"SAFETY FIRST"
CHILDHOOD MALTREATMENT, ATTACHMENT, AND COGNITIVE PROCESSING: A MEDIATION MODEL

by

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FRONTISPIECE

DEDICATION

I dedicate this dissertation to my parents Otto and Jocelyn Sprenger, my daughters Kyle, Quinn, and Chloe Smith, my sisters Julie and Janee Parsons as well as my brother John Parsons, my extended family and my dear friends Dr. Lisa Seyfried, Dr. Lilia Cortina, Dr. Amanda Toler-Woodward, and Mary and Tom Iverson for their never-ending encouragement and support during this arduous process. I dedicate this work to my committee, for without their expertise, patience, and steadfast belief in my ability, my story would not have been told. And finally, I dedicate this to Charles, my safe harbor, who arrived in my life during the throes of my putting the final pieces together and had the fortitude to "hang in" with me to see this project come to fruition. I love you all.

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List of Abbreviations

AAS	Adult Attachment Scale
AMOS	Analysis of Moment Structure
AF-CBT	Abuse-Focused Cognitive Behavioral Therapy
A-RQ	Adolescent Relationship Questionnaire
CAPTA	Child Abuse Prevention and Treatment Act
CBCL	Child Behavior Checklist
CBT	Cognitive Behavioral Therapies
CFA	Confirmatory Factor Analysis
CPP	Child-Parent Psychotherapy
CTS	Conflict Tactics Scale
DHHS	Department of Health and Human Services
DHS	Department of Human Services
FIML	Full-Information Maximum-Likelihood
IRB	Institutional Review Board
NCTSN	National Child Traumatic Stress Network
IEP	Individual Education Plan
IRB	Institutional Review Board
LD	Learning Disability
RMSEA	Root Mean Square of Error Approximation
RSQ	Relationship Scales Questionnaire
SEM	Structural Equation Modeling
TF-CBT	Trauma-Focused Cognitive Behavioral Therapy
YSR	Youth Self-Report

Abstract

Childhood maltreatment is a pervasive problem, with severe developmental consequences across multiple domains. A growing body of empirical evidence indicates that there are critical periods in childhood during which the experience of maltreatment has a profound impact on the developing brain. The developing brain drives cognitive, emotional, social, and psychological development and functioning; thus, understanding the relationship among environmental interactions and the subsequent impact on childhood neurodevelopment can provide insights into how the maltreated child self-regulates social and emotional experiences (such as attachment and interpersonal relationships) and processes information (such as auditory verbal information within social and therapeutic relationships). Those insights can inform the design of more effective treatment approaches for maltreated children that promise to more effectively reduce the long-term impact of the multiple developmental sequelae associated with maltreatment.

This dissertation investigates the interface between childhood relational maltreatment, attachment, and cognitive processing, specifically; auditory and language processing. A sample of 117 incarcerated male adolescents, mean age of 17, from a Midwestern detention center participated in a survey study. The central hypothesis of this study was that attachment acts as a mediator between early relational maltreatment and later deficits in cognitive processing, deficits which then have negative consequences to the social and emotional functioning.

A Structure Equation Modeling strategy was utilized to examine the role of attachment and cognitive processing deficits in child relational maltreatment. A significant relation was revealed between attachment on auditory processing as well as internalizing and externalizing behaviors including withdrawal, anxiety, social problems, and aggression. However, when attachment was held constant, the relation between child relational maltreatment and auditory processing became significant in its influence on withdrawal, anxiety, social problems and aggression indicating support for a partially mediated model. The current study supports the need for multi-model intervention approach when working with maltreated children and youth.

Chapter 1: Introduction

Research has begun to examine the associations between childhood maltreatment, attachment, and disability in children. Current literature indicates that children with disabilities are more likely to be maltreated (Sullivan & Knutson, 2000). However, the notion that children who are maltreated subsequently manifest learning disabilities or cognitive-processing deficits also is garnering increased attention (Schore, 2000, 2002; Teicher, 2002; Teicher et al., 1997).

Recent empirical evidence indicates that there are critical periods in childhood during which the experience of maltreatment has a profound impact on the developing brain. The brain drives cognitive, emotional, social, and psychological functioning; thus, understanding the relationship among environmental interactions and the subsequent impact on childhood neurodevelopment can provide insights into how the maltreated child self-regulates interpersonal and emotional experiences (such as attachment) and processes information (see, e.g., Perry, Pollard, Blakely, Baker, & Vigilante, 1995).

A central and historical aim of the field of social work is to provide interventions that address the sequelae of child maltreatment. However, a great deal remains to be learned with respect to the impact that traumatic experiences, such as maltreatment, can have on the neurological development and the subsequent cognitive and emotional functioning of a child. This research study aims to inform the development of more effective interventions focused on redirecting the negative developmental trajectories that so often occur as a result of child maltreatment. Utilizing a clinical sample of adjudicated

male adolescents who have experienced various forms of childhood maltreatment, I will demonstrate that relational maltreatment during childhood impacts cognitive functioning; specifically, auditory and language processing. I will further demonstrate that this impact is mediated by the deleterious consequences of insecure attachment. These findings will be integrated with past and current discourse on the dynamics of childhood maltreatment and attachment, culminating in the discussion of a need for more effective treatments the form of structured, multimodal intervention strategies.

In the many years I worked as a speech pathologist and social worker with high-risk children and youth, most of who came with substantiated maltreatment histories, it struck me again and again that there were times when the majority of these kids, "just didn't get it". What I mean by this is that it became evident that when these children and youth became upset or emotionally aroused or triggered by a perceived threat (most often during an interpersonal exchange), their ability to process verbal information became significantly compromised – yet when calm or removed from the source of distress, were able to follow complex verbal directives. Why was that? What role did emotional arousal and interpersonal relationships play in the ability or the inability to process information? And even more importantly, if these youth were demonstrating areas of deficit in auditory/language processing, might we need to reevaluate the heavily language laden treatment that defines current service delivery?

Anecdotal examples abound but one theme that is recurrent in the juvenile detention occurs when youth become upset or distressed and as a result of being given "consequences" for acting out. Not usually knowing what upset the youth, a staff will

generally intervene hoping to calm the situation by appealing to the youth's ability to self-regulate. And the scenario usually goes something like this:

> Staff: "Hey Brandon, it looks like you're upset. Lets see if we can work this out…"
>
> Youth: "Man, get out of my face or I'll…"
>
> Staff: " You need to calm down man and get it together. You can do this."
>
> Youth: " @#$@#$@#$!!!"
>
> Staff: "I'm telling you man, you are not in compliance and if you don't get it together there will be a consequence. You need to act respectfully."
>
> Youth: "@#$%^@#$%^&@#$%^&@#$%^&!!!"
>
> Staff: "Calm down!!! NOW!!!"

You get the picture. More verbalization on the part of the staff yields an escalation in behavior. At this juncture the youth is often restrained and taken to a "Life Safety Unit" where he is effectively given a time-out. When interviewed a half hour to an hour later, this same youth is usually able to look back at he series of events leading to the restraint and while not able to identify the "trigger", is often able to verbalize the behavioral plan that he should have implemented based on therapeutic relapse prevention models discussed during his treatment. When asked why he didn't follow his plan, the answer is usually, "I don't know. I didn't understand what he was saying and I was mad!"

Subsequently, when advising the staff that this youth has auditory and/or language processing deficits and doesn't understand what is being said when he is upset, I was told that I was mistaken because "That youth can hear. I've opened a piece of candy and he

can be sitting a whole classroom away from me and he'll turn around when he hears that paper crackle and ask for a piece. Don't tell me he can't hear!"

Discerning the ability to process and make sense of incoming verbal information is very different from hearing acuity or the ability to perceive sound.

Clearly these children and youth were demonstrating a pronounced inability to cognitively process in anxiety producing situations and conversely appeared more able to process information in calmer states. While ethically I could not evoke a high arousal situation to test my hypotheses, I began to investigate the relation between the history of early child maltreatment and cognitive processing through the "Cognition and Disabilities Project" initiated in 2005.

This dissertation will first examine the incidence, prevalence, and known consequences of child maltreatment in the United States. Next, the, current state of intervention service delivery for maltreated children, and the impact of child maltreatment on attachment will be reviewed. We will then synthesize and integrate this review to inform an evolving perspective on child maltreatment and its effects on attachment processes and interpersonal functioning. This synthesis will incorporate a neurobiological perspective, examining more closely the mechanism by which the sequelae of child maltreatment impacts cognitive-processing abilities related to behavioral, social, psychological, and academic functioning. Current research methods and findings will be reviewed, and discussed as they stand to inform the development of more effective intervention models for children who have experienced child maltreatment.

Chapter 2: Incidence and Prevalence of Child Maltreatment

Background

The evolution of public policy and intervention programming related to the maltreatment of children, in the form of physical, sexual, psychological abuse and/or neglect, is commensurate with our awareness of the causes and consequences of such maltreatment. The illumination of trends and patterns can provide invaluable insights into the compositional and contextual factors that can lead to or result from child maltreatment (Chaffin, Kelleher, & Hollenberg, 1996). Thus, having accurate estimates of the incidence and prevalence of child maltreatment can help us to lay the foundation upon which our understanding of these phenomena are built, and subsequently, can increase the efficacy of our treatment delivery.

The federal government's formal recognition of child abuse and neglect as a national problem began in 1935, when public welfare services "for the protection and care of the homeless, of dependent and neglected children and children in danger of becoming delinquents" were first funded by the Social Security Act (Kadushin, 1978, p. 5). In the mid-1960s, state laws began to require the reporting of suspected cases of child abuse and neglect, and by 1967 all states had mandatory child abuse reporting laws (Sedlak, 2001).

As awareness of the magnitude of the problem of child maltreatment grew, public concern spurred Senate subcommittee hearings on the subject. These hearings culminated in the passage of the Child Abuse Prevention and Treatment Act (CAPTA) in 1974. Upon

completion of a feasibility study in 1975, CAPTA led to formation of the National Center on Child Abuse and Neglect, which was responsible for conducting the first study designed to ascertain national rates of child abuse and neglect: the National Incidence Study. That study explored the number of cases of child abuse that occurred in a defined child population within a given year, yielding data related to frequency, severity and distribution of child maltreatment. These data provided a baseline from which subsequent national incidence studies could monitor the increase, decrease and changes in national patterns of child maltreatment cases. Two subsequent incidence studies have been conducted, the most recent of which was published in 1988 (U.S. Children's Bureau, 2001).

Ards and Harrel (1993) released a secondary analysis of the National Incidence Surveys since CAPTA, citing that the number of children reported to Child Protective Services rose steadily from 1974 to 1993. This statistic was substantiated by the 2000 annual report from the National Child Abuse and Neglect Data System and by the national incidence studies, which also reported an increase of 149% in child maltreatment, as defined by the Harm Standard, during the same time period (National Clearinghouse on Child Abuse and Neglect, 2003). Under the Harm Standard, identified children are considered maltreated only if they have previously experienced some form of abuse or neglect. The significant rise in reporting has been attributed to increased public awareness about the reporting process due to education, media exposure, and a refined reporting system; more effective intake, assessment, and data entry; and changing standards and definitions of abuse across disciplines and across time (Tzeng, Jackson, & Karlson, 1991; Wang & Daro, 1997).

According to the U.S. Department of Health and Human Services (DHHS, 2005; 2006; 2007) child maltreatment rates decreased between 1993 and 1999, from 15.3 children per thousand in 1993 to 11.8 children per thousand in 1999. The year 2000 saw a slight increase in the rate of child maltreatment, with subsequent years following suit. Based on a rate of 48.3 per 1,000 children, an estimated 3.6 million children received an investigation by Child Protective Service agencies during 2005. The rate of child maltreatment case investigation increased from 43.2 per 1,000 children in 2001 to 48.3 per 1,000 children in 2005. However, the rate of substantiated victimization decreased from 12.5 per 1,000 children in 2001 to 12.1 per 1,000 children within the same year (Administration for Children and Families, 2004; DHHS, 2005; 2006; 2007; Kilpatrick, Saunders, & Smith, 2003). Furthermore, DHHS speculated that the increase of approximately 73,000 children receiving an investigation in 2005, compared to 2004, is in great part due to the inclusion of data from Alaska and Puerto Rico (U.S. Children's Bureau, 2007).. The existence of somewhat conflicting reports of the incidence and prevalence of child maltreatment underscores the need for more accurate and effective methods of identifying and substantiating such cases.

Although a steadily increasing awareness and recognition of child maltreatment has driven ambitious efforts to treat and protect abused and neglected children, lack of a clear national consensus about what constitutes maltreatment has been cited as a significant barrier to the collection of accurate data on the incidence and prevalence of child abuse and neglect in the United States (Veltman & Brown, 2001). CAPTA, as amended by the Keeping Children and Families Safe Act of 2003, mandates that, at a minimum, states must recognize as a form of child maltreatment:

> …any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act which presents an imminent risk of serious harm.

However, according to DHHS (2007), each state has its own definition of what constitutes child abuse and neglect, Although the federal government provides a foundational operationalization of child maltreatment, the broad and inconsistent state-level definitions, compromise the accuracy and utility of estimated rates of maltreatment in the United States.

Definitional inconsistencies are certainly not the only confounding variables faced by those who strive to obtain accurate data on child maltreatment rates. First, one has to consider the countless incidents of maltreatment that inevitably go unreported. In addition, estimates are often based on the numbers of reports agencies receive rather than on the number of cases in which child abuse or neglect was substantiated.

Despite the fact that incidence rates are difficult to estimate with great accuracy, the most recent statistics are made available through the Child Maltreatment Report (DHHS, 2007), which incorporates statistics from all 50 states, D.C., and Puerto Rico, and which have provided some of the most comprehensive child maltreatment incidence and prevalence data to date. Below is a brief summary of this report and its findings.

Incidence Rates of Various Types of Maltreatment

During 2005 an estimated 899,000 children experienced some form of maltreatment. Of these 899,000 children, 62.8% of victims were neglected, 16.6% were physically abused, 9.3% were sexually abused, 7.1% were psychologically maltreated,

and 2.0% were medically neglected. In addition, 14.3% of child victims experienced other types of maltreatment, such as abandonment, threats of harm, or congenital drug addiction. According to federal regulations, states are permitted to code any maltreatment that does not fall into one of the main categories—physical abuse, neglect, medical neglect, sexual abuse, and psychological or emotional maltreatment—as "other." The problem of mutual exclusivity across these categories further complicates accurate assessment of maltreatment rates due to cases of co-occurrence of different types of abuse and neglect. Children who were victims of more than one type of maltreatment have been traditionally counted within multiple categories (DHHS, 2005). These data reflect a small increase (2%) in neglect from the 2004 report.

Demographics

Relative to sex, age, race, and ethnicity of childhood maltreatment victims, girls (50.7%) were slightly more apt to be abused or neglected than were boys (47.3%). Younger children also experienced higher rates of maltreatment, with nearly three-quarters (73.1%) of the reported neglect cases involving children from birth to 3 years of age. Within the age group of 4- to 7-year-olds, 15.6% were physically abused and 8.9% were sexually abused, compared with 21.3% and 17.3%, respectively, for child victims 12 to 15 years old.

Other demographics of abused children do not vary significantly from year to year. According to the most recent estimates provided by the DHHS 2005 report, African American children, American Indian or Alaska Native children, and Asian or Pacific Islander children had the highest reported rates of victimization, at 19.5, 16.5, and 16.1

per 1,000 children of the same race or ethnicity, respectively. White and Hispanic children had rates of approximately 10.8 and 10.7 per 1,000 children of the same race or ethnicity, respectively. Asian children had the lowest reported rate of 2.5 per 1,000 children of the same race or ethnicity. One-half of all victims were White (49.7%), one-quarter (23.1%) were African American, and 17.4% were Hispanic. Within all racial categories, the largest percentage of victims suffered from neglect rather than abuse (DHHS, 2005).

Perpetrators

Unfortunately, data on the living arrangements of maltreated children is lacking in the most current literature. In the DHHS 2005 report, nearly half of the reporting states did not include statistics on victim/caretaker living arrangements, and those that did report missing data, 40% of cases precluded interpretation of the findings. However, existing data pertaining to perpetrators of child maltreatment reveal that over 83% of children were maltreated by a parent either acting alone or in concert with another. Of those 83%, over 40% were abused or neglected by their mothers acting alone and approximately 18% by their fathers acting alone. Seventeen percent of children were maltreated by both parents, and 11% were abused or neglected by a non-parental caregiver. Thus while victim-perpetrator relationship statistics are relatively nascent, available data suggests that in the majority of substantiated cases, perpetrators of maltreatment have a close relationship with the child (DHHS, 2007).

General Trends in Childhood Maltreatment

As demonstrated, multiple sources of complexity and confusion render the delineation of the incidence and prevalence of childhood maltreatment in the United States difficult. National estimates can vary by reporting agency and by calendar year due to ever-changing and -evolving standards and operationalizations of what constitutes or defines child maltreatment. Furthermore, Finkelhor and Berliner (2005) concluded from a randomized sample of youth and parents that youth victimization surveys may be too narrow in scope; thus, they speculate that problematic types of maltreatment are underrepresented and as a result do not receive the attention needed to address abuse specific policies and/or treatment. Furthermore, in examining treatment outcomes, Spinazolla, Blaustein, and van der Kolk (2005) found that many published reports omitted important significant data, including demographics, exclusion rates and criteria, and trauma histories. This research suggests we need to reexamine our operational definitions of what constitutes relational maltreatment leading to developmental sequelae, and that actual rates may be much higher than currently measured.

Regardless of the aforementioned inconsistencies, identifiable patterns appear throughout the child maltreatment literature and are supported by statistical evaluations. These patterns indicate that younger children are more likely to experience maltreatment than are older youth (Child Trends, 2003, DHHS, 2005, 2006, 2007), that the majority of child maltreatment occurs in the home, and that in most cases maltreatment is perpetrated by the parent or primary caregiver (DHHS, 2005, 2006, 2007). However, since we do know that the majority of victimized children have a close relationship to the perpetrator, we assume that some level of relational trauma underlies typical maltreatment

experiences. In this dissertation, we will use the term " relational child maltreatment" to refer to any form of abuse or neglect which inflicts significant physical, psychological or emotional harm to a child, perpetrated by an individual with a previous relationship to the victim.

The next chapter will discuss the gravity of these statistics, highlighting research indicating that maltreatment of children by parents or caregivers can result in the development of uniquely detrimental physical, psychological, social, emotional, neurological, cognitive and academic outcomes in both the short and the long term.

Chapter 3: Developmental Consequences of Child Maltreatment

While the previous chapter delineated the current state of knowledge on the incidence and prevalence of childhood maltreatment in the United States, that is only the beginning of understanding the consequences. We know that child maltreatment takes many forms, which has rendered it difficult to accurately and fully summarize the true extent and scope of this ubiquitous national problem. As previously discussed, we have come to understand that various forms of maltreatment are not experienced in the same way by all children, and that most of these children are likely to experience more than one form. The experience of one or more forms of maltreatment can have serious and long lasting effects on a child's psychological, emotional and physical well-being, and cognitive functioning. Given that a large majority of victimized children have a personalized relationship to their perpetrator, we can also assume that at least some level of relational trauma underlies typical maltreatment experiences. This knowledge merits the diligent attention of researchers to explicate causal pathways that will enable us to develop more effective methods of intervention for maltreated children and youth.

Past and current research has painted a compelling picture of the myriad of negative and maladaptive consequences that can result from various forms of childhood maltreatment. Although it is evident that most maltreated children are likely to suffer multiple negative outcomes, the partitioning of these outcomes into three categories—psychological/emotional, cognitive, and physical—provides a backdrop against which a clearer and more comprehensive story of maltreatment outcomes can be told.

Overview of Maltreatment Outcomes

Just as "child maltreatment" is difficult to define, its effects are difficult to ascertain, and although all forms of maltreatment, whether psychological or physical, abuse or neglect, have been linked to multiple negative outcomes, direct causal pathways have yet to be established. Age of onset, duration and severity, and relationship of perpetrator to the victim further complicate this endeavor as we seek to disentangle the variables that contribute to these negative sequelae.

Child maltreatment is a pervasive problem that affects a vast number of children in a variety of ways. Children with maltreatment histories have demonstrated a number of psychiatric and attachment disorders, difficulty with emotional regulation and response flexibility, adverse health effects, and lack of school readiness (Cicchetti et al., 1990; Malinosky-Rummell & Hansen, 1993). And longitudinal data has shown that incidence rates, as well as the number of presenting negative physical and mental health consequences, are higher among adults who report having experienced childhood physical abuse than among those who do not (Springer, Sheridan, Kuo, & Carnes, 2007).

Abused and neglected youth are more likely to work low-skilled jobs, to suffer from depression or antisocial personality disorder, to attempt suicide, to display childhood aggression or behavioral problems, and to be arrested as a juvenile or an adult (Brosky & Lally, 2004; Widom, 2000). And early exposure to interpersonal or relational trauma has been linked to a greater risk for problems such as affect and impulse control, memory, attention, and distorted self-concept (van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). Depression, shame and guilt, posttraumatic stress disorder,

maladaptive social and relationship behaviors, aggression, and other behavioral problems are all outcomes that have been observed in victims of childhood physical, emotional, psychological, and sexual abuse (Brosky & Lally, 2004; Valle & Silovsky, 2002). And severe maltreatment, particularly neglect, has been shown to result in reactive attachment disorder in toddlers and young children, characterized by inappropriate social behaviors, which in some cases are misdiagnosed as conduct disorder or depression (Haugaard & Hazan, 2004; Zeanah et al., 2004). The following sections will delineate in greater detail, the aforementioned outcomes, and proposed mechanism by which they develop.

Maltreatment and Physical Health

Chronic and excessive exposure to stressful situations triggers the release of stress-related neurotransmitters, and has been linked to the development of certain physical illnesses (Ron de Kloet, Joels, & Holsboer, 2005). Furthermore, exposure to abnormally high levels of stress during early formative years can negatively impact the physical development of children and youth. For example, a recent longitudinal study found that individuals who reported histories of childhood maltreatment had higher rates of physical difficulties than those who did not report being maltreated (Springer et al., 2007).

Traumatic and stressful childhood experiences can also impact neural processes and brain growth (Gunnar & Fischer, 2006), altering the development of neurological stress-response patterns and thereby compromising brain's ability to process and manage stress (Van Voorgees & Scarpa, 2004). Thus, childhood maltreatment, being an early and

chronic stressor, can negatively impact the development of coping mechanisms, rendering the child even more vulnerable to stress and its consequences later in life.

Maltreatment and Cognitive Deficits

Children with disabilities are almost three times as likely as non-disabled children to have been maltreated (Sullivan & Knutson, 2000). Although the co-morbidity of child maltreatment and cognitive disability has been recognized for many years, it has more recently been evidenced that children with disabilities are several times more likely to have a history of maltreatment than their non-disabled counterparts (Bos & Vaughn, 1998; Lowenthal, 2001). According to Sobsey (2002), almost one-third of children identified as having special needs, have also been the victims of substantiated maltreatment. Identified negative cognitive effects of child maltreatment include cognitive delay/impairment, processing deficits, difficulties with receptive and expressive language competence, impulsivity, inattention, disorganization, auditory memory difficulties, lack of motivation, and low self-esteem (Barnett, 1997; Fuchs & Fuchs, 1998).

Maltreated children perform more poorly in school, often presenting with cognitive deficits (Kendall-Tackett & Eckenrode, 1996). Neglect in particular can compromise school functioning, because it is associated with the internalizing behaviors and social withdrawal (Hildyard & Wolfe, 2002). Veltman and Browne (2001) reported that school-age children with a history of maltreatment often struggle in school due to a variety of developmental delays. Extent of the maltreatment suffered also factored into

the language delay, compromised cognitive development, low IQ, and poor school performance in these empirically based studies.

Language and Auditory Processing

Language and auditory processing skills play a pivotal role in social, emotional and academic functioning. The presence of a specific language impairment, for example, "…exacerbates the contribution of language in the relationship between language and social cognition" in school-age children (Botting & Conti-Ramsden, 2008, p. 295), suggesting that communication difficulties may directly impact social functioning. In a study of the emotional regulation and social behaviors of children with specific language impairments, Fujuki, Spackman, Brinton and Hall (2004) postulated that the social withdrawal often exhibited by such children with such impairments "…represents a fearful, anxious behavior that results from the intertwining of language and emotional factors" (p. 644), suggesting a negative relationship between language deficits and emotional regulation. Research also suggests that, in educational settings, language deficits may be passed off as behavioral problems (Sanger, Moore-Brown, Magnuson & Svboda 2001), thereby excluding these children from consideration for special educational services.

Given that children with language impairments and no history of maltreatment exhibit concomitant behavioral and emotional problems, it could be hypothesized that language impairments resulting from childhood maltreatment might have an even stronger impact on a child's emotional regulatory abilities and social behavior. Therefore, efforts to increase the efficacy of therapeutic intervention for maltreated youth must address language and auditory processing, as effective communication is imperative for a) treatment goals and objectives to be understood, and b) successful therapist-child relationship to be established and maintained throughout treatment. When dealing with

maltreated youth in an intervention setting, therefore, it seems clear that the language and communication capacities of the child must be taken into consideration, particularly when language-loaded treatment protocols, such as Cognitive Behavioral Therapy (often utilized for victims of child abuse and neglect) are being considered.

Maltreatment and Delinquency

Delinquency has not been established as a direct consequence of child maltreatment, per se. What has been demonstrated, however, is an undeniable intersection of maltreatment histories, cognitive and language deficits, and behavioral and emotional problems among juvenile populations. Thus, for the purposes of this discussion, it is a seminal population to examine.

Learning and emotional disabilities are overrepresented in juvenile delinquent populations (Quinn, Rutherford, & Leone, 2001), and a significant proportion of delinquent youth have histories of maltreatment (Wiebush, Freitage, & Baird, 2001). It has been suggested that the punishment and reward systems utilized in our justice systems may be less relevant to youth with maltreatment histories. In a study of responses to reward stimuli, Guyer et al. (2006) found that maltreated children were less likely to choose high-risk options than were controls, and although control children's response times increased as possible winnings increased, maltreated children's response times did not vary. Though small and isolated, these results suggest that maltreated children may be less influenced by reward-punishment systems. Therefore, it can be construed that these youth may also be less responsive to the reward and punishment system that is designed to prevent crime and delinquent behavior and, subsequently, more

likely to end up in a juvenile detention facility. As cited previously, maltreated youth commonly present with language deficits. And behavioral patterns displayed by youth with language impairments can be mistaken as conduct problems (Sanger, et al., 2001), a finding that could contribute to the higher incidence of language impairment and communication deficits, and reduced language processing abilities observed among juvenile populations compared to non-offending peers (Davis, Sanger and Morris-Friehe, 1991; Snow & Powell, 2008). Considering recent estimates that only one-third of juvenile delinquents in residential facilities receive the special education services that they need (Office of Juvenile Justice and Delinquency Prevention, 2001), it could be further construed that they may also not receive the emotional services they might need as well.

Clearly and indisputably, the consequences of child maltreatment are not only deleterious, but also intersect in ways we do not yet fully understand. These facts warrant more informed and effective methods of detection, assessment, and treatment of a spectrum of consequences and outcomes that spans multiple psychosocial, physiological, and developmental domains. The following chapters of this dissertation will revisit these consequences and outcomes as the current and future directions of child maltreatment treatment and intervention are discussed.

Chapter 4: Current Treatment Models for Maltreated Children

Although connections between childhood physical and psychological neglect and abuse and subsequent behavioral and psychological outcomes have been observed, direct causal pathways between various forms of maltreatment and specific negative outcomes have yet to be established (Stuewig & McCloskey, 2005). Still, childhood maltreatment is a complex experience, and "there is a growing consensus that early-onset and chronic trauma result in an array of vulnerabilities across many different domains of functioning" (Kinniburgh, Blaustein, Spinazzola, & van der Kolk, 2005, p. 424). Furthermore, the experience of childhood maltreatment varies from individual to individual, as does the resulting impact and symptomotology. Thus, the development of effective treatment models must entail a careful assessment of multiple areas of functioning, including but not limited to social/personal difficulties, parent/caregiver-child interactions, cognitive/intellectual impairment, neurological impairment, and mental health status (e.g., Kolko, 1998; Wolfe & McEachran, 1997).

Although a multiplicity of intervention strategies geared toward maltreated children are currently utilized, there is a paucity of published work that has evaluated the efficacy of these treatments (Finklehor & Berliner, 1995). Issues such as co-morbidity, type and severity of maltreatment, onset age and duration of maltreatment, intervention length and modality, variations in evaluation design, and limitations of self-report maltreatment data, particularly in children under the age of 8, have proven to be potent obstacles to the assessment of the current state of childhood and adolescent maltreatment intervention service delivery (Friedrich, 1996).

In their attempt to summarize current empirical knowledge about intervention service delivery for maltreated children, Cohen, Murray, and Ingleman (2006) found that most children who have been maltreated and/or exposed to violence "either receive no treatment at all for their trauma symptoms or are treated by community therapists who do not typically provide evidence-based treatments," treatments for which efficacy of has been demonstrated by research, ideally in clinical trials (p. 739). Among those children who did receive treatment, they found, were given some form of therapeutic intervention that, although typically grounded in theory (e.g., cognitive, behavioral, or psychodynamic), were generally narrow in scope, focusing specifically on the abuse or trauma experience.

Although addressing the maltreatment experience is of great importance and is likely to be at least moderately effective, maltreatment-specific therapies do not take into account current research literature, which emphasizes that maltreated children rarely experience one single form of trauma (Cohen, Deblinger, Mannarino, & Steer, 2004). Indeed, Sedlak (2001) has estimated that one-quarter to one-half of maltreated children experience more than one form of abuse. Yet, according to a meta-analysis of the effectiveness of psychosocial interventions for child maltreatment, it is common for these interventions to primarily address only the "presenting problem." The efficacy of these intervention models are somewhat inconclusive, however, and research has yet to discern what type of treatment works best for a specific type of abuse or neglect (Skowron & Reinemann, 2005).

The current literature includes only scant information delineating which maltreatment interventions are successful and for whom, making it difficult to gain a

sense of what current service delivery looks like relative to best or common practice. What is apparent is that many trauma-focused interventions do exist and are used frequently. Given that most young victims have experienced multiple forms of maltreatment, it follows that interventions must overlap in content and approach to meet the diverse needs of these children and youth. In the following sections, examples of such multimodal treatments, as well as the theoretical underpinnings of these treatment models will be provided, and their strengths and limitations will be discussed.

Current Treatment Models

According to the National Child Traumatic Stress Network (NCTSN) (2007), which is funded by the Center for Mental Health Services, the Substance Abuse and Mental Health Services Administration, and DHHS, the majority of trauma-related treatment models, to some degree, incorporate aspects of trauma, psychodynamic, family systems, developmental, social learning, cognitive behavioral, and attachment therapies. Below are some examples of these interventions, their foci, and their theoretical underpinnings.

Cognitive behavioral therapies (CBTs) are empirically supported treatments that focus on maladaptive patterns of thinking and the beliefs that underlie them. Cognitive behavioral therapies are rooted in the concept that our thoughts drive feelings and behaviors, thus modifying or changing thinking and/or behavior (Tavris & Wade, 1997). CBTs are widely accepted as successful, evidence-based treatments for many disorders associated with childhood maltreatment, including depression, anxiety disorders, posttraumatic stress disorder, and other trauma-related symptoms (e.g., Becker-Weidman

& Shell, 2005; Briere et al., 2006; Reinecke, Dattilio, & Freeman, 2003). CBT models are generally designed to address specific thinking patterns, and it is unclear whether an approach that focuses on a specific type of trauma can be maximally effective in treating a victim of childhood maltreatment, particularly when research has shown that many of these children have experienced multiple forms of trauma (Cohen et al., 2004). It should be noted, however, that some of the more effective treatments for maltreated children and youth, which are labeled as "cognitive behavioral" therapies, are much broader in scope than their names might suggest.

One cognitive behavioral approach, developed to treat maltreated children and youth, is known as trauma-focused cognitive behavioral therapy (TF-CBT) (Cohen & Mannarino, 1993). A hybrid treatment model, TF-CBT integrates "cognitive behavioral, interpersonal, and family therapy principles with trauma-sensitive interventions for traumatized children and parents" (Cohen et al., 2006, p. 741). Originally developed for sexually abused children, TF-CBT has been adapted for children exposed to any type of trauma, targeting posttraumatic distress syndrome, depression, and trauma-related cognitions. TF-CBT combines cognitive behavioral and family therapies, and empowerment principles. According to NCTSN (2007), a series of randomized controlled trials has demonstrated that the positive results of TF-CBT intervention exceeded those of a more traditionally used nondirective play therapy.

Abuse-focused cognitive behavioral treatment (AF-CBT) (Kolko, 2002) is a form of cognitive behavioral therapy similar to TF-CBT. It focuses on both child and parent/caregiver characteristics "related to the abusive experience and the larger family context in which coercion or aggression occurs" (NCTSN, 2007). Drawing from

treatments such as learning/behavioral, family, and cognitive therapies, and developmental victimology, AF-CBT aims to improve intra-familial interactions as well as the child's interactions with his or her peers by improving the child's self-image and self-efficacy. This is accomplished through the amelioration of anxiety or depression in the traumatized child (Cohen et al., 2006, p. 746). Although it has not been extensively studied, AF-CBT has been found to be more efficacious among a variety of populations of children and parents than routine community services and/or family therapy (Kolko, 2002).

Various forms of psychotherapy are also utilized to treat abused or neglected children and their families. Child-parent psychotherapy (CPP), for example, is a dyadic relationship model designed to address a variety of behavioral and emotional difficulties, such as posttraumatic stress disorder, in children younger than 6 years old who have been exposed to domestic violence (Cohen et al., 2006). This parent-child approach, developed by Lieberman and Van Horn (2005), is a trauma-focused, relationship-based model that is rooted in attachment theory and incorporates aspects of psychodynamic, developmental, trauma, social learning, and cognitive behavioral theories.

CPP has been identified by the NCTSN (2007) as an effective treatment model for traumatized children and youth. They describe CPP as focusing on "the way the trauma has affected the parent-child relationship and the family's connection to their culture and cultural beliefs, spirituality, intergenerational transmission of trauma, historical trauma, immigration experiences, parenting practices, and traditional cultural values". And although child maltreatment literature contains conflicting information about the effectiveness of these psychological interventions (Berliner & Saunders, 1996; Feather &

Ronan, 2006), like the CBT-based treatments, CPP was found to be more effective than community-standard treatment (Cicchetti, Rogosch, & Toth, 2006; Lieberman, Ippen, & Van Horn, 2006).

Treatment Effectiveness

Child-maltreatment interventions that have been identified as being more effective than "standard" treatments are often very broad in scope, incorporating a variety of theories and therapeutic practices. However, these treatment models are few, and the literature supporting their efficacy is sparse. Indeed, the variability and dearth of child-maltreatment intervention-method efficacy literature suggests that there is a need for further research to determine which methods yield the greatest benefits for which victims. Furthermore, the fact that multimodal approaches seem to benefit maltreated children and youth more effectively than more commonly used interventions suggests that a majority of child maltreatment victims are not receiving the most effective treatments available. Thus, it is apparent that there is a need for more rigorous evaluations to determine the efficacy of current treatment options for maltreated children and youth.

Although it has been evidenced that therapies such as CPP, TF-CBT, or AF-CBT show promise when compared to more commonly used treatment protocols, these treatments incorporate such a broad range of therapeutic theories and practices that it is difficult to ascertain which of these theories and practices is/are the most effective, and for whom. Given the empirically evidenced, multifaceted nature of the child maltreatment experience, it could be assumed that the reason multimodal treatment designs have been more successful than more commonly used treatments is that they are

more likely to address a wider range of symptoms, even if they are only intentionally targeting one or two "presenting" problems. However, further research is necessary to ascertain the validity of this assumption.

Treatment Limitations

Although in the course of development most children have the chance to invest their energies in developing various competencies, complexly traumatized children must focus on survival. "These children need a flexible model of intervention that is embedded in a developmental and social context that can address a continuum of trauma exposures" (Kinniburgh, Blaustein, & Spinazzola, 2005, p. 424).

As previously discussed, current research on treatment efficacy for maltreated children and youth is somewhat lacking, yet it is salient that intervention strategies should be tailored specifically to the individual needs of the victim, and to his or her family or caretaker, if appropriate. Current literature suggests that cognitive behavioral therapeutic approaches can be successful if they are applied to a specific behavioral problem, and that psychotherapy is effective in alleviating symptoms such as depression, but that multimodal treatments are most promising, particularly if the extent of the abuse, neglect, or trauma has resulted in multiple negative outcomes, severely disrupting the victim's ability to function in everyday life.

The majority of childhood maltreatment is perpetrated by a family member or caregiver (DHHS, 2006); thereby increasing the likelihood these children will experience subsequent relational difficulties. In most, if not all cases, child victims will display some form of disrupted/insecure or other attachment-related symptomology. Children must

form and maintain healthy interpersonal relationships to survive, learn, and love. For any therapeutic intervention to be truly effective, a trusting relationship must be formed between the victim of maltreatment and the practitioner. However, when dealing with a child or young adult who has experienced severe relational trauma, this therapeutic relationship may be compromised. Slade (2000) notes:

> Thinking about some patients—particularly those whose early history has been marked by rejection, abandonment, loss, or trauma . . . in terms of the dynamics and function of particular attachment classifications can directly affect both how the clinician understands the dynamics underlying the patient's psychic organization, and how she speaks to such dynamics in the clinical situation. (p. 1160)

Thus, utilizing attachment theory to assess the underpinnings of such issues can serve to guide interventions with traumatized children whose symptoms and psychopathology prevent them from functioning normally in everyday life.

The good news is that the formation of early attachment relationships does not necessarily seal one's fate. Research has shown that attachment style is not fixed, and can change in reaction to current circumstances, which is critical information for practice (Crittenden, Landini, & Claussen, 2001; Davila, Burge, & Hammen, 1997; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). Research suggests, for example, that the most promising form of therapy among severely maltreated children with reactive attachment disorder focuses on the establishment of a secure attachment relationship, regardless of whom that relationship is with, rather than on an exploration of the more

cognitively-based effects of the maltreatment (Haugaard & Hazan, 2004). Furthermore, attachment-based psychotherapy with maltreated youth has been successful in ameliorating aggressive and socially disruptive symptoms when a social learning theory–based paradigm, which is often utilized in youth residential facilities, has failed (Cunningham & Page, 2001).

CBT often appears in child-maltreatment literature as an intervention strategy aimed at reducing the risk of future abuse of children by caregivers, rather than at specifically ameliorating the deleterious effects of maltreatment on children and youth. This type of treatment has been cited as an effective approach to dealing with trauma-related symptoms in children, employing such methods as "teach[ing] children stress management and relaxation skills [or] creating a coherent 'narrative' or story of what happened" (NCTSN, 2007, p. 1). But these practices assume there has been one traumatic experience, and it therefore cannot be directly applied in cases where the victim has suffered multiple forms of maltreatment over an extended period of time. Furthermore, these methods do not address relational trauma and its aftermath.

A meta-analysis of child maltreatment interventions revealed that although treatment effects were greater when non-behavioral methods were used, behavioral treatments were significantly shorter in duration—3 months on average for behavioral treatments, compared to 1 year on average for non-behavioral treatments. Therefore, it may not be safe to assume that psychotherapy is more effective. This does suggest, however, that traditional behavioral therapies may not persist long enough to yield the same beneficial results as non-time-limited or longer-term interventions, the purpose of

which extends to include an establishment of a secure attachment-type relationship between the therapist and the child/adolescent.

Establishing a trusting relationship with a therapist is an important step in any therapeutic situation. Therefore, when working with a victim of a relational trauma such as caregiver maltreatment, therapy may be more effective if the child can form a secure attachment relationship with anyone, including a therapist. Tasca et al. (2006) found the effectiveness of both group psychotherapy and group cognitive behavioral therapy to be the same among adults with binge-eating disorders. However, when attachment-scale scores were taken into account, it was revealed that the cognitive behavioral treatment was less effective than psychotherapy treatment among those with higher attachment anxiety. These results indicate that a secure attachment style may be a prerequisite to effective cognitive behavioral treatment among adults, and therefore it can be inferred that fostering a child's ability to form secure attachments in a controlled, therapeutic setting may maximize the effectiveness of the intervention, even in adulthood.

Given our current knowledge of the state of service delivery for maltreated children and youth, it is evident that more expansive and comprehensive treatment efficacy research must be conducted to ascertain who is benefiting from current intervention models and what those models look like. However, based on the available literature, it is clear that careful assessment is warranted and multimodal treatment is necessary when dealing with children who have experienced multiple forms of maltreatment and relational trauma. This treatment should be rooted in attachment theory, thereby ensuring that the child's ability to form healthy relationships is addressed and

explored, and subsequently, that further treatment modalities can be utilized with maximum efficacy.

The next chapter will review both the origins of and current thinking on attachment theory. I will then review recent studies that, through their utilization of concepts of attachment, have provided empirical and theoretical knowledge that is valuable to our ongoing discussion of the consequences of childhood maltreatment. Furthermore, I argue that attachment theory has great promise to inform the development of treatment and intervention methods that will be more adept at addressing and ameliorating these consequences.

Chapter 5: Child Relational Maltreatment and Attachment

Origins of Attachment Theory

To conceptualize the potential impact of child relational maltreatment on the attachment process, one must begin with the origins of attachment theory. British psychoanalyst John Bowlby initially conceptualized attachment theory in the 1950s. Bowlby used the term *attachment* to describe the affective bond that develops between an infant and a primary caregiver. He believed that the "attachment behavioral system" was innate, serving the evolutionary purpose of helping to assure the survival of the species by keeping an infant within a safe proximal distance of its mother (Sonkin, 2005).

Bowlby extensively researched the concept of attachment, describing it as a "lasting psychological connectedness between human beings" (Bowlby, 1969, p. 194). At the core of his interest in the evolutionary significance of this attachment processes was his accord with the psychoanalytic perspective that early experiences in childhood influence later life development. And it was his early volunteer work with delinquent boys, all of whom, he noted, had experienced "early losses or traumatic abandonments" (Slade, 2000, p. 1147), that "set his professional life on course" (Bretherton, 1992, p. 760). Intrigued by these observations, Bowlby drew upon concepts from disciplines, such as evolutionary biology, psychodynamics, developmental psychology, ethology, cognitive science, and information processing theory, in an attempt to explain how early traumatic histories impact behavior in later life. This multidisciplinary perspective furthered his thinking about the dynamics of the mother-child relationship, and the

subsequent effects a disruption of this relationship might have (Bretherton, 1992; Slade, 2000). Bowlby posited that the

> infant will do what is necessary emotionally, cognitively, and otherwise to maintain his primary attachment relationships, and disruptions in these relationships will often create vulnerability in his *sense of himself and of others*, and in his capacity to regulate, contain, and modulate his affective experience (Slade, 2000, p. 1150).

Continuing to espouse the significance of interpersonal experience during development, Bowlby joined forces with psychologist Mary Ainsworth. It was their combined work that became the foundation of attachment theory and drove early observational research that aimed to better understand the significance of interactions between infants and young children and their parents (e.g., Ainsworth, 1968; Ainsworth & Bowlby, 1991; Bowlby, 1988).

Ainsworth's unique contribution to attachment theory arose from her hypothesis that "young children require a secure dependence on parents before launching into unfamiliar situations" (Bretherton, 1992, p. 762). It was during the 1970s that Ainsworth developed the now famous "strange situation" study, in which 12- to 18-month-old children were briefly separated from and then reunited with their mothers. The notion that the parent is a secure base from which an infant feels safe to separate and explore his/her world was played out in observations of the mother-child reunification.

As a result of her observations, Ainsworth conceptualized three classifications of attachment: secure, anxious avoidant, and anxious ambivalent (Ainsworth, Blehar,

Waters, & Wall, 1978; Bretherton, 1992). The formation of a secure, attachment-style relationship provides the basis for coping, negotiation of interpersonal relationships, and healthy personality development, whereas insecure attachment styles, such as ambivalent or avoidant, often yield more negative outcomes.

Through their research on various aspects of the attachment process in both children and adults, Main and Solomon (1986, 1990) expanded Ainsworth's conceptualization of attachment categories, suggesting a fourth style known as disorganized/disoriented attachment. The disorganized/disoriented attachment style can often appear to be either ambivalent or avoidant. Indeed, children who display disorganized/disoriented attachment styles actually demonstrate a lack of "coherent" attachment behavior, meaning that it is difficult to discern and/or interpret many of their interpersonal behaviors. Main and Solomon (1986) attributed the development of disorganized/disoriented attachment to an inconsistency in parenting behavior, citing the confusion a child feels when alternately comforted and then frightened by his or her caregiver(s) as ultimately leading to this style of attachment thus supporting the importance of interpersonal interaction discussed earlier by Bowlby and Ainsworth. (Main & Hesse, 1990; Main & Solomon, 1986).

More recent models of attachment have evolved from Bowlby's hypothesis that disruptions in the early development of relationships with one's caregiver(s) can create vulnerabilities relative to one's sense of self and/or of interpersonal interactions with others (Slade, 2000). Bartholomew (1990) and Bartholomew & Horowitz (1991) expanded upon this theory, suggesting that an individual's attachment style could be classified by both their mental representation of self, and of others. Within this two-

dimensional/axial "self and others" model, they proposed, lie four categories of attachment style: secure, fearful, preoccupied, and dismissing. According to Bartholomew and Horowitz (1991), the dimension reflecting the representation of *self* indicates the degree to which an individual has developed a sense of positive or negative self-worth, or, the degree to which an individual believes he or she deserves to be cared for or loved by others. The dimension reflecting the representation of *others* indicates the degree to which an individual holds positive or negative expectations of the behaviors of other individuals. Research has shown "that individuals tend to select and create environments that confirm their expectations of relationships, and tend to interpret incoming information on the basis of these positive or negative expectations" (Lyn & Burton, 2004, p.150; Collins & Read, 1993). The concept that early interpersonal experiences form the template for future relationships (Collins & Read, 1993), lends credence to the idea that the development of a secure style of attachment during childhood is critical in order to facilitate seeking out and engaging in healthy relationships later in life.

It was over 50 years ago that Bowlby first proposed that early attachment relationships could affect later life functioning across multiple domains (see e.g., Bretherton, 1992). While Bowlby's theoretical contributions to the development of attachment theory are seminal, current research and methodological advances, along with the development of complementary theoretical perspectives, have given rise to more advanced theoretical formulations on the process and implications of attachment. Today, it has been evidenced that attachment style is predictive of either favorable or unfavorable outcomes related to future relationships (Solomon & Siegel, 2003).

Current attachment theories have shown considerable promise as a means of construing the importance of interpersonal relationships, and have subsequently elucidated how relational trauma, such as childhood maltreatment, impacts a child's developmental trajectory. This new knowledge, in concert with the classical tenets of early attachment theory, has provided a powerful theoretical basis for the development of therapeutic interventions for children (or adults) who present with insecure attachment styles, which is particularly salient when dealing with victims of childhood relational maltreatment.

Drawing from Bolby's notion that the instinct to form relational bonds with others and the development of strategies to seek and maintain proximity to these attachment figures when distressed, ill, or afraid provides the foundation or template for future relationships (1969, 1982), for the purposes of this study, secure attachment is operationalized as the formation of meaningful primary relationships with caregivers who are sensitive and responsive to an infant's or child's wants and needs and yields the ability to form healthy relationships and be resilient in times of stress. Insecure attachment on the other hand is operationalized as the by-product of impaired or compromised relational bonds with primary caregivers yielding anxious or ambivalent behaviors particularly when individuals become distressed, ill, or afraid often culminating in high states of emotional arousal.

Current Variations on Attachment Theory

As discussed, current research on attachment indicates that what were once thought to be stable traits formed in early childhood relationships are now considered to be more fluid throughout the life span (Crittenden, Landini, & Claussen, 2001). The following section will highlight some of the most recent research and theories that are grounded in attachment theory, all of which relate to the discussion of child maltreatment and its consequences as well as, directions of current and future interventions for maltreated children and youth.

On overwhelming body of literature demonstrates a relation between childhood maltreatment and insecure attachment types (Morton & Brown, 1998). For example, Waters et al. (2000) reported on a longitudinal study that followed 12- to 18-month-old infants to 21 years of age. These researchers found that attachment styles remained for the most part stable. These results concur with previous research, which has shown that infants classified as insecurely attached often have problems in social and cognitive functioning, which manifests as behavior problems at home and in school (e.g., Speltz, Greenberg, & Deklyen, 1990).

Elgar et al. (2003), investigated attachment characteristics in 68 male juvenile delinquents. Utilizing the Adolescent Attachment Questionnaire, a self-report measure, these researchers found insecure attachment characteristics were related to behavioral problems, substance use, and poor family functioning.

Through the application of attachment theory, Alexander (1992) studied sexual abuse and found themes associated with insecure attachment. Role reversal, rejection, and fear were observed in family dynamics related to parent-child interactions. Styron and Janoff-Bulman (1997) found that, compared to non-abused counterparts, college students who reported being abused as children also reported insecure attachment relationships and higher levels of depression. In another study, Small bone and Dads (2001) provide evidence that a correlation exists between insecure avoidant attachment style and coercive sexual behavior in adults. According to these authors, insecure attachment also was found to be associated with antisocial behavior and aggression.

Attachment and Child Maltreatment

Research has suggested that an insecure disorganized/disoriented attachment style in infancy and early childhood can impede the development of successful coping strategies, thereby increasing the likelihood of psychiatric disorders (Score, 2002). Further, Waters et al. (2000) found that infants initially presenting with a secure attachment style may change their attachment status if exposed to a traumatic or stressful event. And in a randomized intervention trial Cicchetti, Rogosch, and Toth (2006) found that maltreated infants exhibited an increased insecure attachment style when compared to a comparison group. The good news is that current research also indicates that early intervention can alter the development of a maltreated infant's attachment style. Such findings indicate that attachment theory can inform our understanding of the impact of childhood maltreatment experiences on the growth and development of children and youth, and that the theory can be applied to increase the efficacy of various treatment strategies.

Through her application of the central tenets of attachment theory within an information-processing framework, Crittenden (1997) has advanced our thinking on maltreatment and development, focusing on the interaction between genetics and person-specific maturational processes to predict outcomes. Crittenden has suggested that there are developmental windows or periods during which physical, cognitive, and emotional states—which have been shaped by early interpersonal relationships and experiences—influence trajectories of growth and change. In other words, attachment in childhood affects development by influencing the creation of an interpersonal lens through which life is experienced, thereby setting the stage for developmental patterns or trajectories to occur. External stimuli are transformed into information that in turn dictates behaviors, which are continually modified in reaction to changes in context.

From this perspective, childhood trauma could be conceptualized as a catalyst that triggers impaired/insecure attachment behavior(s) that in turn negatively impact functioning across multiple domains, including social, psychological, and cognitive functioning/processing. This line of thinking is seminal to the discussion of child maltreatment, because what might be considered maladaptive under "normal" life circumstances might well be viewed as adaptive within the context of abuse and neglect (Crittenden, 1997). Thus, the assessment of cognitive functioning when treating victims of childhood maltreatment is essential, because presenting behavioral problems may very well be rooted in adaptation strategies developed in reaction to an abusive or neglectful early environment. This requires an understanding of the relationship between childhood maltreatment, the development of structures and neurological pathways in the brain, and

subsequent cognitive outcomes related to the processing of social and emotional information.

Chapter 6: Hypotheses

The Present Study

Given the evolving perspective on child maltreatment and its effects on attachment processes and interpersonal functioning, investigating how those effects may impair cognitive-processing abilities can inform more effective intervention models for children who have experienced child maltreatment. Therefore, the current research aims to explain that the experience of early relational maltreatment is significantly related to cognitive processing deficits: specifically language and auditory processing. It aims to explain that auditory and language processing deficits in maltreated children is predictive of internalizing problems: specifically withdrawal, anxiety, and social problems and that auditory and language processing deficits in maltreated children is predictive of aggression. And the present study aims to explain that the experience of early relational trauma and subsequent cognitive processing disorders is mediated by attachment status. This research agenda is important because must we change our thinking regarding practice intervention and service delivery, based upon what we know now and are beginning to understand about the role of attachment in learning and cognitive processing among children and youth who have experienced early relational maltreatment.

Main Hypotheses

H 1: Experiences of early relational trauma/maltreatment is significantly related to cognitive processing deficits: specifically language and auditory processing.

H 2: Auditory/language processing deficits in maltreated children are predictive of internalizing behaviors (withdrawal, anxiety, social problems).

H 3: Auditory/language processing deficits in maltreated children are predictive of aggression.

H 4: The experience of early relational trauma and subsequent cognitive processing disorders is mediated by level of insecure attachment.

Chapter 7: Methods

Research Design

The study was conducted at a moderate to high security boys' training school in a small Midwest community and utilized a cross-sectional anonymous survey with a purposive sample of incarcerated adolescent offenders. This non-probability sample was chosen because of the higher incidence of low-probability early trauma as well as related cognitive deficits/disorders of interest, which is characteristic of an incarcerated high-risk adolescent population. Generalization to the larger population is problematic, however, this particular sample allowed for an in-depth investigation of variability within the target constructs. Each youth was given the opportunity to participate in the study. No incentives were offered. Further, each youth was assured that the study was anonymous and that refusal to participate would not result in any repercussion nor would staff be made aware of who did or did not participate.

Permission to perform the study was granted through the University of Michigan's Institutional Review Board (see Appendix 8) and the Institutional Review Board from the State of Michigan's Department of Human Services. Further, a Certificate of Confidentiality (see Appendix 9) was also obtained from the National Institute of Child and Human Development.

Census at the initiation of the project was 207 boys, ranging in age from 13-21. Educational achievement widely varied. Reading scores ranged from first to college level reading level. The majority of the residents were wards of the state: ninety-one

percent was termed State Ward Delinquent and six percent were designated Temporary Wards of the State. Letters of consent were mailed to parents or guardians of youth under the age of eighteen. Upon receipt of consent letters of assent were signed by youth under the age of eighteen and letters of assent were signed by youth over eighteen.

Data were collected for approximately twelve months at two time points of about an hour and a half each. Additional time was allotted if participants required reading support or individualized administration of specific subtests. The study design was comprised of pencil and paper survey battery, the Youth Education Life Survey (see Appendix 11) as well as experimental clinical research conducted by computer and one-on-one testing (see Appendix 1). Each component of the battery required approximately five to fifteen minutes to complete depending on each participant's ability to comprehend and complete a task. Of primary interest were constructs related to relational trauma, educational history, cognitive processing, and internalizing as well as externalizing behavior.

Demographic data were collected via a series of questions that addresses age, ethnicity and educational history. In addition, student educational and medical histories (when available) were obtained through student files. Committing offense and maltreatment histories were substantiated whenever possible utilizing existing police reports and/or admission forms.

Both the University of Michigan's Institutional Review Boards (IRB) gave approval after thorough review of methods, measures, and risk to subjects. In addition, I

was required to submit a conflict of interest form due to the fact that I currently consult for the State of Michigan as a speech and language pathologist.

Recruitment

Adolescent male subjects were recruited from a high security residential youth facility. No exclusionary criteria were established thus all youth were given the opportunity to participate. The census at the time of recruitment was 207 boys ranging in age from 13-21 and classified as low medium to high secure. The majority of the youth were designated wards of the state, indeed 91% were designated State Ward Delinquent. The remainder of the youth were considered either Temporary Court Wards or were classified as Dual Wards of the State. Academic ability varied widely as did reading level which was ascertained from available records to range from 1st grade to college level.

The consent process was tedious and multi-leveled. In the first wave, consent letters were mailed to parent, guardian or the juvenile court representative prior to recruiting youth for participation (see Appendix 2 and Appendix 3). Return envelopes with postage were provided and routed to a separate mailbox for the "Cognition and Disabilities Project" in the facility's Academic center. Youth over the age of 18 were asked to sign the consent form on their own behalf (see Appendix 4). In the case where a youth had been designated as a ward of the state, permission was requested from the juvenile court (see Appendix 5). After a three week period, a second wave of duplicate letters were sent to the appropriate guardian requesting permission for the designated youth to participate in the study. In the event that there was no response to the second

letter, we asked the State Department of Human Services (DHS) to grant permission for juveniles classified under Delinquency Act 150 to participate (see Appendix 6). Upon receiving parent and/or guardian or DHS permission was obtained, each youth in the facility was contacted individually by the researchers.

A narrative was written to provide consistency in recruiting that was delivered to each youth explaining that participation in the study was voluntary and anonymous. The youth were further informed that no incentives were offered or repercussion would result from participation or refusal to participate. Youth were made aware that if they agreed to participate that they were able to "stop" at any time without threat of repercussion and that therapeutic staff would be available if they felt uneasy or uncomfortable answering questions. In addition it was explained that while their parent, guardian or court had given permission for their participation, they also needed to sign letters of assent indicating their agreement to participate prior to administration of the test battery (see Appendix 7).

Assent letters were written at approximately a third grade level that required a signature and date (see Appendix 7)). In the circumstance where the youth had difficulty reading or understanding the letter of assent it was read aloud to them and once verbal assent was obtained, they were directed where to sign and date. For those youth who refused participation, alternative tasks were devised to complete at the time of testing so that staff were unaware as to who was participating and who was not. The youth were given two opportunities to participate in the study and it was further explained that those youth who declined participation could change their mind and participate. There were no exclusion criteria.

Prior to the administration of the test batteries, information was collected from both educational (see Appendix 10) and clinical medical files. Forms were provided to the research staff to guide consistent information retrieval. Information garnished from the records included; information regarding prior diagnoses, previous psychological and/or educational testing, past and present medical conditions, medications, and history of ancillary support services (see Appendix 10).

Administration/Procedure

Paper and pencil life surveys were administered in the speech and language lab or a classroom designated for testing across the hall. The computerized cognitive batteries were administered at self-contained (enclosed) computer desks. One-on-one testing was performed in whatever testing room was available. Those that administered the life survey and subsequent testing sessions were either advanced Doctoral Candidates or upper level undergraduates (research assistants) who were majoring in psychology. The advanced Doctoral Candidates all held a Master degree in psychology, held certification in clinical test administration and had completed training in research ethics from the University of Michigan. Undergraduate research assistants also received training in research ethics. Reading assistance was provided by all available research staff while all other measures/formalized testing were administered or performed by advanced doctoral students with expertise and in cognitive, psychological, and/or neuropsychological testing.

Youth were instructed that they could complete each portion of the survey in any order they chose and that they could quit at any time.

Risk to Subjects

This study posed no physical risk to the participants. Risks associated with the right to privacy and possible psychological distress due to the content of the surveys and testing were addressed and potential participants' questions answered.

Risk to Privacy/Confidentiality

Youth were advised during the introductory narrative that they needed to be mindful that if they disclosed any information (time, date, person, criminal act) regarding criminal activity that they had committed or others had committed against them *that had NOT previously been unreported,* that we bound to report any divulged information to the Michigan Department of Human Services. These guidelines for risk of privacy were outlined in the letter of consent and it was further explained to the youth that a Certificate of Confidentiality was obtained subsequent to Institutional Review Board approval that guaranteed that the data/information being collected was protected from court subpoena.

Relative to coding, youth were given a participation number that was linked to coded answers in the data-base taken from the survey and cognitive batteries. No names or other identifiers were used on test forms.

Psychological Risk

Each component of the survey/test battery held the potential to trigger the participating youth psychologically as many of the questions were of a sensitive nature and required the potential "re-visiting" of past traumatic events (personal histories of

abuse, delinquency, and the Conflict Tactics Scale). For these reasons, youth were advised that clinical staff would be available during and/or after testing sessions if the need to process the procedure was warranted or requested. Treatment staff was made aware that the youth might require therapeutic assistance. Facility staff and center social workers were notified if a youth requested time with the treatment team or in the event of an adverse reaction observed by the researchers that occurred during participation. Particular care was taken to monitor those youth with diagnosed mental health issues or those who demonstrated decreased mental capacity. The Principle Investigators, either separately or together, hold degrees in special education, social work, and psychology or have many years of combined experience working with youth with emotional and behavioral problems and well as decreased cognitive capabilities.

Securing Data

Confidentiality of the data was addressed in several ways. As noted above, all personal identifiers were removed and each youth was assigned a personal identification number. These numbers are stored in a secure locked and password protected location.

Sample Demographics

The sample was comprised of 117 adjudicated males that ranged from 13 to 20 years of age. The mean age was 17 years (see Table 1).

Table 1: *Age in Years*

Age	*N*	*Percent*
13	1	.9
14	1	.9
15	5	4.6
16	22	20.4
17	33	30.6
18	31	28.7
19	10	9.3
20	5	4.6
17.25 (Mean)	108	100.00

Note: Percent of Sample Age in Years

Committing offenses ranged from incorrigibility to murder. Education was operationalized relative to last grade completed. The sample ranged from 7th grade to the first year of college with a mean of 10th grade.

Table 2: *Last Grade Completed*

Grade	*N*	*Percent*
7th Grade	3	2.6
8th Grade	15	14.7
9th Grade	10	9.8
10th Grade	16	15.7
11th Grade	27	26.5
12th Grade	26	25.5
One Year of College	5	4.9
10.44 (Mean)	102	100.00

Note: Percent of Sample Last Grade Completed

Ethnicity was self-reported. Fifty-two percent of the population reported being Caucasian, 41.5% African American, 1.9% reported being Hispanic or Latino while .9% reported being Asian or Pacific Islander, and .9% as other. Over 35% of the population reported mixed ethnicity. Of that 35%, 13% of the youth reported being Caucasian and Native American. Five percent reported as being African American and Caucasian, African American and Native American or Caucasian and Hispanic while 9% reported three or more racial backgrounds or being "multi-racial".

Table 3: *Race or Ethnic Group*

Race or Ethnic Group	*n*	*Percent*
White or Caucasian	55	51.9
African American	44	41.5
Hispanic or Latino	2	1.9
Asian or Pacific Islander	1	.9
Other	1	.9
Mixed Race: African American and Caucasian	5	4.7
Mixed Race: African American and Native American	5	4.7
Mixed Race: African American and Other	1	.9
Mixed Race: Caucasian and Hispanic or Latino	6	5.7
Mixed Race: Caucasian and Native American	14	13.2
Multi-Racial (three or more races)	8	7.5

Note: Percent Sample of Racial or Ethnic Group

Youth were also asked with which racial group they most *identified*. The majority of the youth most closely identified as being African American (49%). Approximately

30% of the sample identified as being Caucasian, 7% as Hispanic or Latino, 2% as Asian or Pacific Islander, and 9% reported being most closely identified as Native American.

Table 4: *Self-Reported Identification with Race or Ethnic Group*

Race or Ethnic Group	*N*	Percent
	102	100.00
African American	50	49.0
White or Caucasian	30	29.4
Hispanic or Latino	7	6.9
Asian or Pacific Islander	2	2.0
Native/American Indian	9	8.8
Other	4	3.9

Note: Race or Ethnic Group Youth Feels Closest to/Identifies

Youth were asked to best describe the family they were raised in. Family constellation choices included: Two parents, Single mom, Single dad, Mom and partner, dad and partner, other relative, Grandparent or Foster home. Thirty-seven percent of the youth reported that they had grown up in a two-parent household. Twenty-seven percent surveyed reported that had been raised by a single mom, 12% reported being raised by their mom and a partner, 9% were raised by a grandparent, 6% were raised by "other relative", 4% by a single dad, 3% by dad and a partner and 3% reported being raised by a foster parent.

Table 5: *Family Constellations*

Composition	*N*	*Percent*
Two parents	37	36.6
Single Mom	27	26.7
Mom and Partner	12	11.9
Single Dad	4	4.0
Dad and Partner	3	3.0
Grandparent	9	8.9
Other Relative	6	5.9
Foster Home	3	3.0

Note: Percent Sample of Family Composition

Fifty percent of the youth reported that their parents were married. Thirty-nine percent of the sample reported that their parents had at least one time, been divorced and 11% reported that their parents had never married.

Table 6: *Parental Marital Status*

Marital Status	*N*	Percent
	94	100.00
Intact	47	50.0
Divorced	37	39.4
Never married	10	10.6

Note: Percent Sample of Parental Marital Status

When asked about their histories of child maltreatment, 69% reported being emotionally abused as a child, 57% reported physical abuse, 54% reported a history of

sexual abuse, and 32% reported neglect. Further, 21% reported being "very poor" defined as little money, food, clothes or lack of utilities such as heat.

In terms of placement, the youth were asked how many "out of home" places they had lived or received services from. Ninety percent reported that they had been previously placed in one or in a combination of a locked detention, an assessment facility or a residential treatment program. Twenty-six percent of the youth reported that they had lived in foster care with strangers while 24% reported having lived in foster care with relatives. Eighty-two percent of the sample reported previously placement in a residential treatment facility and 32% reported having attended an outpatient treatment program. In addition, 15% reported having been placed in a residential substance abuse program and an additional 5% reported attending community substance abuse program.

Table 7: *Out of Home Placements*

Placements	*N*	Percent
Foster Care with Strangers	26	26.0
Foster Care with Relatives	23	24.2
Group Home	18	18.0
Locked Detention or Assessment Center	92	89.9
Residential Treatment Center	84	82.4
Outpatient Treatment Program	32	32.0
Residential Substance Abuse Program	15	15.0
Community Based Substance Abuse Program	5	5.0

Note: Percent Sample Prior Out-of-Home Placements

Half of the youth surveyed reported that they were prescribed medication by consulting psychiatrists (corroborated by medical records). Sixty-one percent were taking

part in a sexual offender treatment program. Fifty-six percent of the sample reported past or present difficulty with vision and 10% of the youth reported problems with hearing.

Special Education histories were assessed via a non-standardized paper and pencil measure administered as part of the life history. Youth were asked to rate how much difficulty they had across various subject areas with a focus on language domains. A 5 point Likert scale was used to assess the amount of perceived difficulty with answers ranging from: “not difficult at all” to “very difficult”. Thirty-four percent of the youth reported having some to very much difficulty with reading, 49% reported having “some to very much” difficulty with penmanship, 57% reported a range of “some to very much” difficulty with spelling, 80% reported “rare to frequent” word finding problems, and a total of 50% reported a range of “some to very much” difficulty putting thoughts to paper. Fifty-seven percent of the youth had been told that they had a learning disability, 67% reported having been or currently placed in special education classes and 70% of this sample reported having current Individual Education Plans (IEP). Thirty-two percent of the sample reported memory problems, 42% reported having received help with reading, 31% reported that they had been told they had speech problems, 40% reported that they had been told that someone had told them that that had/have a hard time understanding their speech with 25% reporting that they had received speech and language therapy. Corroborating information was gleaned from hard copy education files made available through the academic center. According to these files, 76% of this sample was diagnosed disability although the files were unclear as to designation.

Table 8: *Special Needs/Special Education Histories*

Education Files	*N*	*Percent*
Designated Disability	77	75.5
Difficulty with Vision	58	55.8
Cognitive Impairment	12	11.7
Speech Disorder	13	12.6
Language Disorder	10	9.8
Hearing Deficits	10	9.8
Neurologic Problem	5	4.9

Note: Percent Sample Special Education Designation/Special Needs

Measures

Three main constructs were the focus of this study: child maltreatment, attachment, and cognitive processing; specifically auditory and language processing.

Child maltreatment was measured using an adapted version of the Conflict Tactics Scale (CTS) (see Appendix 11) for use with children (Straus, 1990). Attachment was measured using the Adolescent Relationship Questionnaire (A-RQ) (see Appendix 11), a revision of the original Relationship Questionnaire. Scales reflect the degree of security, fearfulness, preoccupiedness, and dismissingness (Griffin and Bartholomew, 1994). Auditory Processing was measured using SCAN-A (see Appendix 13), a test for auditory processing disorders in adolescents and adults. (Keith, 1994). Internalizing and externalizing behaviors were measured via the Youth Self-Report (Achenbach, 1991) (see Appendix 12).

Conflict Tactics Scale

Originally developed by Strauss (1979), the Conflict Tactics Scale (CTS) is designed to obtain data on all possible dyadic combinations of family members (Strauss, 1990). For the purpose of this study only the parent-child and child-sib dyads were examined. Each dyad relationship was assessed utilizing 18 items along the dimensions of reasoning, verbal aggression, (psychological abusiveness) and violence (delineated into minor and severe) referencing two periods of age: occurring between 6-12 years of age and occurring between 13-18 years of age. Youth was asked to rate on a 5 point scale "how often" they witnessed or were a participant in family conflicts relative to their relationship to both parents and siblings: 1=Never, 2= a couple times a year, 3 = once a month, 4=once a week, and 5=every day. Examples include: Brother or sister insulted or swore at you; Brother or sister tickled you in an abusive way; Parent (mother (M), father (F), or both (B)) discussed issues calmly with you, and Parent (mother (M), father (F), or both (B)) pushed, grabbed, or shoved you, slapped you, hit you or spanked you (If yes, please circle which one). Internal consistency reliability coefficients describe the accuracy of a score on a measure/test. Internal consistency as a measure of reliability implies that the tasks are homogeneous. Internal consistency of the CTS was determined as part of the National Family Violence Survey (n = 2143). Chronbach's alphas for reasoning, verbal aggression, and violence ranged from .70 to .88. Concurrent validity or the degree of correlation between a measure/subscale and another measure/subscale at the same point was determined to be between .33 and .64 for verbal aggression and violence as measured by a correlation between child and parent response(s) to CTS items (Straus, 1990).

Adolescent Relationship Questionnaire

The Adolescent Relationship Scales Questionnaire (A-RQ) is a revision of the Relationship Questionnaire (RQ) (Hazen & Shaver, 1987). The original Relationship Questionnaire has been cross-culturally validated (Schmitt et al., 2004), and demonstrated concurrent validity with the Adult Attachment Scale (AAS) (Collins & Read, 1996), with attachment types determined by the A-RQ correlating with attachment types determined by the Adult Attachment Scale (AAS) (Domingo, & Chambliss, 1998). Bowlby's (1973) "working models" of the self and others underlie the four dimensions of attachment behaviors on which the A-RQ is based (Bartholomew & Horowitz, 1991). These internal working models of self and others, with a positive and negative model of each, can be used in classifying individuals into four attachment styles: Secure, Preoccupied, Dismissing and Fearful.

Three studies utilizing various methodologies investigated the two dimensions hypothesized to underlie attachment. Griffin and Bartholomew (1994) utilized Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) to establish that the hypothesized underlying dimensions of attachment can be measured reliably and that they do validly represent the constructs of self and other models. Examples of test items include: (a) "It is easy for me to feel close to people. I feel okay asking people for help and I know they will usually help me. When people ask me for help, they can count on me. I don't worry about being alone and I don't worry about others not liking me." and (b) "It is hard for me to feel close to people. I want to be close to people, but I find it hard to trust them. I find it hard to ask people for help. I worry that if I get too close to people they will end up hurting me." Griffin and Bartholomew (1995)

cite strong evidence for the construct validity of the model of self and other attachment dimensions. Across studies the two attachment dimensions demonstrated discriminant validity as the measures of the different constructs—or types of attachment—were essentially independent and convergent validity inasmuch as different measures of a construct were highly related.

SCAN-A: A test for Auditory Processing Disorders in Adolescents and Adults

The SCAN-A is a widely utilized auditory processing screening tool for use with adolescents and adults 12-to-50 years of age. The SCAN-A consists of four subtests: Filtered Words, Auditory Figure-Ground, Competing Words, and Competing Sentences, each of which takes between 10 to 20 minutes to administer. Test administration requires that the subject and test administrator (speech and language pathologist) each wear a set of earphones that test stimuli are presented to simultaneously so that the subject responses can be interpreted and recorded. In the Filtered Words subtest, the subject is asked to repeat words that sound muffled. Two practice words and 20 test words are presented to ear. The Auditory Figure-Ground subtest evaluates the subject's ability to understand multi-syllabic words presented while listening to background noise (people talking). Two practice words and 20 test words are presented to ear. The Competing Words subtest requires that the subject listen to two multi-syllabic words presented simultaneously – one word presented to each ear. The subject is asks to repeat the word pairs alternating between what was heard first on the left and/or then on the right. A set of two practice word pairs and 15 word pairs are presented. Although the primary purpose of the SCAN-A is to measure auditory processing abilities/deficits, the four sub-tests also

measure aspects of speech recognition. According to Keith, The Filtered Words and Auditory Figure-Ground subtests "tap" auditory perception of distorted speech in a "compromised acoustic environment". These skills are important for assessing the subject's ability to perceive speech in everyday listening situations such as the classroom or therapeutic milieu. The construct validity of the SCAN-A evaluated by Keith (1995) examined inter-correlations among SCAN-A subtest standard scores. Keith cites evidence of reliability findings that SCAN-A scores are homogenous, dependable, and stable across repeated administration. A study of 38 subjects in three age groups, 19-30, 31-40, and 41-50, demonstrated test re-test reliability. Between test intervals ranged from 1 day to 5 months, with a mean of 46 days. A test re-test reliability coefficient for the Total Test Score was .69, and the standard error of measure was 2.8 (Keith, 1995).

Youth Self-Report

The Youth Self-Report (YSR) was adapted from the adult-report Child Behavior Check List/4-18 (known as the CBCL). The YSR was designed for use with adolescents between the ages of 12 and 18. It is a self-report measure that the adolescent himself/herself fills out. The YSR contains two sub-areas: (a) 20 competence items that measure the child's participation in hobbies, games, sports, jobs, chores, friendship, and activities, and (b) 118 items that measure eight sub-scale symptoms: withdrawn, somatic complaints, anxiety and depression, social problems, thought problems, attention problems, aggressive behavior, and delinquent behaviors (Achenbach, 1991). The first three subscales are referred to as 'internalizing,' whereas the next two are referred as to 'externalizing'. The remaining three scales are categorized as 'neither internalizing nor externalizing'. Overall behavioral and emotional functioning is measured by the total

problem scale. An adolescent selects his or her response from: 0 = not true, 1 = Somewhat or Sometimes True, or 2 = Very True or Often True. Examples of subscale items include: (a) I act to young for my age, (b) I feel lonely, (c) I am too fearful or anxious, (d) and I break rules at home, school, or elsewhere. Test-re-test reliability was ascertained by administering the YSR at two time points (post test administered seven months after initial test) to 11 adolescents. Pearson correlations between Time 1 and Time 2 ranged from .30 to .60 indicating moderate stability over time. Chronbach's alpha for the eight subscales ranged from .59 to .90, indicating a range from marginal to high internal consistency. Internal consistency for internalizing behaviors, externalizing behavior, and total problem score yielded .91, .89, and .95 respectively. Content validity was assessed by testing subscale discrimination between two groups; clinically referred (n = 1054) and non-referred adolescents (n = 1054). Results revealed that all 8 subscales of the YSR adequately discriminated between clinically referred and non-referred adolescents.

Chapter 8: Results

Descriptives

Descriptive statistics for the observed variables are described in Table 9. Maltreatment 6-12 (MT6) and Maltreatment 13-18 (MT13) were scales created from the Conflict Tactics Scale (Straus 1979) , by computing the average of the combined total of maltreatment (number of times specific types of abuse/maltreatment occurred weekly, monthly and/or monthly) perpetrated on the youth by siblings and parents. Internalizing behaviors were measured via the Youth Self-Report (Achenbach, 1991). A self-reported pencil and paper survey asked "how true" statements were ranging from: (a) 0 = Not True, (b) 1 = Somewhat or Sometimes True, and (c) 2 = Very True or Often True. As can be seen in the table, the mean scores ranged from .58 to .63 on Anxious/Depressed, Social Problems, and Withdrawn respectively. Aggression was also measured via the YSR with a mean response of .74. Dimensions of insecure attachment (a)Hard to be Close/Fearfulness, (b)Want to be Close/Preoccupiedness, and (c) Don't Care if Close/Dismissingness) were measure by the A-RQ. This measure required that the participant choose from four paragraphs that best described their style of attachment or the way they felt about their relationships with others. The second part of this measure then asked the participant to rate on a Likert Scale from 1 to 7 how much the paragraph they choose was "like me" with 1 = Not at all like me and 7 = Very much like me. The mean scores of 3.22, 3.29, and 3.06 respectively. Subtests of the Scan-A (Keith, 1995) vary with respect to scoring. When means of the participating youth were compared to a

convenience sample (Keith,1995), the range of scores did not deviate significantly although two of the subtests averaged lower scores than the comparative sample.

Table 9: *Descriptive Statistics for Observed Variables*

Variable	*n*	Minimum	Maximum	Mean	SD
Maltreatment 6-12	100	1.00	4.47	2.09	.82
Maltreatment 13-18	99	1.00	3.98	1.98	.70
Withdrawn	103	.00	2.00	.63	.46
Anxious/Depressed	101	.00	2.00	.58	.44
Social Problems	101	.00	1.88	.58	.41
Aggression	101	.00	2.00	.74	.41
Hard to be Close	97	1.00	7.00	3.22	2.14
Want to be Close	100	1.00	7.00	3.29	1.99
Don't Care if Close	96	1.00	7.00	3.06	2.14
SCANA_CW	68	25	57	48.74	6.76
SCANA_AFG	68	24	40	35.56	2.67
SCANA_FW	68	20	36	29.16	3.31

Bivariate correlations were run for all variables in the tested model and are detailed in Table 10. As expected, maltreatment in childhood and adolescence correlate highly (r = .52) suggesting that for many participants the experience of maltreatment spans over a period of more than a decade. On the other hand, the correlation does not suggest that all participants were maltreatment from age 6 to 18. As the patterns of correlations with all other variables under consideration suggest, the differentiation between earlier and later maltreatment was important. As can be seen, the experience of

relation child maltreatment between the ages of 6 to 12 years (MT6) is highly correlated with the Filtered Words subtest of the SCAN-A and with being withdrawn (YSR) – a pattern that is less pronounced for the maltreatment variable age 13-18 (MT13). This is remarkable given that it is reasonable to assume that participants would be less capable of reporting the more distant life experience. The dimensions of attachment as measured by the A-RQ (Griffin & Bartholomew, 1994) "Wanting to be Close" (preoccupiedness) and "Not Caring if Close" (dissmissingness) is highly correlated with "Hard to be Close" (fearfulness). Of interest is that "Hard to be Close" or fearfulness is correlated with each of the subtests of the SCAN-A, with the highest correlation observed with the Filtered Words and Auditory Figure-Ground subtests which, according to Keith (1995), "tap" auditory perception of distorted speech in a "compromised acoustic environment" to the extent that these particular deficits predict difficulty in auditory processing related to speech recognition and thus the ability to process language. Giving more strength to Keith's assertion that Filtered Words and Auditory Figure-Ground "tap" similar constructs relative to auditory perception and speech recognition, is that these two subtests are also highly correlated. These findings are of particular interest as auditory perceptual and speech recognition skills are the foundation for the subject's ability to perceive speech and language in everyday listening situations such as the classroom or therapeutic milieu. The Competing Words subtest of the SCAN-A approach significance as well which gives further credence to compromised auditory and language processing abilities. Given these correlations it is not surprising that social problems, anxiety, and aggression are also highly correlated with fearfulness or finding it "Hard to be Close". It is also interesting to note that preoccupiedness or the desire to "Want to be Close" while

not correlated with subtests of the SCAN-A are significantly correlated with social problems, anxiety, withdrawal, and aggression. And dismissingness or "Not Caring if Close" neither correlates with the SCAN-A subtests or the internalizing behaviors of social problems, and withdrawal or aggression as measured by the Youth Self-Report (Achenbach, 1991).

Table 10: Bivariate Pearson Correlation Coefficients (pairwise deletion 62 < *n* < 100)

	MT6	MT13	Hardclos	Wantclos	Careclos	Scana_fw	Scana_afg	Scana_cw	Socprob	Yanxious	Withdraw	Aggress
MT6	1.000	.517*	.073	.053	.060	-.385*	-.162	-.149	.134	.173	.230*	.130
MT13	.517*	1.000	-.026	.034	.012	-.160	-.179	-.158	.106	.218	.128	-.006
Hardclos	.073	-.026	1.000	.445*	.420*	-.328*	-.257*	-.231	.231*	.238*	.190	.332*
Wantclos	.053	.034	.445*	1.000	.195	-.069	-.052	-.202	.344*	.380*	.243*	.237*
Careclos	.060	.012	.420*	.195	1.000	-.103	-.073	-.036	.049	.077	.242*	.312*
Scana_fw	-.385*	-.160	-.328*	-.069	-.103	1.000	.189	.310*	-.281*	-.339*	-.270	-.199
Scana_afg	-.162	-.179	-.257*	-.052	-.073	.189	1.000	.416*	-.133	-.136	-.149	-.114
Scana_cw	-.149	-.158	-.231	-.202	-.036	.310*	.416*	1.000	-.526*	-.459*	-.442*	-.004
Socprob	.134	.106	.231*	.344*	.049	-.281*	-.133	-.526*	1.000	.747*	.706*	.231*
Yanxious	.173	.218	.238*	.380*	.077	-.339*	-.136	-.459*	.747*	1.000	.773*	.219*
Withdraw	.230*	.128	.190	.243*	.242*	-.270	-.149	-.442*	.706*	.773*	1.000	.235*
Aggress	.130	-.006	.332*	.237*	.312*	-.199	-.114	-.004	.231*	.219*	.235*	1.000

Note: * p < .0

Hypotheses Testing

The first step of hypotheses testing involved running several hierarchical regressions to test the effect of maltreatment, insecure attachment, and auditory/language processing on the outcome variables: withdrawal, depression, social problems, and aggression (Table 11a,b,c,d). The second step utilized a structural equation modeling (SEM) strategy to test the main hypotheses in one integrated model. The analyses were performed using AMOS 7 (Arbuckle, 2006). Because of the presence of missing data, the analysis was based on the Full-Information Maximum-Likelihood (FIML) estimation of the covariance matrix (Arbuckle, 2006).

Tables 11(a,b,c,d) depict step-wise hierarchical regression on the independent variables: withdrawal, depression, social problems, and aggression.

Table 11a: *Hierarchical Step-Wise Regression on Withdrawal*

	Step 1		Step 2		Step 3	
	Beta	*P*	*Beta*	*p*	*Beta*	*p*
MT 6	.077	.656	.076	.633		
MT 13	.254	.145	.313	.057		
Hardclos			-.160	.383	-.337	.086
Wantclos			**.433**	**.022**	**.466**	**.016**
Careclos			.161	.347	.175	.286
ScanA_FW					-.325	.062
ScanA_AFG					-.067	.683
ScanA_CW					-.151	.351
R^2/ R^2_Δ	R^2=.09		R^2=.29 R^2_Δ=.20*		R^2=.41 R^2_Δ=.12*	

** indicates R^2 change coefficients to highlight the additional amount of variance explained in each step.*

As can be seen in this hierarchical step-wise regression, 9% variance is explained relative to the direct effect of maltreatment on the internalizing behavior: withdrawal. Neither MT 6 nor MT 13 reaches significance as predictor variables. Step two reveals that insecure attachment, almost exclusively driven by "preoccuppiedness" (variable Wantclos) explains additional 20% of the variance. And as can be seen in step three, auditory/language processing explains an additional 12%, leaving the regression coefficients of the two maltreatment remains virtually unchanged.

Table 11b: *Hierarchical Step-Wise Regression on Depression*

	Step 1		Step 2		Step 3	
	Beta	*P*	*Beta*	*p*	*Beta*	*p*
MT 6	-.071	.661	-.071	.632		
MT 13	.249	.126	**.325**	**.035**		
Hardclos			-.053	.741	-.038	.833
Wantclos			**.454**	**.006**	**.476**	**.008**
Careclos			-.126	.384	-.131	.382
ScanA_FW					-.093	.570
ScanA_AFG					.020	.897
ScanA_CW					-.078	.642
R^2/ R^2_Δ	R^2=.05		R^2=.24 R^2_Δ=.19*		R^2=.25 R^2_Δ=.01*	

** indicates R^2 change coefficients to highlight the additional amount of variance explained in each step.*

As can be seen in this hierarchical step-wise regression, 5% variance is explained relative to the direct effect of maltreatment on the internalizing behavior: depression. However, neither predictor variable reaches significance. Step two reveals that insecure attachment, almost exclusively driven by "preoccupiedness" (variable Wantclos), explains a significant additional amount (19%) of the variance. Adding uditory/language processing

in step 3 explains only an additional 1% of the variance. Again, the co-efficient of maltreatment remains virtually unchanged suggesting mediation is not at play.

Table 11c: *Hierarchical Step-Wise Regression on Social Problems*

	Step 1		Step 2		Step 3	
	Beta	*P*	*Beta*	*p*	*Beta*	*P*
MT 6	.142	.432	.108	.530		
MT 13	.071	.693	.151	.388		
Hardclos			.134	.486	-.009	.961
Wantclos			**.407**	**.044**	.248	.211
Careclos			-.155	.427	-.025	.891
ScanA_FW					-.044	.805
ScanA_AFG					.312	.103
ScanA_CW					**-.591**	**.005**
R^2/ R^2_Δ	R^2=.04		R^2=.20 R^2_Δ=.16*		R^2=.40 R^2_Δ=.20*	

** indicates R^2 change coefficients to highlight the additional amount of variance explained in each step.*

A similar pattern emerges for Social Problems: The initial regression on the two maltreatment variables does not produce significant coefficients (with 4% explained variance). Step two reveals that insecure attachment, almost exclusively driven by "preoccupiedness" explains a significant amount (16%) of the variance. Auditory/language processing explains an additional 20% of the variance. While the coefficient of maltreatment remains virtually unchanged, the significant effect of fearfulness is noticeably reduced in step 3 suggesting partial mediating: the effect of insecure attachment impairs auditory processing which, in turn, affects internalizing problem behavior.

Table 11d: *Hierarchical Step-Wise Regression on Aggression*

	Step 1		Step 2		Step 3	
	Beta	*P*	*Beta*	*p*	*Beta*	*P*
MT 6	.042	.819	.020	.912		
MT 13	.080	.664	.023	.900		
Hardclos			.305	.154	.197	.394
Wantclos			-.325	.135	-.323	.182
Careclos			.177	.836	.192	.384
ScanA_FW					-.235	.278
ScanA_AFG					.009	.964
ScanA_CW					-.142	.512
R^2/ R^2_Δ	R^2=.01		R^2=.12 R^2_Δ=.11*		R^2=.19 R^2_Δ=.07*	

** indicates R^2 change coefficients to highlight the additional amount of variance explained in each step.*

As can be seen in this hierarchical step-wise regression, 1% variance is explained relative to the direct effect of maltreatment on the externalizing behavior: aggression. Step two reveals that insecure attachment explains a significant amount (11%) of the variance although none of the three predictors shows a significant regression weight which suggests that fearfulness does not stand out as the major variable to explain the effect of insecure attachment on Aggression. In step three, auditory/language processing explains an additional 7% of the variance however, and the co-efficient of maltreatment as well as the coefficients of the three attachment variables remain virtually unchanged suggesting that mediation is not at play.

In this regression, a direct link between maltreatment and behavioral outcomes could not be established empirically. Attachment and auditory processing, on the other hand, are players in negative behavioral outcomes. In the next step, we try to integrate

these findings in the framework of SEM. This enables us to use latent constructs in order to account for measurement error which might have lowered the empirical associations in the Multiple Regression analyses. By looking at all outcome variables simultaneously it is also possible to develop a model that is more parsimonious, i.e., uses fewer parameters to succinctly describe the hypothesized causal model.

Figure 1 depicts the hypothesized model tested in the current study. This model suggests that the empirical association between relational trauma/maltreatment and language/auditory processing is at least partially mediated through insecure attachment. This, in turn means for the analysis that we expect the direct path from maltreatment to auditory processing (see Figure 1) to be insignificant (or at least significantly reduced) once attachment is introduced as additional predictor variable to the model. Therefore, the mediation hypothesis (H4) implies that the paths from maltreatment to attachment and the path from attachment to auditory processing become significant (i.e., mediation). If the direct path from maltreatment to auditory processing is insignificant in the presence of a significant mediation, the process would be considered "full mediation"; if it remains significant in the presence of mediation we conclude that a partial mediation processes is at play.

The hypotheses regarding the effect of auditory processing deficits on internalizing behavior and aggression are operationalized as direct causal/predictive paths. The hypotheses are tested using the t-statistic for each of the four respective regression weights.

Figure 1: *Mediation Model of the Effects of Child Maltreatment*

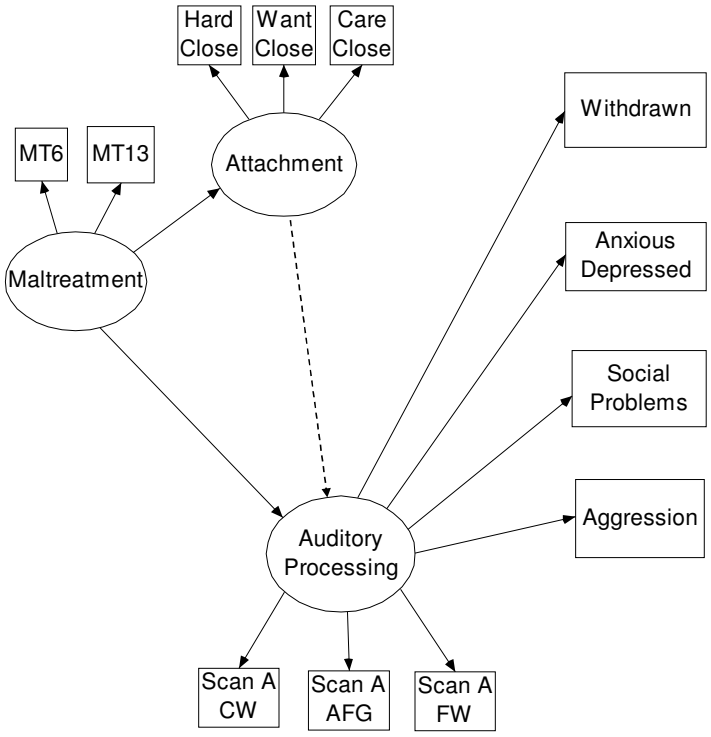

Table 11 summarizes the relevant estimates for all structural parameters of the regression model. The model revealed excellent fit. The Chi-square was not significant (55.1, *df* = 45). This alone would not indicate a good fit given the relatively small sample for SEM analysis. However, with an Incremental Fit Index of .97 and the Comparative Fit Index of .96 the assertion that the data fit the designated model is strongly supported. The sample-size independent Root Mean Square Estimate of Approximation also indicates an excellent fit (RMSEA = .044).

Table 12: *Regression Estimates for the Proposed Structural Equation Model*

Predictor	Outcome	B	S.E.	β	*p*
Maltreat	Attach	.205	.359	.076	.568
Attach	AudProcess	-.439	.198	-.468	.027
Maltreat	AudPocess	-.886	.561	-.349	.115
Maltreat	MT6	1.000	*	.869	*
Maltreat	MT13	.586	.304	.589	.054
Attach	Hardclos	1.000	*	.895	*
Attach	Wantclos	.506	.168	.486	.003
Attach	Careclos	.494	.172	.442	.004
AudProcess	Scana_fw	1.000	*	.451	*
AudProcess	Scana_afg	.704	.263	.472	.007
AudProcess	Scana_cw	2.575	.806	.831	.001
AudProcess	Aggress	-.107	.044	-.435	.029
AudProcess	Withdraw	-.129	.045	-.527	.004
AudProcess	Yanxious	-.181	.067	-.543	.003
AudProcess	Socprob	-.128	.044	-.546	.004

Note: Sample includes 117 adjudicated adolescents. Model fit was good, IFI = .97, CFI=.96, and RMSEA= .044.

Experience of early relational trauma/maltreatment was significantly correlated with auditory processing (model implied latent correlation of r = - .39). Therefore, Hypothesis 1 was confirmed. Hypothesis 4 implied that this effect is significantly reduced or becomes insignificant when the mediation process through attachment is specified in the model as it is in the model reported in Table 11. The direct effect is no longer significant corroborating the notion of mediation. Hypothesis 4 was thus not

confirmed as the coefficient is insignificant however, the standardized coefficient is substantial with B = .21. Testing for mediation in SEM can be accomplished by examining the difference in the Chi-Square relative to the change in degrees of freedom between the fully mediated model (direct effect from maltreatment to Auditory Processing constrained to zero, the dashed line in the model detailed in Figure 1) and one with the direct effect freely estimated (Holmbeck, 1997). When comparing those two models with the current data, the findings support a near fully mediated model. The change in Chi-square is 5.0 at 1 degree of freedom, with the critical value for Chi-square at p = .05 and 1 degree of freedom is 3.84. Therefore, while these findings do not support the assertion of a fully mediated model, the model is at least partially mediated and is approaching full mediation. Hypothesis 4 is therefore supported.

The SEM analysis support Hypotheses 2 and 3 strongly: All four regression coefficients from Auditory Processes to Withdrawal, Anxiety, Social Problems and Aggression are significantly negative as predicted.

Note that all effects in the model are predictive statistically in the sense of linear regression. Logically, this does neither imply a causal association or even a temporal sequence given the data cross-sectional nature of the data. On the other hand the findings do not contradict the notion of causal mechanisms if they are implied by theory and supported empirically by other – preferably longitudinal – studies.

CHAPTER 9: DISCUSSION

Synthesis and Implications

Child maltreatment is a broad and complex problem that can alter physical, psychological, and emotional development, resulting in myriad negative developmental outcomes (see, e.g., Brown & Bzostek, 2003; DuRant, Getts, Cadenhead, Emans, & Woods, 1995; Finkelhor & Hashima, 2001; Singer, Anglin, Song, & Lunghofer, 1995). As supported the current study, insecure attachment styles, cognitive processing deficits, and behavioral problems are all associated with childhood maltreatment; thus, it is critical that we further our conceptual understanding of these complex, pervasive, and often devastating problems. This process must entail the clarification of how negative factors are related and where they interface within a developmental framework.

Principles of attachment theory, both old and new, should be employed when establishing a therapeutic relationship, particularly when working with child victims of abuse and neglect. Utilizing an attachment lens can facilitate positive treatment outcomes in work with maltreated children inasmuch as it provides a knowledge base from which practitioners can anticipate responses based on the attachment dynamics displayed by the client. The current findings of the mediational influence of insecure attachment within the influence of child maltreatment on auditory processing and in turn social, emotional, and behaviorally functioning reinforce this assertion. In other words, the current findings suggest we must attend to attachment issues to effectively intervene in the effect of child maltreatment. Furthermore, the effect on auditory processing has implications for the

methods we use in the process of intervention. Caution is needed in the exclusive use of "talk" therapies (CBT) as the current model shows that the auditory processing of maltreated youth is impaired by that maltreatment. Thus, attachment theory can help the practitioner to be thoughtful relative to boundary issues and triggering events that have the potential to put a maltreated child in states of distress and/or high arousal that may hinder the therapeutic process.

Understanding how child maltreatment and the resultant relational trauma affects the attachment relationship, which in turn alters cognitive processing ability via the structure and underlying function of the brain, will aid our ability to treat the aftermath of child abuse and neglect. Rather than treating presenting symptoms alone, such an understanding will better inform the design of multimodal treatment strategies that target the synergistic interplay of the psychological impacts of childhood maltreatment, attachment difficulties, and deficits in cognitive functioning [see Figure 1].

Current Thinking

Current child maltreatment literature indicates the necessity of a shift in current intervention strategies. It has become clear that we need to move away from strictly cognitive behavioral treatment or psychotherapeutic approaches and toward interventions that are better informed by our growing understanding of how the trauma associated with childhood maltreatment affects multiple developmental domains. Thus, as I have discussed, identification and clarification of the interrelationships among child maltreatment, attachment, and cognitive processing may ultimately inform the development of evidence-based practice efforts that are more effective in treating maltreated children and youth.

Perry (2001a) has referred to early attachment relationships as "emotional glue." Indeed, it is clear that the relational interactions we experience during our earliest and most vulnerable developmental periods are critical in shaping and forming psychologically and emotionally healthy relationships. He also says that "timing is everything," because during the first 3 years of life the "human brain develops to 90% of adult size and puts in place the majority of systems and structures that will be responsible for all future emotional, behavioral, social, and psychological functioning during the rest of life" (p. 4).

It has also been said that experience is the architecture of the brain. Experience in infancy and early childhood strengthens neural pathways that facilitate survival, thus meeting both the physical and emotional needs that will allow the child to react to, and cope with, everyday life. Neural circuitry is therefore strengthened and modified under varying conditions and reflects the environment. However, although stress is an integral part of daily living—and learning to cope with moderate amounts of stress is necessary for survival—brain development is altered by exposure to prolonged and/or chronic severe or unpredictable stress, including child maltreatment.

For example, according to Lowenthal (1999), maltreated children's brains display more highly attuned abilities to react to danger. Conceptually, Lowenthal posits that the brain organization that puts these children in almost constant states of high alert is undoubtedly related to their adaptation to a dangerous and highly stressful environment, and thus is rooted in survival. And because physical flight is not always possible in these situations, they "cope by freezing" (p. 205). Lowenthal posits that this freezing response to perceived threatening events allows "the child time to process and evaluate the

stressor" (p. 205). While, following this line of thinking, "freezing", may have been adaptive originally, it can become maladaptive in later social settings. For example, "freezing" can be misinterpreted as noncompliance or defiance of requests or demands, and as a result, caretakers often up the ante by challenging the behavior, which in turn escalates the fear response and increases the magnitude of behavioral responses in the highly aroused child (James, 1994).

Similar to those who suffer cognitive impairments subsequent to neurological damage, children and youth who have experienced maltreatment may exhibit a variety of impaired listening, reading, speaking, and writing skills that further confound their ability to communicate under stress. Additional neuropsychological deficits (perceptual and cognitive) may include impaired memory, sensation, perception, motor dexterity, attention, and executive functioning. Impairments such as these are salient to considering which treatment approaches will be most effective when working with maltreated children—children lacking the emotional glue spoken of by Perry (2001a), or the sound brain architecture grounded in positive life experience and healthy interpersonal relationships that promotes learning.

As noted, research has demonstrated that cognitive processes become compromised during periods of high emotional arousal. As a result, we must hold a critical lens to the practice of relying on cognitive behavioral therapies. The foundation of these cognitive behavioral theoretical models assumes the ability to access cognitive processes during treatment—even when dialogue surrounding early interpersonal experience elicits stress-related reactions, such as freezing, that will hinder the

therapeutic process. This is particularly true if a trusting alliance/relationship between the child and the therapist (i.e., an attachment) has not been securely established.

Regardless of whether or not one embraces the notion that adaptive behavioral patterns of freezing or that maltreatment-driven brain changes rooted in attachment styles and relationships, disrupt cognitive processing abilities (e.g., recognition of the connection between thoughts, feelings, and behaviors) and executive functions (e.g., the ability to change the cognitive set or make adjustments in thinking), it is clear that maltreatment can impact behavior and neurological functioning. And, therefore, effective intervention will depend, in part, upon our ability to change patterns of behavior and thinking/cognition by way of neural "rewiring".

The field of social work is dedicated to increasing child welfare through research and practice efforts geared toward improvement of the efficacy of interventions. The development of public policy and efficacious intervention programs that address child maltreatment are dependent upon understanding the extent and scope of child maltreatment and its consequences. Therein lie the larger questions: a) How do we draw on bodies of research, relate them to one another, and translate what we know into intervention strategies that work with a variety of maltreated children? And b) How must we change our thinking and practice based upon what we know now and are beginning to understand about learning and cognitive processing in children and youth who have experienced abuse and/or neglect?

Going Forward

The fact that child maltreatment and insecure attachment result in myriad negative sequelae is not breaking news. As noted, this has been the subject of theoretical development and empirical research for decades. However, further understanding of this reciprocal interaction and how that interaction impacts developing brain structures and functioning is crucial to our efforts to determine and design top-quality educational and therapeutic programming and intervention.

Although the experience of child maltreatment is unique to each child, and the consequences that result depend on a variety of factors, including age of onset, frequency and duration of the maltreatment, child characteristics, and the child's relationship to the perpetrator, consideration and attention in both research and practice should be given to variables central to the attachment relationship and the underlying neurobiology that results from maltreatment/insecure attachment. Clearly, the most significant cost of child maltreatment/trauma is the loss or disruption of a secure attachment base. The neurological impact of trauma and early disrupted/insecure attachment experiences must inform our understanding of processing difficulties that contribute to many of the behavioral and learning problems exhibited by victims of child maltreatment.

I argue for a treatment approach that is more trauma-focused in theory and multimodal in its interventions. Maltreated children's styles of learning can be related to the way the child's brain most effectively organizes and processes information. Currently, only limited integration of this awareness appears to be reflected in treatment models, particularly among those children who exhibit a variety of learning, emotional, and/or behavioral problems.

We must develop a practice/intervention approach that promotes meaningful change; beginning with the realization that establishing a secure attachment relationship promotes a feeling of safety within the therapeutic milieu. This can be accomplished by understanding that emotions interact with thinking and/or reason to either support or inhibit cognitive processing and learning. We must create environments in which children and youth feel physically and emotionally safe to learn, because threat and stress impede learning and integration and because affect regulation is essential to the learning process. We need to understand that sensory engagement is important from a multimodal perspective and that assessing both strengths and weaknesses to capitalize on success is imperative to positive therapeutic outcomes. We also must realize that language might be the least accessible and/or least useful modality for traumatized children and youth—particularly at the beginning of treatment. Thus, multimodal learning that emphasizes predictability and structure, repetition, and sequencing to form new and adaptive neural pathways should be a priority.

And because we now know that traumatic experiences have a negative impact on the neurodevelopment of young children, particularly with respect to language skills, including auditory processing, expressive/receptive language abilities, and verbal memory skills (Perry, 2001b; Perry & Pate, 1994; Perry, Pollard, Blakely, & Vigilante, 1995; Teicher, Anderson, Polcari, Anderson, & Navalta, 2002; van der Kolk, MacFarlane, & Weisaeth, 1996), we must keep in mind that learning and/or processing may be difficult for maltreated children and youth in a normal environment, and nearly impossible it emotionally charged situations. And, given that language might be the least accessible or useful modality for clients, particularly at the beginning of the treatment

when the therapist-client relationship is forming, it is important to develop intervention strategies that are not verbally loaded—by incorporating, music, movement, and hands-on activities into the therapeutic process.

Attachment and the Brain

It is thought that meaningful, healthy interpersonal relationships have the potential to reactivate neuro-plastic or cognitive processes that may actually change the structure and function of the brain. In a perfect world we would have the ability to image the brain in maltreated children before and after therapeutic intervention, as a means of providing tangible evidence that the structure and function of the brain can be changed or modified. Nonetheless, our current knowledge on this subject is a good starting point from which we can devise intervention models that address neurological impairments, borrowing from rehabilitation therapies currently used to treat individuals who have suffered various forms of brain damage.

Cozolino (2002), Schore (1994, 2000), Siegel (1999), and Teicher (2000), leaders in child maltreatment research and theory, argue strongly that new data arising from advances in neuroscience will inform and improve our work with maltreated children. These scientists hold that it is caregiver nurturance that:

> …sets us on a course of physical and psychological health—or when it is lacking, disease and mental illness. Because of the link between interpersonal relationships and biological growth, we are particularly interested in the impact of early caretaking relationships when the neural infrastructure of the social brain is forming. (Cozolino, 2006, p. 8)

Given the results of this study, we need to understand more about how biological processes interact with the environment to affect behavior. In addition, we need to develop a diagnostic protocol or assessment procedure that will facilitate the identification of maltreated children and youth. Finally, we must develop a practice/intervention approach that promotes meaningful change by paying attention to the fact that emotions interact with thinking and/or reason to either support or inhibit learning.

The old adage "safety first" takes on new meaning when we address the therapeutic needs of children who have experienced interpersonal or relational trauma. It is critical that we create therapeutic environments in which children and youth feel physically and emotionally safe, so that they can begin to heal and practice newly developing adaptive relational behavior. We must remember that threat and stress impede learning and integration, that maltreated children and youth may demonstrate deficits in auditory and language processing, and that affect regulation and sensory engagement is an essential foundation of the learning process. Furthermore, we must keep in mind that multimodal learning—emphasizing predictability and structure—along with sequencing and repetition will help in the formation of new adaptive neural pathways.

Our current multidisciplinary knowledge relating to attachment, neural and brain development, cognitive impairments and cognitive functioning, and the multifaceted nature of child maltreatment is central to our ability to treat victims of child maltreatment, particularly those who have experienced prolonged or chronic forms of

relational trauma inflicted by a primary caregiver. The synthesis of the current topics in this paper are a guide to this end, providing a base from which we can continue to build more efficacious and better-informed treatment and intervention methods designed to meet the complex needs of the maltreated child.

CHAPTER 10: CONCLUSION

Childhood relational maltreatment interferes with the development of secure attachments relationships. Childhood relational maltreatment disrupts the development of healthy coping mechanisms, instead priming the brain and central nervous system to "survive" in a frequent state of high emotional arousal and fear. We see the tragic outcomes of childhood relational maltreatment mislabeled and misunderstood. Maltreatment during childhood can set a course for relational, social, and academic failure, in many cases because the maltreatment/trauma endured has rendered them less able to communicate the very problems and challenges it has created for them. The hope for these children, youth and adolescents lies in our growing understanding of what it means to come from abusive and neglectful environments—for the body and the mind, and our ability to creatively, imaginatively, and purposefully integrate this knowledge into treatment and intervention strategies as unique and multifaceted as the challenges they have, and will continue to face.

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APPENDICES

Appendix 1: Table of Measures

Measure	Time to Administer	Description	Scales
From Records			
Eduction history		History of disabilities, IQ	N/A
Teacher Measures	**35 minutes**		
Teacher Report Form	15 minutes	The TRF is designed to obtain teachers' reports of children's academic performance, adaptive functioning, and behavioral/emotional problems. Teachers rate the child's academic performance in each subject on a five-point scale ranging from 1 (far below grade level) to 5 (far above grade level).	Syndromes were based on principal components analyses of 4,437 referred students and were normed on 2,319 non-referred students. Internalizing behavior problems Externalizing behavior problems Total behavior problems
Learning Disabilities Diagnostic Screen	10-20 minutes	The LDDI is a rating scale designed to help you identify intrinsic processing disorders and LDs in students between the ages of 8.0-17.11 years.	The test was normed on 2,152 students with LDs residing in 43 states and the District of Columbia. The demographic characteristics of the normative sample are representative of the population of U.S. students who have learning disabilities with regard to gender, race, ethnicity, urban/rural residence, family income, educational attainment of parents, and geographic distribution. Numerous validity studies were conducted to ensure that the LDDI scores have content-description, criterion-prediction, and construct-identification validity.

Measure	Time to Administer	Description	Scales
Dyslexia Screening Instrument	15-20 minutes	The DSI is a brief rating scale designed to describe the cluster of characteristics associated with dyslexia and to discriminate between students who display these characteristics and students who do not. It provides a starting point for differential diagnosis and is designed for students in Grades 1-12.	Dyslexia Total Score
Survey Measures	**100 minutes**		
Behavior Rating Inventory of Executive Function--Self-Report	10 Minutes	The 80 items yield information for eight non-overlapping clinical scales that measure different aspects of executive functioning: Inhibit, Shift (with Behavioral Shift and Cognitive Shift subscales), Emotional Control, Monitor, Working Memory, Plan/Organize, Organization of Materials, and Task Completion. The clinical scales form two broader indexes--the Behavioral Regulation Index (BRI) and the Metacognition Index (MI)--and yield an overall summary score, the Global Executive Composite (GEC).	The BRIEF-SR scales demonstrate appropriate reliability. Internal consistency is high for the GEC (æ = .96) and moderate to high for the clinical scales (æ = .72-.96). Temporal stability is strong (r = .89) for the GEC (over a period of approximately five weeks), and there is strong interrater agreement for the GEC with parent ratings on the BRIEF (r = .56). Teacher ratings on the BRIEF correlated less strongly with adolescent ratings on the BRIEF-SR (GEC, r = .25), but were well within expectations.

Measure	Time to Administer	Description	Scales
Marlowe- Crown Social Desirability Scale	5 minutes	10 Item measure of the degree to which participants answer survey questions in a manner which reflects their perception of what is socially desirable instead of reflecting their own feelings.	
Trauma Symptom Checklist for children	10 minutes	44 item measure of prevalence of Post Traumatic Stress Disorder symptoms.	Participants are asked to rate on a 0-3 scales symptoms of PTSD and are scored according to cut-offs.
Beck Depression Inventory	10 minutes	The Beck Depression Inventory (BDI - II) is a 21-item test presented in multiple choice format which purports to measure presence and degree of depression in adolescents and adults. Each of the 21-items of the BDI attempts to assess a specific symptom or attitude "which appear(s) to be specific to depressed patients, and which are consistent with descriptions of the depression contained in the psychiatric literature."	Each of the Inventory items corresponds to a specific category of depressive symptom and/or attitude. Each category purports to describe a specific behavioral manifestation of depression and consists of a graded series of four self-evaluative statements. The statements are rank ordered and weighted to reflect the range of severity of the symptom from neutral to maximum severity. Numerical Values of zero, one, two, or three are assigned each statement to indicate degree of severity.
Cognitive Battery	115 - 150 total		

Measure	Time to Administer	Description	Scales
Youth Self Report	15 minutes	Youths rate themselves for how true each item is now or was within the past six months, using the same three-point response scale as for the CBCL/6-18 and TRF. In addition, the YSR has 14 socially desirable items that most youths endorse about themselves.	The YSR scoring profile provides raw scores, T scores, and percentiles for two competence scales (Activities and Social), Total Competence, the eight cross-informant syndrome scales, the six DSM-oriented scales that are also scored from the CBCL/6-18 and TRF, Internalizing, Externalizing, and Total Problems scales. Scales are based on 2,581 high-scoring youths and normed on 1,057 non-referred youths.
Conflict Tactics Scale	15 minutes	The Conflict Tactics Scale consists of 18 items that reflect disagreements experienced in dyadic relationships. It includes verbal reasoning and verbal conflict as well as mild - severe physical conflict. This measure has been used in studies of conflictual relationships and in national samples of American families.	The participants is asked to indicated whether a particular conflict tactic occurred in their relationship and how often it occurred within the last year. Relationships studied include the participant and his sibling, parent-child dyads and parent-parent conflicts.
Self-reported Delinquency	15 minutes	In this measure participants describe their delinquent activities, tapping the areas of property damage, theft, assault, and substance use.	For each type of delinquent act, the participant is asked whether he/she ever committed it, how many times in the past year, if others were involved, and if he/she was under the influence of alcohol or drugs while committing it.

Measure	Time to Administer	Description	Scales
Kaufman Brief Intelligence Test	15-20 Minutes	A revision of the Kaufman Brief Intelligence Test (K-BIT), the KBIT-2 is a quick and reliable measure of intelligence. The KBIT-2 provides an improved Verbal scale, including receptive and expressive vocabulary items that do not require reading or spelling.	Provides high reliability and validity, cultural fairness reflected in norming procedures and item selection, and convenient and fast administration.
Wide Range Achievement Test 3	15 - 30 minutes	The WRAT3 consists of two equivalent alternate test forms. Each form of the WRAT3 has three subtests focusing on specific coding skills: • Reading--recognizing and naming letters, pronouncing printed words • Spelling--writing names, writing letters and words from dictation • Arithmetic--counting, reading number symbols, oral problem computations	The WRAT3 is normed by age-not grade level-for greater accuracy. WRAT3 standard scores and percentiles compare an individual's performance with others of the same age. The grade levels indicated are clues to instructional levels, not determinations of specific instructional levels.
Wisconsin Card Sort - CV4	10 - 15 minutes	The WCST-64 allows the clinician to assess the following "frontal" lobe functions: strategic planning, organized searching, utilizing environmental feedback to shift cognitive sets, directing behavior toward achieving a goal, and modulating impulsive responding.	WCST- CV4 normative, reliability, and validity data are derived from the same samples described in the Wisconsin Card Sorting Manual-Revised and Expanded (Heaton, Chelune, Talley, Kay, and Curtiss, 1993).

Appendix 2: Authorizing Party DHS

Authorizing Party for Study Participation
Youth Under Department of Human Services Supervision

Department of Human Services (DHS)-supervised youth will only be allowed to participate in a research study if the appropriate authorizing party has determined that the study is in the best interest of the child/youth.

Even with the consent of the appropriate authority, the child/youth always has the right to decline to participate in the study. Participation might include completing a survey or being interviewed.

Purchase of service agencies and foster parents never have the right to decide if a child/youth can participate in a study. Youth in Independent Living must be advised that if they participate in a study, they do so without the authority of the supervising agency.

The following information summarizes the legal status and the authorizing party for approval to participate in a research study:

Type of Care/Legal Status	Authorizing Party for Study Participation
Temporary Court Ward	Court/Judge and parent or legal guardian or youth if age 18 or over unless youth has been determined incompetent
Permanent Court Ward	Court/Judge or youth if age 18 or over unless youth has been determined incompetent
State Ward (Act 220)	MCI Superintendent or youth if age 18 or over unless youth has been determined incompetent
Delinquent State Ward (Act 150)	DHS Director or designee or youth if age 18 or over unless youth has been determined incompetent
Voluntary Release Ward (Act 296) Released to DHS	MCI Superintendent or youth if age 18 or over unless youth has been determined incompetent
Dual Wards – MCI and Act 150 & 296 or 220	DHS Director or designee and the MCI Superintendent, or youth if age 18 or over unless youth has been determined incompetent
Emergency/Volunteer Foster Care Ward	Parent or legal guardian or youth if age 18 or over unless youth has been determined incompetent
MCI-O Ward	MCI Superintendent or youth if age 18 or over unless youth has been determined incompetent
Pending Adoption (supervisory period)	Court/Judge
Broken Adoption – recommitted to MCI	MCI Superintendent
Broken Adoption – Permanent Court Ward	Court/Judge
OTI/Interstate Compact Youth	Sending state authority/court
Michigan child placed out of state	See categories above

Appendix 3: Parent Consent

Parent/Guardian Consent Form

August 14, 2006

Dear Parent/Guardian:

You are receiving this letter because your son is detained at [redacted] Boys Training School and we are requesting your permission to allow your son to participate in a study conducted at [redacted] Boys Training School. We would like all the boys at [redacted] Boys Training School to participate in a study of boys' learning skills. Your son will only be allowed to participate in the study with your permission or the permission of the court system. As researchers at the University of Michigan in Ann Arbor who will be conducting this study, we are writing to request your permission for your son to participate in this study.

What is this research about?

The purpose of this study is to understand how boys at [redacted] Boys Training School learn and process information. The study seeks to understand why there are so many students with learning problems among incarcerated boys and girls and how to best teach those students so that they will be more successful in school. One goal of the study is to help [redacted] Boys Training School in developing an intake procedure that will include a number of educational tests.

What will my son be asked to do?

Your son will be asked to complete a paper and pencil survey about the way he thinks, the way he behaves in different settings and history of family relationships. He will also be asked to complete some computer based educational tasks. Teachers will be asked to evaluate each boy's social behavior and reading ability. School health history and education data will be obtained from each participating boy's file.

This study is not an evaluation of the current educational programming at [redacted] Training School. However, it is hoped that this study will provide valuable information about student learning to [redacted] Training School in order for the educational team to determine the best program of learning for each boy. [redacted] Training School will be providing space to conduct the survey as well as time in the boys' schedules for them to complete the study. You may withdraw your son from the study by notifying Suzanne Perkins or Joanne Smith-Darden at the number below.

If you would like to see a copy of the survey you may request to see one by calling the [redacted] Training School office at ([redacted].

Who is doing this research?

The research is being conducted by Suzanne Perkins and Joanne Smith Darden, whose contact information is located at the end of this form. They are both doctoral students at the University of Michigan and overseen by Sandra Graham-Bermann, Associate Professor in the psychology department. Ms. Smith-Darden is a part-time speech and Language therapist at [redacted] Training School. Joanne's role in the study will be as a researcher from the University of Michigan.
Both Suzanne and Joanne will be available for any questions.

IRB: Behavioral Sciences IRB Number: HUM00000513 Document Approved On: 11/10/2006

Who will get to see my son's answers?

A Federal Certificate of Confidentiality has been obtained for this study. Suzanne Perkins and Joanne Smith-Darden and members of their research team will see your son's/ward's answers. Your son will be given a number that will identify him. No staff member at [redacted] will see your son's/ward's answers. However if Suzanne or Joanne diagnosis your son/ward with a learning disability we will meet with you and your son to discuss our findings and what this means for his education at [redacted]. With your permission we will then notify the [redacted] educational staff so that they can better plan for your son/ward's educational program.

Please read the following consent form, then sign and return it within two weeks if you are willing to let your son participate in this study. Please read the form carefully to be sure that you are aware of all the details of the study. Please initial in the lines provided in the consent form and sign at the bottom. Each boy will have the study explained to him and then be asked to sign his own consent form.

In order to provide the best information about student learning needs [redacted] Boys Training School, we would like all students to participate in this study and will be requesting court permission to proceed if forms are not returned in two weeks.

Thank you,

Suzanne Perkins
M.S., Psychology, M.Ed. Teaching and Curriculum
Ph.D. Candidate
School of Education and Department of Psychology

Joanne Smith-Darden
Ph.D. Pre-Candidate
School of Social Work and
Department of Psychology

Sandra Graham-Bermann, Ph.D.
Associate Professor
Department of Psychology

If you have further questions or concerns about my rights, or my son's/ward's rights as a research participant, or about the approval of this study, you may contact the Institutional Review Board Office, 540 E. Liberty, Suite 202, Ann Arbor, MI 48104-2202 at 734-936-0933 or irbhsbs@umich.edu.

IRB: Behavioral Sciences IRB Number: HUM00000513 Document Approved On: 11/10/2006

As part of an overall screening process for treatment, each student at [redacted] Boys Training School is being asked to participate in this study.

I _____ consent to allow my son/ward to participate in the research project to be conducted by Suzanne Perkins, Ph.D. candidate and Joanne Smith-Darden, Ph.D. pre-candidate at the University of Michigan in Ann Arbor, Michigan, under the circumstances listed below:

_____I consent to allow my son/ward to participate in educational testing and surveys given in small groups and one-on-one with these researchers. I am agreeing to my son/ward being involved in 2 sessions, which each will last approximately 1 and 1/2 hours.

_____I understand that my son will be provided with breaks during this time.

_____I understand that the session may involve talking about sensitive, intimate matters. At the conclusion of the interview, the researcher will offer my son/ward the opportunity to discuss the experience with [redacted] Boys Training School clinical staff, if so desired.

_____I understand that information from medical and educational records will be obtained by the researchers.

_____I have been made aware that my son's/ward's participation is **voluntary** and that he may **withdraw his assent** at any time during, or subsequent to, participation.

_____I understand that my son may **skip or refuse** to answer any survey question that makes him feel uncomfortable without affecting study compensation or academic standing/record.

_____ I understand that I can withdraw my son/ward from participating in the study.

_____I have been made aware that declining to participate will **not** result in any **negative treatment** from the juvenile justice system or [redacted] Training School staff.

_____I also understand that consenting to participate will **not** result in **favorable treatment** from the juvenile justice system or [redacted] Boys Training School staff.

_____I understand that, although my son/ward may not receive direct benefit from his participation, others may ultimately benefit from the knowledge obtained in this study.

_____ In addition, I understand that [redacted] Educational center will receive a cash donation to be put into the "Boys Benefit Fund," which is a fund at the facility that provides educational and recreational materials for the use of all boys.

_____I understand that information relating to my son's/ward's participation or non-participation in this interview will not be disclosed to [redacted] Boys Training School staff by Suzanne Perkins or Joanne Smith-Darden. When Suzanne Perkins or Joanne Smith-

Darden use findings from this study for publications and/or written or oral presentations, they will maintain my son's/ward's confidentiality, meaning that they will not reveal my son's/ward's name or any identifying information about him.

_____I understand that Suzanne Perkins and Joanne Smith-Darden have obtained a federal Certificate of Confidentiality for this study.

_____I further have been made aware that a Certificate of Confidentiality has been obtained from the Federal Government for this study to insure my son's/ward's privacy. This Certificate means that Suzanne Perkins and Joanne Smith-Darden, as the researchers, cannot be forced to tell people who are not connected with the study, including courts, about my son's/ward's participation, without his written consent. I understand that the Certificate cannot be used to resist a demand for information from personnel of the United States Government that is used for auditing or evaluation of federally funded projects. I also understand that a Certificate of Confidentiality does not prevent my son/ward from voluntarily releasing information about his involvement in this research. If another person or agency received his written consent to receive research information, then Suzanne Perkins and Joanne Smith-Darden may not use the Certificate to withhold that information.

_____I understand that my son will not be identified in any reports on this study. Records will be kept confidential to the extent provided by federal, state, and local law.

_____I understand that all personal information that my son/ward discloses will be kept confidential by Suzanne Perkins and Joanne Smith-Darden, to the extent provided by local, state and federal law.

_____I understand the Joanne Smith-Darden is a part-time Speech and Language Therapist at [redacted] but will not benefit financially from my son/ward's participation in the study.

_____I have been made aware that Suzanne Perkins or Joanne Smith-Darden will report to Michigan Department of Human Services any disclosures made by my son/ward that involve the endangerment of a minor, including my son/ward.

_____ I have been made aware that I can contact Suzanne Perkins or Joanne Smith Darden with questions related to this project at **1-877-325-5044 (toll free)** and that they will address any questions or concerns I have about the project to the best of their abilities. If this does not resolve my concerns or if I have further questions or concerns about my rights, or my son's/ward's rights as a research participant, or about the approval of this study, I may contact the Institutional Review Board Office, 540 E. Liberty, Suite 202, Ann Arbor, MI 48104-2202 at 734-936-0933 or irbhsbs@umich.edu.

_____I have also been informed that this signed consent form will be kept by the researcher in a locked file and that I will receive another copy to keep.

****

_____I have read the above document. I understand what my son's/ward's participation in this interview requires of him and me and have been informed of the rights that he and I have in

regards to this project.

I have read the information given above. Suzanne Perkins and Joanne Smith-Darden have offered to answer any questions I may have concerning the study. I consent to allow the participation of my son/ward in this project under the conditions established above.

Parent/Guardian signature (circle one)	date	Joanne Smith-Darden Ph.D. Pre-Candidate Joint Social Work and Psychology	date
Suzanne Perkins, M.S., M.Ed. Ph.D. Candidate School of Education and Department of Psychology	date	Sandra Graham-Bermann, Ph. D. Associate Professor Department of Psychology	date

Appendix 4: Young Adult Consent

Student Consent Form
(Over 18)

August 14, 2006

Dear Student:

You are receiving this letter because we would like you to participate in a study of boys' learning skills. You will only be allowed participate in the study with your permission. As researchers at the University of Michigan in Ann Arbor who will be conducting this study, we are writing to request your permission for your participation in this study.

What is this research about?

The purpose of this study is to understand how boys at [redacted] Boys Training School learn and process information. The study seeks to understand why there are so many students with learning problems among incarcerated boys and girls and how to best teach those students so that they will be more successful in school. One goal of the study is to help [redacted] Boys Training School in developing an intake procedure that will include a number of educational tests.

What will I be asked to do?

You will be asked to complete a paper and pencil survey about the way you think, the way you behave in different settings and your history of family relationships. You will also be asked to complete some computer based educational tasks. Teachers will be asked to evaluate each boy's social behavior and reading ability. School health history and education data will be obtained.

This study is not an evaluation of the current educational programming at [redacted] Boys Training School. However, it is hoped that this study will provide valuable information about student learning to [redacted] Boys Training School in order for the educational team to determine the best program of learning for each boy. [redacted] Boys Training School will be providing space to conduct the survey as well as time in the boys' schedules for them to complete the study.

If you would like to see a copy of the survey you may request to see one in the [redacted] Training School office. Please speak to Joanne Smith-Darden about setting up a time to see the survey.

Who is doing this research?

The research is being conducted by Suzanne Perkins and Joanne Smith Darden, whose contact information is located at the end of this form. They are both doctoral students at the University of Michigan and overseen by Sandra Graham-Bermann, Associate Professor in the psychology department. Ms. Smith-Darden is a part-time Speech and Language Pathologist at [redacted] Boys Training School. Joanne's role in the study will be as a researcher from the University of Michigan. Both Suzanne and Joanne will be available for any questions.

Who will get to see my answers?

A Federal Certificate of Confidentiality has been obtained for this study. Suzanne Perkins and Joanne Smith-Darden and members of their research team will see your answers. You will be given a number that will identify you. No staff member at [redacted]y will see your answers. However if Suzanne or Joanne diagnosis you with a learning disability we will meet with you to discuss our findings and what this means for your education at [redacted]. With your permission we will then notify the [redacted] educational staff so that they can better plan for your educational program.

Please read the following consent form, then sign and return it within two weeks if you are willing to participate in this study. Please read the form carefully to be sure that you are aware of all the details of the study. Please initial in the lines provided in the consent form and sign at the bottom.

Thank you,

Suzanne Perkins
M.S., Psychology, M.Ed. Teaching and Curriculum
Ph.D. Candidate
School of Education and Department of Psychology

Joanne Smith-Darden
Ph.D. Pre-Candidate
School of Social Work and
Department of Psychology

Sandra Graham-Bermann, Ph.D.
Associate Professor
Department of Psychology

If you have further questions or concerns about your rights as a research participant, or about the approval of this study, you may contact Institutional Review Board Office, 540 E. Liberty, Suite 202, Ann Arbor, MI 48104-2202 at 734-936-0933 or irbhsbs@umich.edu.

IRB: Behavioral Sciences IRB Number: HUM00000513 **Document Approved On: 11/10/2006**

Student Consent Form

(Over 18)

As part of an overall screening process for treatment, each student at [redacted] Boys Training School is being asked to participate in this study.

I _____ consent to participate in the research project to be conducted by Suzanne Perkins, Ph.D. candidate and Joanne Smith-Darden, Ph.D. pre-candidate at the University of Michigan in Ann Arbor, Michigan, under the circumstances listed below:

_____I consent to participate in educational testing and surveys given in small groups and one-on-one with these researchers. I am agreeing to being involved in 2 sessions, each of which will last approximately 1 and 1/2 hours.

_____I understand that I will be provided with breaks during this time.

_____ I understand that the session may involve talking about sensitive, intimate matters. At the conclusion of the interview, the researcher will offer me the opportunity to discuss the experience with [redacted] Boys Training School clinical staff, if so desired.

_____I understand that information from medical and educational records will be obtained by the researchers.

_____I have been made aware that my participation is **voluntary** and that I may **withdraw my consent** at any time during, or subsequent to, participation.

_____ I understand that I may **skip or refuse** to answer any survey question that makes me feel uncomfortable without affecting study compensation or academic standing/record.

_____I have been made aware that declining to participate will **not** result in any **negative treatment** from the juvenile justice system or [redacted] Boys Training School staff.

_____ I also understand that consenting to participate will **not** result in **favorable treatment** from the juvenile justice system or [redacted] Boys Training School staff.

_____I understand that, although I may not receive direct benefit from my participation, others may ultimately benefit from the knowledge obtained in this study.

_____In addition, I understand the [redacted] Educational center will receive a cash donation to be put into the Boys Benefit Fund.

_____I understand that information relating to my participation or non-participation in this interview will not be disclosed to [redacted] Boys Training School staff by Suzanne Perkins or Joanne Smith-Darden. When Suzanne Perkins or Joanne Smith-Darden use

findings from this study for publications and/or written or oral presentations, they will maintain my confidentiality, meaning that they will not reveal my name or any identifying information about me.

_____I understand that Suzanne Perkins and Joanne Smith-Darden have obtained a federal Certificate of Confidentiality for this study.

_____I further have been made aware that a Certificate of Confidentiality has been obtained from the Federal Government for this study to insure my privacy. This Certificate means that Suzanne Perkins and Joanne Smith-Darden, as the researchers, cannot be forced to tell people who are not connected with the study, including courts, about my participation, without my written consent. I understand that the Certificate cannot be used to resist a demand for information from personnel of the United States Government that is used for auditing or evaluation of federally funded projects. I also understand that a Certificate of Confidentiality does not prevent me from voluntarily releasing information about my involvement in this research. If another person or agency received my written consent to receive research information, then Suzanne Perkins and Joanne Smith-Darden may not use the Certificate to withhold that information.

_____I understand that I will not be identified in any reports on this study. Records will be kept confidential to the extent provided by federal, state, and local law. However, the Institutional Review Board or university and government officials responsible for monitoring this study may inspect these records.

_____I understand that Joanne Smith-Darden is a part-time Speech and Language Therapist at [redacted] but will not benefit financially from my participation in the study.

_____I understand that all personal information that I disclose will be kept confidential by Suzanne Perkins and Joanne Smith-Darden, to the extent provided by local, state and federal law.

_____I have been made aware that Suzanne Perkins or Joanne Smith-Darden will report to Michigan Department of Human Services any disclosures made by me that involve the endangerment of a minor, including me.

_____I have been made aware that I can contact Suzanne Perkins or Joanne Smith Darden with questions related to this project at **1-877-325-5044 (toll free)** and that they will address any questions or concerns I have about the project to the best of their abilities. If this does not resolve my concerns or if I have further questions or concerns about my rights as a research participant, or about the approval of this study, I may contact the Institutional Review Board Office, 540 E. Liberty, Suite 202, Ann Arbor, MI 48104-2202 at 734-936-0933 or irbhsbs@umich.edu.

_____I have also been informed that this signed consent form will be kept by the researcher in a locked file and that I will receive another copy to keep.

****

_____I have read the above document. I understand what my participation in this interview

requires of me and have been informed of the rights that he and I have in regards to this project.

I have read the information given above. Suzanne Perkins and Joanne Smith-Darden have offered to answer any questions I may have concerning the study. I consent to allow my participation in this project under the conditions established above.

Youth (Over 18) date	Joanne Smith-Darden date Ph.D. Pre-Candidate Joint Social Work and Psychology
Suzanne Perkins, M.S., M.Ed. date Ph.D. Candidate School of Education and Department of Psychology	Sandra Graham-Bermann, Ph. D. date Associate Professor Department of Psychology

IRB: Behavioral Sciences IRB Number: HUM00000513 **Document Approved On: 11/10/2006**

Appendix 5: Court Consent

August 14, 2006

Dear Juvenile Court Official:

We are writing this letter to request your permission for a boy at [redacted] Boys Training School to participate in this study of boys' learning skills. Each boy who is a Temporary or Permanent Court Ward will not be able to participate in the study without the permission of the court system. As researchers at the University of Michigan in Ann Arbor who will be conducting this study, we are writing to request court permission for each ward of the state to participate in this study.

The study will be conducted by Suzanne Perkins and Joanne Smith-Darden. Both Joanne and Suzanne are advanced graduate students at the University of Michigan and are overseen by Sandra Graham-Bermann, Associate Professor in the psychology department. Ms. Smith-Darden is also a part-time Speech and Language Pathologist at [redacted] Boys Training School. Joanne's role in the study will be as a researcher from the University of Michigan.

What is this research about?

The purpose of this study is to understand how boys at [redacted] Boys Training School learn and process information. The study seeks to understand why there are so many students with learning problems among incarcerated boys and how to best teach those students so that they will be more successful in school. One goal of the study is to help [redacted] Boys Training School in developing an intake procedure that will include a number of educational tests.

Each boy will be asked to complete a paper and pencil survey about the way he thinks, the way he behaves in different settings and history of family relationships. He will also be asked to complete some computer based educational tasks. Teachers will be asked to evaluate each boy's social behavior and reading ability. School health history and education data will be obtained from each participating boy's file.

This study is not an evaluation of the current educational programming at [redacted] Boys Training School. However, it is hoped that this study will provide valuable information about student learning to [redacted] Boys Training School in order for the educational team to determine the best program of learning for each boy. [redacted] Boys Training School will be providing space to conduct the survey as well as time in the boys' schedules for them to complete the study. If Suzanne or Joanne diagnosis a boy with a learning disability we will meet with him to discuss our findings and what this means for his education [redacted]. With his permission we will then notify the [redacted] educational staff so that they can better plan for his educational program.

Please read the following consent form, then sign and return it. Please initial in the lines provided in the consent form and sign at the bottom. Each boy will have the study explained to him and then be asked to sign his own consent form. A Federal Certificate of Confidentiality has been obtained for this study.

Thank you,

Suzanne Perkins
M.S., Psychology, M.Ed. Teaching and Curriculum
Ph.D. Candidate
School of Education and Department of Psychology

Joanne Smith-Darden
Ph.D. Pre-Candidate
School of Social Work and
Department of Psychology

Sandra Graham-Bermann, Ph.D.
Associate Professor
Department of Psychology

If you have further questions or concerns about the boy's rights as a research participant, or about the approval of this study, you may contact the Institutional Review Board Office, 540 E. Liberty, Suite 202, Ann Arbor, MI 48104-2202 at 734-936-0933 or irbhsbs@umich.edu.

Juvenile Court Consent Form

As part of an overall screening process for treatment, each student at [redacted] Boys Training School is being asked to participate in this study.

I _____ consent to allow _____ to participate in the research project to be conducted by Suzanne Perkins, Ph.D. candidate and Joanne Smith-Darden, Ph.D. pre-candidate at the University of Michigan in Ann Arbor, Michigan, under the circumstances listed below:

_____ I consent to_____ participating in educational testing and surveys given in small groups and one-on-one with these researchers. I am agreeing to this boy being involved in 2 sessions. Each will last approximately 1 and 1/2 hours.

_____I understand that each boy will be provided with breaks during this time.

_____I understand that the session may involve talking about sensitive, intimate matters. At the conclusion of the interview, the researcher will offer each boy the opportunity to discuss the experience with [redacted] Boys Training School clinical staff, if so desired.

_____I understand that information from medical and educational records will be obtained by the researchers.

_____I have been made aware that each boy's participation is **voluntary** and that he may **withdraw his assent** at any time during, or subsequent to, participation.

_____ I understand that each boy may **skip or refuse** to answer any survey question that makes him feel uncomfortable without affecting study compensation or academic standing/record.

_____I have been made aware that declining to participate will **not** result in any **negative treatment** from the juvenile justice system or [redacted] Boys Training School staff.

_____I also understand that consenting to participate will **not** result in **favorable treatment** from the juvenile justice system or [redacted] Boys Training School staff.

_____I understand that although each boy may not receive direct benefit from his participation, others may ultimately benefit from the knowledge obtained in this study.

_____ In addition, I understand the [redacted] Educational center will receive a cash donation to be put into the "Boys Benefit Fund," which is a fund at the facility that provides educational and recreational materials for the use of all boys.

_____ I understand that information relating to_____ participation or non-participation in this interview will not be disclosed to [redacted] Boys Training School staff by Suzanne Perkins or Joanne Smith-Darden. When Suzanne Perkins or Joanne Smith-Darden use findings from this study for publications and/or written or oral presentations,

they will maintain each boy's confidentiality, meaning that they will not reveal any boy's name or any identifying information about him.

_____I understand that Suzanne Perkins and Joanne Smith-Darden have obtained a federal Certificate of Confidentiality for this study.

_____I further have been made aware that a Certificate of Confidentiality has been obtained from the Federal Government for this study to insure each boy's privacy. This Certificate means that Suzanne Perkins and Joanne Smith-Darden, as the researchers, cannot be forced to tell people who are not connected with the study, including courts, about each boy's participation, without the boy's legal guardian's written consent. I understand that the Certificate cannot be used to resist a demand for information from personnel of the United States Government that is used for auditing or evaluation of federally funded projects. I also understand that a Certificate of Confidentiality does not prevent the boy or a member of the boy's family from voluntarily releasing information about his involvement in this research. If another person or agency received the boy's legal guardian's written consent to receive research information, then Suzanne Perkins and Joanne Smith-Darden may not use the Certificate to withhold that information.

_____I understand that no boy will be identified in any reports on this study. Records will be kept confidential to the extent provided by federal, state, and local law. However, the Institutional Review Board or university and government officials responsible for monitoring this study may inspect these records.

_____I understand that all personal information that each boy discloses will be kept confidential by Suzanne Perkins and Joanne Smith-Darden, to the extent provided by local, state and federal law.

_____I understand the Joanne Smith-Darden is a part-time Speech and Language Pathologist at [redacted] but will not benefit financially from any boy's participation in the study.

_____I have been made aware that Suzanne Perkins or Joanne Smith-Darden will report to Michigan Department of Human Services any disclosures made by each boy that involve the endangerment of a minor.

_____I have been made aware that I can contact Suzanne Perkins or Joanne Smith Darden with questions related to this project at **1-877-325-5044 (toll free)** and that they will address any questions or concerns I have about the project to the best of their abilities. If this does not resolve my concerns or if I have further questions or concerns about the boy's rights as a research participant, or about the approval of this study, I may contact the Institutional Review Board Office, 540 E. Liberty, Suite 202, Ann Arbor, MI 48104-2202 at 734-936-0933 or irbhsbs@umich.edu.

_____I have also been informed that this signed consent form will be kept by the researcher in a locked file and that I will receive another copy to keep.

****

_____ I have read the above document. I understand what each boy's participation in this

interview requires of him and have been informed of the rights that he has in regards to this project.

I have read the information given above. Suzanne Perkins and Joanne Smith-Darden have offered to answer any questions I may have concerning the study. I consent to allow the participation of this boy in this project under the conditions established above.

Court approved signature	date	Joanne Smith-Darden Ph.D. Pre-Candidate Joint Social Work and Psychology	date
Suzanne Perkins, M.S., M.Ed. Ph.D. Candidate School of Education and Department of Psychology	date	Sandra Graham-Bermann, Ph. D. Associate Professor Department of Psychology	date

IRB: Behavioral Sciences IRB Number: HUM00000513 Document Approved On: 11/10/2006

Appendix 6: Department of Human Services Consent

October 6, 2005

Marianne Udow, Director
Michigan Department of Human Sservices

P.O. Box 30037
Lansing, Michigan 48909
Telephone: (517) 373-2000
Fax: (517) 335-6101

Dear Ms. Udow:

We are writing this letter to inform you of the study that we are planning on conducting with boys at the [redacted] Boy's Training School. As researchers at the University of Michigan in Ann Arbor who will be conducting this study, we are writing to inform you of the nature of the study so that you will be able to make an informed choice about allowing the study to take place at [redacted].

The study, entitled the Cognition and Disabilities Project, will be conducted by Suzanne Perkins and Joanne Smith-Darden. Both Joanne and Suzanne are advanced graduate students at the University of Michigan and are overseen by Sandra Graham-Bermann, Associate Professor in the psychology department. Ms. Smith-Darden is employed part-time at [redacted] as a Speech and Language Pathologist. Joanne's role in the study will be as a researcher from the University of Michigan.

What is this research about?

The purpose of this study is to understand how boys at [redacted] Boys Training School learn and process information. The study seeks to understand why there are so many students with learning problems among incarcerated boys and how to best teach those students so that they will be more successful in school. One goal of the study is to help [redacted] Boys Training School in developing an intake procedure that will include a number of educational tests.

Each boy will be asked to complete a paper and pencil survey about the way he thinks, the way he behaves in different settings and history of family relationships. He will also be asked to complete some computer based educational tasks. Teachers will be asked to evaluate each boy's social behavior and reading ability. School health history and education data will be obtained from each participating boy's file. This study is not an evaluation of the current educational programming at [redacted] Boys

Appendix 7: Student Assent

Student Assent

The [redacted] Training School and researchers at the University of Michigan are collaborating on this survey about ways that students learn and think, students' family histories, your feelings and other sensitive topics. In addition to this survey information about your learning will be obtained from your medical and educational records here at [redacted]. Your parents/guardians or the court have given permission for you to complete the survey.

- You will participate in two sessions, which will each last approximately 1 and 1/2 hours. You will be provided with breaks during this time.
- Some of the issues we discuss with you will be sensitive matters. At the end of the interviews you will be able to talk about your experience with a member of the [redacted] clinical staff if you would like.
- You will be asked some of your past behavior, which may have been against the law. You are only asked general information about these behaviors, such as how many times a behavior occurred. You are not asked about specific dates, places or people that would link you to a crime that you could be prosecuted for. **Do not** disclose and specific crimes to the researchers. Information about these crime can not be kept confidential and will be disclosed to law enforcement.
- Your participation is **voluntary** and you may **withdraw** from the study at any time before, during, or after participation. YOU MAY STOP AT ANYTIME. ALL YOU HAVE TO DO IS SAY "STOP" AND WE WILL NOT ASK YOU ANY FURTHER QUESTIONS.
- If you decide not to participate you will **not** receive **negative treatment** from the juvenile justice system or [redacted] Boys Training School staff.
- If you choose to participate you will **not** receive **favorable treatment** from the juvenile justice system or [redacted] Training School staff.
- The [redacted] Educational Center will receive a cash donation to be put into the "Boys Benefit Fund," which is a fund that gives educational and recreational equipment to the facility that can be used by all boys at the [redacted] Training School.
- You may **skip or refuse** to answer any question on the survey that makes you feel uncomfortable without affecting the facility's compensation or your academic standing/record.
- If Suzanne or Joanne diagnosis you with a learning disability we will meet with you to discuss our findings and what this means for your education at [redacted]. With your permission we will then notify the [redacted] educational staff so that they can better plan for your educational program.
- Suzanne Perkins and Joanne Smith-Darden have obtained a federal Certificate of Confidentiality for this study. You will not be identified in any reports on this study.
- Joanne Smith-Darden is a part-time Speech and Language Pathologist at [redacted], but will not benefit financially from the study. Her role will be as a researcher in this project.

IRB, Behavioral Sciences IRB Number: HUM00005[illegible] Document Approved On: 11/10/2006

YOUR RESPONSES ARE COMPLETELY CONFIDENTIAL. YOUR PARENTS WILL NOT HAVE ACCESS TO ANY IDENTIFYING INFORMATION NOR WILL ANYONE IN THE [redacted] TRAINING SCHOOL.

IT IS IMPORTANT FOR YOU TO REMEMBER THAT IF YOU TELL US ABOUT A CRIME YOU COMMITTED WE WILL HAVE TO REPORT THAT TO THE MICHIGAN DEPARTMENT OF HUMAN SERVICES.

ALL INFORMATION WILL BE CODED SO THAT YOUR NAME IS ONLY ON THE FRONT PAGE OF THE SURVEY AND WILL BE RIPPED OFF AND KEPT IN A SEPARATE LOCKED FILE FROM THE FILE WITH YOUR SURVEY. YOUR ANSWERS ON THE SURVEY WILL BE CONNECTED ONLY WITH YOUR PARTICIPANT NUMBER.

Your opinions are very important to us, so please answer all the questions with complete candor.

Please place a check mark:

o____ I ASSENT to participate in this study.

o____ I ASSENT to the use of my health and educational records. (The survey will begin).

o____ I do not wish to participate in this study and there is no penalty for not participating. (I will now be sent to a language tutorial.)

Date _____

If you have any questions you may contact Suzanne Perkins or Joanne Smith-Darden, from the University of Michigan who are available during the survey or you may call them toll free at **1-877-325-5044**.

If you have further questions or concerns about your rights as a research participant, or about the approval of this study, I may contact Institutional Review Board Office, 540 E. Liberty, Suite 202, Ann Arbor, MI 48104-2202 at 734-936-0933 or irbhsbs@umich.edu.

Appendix 8: Initial IRB Approval

Behavioral Sciences Institutional Review Board (IRB) • 540 East Liberty Street, Suite 202, Ann Arbor, MI 48104-2210 • phone (734) 936-0933 • fax (734) 998-9171 • irbhsbs@umich.edu

Date: 12/14/2005

To: Ms. Suzanne Perkins

Cc: DRDA, COI OVPR, IRB Behavioral Sciences

Subject: Initial Study Approval

The Behavioral Sciences Institutional Review Board (IRB) has reviewed and approved the research proposal referenced below. The IRB determined that the research is compliant with applicable guidelines, state and federal regulations, and the University of Michigan's Federal-wide Assurance with the Department of Health and Human Services (HHS).

Please note that a Certificate of Confidentiality must be obtained and submitted to the IRB prior to the initiation of your project.

Any proposed changes/amendments in the research (e.g., personnel, procedures, or documents), no matter how minor, must be approved in advance by the IRB unless necessary to eliminate apparent immediate hazards to research subjects.

The approval period for this project is listed below. *Please note your expiration date.* If the project is scheduled to continue beyond this date, submit a Scheduled Continuing Review application **at least two months prior** to the expiration date to allow the IRB sufficient time to review and approve the project. **If the approval lapses, no work may be conducted on this project until appropriate approval has been obtained, except as necessary to eliminate apparent immediate hazards to research subjects.**

The IRB must be informed of all unanticipated or adverse events (i.e., physical, social, or emotional) or any new information that may affect the risk/benefit assessment of this research.

The online forms for amendments, adverse event reporting, and scheduled continuing review can be obtained by accessing the eResearch workspace for this approved study at https://eresearch.umich.edu.

It is expected that only the current IRB-approved version of the informed consent document(s) will be used in conjunction with this research. To obtain and download a copy of the current IRB-approved informed consent document(s), PIs and Study Staff should access the eResearch workspace for this approved study and view the "Documents" tab.

Submission Information:
Title: Cognition and Disabilities Project: Study of Disability, Cognitive Processing, Violence History and Perpetration
IRB File Number: HUM00000513
Initial IRB Approval Date: **9/13/2005**
Current IRB Approval Period: **9/13/2005 - 9/12/2006**
Expiration Date: **9/12/2006**
eResearch workspace: Cognition and Disabilities Project: Study of Disability, Cognitive Processing, Violence History and Perpetration
UM Federalwide Assurance: FWA00004969 Expiration 6/12/06

Sincerely,

James Sayer
Chair, IRB Behavioral Sciences

Appendix 9: Certificate of Confidentiality

DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

National Institutes of Health
National Institute of Child Health and Human Development
Bethesda, Maryland 20892

April 26, 2006

Sandra Graham-Burmann, Ph.D.
Associate Professor
Department of Psychology
University of Michigan
530 Church Street
Ann Arbor, Michigan 48109-1043

Dear Dr. Graham-Burmann:

Enclosed is the Confidentiality Certificate protecting the identity of research subjects in your project entitled, "Cognition and Disabilities Project: Study of Disability, Cognitive Processing, Violence History, and Perpetration." Please note that the Certificate expires on September 12, 2006.

Please be sure that the consent form given to research participants accurately states the intended uses of personally identifiable information (including matters subject to reporting) and the confidentiality protections, including the protection provided by the Certificate of Confidentiality with its limits and exceptions.

If you determine that the research project will not be completed by the expiration date, September 12, 2006, you must submit a written request for an extension of the Certificate three months prior to the expiration date. If you make any changes to the protocol for this study, you should contact me regarding modification of this Certificate. Any requests for modifications of this Certificate must include the reason for the request, documentation of the most recent IRB approval, and the expected date for completion of the research project.

Please advise me of any situation in which the Certificate is employed to resist disclosure of information in legal proceedings. Should attorneys for the project wish to discuss the use of the Certificate, they may contact the Office of the NIH Legal Advisor, National Institutes of Health, at (301) 496-6043.

Correspondence should be sent to:

Susan C. Streufert, Ph.D.
Director, Office of Extramural Policy
National Institute of Child Health and Human Development
6100 Executive Boulevard, Room 2C01, MSC 7510
Bethesda, MD 20892-7510
Telephone: (301) 435-6856
Fax: (301) 480-2400

Sincerely,

Susan C. Streufert

Susan C. Streufert, Ph.D.

CONFIDENTIALITY CERTIFICATE

CC-HD-06-18

issued to

University of Michigan

conducting research known as

Cognition and Disabilities Project: Study of Disability, Cognitive Processing, Violence History, and Perpetration

In accordance with the provisions of section 301(d) of the Public Health Service Act 42 U.S.C. 241(d), this Certificate is issued in response to the request of the Principal Investigator, Sandra Graham-Burmann, Ph.D., to protect the privacy of research subjects by withholding their identities from all persons not connected with this research. Dr. Graham-Burmann is primarily responsible for the conduct of this research, which is supported by local funds.

Under the authority vested in the Secretary of Health and Human Services by section 301(d), all persons who:

1. are enrolled in, employed by, or associated with the University of Michigan and their contractors or cooperating agencies and

2. have in the course of their employment or association access to information that would identify individuals who are the subjects of the research pertaining to the project known as, "Cognition and Disabilities Project: Study of Disability, Cognitive Processing, Violence History, and Perpetration,"

are hereby authorized to protect the privacy of the individuals who are the subjects of that research by withholding their names and other identifying characteristics from all persons not connected with the conduct of that research.

The participants for this project are residents of the W. J. Maxey Boys Training School including 207 boys between the ages of 13 and 21. The aim is to evaluate how these boys learn and process information. The results will help to understand why there are so many students with academic problems among incarcerated boys and to develop teaching methods to improve their learning performance. Small groups of students, sitting at individual computers, will first respond to a battery of survey measures, followed by another session consisting of computerized and paper-and-pencil educational tests. Additional information will be obtained from participants medical and educational files.

A Certificate of Confidentiality is needed because the study will collect sensitive information regarding their incarceration and behavior patterns, medical data, and history of family relationships. The Certificate will help researchers avoid involuntary disclosure that could expose subjects or their families to adverse economic, legal, psychological, and social consequences.

All subjects will be assigned a code number and identifying information and records will be kept in locked files at the Institution.

This research began September 13, 2005 and is expected to end on September 12, 2006.

As provided in section 301 (d) of the Public Health Service Act 42 U.S.C. 241(d):

> "Persons so authorized to protect the privacy of such individuals may not be compelled in any Federal, State, or local civil, criminal, administrative, legislative, or other proceedings to identify such individuals."

This Certificate does not protect you from being compelled to make disclosures that: (1) have been consented to in writing by the research subject or the subject's legally authorized representative; (2) are required by the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) or regulations issued under that Act; or (3) have been requested from a research project funded by NIH or DHHS by authorized representatives of those agencies for the purpose of audit or program review.

This Certificate does not represent an endorsement of the research project by the Department of Health and Human Services. This Certificate is now in effect and will expire on September 12, 2006. The protection afforded by this Confidentiality Certificate is permanent with respect to subjects who participate in the research during the time the Certificate is in effect.

Date: 4/26/06

Yvonne T. Maddox, Ph.D.
Deputy Director
National Institute of Child Health
and Human Development

Appendix 10: Educational Records Form

Project Title: Cognition and Disabilities Project: Study of Disability, Cognitive Processing, Violence History and Perpetration

Educational Records Check Sheet

Participant Number _____ Age _____

IQ Measure _____

Verbal IQ _____ Performance IQ _____

Composite IQ _____

IEP (circle one) YES NO

504 Plan (circle one) YES NO

Diagnosed Disability (circle one) YES NO

Disabilities:

1. _____

2. _____

3. _____

Disorder	Past History	Currently Present	Both	Unclear
Cognitive _____	_____	_____	_____	_____
Neurological _____	_____	_____	_____	_____
ADHD _____	_____	_____	_____	_____
Emotional Disturbance _____	_____	_____	_____	_____
Fine Motor _____	_____	_____	_____	_____
Gross Motor _____	_____	_____	_____	_____
Speech _____	_____	_____	_____	_____
Communication _____	_____	_____	_____	_____
Vision _____	_____	_____	_____	_____
Hearing _____	_____	_____	_____	_____

Participant Number _____

Appendix 11: Youth Education Life Survey

Participant Number _____

Youth Educational Life Survey

Thank you for taking the time to participate in our project! We are available to answer questions if you have any. Please answer all questions as honestly as possible.

There are many questions in this survey about things that may not apply to you. If that is the case, please write NA on that question or page, or first page of that set of questions, so we can know that those questions do not apply to you.

Please also know that if you share any new abuses with us (e.g., people who have hurt you or people you have hurt), we will report this information to the proper authorities.

Many of the surveys have two sides.
Please answer every question you are able to.
Please ask questions at any time.
Thank you!

First Name _____ Last Name _____

Unit name _____

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Participant Number _____

The first set of questions asks for information about you and your family.

1. How old are you? _____years

2. In school, what grade did you last complete? (Select one)

____ 6th	____ 9th	____ 12th
____ 7th	____ 10th	____ College (how many years? ___)
____ 8th	____ 11th	

3. Which one of the following BEST describes the family you were raised in (PLEASE CHECK ONLY ONE)?

__ 1. Two parents	__ 4. Mom and partner	__ 7. Grandparent
__ 2. Single mom	__ 5. Dad and partner	__ 8. Foster home
__ 3. Single dad	__ 6. Other relative	

4. Do these describe your family and/or home? Please circle your answer.

	No	Yes	Don't Know
EXAMPLE A. Parent with alcohol or drug problem.	0	(1)	2
A. Parent with alcohol or drug problem.	0	1	2
B. Parent who sold drugs	0	1	2
C. Illness or physical health problems in the family	0	1	2
D. Mental health problems in the family	0	1	2
E. Frequent changes in who lives at home	0	1	2
F. Neglect of children	0	1	2
G. Physical abuse of children	0	1	2
H. Sexual abuse of children.	0	1	2
I. Illegal acts by family members (other than you).	0	1	2
J. Hitting, slapping, punching, or other violence between parents or adults at home.	0	1	2
K. Children being placed outside the family (not counting you).	0	1	2
L. Lots of moves and/or homelessness	0	1	2
M. Very poor (little money, food, clothes, heat, etc.)	0	1	2

Participant Number _____

Please check ALL the ethnic or racial groups you belong to.

____ 1. Black or African American
____ 2. White or Caucasian
____ 3. Hispanic or Latino
____ 4. Asian or Pacific Islander
____ 5. Native American/American Indian
____ 6. Arab American
____ 7. Other (please list)_____

6. Please choose the ONE race or ethnic group you feel closest to.

____ 1. Black or African American
____ 2. White or Caucasian
____ 3. Hispanic or Latino
____ 4. Asian or Pacific Islander
____ 5. Native American/American Indian
____ 6. Arab American
____ 7. Other (please list)_____

7. In general, belonging to my ethnic/racial group is an important part of my self image (how I see myself). Please circle your answer.

Strongly Disagree	Somewhat Disagree	Somewhat Agree	Strongly Agree
1	2	3	4

8. How close do you feel to people of your race or ethnic group? Please circle your answer.

Not Close at All	Not too Close	Fairly Close	Very Close
1	2	3	4

9a. Before you were arrested how important was religion in your life? Please circle your answer.

Not very important		Neutral / Mixed		Very Important
1	2	3	4	5

9b. Since you were arrested how important is religion in your life? Please circle your answer.

Not very important		Neutral / Mixed		Very Important
1	2	3	4	5

10. During the year prior to your arrest how often did you attend religious services and/or gatherings? Place a check next to the best answer for you.

__ 1. several times a week
__ 2. once a week
__ 3. once or twice a month
__ 4. several times a year
__ 5. never

Participant Number _____

11. How many times have you... (Place a circle in the appropriate box): Answer the questions about what you have experienced yourself, not what you have seen on television or in the movies.

	Never	Once or Twice	A Few Times	Many Times
EXAMPLE A. Had somebody threaten to stab you.	(1)	2	3	4
A. Had somebody threaten to stab you.	1	2	3	4
B. Had somebody threaten to shoot you.	1	2	3	4
C. Had somebody threaten to kill you.	1	2	3	4
D. Been beat up.	1	2	3	4
E. Seen a stranger get shot.	1	2	3	4
F. Seen a stranger get stabbed.	1	2	3	4
G. Seen a stranger being beat up.	1	2	3	4
H. Seen a stranger get killed.	1	2	3	4
I. Seen a relative or friend get shot.	1	2	3	4
J. Seen a relative or friend get stabbed.	1	2	3	4
K. Seen a relative or friend get beat up.	1	2	3	4
L. Seen a relative or friend get killed	1	2	3	4
M. Seen somebody get arrested.	1	2	3	4
N. Seen a gun in your home.	1	2	3	4
O. Heard guns being shot (not when hunting animals).	1	2	3	4
P. Seen people having sex	1	2	3	4

Participant Number _____

12. Please indicate how many of each of these types of out of home places you may have lived or received services from. Place a number on each blank to indicate how many placements you have had at that sort of place (Example: 3 Foster Care, if you have lived at three foster homes)

___ A. Foster Care with strangers (not relatives)
___ B. Foster care with relatives
___ C. Group Home
___ D. Locked detention or assessment facility
___ E. Residential treatment program
___ F. Outpatient treatment program
___ G. Residential substance abuse treatment program
___ H. Community substance abuse program
___ I. Other: _____

13. How much time in total have you served in facilities previous to this stay?
_____ Years _____ Months

14. Are you on any medicine prescribed by a psychiatrist?
_____ Yes _____ No

15. Have you begun taking part in a sex offender treatment group?
_____ Yes _____ No

15a. If so, how long have you been in this group (total)?
_____ Years _____ Months

16. How much do you agree with the following statements (please circle your answer)?

	Never	Sometimes	Usually	Most of the time	Always
EXAMPLE a. "I used/abused drugs before my criminal offenses."	1	2	3	(4)	5
a. "I used/abused drugs before my criminal offenses."	1	2	3	4	5
b. "I used/abused alcohol before my criminal offenses."	1	2	3	4	5
c. "I used/abused drugs after my criminal offenses."	1	2	3	4	5
d. "I used/abused alcohol after my criminal offenses."	1	2	3	4	5
e. "I looked at pornography just before my criminal offenses."	1	2	3	4	5

	Never	Sometimes	Usually	Most of the time	Always
f. "I looked at pornography right after my criminal offenses."	1	2	3	4	5
g. "I spent a lot of time planning my criminal offenses."	1	2	3	4	5
h. "I felt guilty about my criminal offenses right after committing them."	1	2	3	4	5

The next section asks you to think about your childhood. All families have disagreements and conflicts. We would like to know about how conflicts are handled in your family.

Please answer some questions about conflict between brothers and/or sisters, specifically - the one with whom you have had the most conflict or hassles. All siblings are troublesome some of the time. At those times children use different ways of trying to settle their differences.

The following is a list of things which YOUR BROTHER OR SISTER might have done when the two of you had a dispute or disagreement.

For each item please tell how often when you were aged 13-18 and then how often when you were aged 6-12 these things occurred.

Please use the following scale
1=Never, 2= a couple times a year, 3=once a month, 4=once a week 5= every day:

	HOW OFTEN (age 13-18)	HOW OFTEN (age 6-12)
EXAMPLE 1. Brother or sister discussed the issue calmly with you.	5	1
1. Brother or sister discussed the issue calmly with you.	___	___
2. Brother or sister got information to back up his or her side of things.	___	___
3. Brother or sister brought in or tried to bring in someone to help settle things.	___	___

Participant Number _____

	HOW OFTEN (age 13-18)	HOW OFTEN (age 6-12)
4. Brother or sister insulted or swore at you.	___	___
5. Brother or sister sulked or refused to talk about it.	___	___
6. Brother or sister stomped out of the room or house or yard.	___	___
7. Brother or sister cried.	___	___
8. Did or said something to spite you.	___	___
9. Intentionally teased or ridiculed you.	___	___
10. Called you names which hurt your feelings.	___	___
11. Threatened to hit, spank or throw something at you. (If yes, please circle which on? Hit, spank or throw?)	___	___
12. Threw or smashed or hit or kicked something, but not you. (If yes, please circle which on? Threw, smashed, hit, or kicked?)	___	___
13. Actually threw something at you.	___	___
14. Tickled you in an abusive way.	___	___
15. Pushed, grabbed, or shoved, or slapped you, hit you or spanked you (If yes, please circle which one.).	___	___
16. Used a belt on you.	___	___

Participant Number _____

	HOW OFTEN (age 13-18)	HOW OFTEN (age 6-12)
17.Kicked you, bit you or beat you up. (If yes please circle which one.)	___	___
18. Threatened to, or actually used a knife or gun on you. (If yes please circle which one.)	___	___

Now you are asked to answer questions about conflict between you and the same brother or sister, describing the things which YOU might have done when the two of you had a dispute or disagreement. For each item please tell how often when you were aged 13-18 and then how often when you were aged 6-12 these things occurred.

Please use the following scale
1=Never, 2= a couple times a year, 3=once a month, 4=once a week 5= every day:

	HOW OFTEN (age 13-18)	HOW OFTEN (age 6-12)
EXAMPLE 1. YOU discussed the issue calmly with your brother or sister.	5	1
1. YOU discussed the issue calmly with your brother or sister.	___	___
2. YOU got information to back up his or her side of things.	___	___
3. YOU brought in or tried to bring in someone to help settle things.	___	___
4. YOU insulted or swore at your brother or sister.	___	___
5. YOU sulked or refused to talk about it.	___	___
6. YOU stomped out of the room or house or yard.	___	___
7. YOU cried.	___	___
8. YOU did or said something to spite your brother or sister.	___	___
9. YOU intentionally teased or ridiculed your brother or sister.	___	___
10. YOU called your brother or sister names which hurt their feelings.	___	___

Participant Number _____

	HOW OFTEN (age 13-18)	HOW OFTEN (age 6-12)
11. YOU threatened to hit, spank or throw something at your brother or sister. (If yes, please circle which on? Hit, spank or throw?)	___	___
12. YOU threw or smashed or hit or kicked something, but not your brother or sister. (If yes, please circle which on? Threw, smashed, hit, or kicked?)	___	___
13. YOU actually threw something at your brother or sister.	___	___
14. YOU tickled your brother or sister in an abusive way.	___	___
15. YOU pushed, grabbed, or shoved, or slapped , hit or spanked your brother or sister (If yes, please circle which one.).	___	___
16. YOU used a belt on your brother or sister.	___	___
17. YOU kicked, bit or beat up your brother or sister. (If yes please circle which one.)	___	___
18. YOU threatened to, or actually used a knife or gun on your brother or sister. (If yes please circle which one.)	___	___

Now you are asked to answer questions about conflict between YOU AND YOUR PARENTS, describing the things which THEY might have done when the two of you had a dispute or disagreement. For each item please tell how often when you were aged 13-18 and then how often when you were aged 6-12 these things occurred. Please indicate WHICH PARENT (mother, father or both) your comments refer to. Use "M" for mother (or mother figure), "F" for father (or father figure) and "B" for both.

Please use the following scale
1=Never, 2= a couple times a year, 3=once a month, 4=once a week 5= every day:

1. Were your parents ever divorced?
_____ Yes _____ No

2. Did either parent ever remarry?
_____ Yes _____ No

3. Which parent? Mother/ Father/ Both (please circle)

Participant Number _____

Please circle M (mother), F (father), B (both)	HOW OFTEN (age 13-18)	HOW OFTEN (age 6-12)
EXAMPLE 1. Parent (M, F, B) discussed the issue calmly with you.	5	1
1. Parent (M, F, B) discussed the issue calmly with you.	___	___
2. Parent (M, F, B) got information to back up his or her side of things.	___	___
3. Parent (M, F, B) brought in or tried to bring in someone to help settle things.	___	___
4. Parent (M, F, B) insulted or swore at you.	___	___
5. Parent (M, F, B) sulked or refused to talk about it.	___	___
6. Parent (M, F, B) stomped out of the room or house or yard.	___	___
7. Parent (M, F, B) cried.	___	___
8. Parent (M, F, B) did or said something to spite you.	___	___
9. Parent (M, F, B) intentionally teased or ridiculed you.	___	___
10. Parent (M, F, B) called you names which hurt your feelings.	___	___
11. Parent (M, F, B) threatened to hit, spank or throw something at you. (If yes, please circle which on? Hit, spank, throw?)	___	___
12. Parent (M, F, B) threw or smashed or hit or kicked something, but not you. (If yes, please circle which on? Threw, smashed, hit, or kicked?)	___	___
13. Parent (M, F, B) actually threw something at you.	___	___
14. Parent (M, F, B) tickled you in an abusive way.	___	___
15. Parent (M, F, B) pushed, grabbed, or shoved, or slapped you, hit you or spanked you (If yes, please circle which one.).	___	___
16. Parent (M, F, B) used a belt on you.	___	___
17. Parent (M, F, B) kicked you, bit you or beat you up. (If yes please circle which one.)	___	___
18. Parent (M, F, B) threatened to, or actually used a knife or gun on you. (If yes please circle which one.)	___	___

Participant Number _____

Now you are asked to answer questions about conflict BETWEEN YOUR PARENTS, describing the things which THEY might have done when the two of THEM had a dispute or disagreement. For each item please tell how often when you were aged 13-18 and then how often when you were aged 6-12 these things occurred. Please indicate WHICH PARENT (mother, father or both) your comments refer to. Use "M" for mother (or mother figure), "F" for father (or father figure) and "B" for both.

Please use the following scale
1=Never, 2= a couple times a year, 3=once a month, 4=once a week 5= every day:

Please circle M (mother), F (father), B (both)	HOW OFTEN (age 13-18)	HOW OFTEN (age 6-12)
EXAMPLE 1. Parent (M, (F), B) discussed the issue calmly with the other parent.	5	1
1. Parent (M, F, B) discussed the issue calmly with the other parent.	___	___
2. Parent (M, F, B) got information to back up his or her side of things.	___	___
3. Parent (M, F, B) brought in or tried to bring in someone to help settle things.	___	___
4. Parent (M, F, B) insulted or swore at the other parent.	___	___
5. Parent (M, F, B) sulked or refused to talk about it.	___	___
6. Parent (M, F, B) stomped out of the room or house or yard.	___	___
7. Parent (M, F, B) cried.	___	___
8. Parent (M, F, B) did or said something to spite the other parent.	___	___
9. Parent (M, F, B) intentionally teased or ridiculed the other parent.	___	___
10. Parent (M, F, B) called you names which hurt the other parent's feelings.	___	___
11. Parent (M, F, B) threatened to hit, spank or throw something at the other parent. (If yes, please circle which on? Hit, spank, throw?)	___	___

Participant Number _____

Please circle M (mother), F (father), B (both)	HOW OFTEN (age 13-18)	HOW OFTEN (age 6-12)
12. Parent (M, F, B) threw or smashed or hit or kicked something, but not the other parent. (If yes, please circle which on? Threw, smashed, hit, or kicked?)	___	___
13. Parent (M, F, B) actually threw something at the other parent.	___	___
14. Parent (M, F, B) tickled the other parent in an abusive way.	___	___
15. Parent (M, F, B) pushed, grabbed, or shoved, or slapped the other parent, hit the other parent or spanked the other parent (If yes, please circle which one.).	___	___
16. Parent (M, F, B) used a belt on the other parent.	___	___
17. Parent (M, F, B) kicked the other parent, bit the other parent or beat up the other parent. (If yes please circle which one.)	___	___
18. Parent (M, F, B) threatened to, or actually used a knife or gun on the other parent. (If yes please circle which one.)	___	___

This section deals with your own behavior. Remember that all your answers are confidential and no one except our research staff will ever see them. I'll read a series of behaviors to you. Please give me your best estimate of the exact number of times you've done each thing during the year before coming to Maxey.

How many times in the year before coming to Maxey have you:

1. Run away from home? _____
2. Skipped school? _____
3. Been suspended or sent home from school? _____
4. Lied about your age to get into someplace or to buy something, for example, lying about your age to get into a movie or to buy alcohol? _____
5. Cheated on school tests? _____
6. Hitchhiked where it was illegal to do so? _____
7. Carried a hidden weapon? _____

Participant Number _____

8. Been loud, rowdy, or unruly in a public place so that people complained about it or you got in trouble? _____

9. Begged for money or things from strangers? _____

10. Made obscene telephone calls such as calling someone and saying dirty things? _____

11. Purposely damaged or destroyed property that did not belong to you. (for example, breaking, cutting or marking up something)? _____

12. Purposely set fire to a house building, car, or other property or tried to do so? _____

13. Broken city curfew laws (that is, been in a public place including out in the street without a parent or other adult during the curfew period from 10:30 p.m. to 5 a.m.) _____

14. Avoided paying for things such as movies, bus or subway rides, food, or computer services? _____

15. Gone into or tried to go into a building to steal something? _____

16. Stolen or tried to steal money or things worth $5 or less? _____

17. Stolen or tried to steal money or things worth between $5 and $50? _____

18. Stolen or tried to steal money or things worth more than $50 but less than $100? _____

19. Stolen or tried to steal money or things worth $100 or more? _____

20. Taken something from a store without paying for it (including events you have already told me about)? _____

21. Snatched someone's purse or wallet or picked someone's pocket? _____

22. Taken something from a car that did not belong to you? _____

23. Knowingly bought, sold or held stolen goods or tried to do any of these things? _____

24. Gone joyriding, that is, taken a motor vehicle such as a car or motorcycle for a ride or drive without the owner's permission? _____

25. Stolen or tried to steal a motor vehicle such as a car or motorcycle? _____

26. Used checks illegally or used a slug or fake money to pay for something? _____

27. Used or tried to use credit or bank cards without the owner's permission? _____

28. Tried to cheat someone by trying to sell them something that was worthless or not what you said it was? _____

29. Attacked someone with a weapon or with the idea of seriously hurting or killing them? _____

30. Hit someone with the idea of hurting them (other than the events you just mentioned)? _____

31. Used a weapon, force or strong-arm methods to get money or things from people? _____

32. Thrown objects such as rock or bottles at people (other than the events you have already mentioned)? _____

33. Been involved in a gang fight? _____

34. Physically hurt or threatened to hurt someone to get them to have sex with you? _____

35. Had or tried to have sexual relations with someone against their will (other than the events you just mentioned)? _____

36. Sold marijuana or hashish? "pot" "grass" "hash" _____

37. Sold hard drugs such as heroin, cocaine or LSD (total frequency of all hard drug sales, not limited to these three drugs)? _____

38. Drunk coffee or tea? _____

39. Used tobacco? _____

Educational History

This survey asks about your educational history. Please answer these questions from your years in elementary and secondary school.

	Not Difficult at all	A little Difficult	Somewhat Difficult	Quite Difficult	Very Difficult
1. How difficult was/is reading for you?	1	2	3	4	5
2. How difficult was/is math for you?	1	2	3	4	5
3. How difficult was/is penmanship (writing letters or numbers) for you?	1	2	3	4	5
4. How difficult was/is spelling for you?	1	2	3	4	5

Participant Number _____

	Not Difficult at all	A little Difficult	Somewhat Difficult	Quite Difficult	Very Difficult
5. How difficult was/is it for you to write your thoughts on paper?	1	2	3	4	5
6. How much do you like school?	1	2	3	4	5

7. Was more than one language spoken in your home? _____ Yes _____ No

8. Was sign language used in your home? _____ Yes _____ No

9. Do you remember someone saying that you had a learning disability or problem?

_____ Yes _____ No

10. Did/do you attend Special Education classes? _____ Yes _____ No

11. How many hours per day did/do you spend in Special Education (not including individual/ group therapy) classes (please mark one)?

0	1	2	3	4	5	All Day

12. Did/do you receive help with reading? _____ Yes _____ No

13. Have you been told that you see letters/numbers "backwards"? _____ Yes _____ No

14. How often do you WRITE letters/numbers "backwards"?

Never	Rarely	Sometimes	Frequently	Nearly Always
1	2	3	4	5

15. Do you remember someone saying that you had/have a problem with SPEECH?

_____ Yes _____ No

16. Do you remember someone saying that you had/have a problem with MEMORY?

_____ Yes _____ No

Participant Number _____

17. Do you remember people saying that they had/have a hard time understanding you when you spoke? _____ Yes _____ No

18. Did/do you receive help with your speech? _____ Yes _____ No

19. How long have you received help with your speech?_____Years. and _____months.

20. How often did/do you feel that you "forgot" words when you were speaking?

Never	Rarely	Sometimes	Frequently	Nearly Always
1	2	3	4	5

The next section asks you to think about the way you handle day to day situations.

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide how much each statement describes you personally. Please indicate how strongly you agree or disagree with each statement.

	Agree Strongly	Agree	Agree Mildly	Neither Agree or Disagree	Disagree Mildly	Disagree	Disagree Strongly
1. No matter who I'm talking to, I'm always a good listener.							
2. I have sometimes taken unfair advantage of another person.							
3. I am always courteous, even to people who are disagreeable.							
4. I sometimes try to get even, rather than forgive and forget.							

Participant Number _____

	Agree Strongly	Agree	Agree Mildly	Neither Agree or Disagree	Disagree Mildly	Disagree	Disagree Strongly
5. I am quick to admit making a mistake.							
6. I sometimes, feel resentful when I don't get my own way.							
7. There have been occasions when I took advantage of someone.							
8. I would never think of letting someone else be punished for my wrongdoing.							
9. At times I have wished that something bad would happen to someone I disliked.							
10. I am always willing to admit when I make a mistake.							

Participant Number _____

On the next pages, you will find a list of statements about feelings. If a statement describes how you usually feel, put on X in the column "Like Me." If the statement does not describe how you usually feel, put an X in the column "Unlike Me." There are no right or wrong answers.

Like Me	Unlike Me	
☐	☐	1. Things usually don't bother me.
☐	☐	2. I find it very hard to talk in front of the class.
☐	☐	3. There are lots of things about myself I'd change if I could.
☐	☐	4. I can make up my mind without too much trouble.
☐	☐	5. I'm a lot of fun to be with.
☐	☐	6. I get upset easily at home.
☐	☐	7. It takes me a long time to get used to anything new.
☐	☐	8. I'm popular with kids my own age.
☐	☐	9. My parents usually consider my feelings.
☐	☐	10. I give in very easily.
☐	☐	11. My parents expect too much of me.
☐	☐	12. It's pretty tough to be me.
☐	☐	13. Things are all mixed up in my life.
☐	☐	14. Kids usually follow my ideas.
☐	☐	15. I have a low opinion of myself.
☐	☐	16. There are many times when I'd like to leave home.
☐	☐	17. I often feel upset in school.
☐	☐	18. I'm not as nice looking as most people.
☐	☐	19. If I have something to say, I usually say it.
☐	☐	20. My parents understand me.
☐	☐	21. Most people are better liked than I am.
☐	☐	22. I usually feel as if my parents are pushing me.
☐	☐	23.I often get discouraged at school.
☐	☐	24. I often wish I were someone else.
☐	☐	25. I can't be depended on.
☐	☐	26. I never worry about anything.
☐	☐	27. I'm pretty sure of myself.
☐	☐	28. I'm easy to like.
☐	☐	29. My parents and I have a lot of fun together.
☐	☐	30. I spend a lot of time daydreaming.
☐	☐	31. I wish I were younger.
☐	☐	32. I always do the right thing.
☐	☐	33. I'm proud of my school work.
☐	☐	34. Someone always has to tell me what to do.
☐	☐	35. I'm often sorry for the things I do.
☐	☐	36. I'm never happy.
☐	☐	37. I'm doing the best work that I can.

Participant Number _____

Like Me	Unlike Me	
☐	☐	38. I can usually take care of myself.
☐	☐	39. I'm pretty happy.
☐	☐	40. I would rather play with children younger than I am.
☐	☐	41. I like everyone I know.
☐	☐	42. I like to be called on in class.
☐	☐	43. I understand myself.
☐	☐	44. No one pays much attention to me at home.
☐	☐	45. I never get scolded.
☐	☐	46. I am not doing as well in school as I'd like to.
☐	☐	47. I can make up my mind and stick to it.
☐	☐	48. I really don't like being a boy.
☐	☐	49. I don't like to be with other people.
☐	☐	50. I'm never shy.
☐	☐	51. I often feel ashamed of myself.
☐	☐	52. Kids pick on me very often.
☐	☐	53. I always tell the truth.
☐	☐	54. My teachers make me feel I'm not good enough.
☐	☐	55. I don't care what happens to me.
☐	☐	56. I'm a failure.
☐	☐	57. I get upset easily when I'm scolded.
☐	☐	58. I always know what to say to people.

In the next section please tell us how frequently you feel this way.

	Never	Some-times	Lots of times	Almost all the time
1. Bad dreams or nightmares				
2. Feeling afraid something bad might happen				
3. Scary ideas or pictures just pop into my head				
4. Pretending I am someone else				
5. Arguing too much				
6. Feeling lonely				
7. Feeling sad or unhappy				

Participant Number _____

	Never	Some-times	Lots of times	Almost all the time
8. Remembering things that happened that I didn't like				
9. Going away in my mind, trying not think				
10. Remembering scary things				
11. Crying				
12. Getting scared all of a sudden and don't know why				
13. Getting mad and can't calm down				
14. Feeling dizzy				
15. Wanting to yell at people				
16. Wanting to hurt myself				
17. Wanting to hurt other people				
18. Feeling scared of men				
19. Feeling scared of women				
20. Washing myself because I feel dirty on the inside				
21. Feeling stupid or bad				
22. Feeling like I did something wrong				
23. Feeling like things aren't real				
24. Forgetting things, can't remember things				
25. Feeling like I'm not in my body				
26. Feeling nervous or jumpy inside				
27. Feeling afraid				

Participant Number _____

	Never	Some-times	Lots of times	Almost all the time
28. Can't stop thinking about something bad that happened to me				
29. Getting into fights				
30. Feeling mean				
31. Pretending I'm somewhere else				
32. Being afraid of the dark				
33. Worrying about things				
34. Feeling like nobody likes me				
35. Remembering things I don't want to remember				
36. Feeling like I hate people				
37. Trying not to have any feelings				
38. Feeling mad				
39. Feeling afraid somebody will kill me				
40. Wishing bad things had never happened				
41. Wanting to kill myself				
42. Daydreaming				

The following section will ask you to think back over your childhood. It might help to remember the places you lived in, who you lived with, and what you did with your time as a child. Please answer the questions while thinking about your childhood.

1. Were you physically abused as a child? _____ Yes _____ No

2. Were you emotionally abused as a child? _____ Yes _____ No

3. Were you sexually abused as a child? _____ Yes _____ No

Participant Number _____

These questions ask about some of your experiences growing up as a child. For each question, circle the number that best describes how you feel. Although some of these questions are of a personal nature, please try to answer as honestly as you can.

When I was growing up . . .	Never true	Rarely true	Some-times true	Often true	Very Often True
1. There was someone in my family whom I could talk to about my problems.	1	2	3	4	5
2. I didn't have enough to eat.	1	2	3	4	5
3. People in my family showed confidence in me and encouraged me to succeed.	1	2	3	4	5
4. Someone in my family hit me or beat me.	1	2	3	4	5
5. I lived in a group home or in a foster home.	1	2	3	4	5
6. I knew that there was someone to take care of me and protect me.	1	2	3	4	5
7. People in my family called me things like "stupid," "lazy," or "ugly."	1	2	3	4	5
8. I was living on the streets by the time I was a teenager or even younger.	1	2	3	4	5
9. My parent(s) were too drunk or high to take care of the family.	1	2	3	4	5
10. People in my family got into trouble with the police.	1	2	3	4	5
11. There was someone in my family who helped me feel important or special.	1	2	3	4	5
12. I had to wear dirty clothes.	1	2	3	4	5
13. I lived with different people at different times (like different relatives or foster families).	1	2	3	4	5
14. People in my family hit me so hard that it left me with bruises or marks.	1	2	3	4	5
15. I had sex with an adult or with someone who was a lot older than me (someone at least 5 years older than me).	1	2	3	4	5

Participant Number _____

When I was growing up . . .	Never true	Rarely true	Some-times true	Often true	Very Often True
16. There was someone in my family who wanted me to be a success.	1	2	3	4	5
17. I was punished with a belt, a board, a cord (or some other hard object.)	1	2	3	4	5
18. People in my family said hurtful or insulting things to me.	1	2	3	4	5
19. I got hit or beaten so badly that it was noticed by someone like a teacher, neighbor, or doctor.	1	2	3	4	5
20. I believe that I was physically abused.	1	2	3	4	5
21. I felt loved.	1	2	3	4	5
22. I spent time out of the house and no one knew where I was.	1	2	3	4	5
23. People in my family felt close to each other.	1	2	3	4	5
24. Someone tried to touch me in a sexual way or tried to make me touch them.	1	2	3	4	5
25. Someone threatened to hurt me or tell lies about me unless I did something sexual with them.	1	2	3	4	5
26. People in my family looked out for each other.	1	2	3	4	5
27. I was frightened of being hurt by someone in my family.	1	2	3	4	5
28. Someone in my family hated me.	1	2	3	4	5
29. I believe that I was emotionally abused.	1	2	3	4	5
30. Someone in my family tried to make me do or watch sexual things.	1	2	3	4	5
31. Someone in my family molested me.	1	2	3	4	5
32. Someone in my family believed in me.	1	2	3	4	5

Participant Number _____

When I was growing up . . .	Never true	Rarely true	Some-times true	Often true	Very Often True
33. I believe that I was sexually abused.	1	2	3	4	5
34. My family was a source of strength and support.	1	2	3	4	5

In answering these questions, think about each item carefully and give the answer that best reflects how you have been feeling during the past few days. Make sure you answer for each of the twenty-one questions.

1. 0 = I do not feel sad.
   1 = I feel sad.
   2 = I am sad all the time and I can't snap out of it.
   3 = I am so sad or unhappy that I can't stand it.

2. 0 = I am not particularly discouraged about the future.
   1 = I feel discouraged about the future.
   2 = I feel I have nothing to look forward to.
   3 = I feel that the future is hopeless and that things cannot improve.

3. 0 = I do not feel like a failure.
   1 = I feel I have failed more than the average person.
   2 = As I look back on my life, all I can see is a lot of failures.
   3 = I feel I am a complete failure as a person.

4. 0 = I get as much satisfaction out of things as I used to.
   1 = I don't enjoy things the way I used to.
   2 = I don't get real satisfaction out of anything anymore.
   3 = I am dissatisfied or bored with everything.

5. 0 = I don't feel particularly guilty
   1 = I feel guilty a good part of the time.
   2 = I feel quite guilty most of the time.
   3 = I feel guilty all of the time.

6. 0 = I don't feel I am being punished
   1 = I feel I may be punished.
   2 = I expect to be punished.
   3 = I feel I am being punished

7. 0 = I don't feel disappointed in myself.
   1 = I am disappointed in myself
   2 = I am disgusted with myself
   3 = I hate my self

Participant Number _____

8. 0 = I don't feel I am any worse than anybody else.
   1 = I am critical of myself for all my weaknesses or mistakes.
   2 = I blame myself all the time for my faults.
   3 = I blame myself for everything bad that happens.

9. 0 = I don't have any thoughts of killing myself.
   1 = I have thoughts of killing myself, but I would not carry them out.
   2 = I would like to kill myself.
   3 = I would kill myself if I had the chance.

10. 0 = I don't cry any more than usual.
    1 = I cry more now than I used to.
    2 = I cry all the time now.
    3 = I used to be able to cry, but now I can't cry even though I want to.

11. 0 = I am no more irritated by things than I ever am.
    1 = I am slightly more irritated now than usual.
    2 = I am quite annoyed or irritated a good deal of the time.
    3 = I feel irritated all the time now.

12. 0 = I have not lost interest in other people.
    1 = I am less interested in other people than I used to be.
    2 = I have lost most of my interest in other people.
    3 = I have lost all of my interest in other people.

13. 0 = I make decisions about as well as I ever could.
    1 = I put off making decisions more than I used to.
    2 = I have greater difficulty in making decisions than before.
    3 = I can't make decisions at all anymore.

14. 0 = I don't feel that I look any worse than I used to.
    1 = I am worried that I am looking old or unattractive.
    2 = I feel that there are permanent changes in my appearance that make me look unattractive.
    3 = I believe that I look ugly.

15. 0 = I can work about as well as before
    1 = It takes an extra effort to get started at doing something.
    2 = I have to push myself very hard to do anything.
    3 = I can't do any work at all

16. 0 = I can sleep as well as usual
    1 = I don't sleep as well as I used to
    2 = I wake up 1-2 hours earlier than usual and find it hard to get back to sleep
    3 = I wake up several hours earlier than I used to and cannot get back to sleep

17. 0 = I don't get more tired than usual
    1 = I get tired more easily than I used to
    2 = I get tired from doing almost anything.

3 = I am too tired to do anything.

18. 0 = My appetite is no worse than usual.
    1 = My appetite is not as good as it used to be.
    2 = My appetite is much worse now.
    3 = I have no appetite at all anymore.

19. 0 = I haven't lost much weight, if any, lately.
    1 = I have lost more than five pounds.
    2 = I have lost more than ten pounds.
    3 = I have lost more than fifteen pounds.

20. 0 = I am no more worried about my health than usual.
    1 = I am worried about physical problems such as aches and pains, or upset stomach, or constipation.
    2 = I am very worried about physical problems and it's hard to think of much else.
    3 = I am so worried about my physical problems that I cannot think about anything else.

21. 0 = I have not noticed any recent change in my interest in sex.
    1 = I am less interested in sex than I used to be.
    2 = I am much less interested in sex now.
    3 = I have lost interest in sex completely.

Below we have described 4 different ways that people are when they are with other people. Please read each description and decide how much you are like each one when you are with people.

	Not at all like me			Kind of like me			Very much like me
A. It is easy for me to feel close to people. I feel okay asking people for help and I know that they will usually help me. When people ask me for help, they can count on me. I don't worry about being alone and I don't worry about others not liking me.	1	2	3	4	5	6	7
B. It is hard for me to feel close to people. I want to be close to people, but I find it hard to trust them. I find it hard to ask people for help. I worry that if I get too close to people they will end up hurting me.	1	2	3	4	5	6	7

Participant Number _____

	Not at all like me			Kind of like me			Very much like me
C. I want to be really close to people, but they don't want to get that close to me. I am unhappy if I don't have people that I feel close to. I sometimes think that I care about people more than they care about me.	1	2	3	4	5	6	7
D. I don't care if I am close to people. It is very important for me not to ask for help, because I like to do things on my own. I don't like it if people ask me for help.	1	2	3	4	5	6	7

Think about all of the people in your life. Now read each of the following statements and rate how much it describes your feelings.

	Like Me				Not Like Me
1.I find it hard to count on other people.	5	4	3	2	1
2. It is very important to me to feel independent.	5	4	3	2	1
3.I find it easy to get emotionally close to others.	5	4	3	2	1
4.I worry that I will be hurt if I become too close to others.	5	4	3	2	1
5.I am comfortable without close emotional relationships.	5	4	3	2	1
6.I want to be completely emotionally close with others.	5	4	3	2	1
7.I worry about being alone.	5	4	3	2	1
8.I am comfortable depending on other people.	5	4	3	2	1
9.I find it difficult to trust others completely.	5	4	3	2	1

Participant Number _____

	Like Me				Not Like Me
10.I am comfortable having other people depend on me.	5	4	3	2	1
11.I worry that others don't value me as much as I value them.	5	4	3	2	1
12. It is very important for me to do things on my own.	5	4	3	2	1
13. I'd rather not have other people depend on me.	5	4	3	2	1
14.I am kind of uncomfortable being emotionally close to people.	5	4	3	2	1
15.I find that people don't want to get as close as I would like.	5	4	3	2	1
16.I prefer not to depend on people.	5	4	3	2	1
17.I worry about having people not accept me.	5	4	3	2	1

Appendix 12: Youth Self-Report

Please print

YOUTH SELF-REPORT FOR AGES 11-18

For office use only
ID #

YOUR FULL NAME: First Middle Last

YOUR GENDER ☐ Boy ☐ Girl

YOUR AGE

YOUR ETHNIC GROUP OR RACE

TODAY'S DATE Mo._____ Date _____ Yr. _____

YOUR BIRTHDATE Mo._____ Date _____ Yr. _____

GRADE IN SCHOOL _____

NOT ATTENDING SCHOOL ☐

IF YOU ARE WORKING, PLEASE STATE YOUR TYPE OF WORK:

PARENTS' USUAL TYPE OF WORK, even if not working now. *(Please be specific — for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)*

FATHER'S TYPE OF WORK _____

MOTHER'S TYPE OF WORK _____

Please fill out this form to reflect *your* views, even if other people might not agree. Feel free to print additional comments beside each item and in the spaces provided on pages 2 and 4. ***Be sure to answer all items.***

I. Please list the sports you most like to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.

☐ None

	Compared to others of your age, about how much time do you spend in each?			Compared to others of your age, how well do you do each one?		
	Less Than Average	Average	More Than Average	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐

II. Please list your favorite hobbies, activities, and games, other than sports. For example: cards, books, piano, cars, computers, crafts, etc. (Do ***not*** include listening to radio or watching TV.)

☐ None

	Compared to others of your age, about how much time do you spend in each?			Compared to others of your age, how well do you do each one?		
	Less Than Average	Average	More Than Average	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐

III. Please list any organizations, clubs, teams, or groups you belong to.

☐ None

	Compared to others of your age, how active are you in each?		
	Less Active	Average	More Active
a. _____	☐	☐	☐
b. _____	☐	☐	☐
c. _____	☐	☐	☐

IV. Please list any jobs or chores you have. For example: paper route, babysitting, making bed, working in store, etc. (Include ***both*** paid and unpaid jobs and chores.)

☐ None

	Compared to others of your age, how well do you carry them out?		
	Below Average	Average	Above Average
a. _____	☐	☐	☐
b. _____	☐	☐	☐
c. _____	☐	☐	☐

Be sure you answered all items. Then see other side.

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Please print. Be sure to answer all items.

Below is a list of items that describe kids. For each item that describes you ***now or within the past 6 months***, please circle the ***2*** if the item is ***very true or often true*** of you. Circle the ***1*** if the item is ***somewhat or sometimes true*** of you. If the item is ***not true*** of you, circle the ***0***.

0 = Not True **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

0 1 2 1. I act too young for my age
0 1 2 2. I drink alcohol without my parents' approval (describe): _____
_____
0 1 2 3. I argue a lot
0 1 2 4. I fail to finish things that I start
0 1 2 5. There is very little that I enjoy
0 1 2 6. I like animals
0 1 2 7. I brag
0 1 2 8. I have trouble concentrating or paying attention
0 1 2 9. I can't get my mind off certain thoughts; (describe): _____
_____
0 1 2 10. I have trouble sitting still
0 1 2 11. I'm too dependent on adults
0 1 2 12. I feel lonely
0 1 2 13. I feel confused or in a fog
0 1 2 14. I cry a lot
0 1 2 15. I am pretty honest
0 1 2 16. I am mean to others
0 1 2 17. I daydream a lot
0 1 2 18. I deliberately try to hurt or kill myself
0 1 2 19. I try to get a lot of attention
0 1 2 20. I destroy my own things
0 1 2 21. I destroy things belonging to others
0 1 2 22. I disobey my parents
0 1 2 23. I disobey at school
0 1 2 24. I don't eat as well as I should
0 1 2 25. I don't get along with other kids
0 1 2 26. I don't feel guilty after doing something I shouldn't
0 1 2 27. I am jealous of others
0 1 2 28. I break rules at home, school, or elsewhere
0 1 2 29. I am afraid of certain animals, situations, or places, other than school (describe): _____
_____
0 1 2 30. I am afraid of going to school
0 1 2 31. I am afraid I might think or do something bad
0 1 2 32. I feel that I have to be perfect
0 1 2 33. I feel that no one loves me
0 1 2 34. I feel that others are out to get me
0 1 2 35. I feel worthless or inferior
0 1 2 36. I accidentally get hurt a lot
0 1 2 37. I get in many fights
0 1 2 38. I get teased a lot
0 1 2 39. I hang around with kids who get in trouble
0 1 2 40. I hear sounds or voices that other people think aren't there (describe): _____
_____
_____
0 1 2 41. I act without stopping to think
0 1 2 42. I would rather be alone than with others
0 1 2 43. I lie or cheat
0 1 2 44. I bite my fingernails
0 1 2 45. I am nervous or tense
0 1 2 46. Parts of my body twitch or make nervous movements (describe): _____
_____
_____
0 1 2 47. I have nightmares
0 1 2 48. I am not liked by other kids
0 1 2 49. I can do certain things better than most kids
0 1 2 50. I am too fearful or anxious
0 1 2 51. I feel dizzy or lightheaded
0 1 2 52. I feel too guilty
0 1 2 53. I eat too much
0 1 2 54. I feel overtired without good reason
0 1 2 55. I am overweight
56. Physical problems ***without known medical cause:***
0 1 2 a. Aches or pains (***not*** stomach or headaches)
0 1 2 b. Headaches
0 1 2 c. Nausea, feel sick
0 1 2 d. Problems with eyes (***not*** if corrected by glasses) (describe): _____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe): _____
_____

 Be sure you answered all items. Then see other side.

Please print. Be sure to answer all items.

V. 1. About how many close friends do you have? (Do *not* include brothers & sisters)

❒ None ❒ 1 ❒ 2 or 3 ❒ 4 or more

2. About how many times a week do you do things with any friends outside of regular school hours? (Do *not* include brothers & sisters)

❒ Less than 1 ❒ 1 or 2 ❒ 3 or more

VI. Compared to others of your age, how well do you:

	Worse	Average	Better	
a. Get along with your brothers & sisters?	❒	❒	❒	❒ I have no brothers or sisters
b. Get along with other kids?	❒	❒	❒	
c. Get along with your parents?	❒	❒	❒	
d. Do things by yourself?	❒	❒	❒	

VII. 1. Performance in academic subjects. ❒ I do not attend school because _____

Check a box for each subject that you take	Failing	Below Average	Average	Above Average
a. English or Language Arts	❒	❒	❒	❒
b. History or Social Studies	❒	❒	❒	❒
c. Arithmetic or Math	❒	❒	❒	❒
d. Science	❒	❒	❒	❒
e. _____	❒	❒	❒	❒
f. _____	❒	❒	❒	❒
g. _____	❒	❒	❒	❒

Other academic subjects–for example: computer courses, foreign language, business. Do ***not*** include gym, shop, driver's ed., or other nonacademic subjects.

Do you have any illness, disability, or handicap? ❒ No ❒ Yes—please describe:

Please describe any concerns or problems you have about school:

Please describe any other concerns you have:

Please describe the best things about youself:

Be sure you answered all items.

Please print. Be sure to answer all items.

0 = Not True **1 = Somewhat or Sometimes True** **2 = Very True or Often True**

0 1 2 57. I physically attack people
0 1 2 58. I pick my skin or other parts of my body (describe): _____
_____
0 1 2 59. I can be pretty friendly
0 1 2 60. I like to try new things
0 1 2 61. My school work is poor
0 1 2 62. I am poorly coordinated or clumsy
0 1 2 63. I would rather be with older kids than kids my own age
0 1 2 64. I would rather be with younger kids than kids my own age
0 1 2 65. I refuse to talk
0 1 2 66. I repeat certain acts over and over (describe):
_____
_____
0 1 2 67. I run away from home
0 1 2 68. I scream a lot
0 1 2 69. I am secretive or keep things to myself
0 1 2 70. I see things that other people think aren't there (describe):_____
_____
0 1 2 71. I am self-conscious or easily embarrassed
0 1 2 72. I set fires
0 1 2 73. I can work well with my hands
0 1 2 74. I show off or clown
0 1 2 75. I am too shy or timid
0 1 2 76. I sleep less than most kids
0 1 2 77. I sleep more than most kids during day and/or night (describe): _____
_____
0 1 2 78. I am inattentive or easily distracted
0 1 2 79. I have a speech problem (describe): _____
_____
0 1 2 80. I stand up for my rights
0 1 2 81. I steal at home
0 1 2 82. I steal from places other than home
0 1 2 83. I store up too many things I don't need (describe): _____
_____
0 1 2 84. I do things other people think are strange (describe): _____
_____
0 1 2 85. I have thoughts that other people would think are strange (describe):_____
_____
0 1 2 86. I am stubborn
0 1 2 87. My moods or feelings change suddenly
0 1 2 88. I enjoy being with people
0 1 2 89. I am suspicious
0 1 2 90. I swear or use dirty language
0 1 2 91. I think about killing myself
0 1 2 92. I like to make others laugh
0 1 2 93. I talk too much
0 1 2 94. I tease others a lot
0 1 2 95. I have a hot temper
0 1 2 96. I think about sex too much
0 1 2 97. I threaten to hurt people
0 1 2 98. I like to help others
0 1 2 99. I smoke, chew, or sniff tobacco
0 1 2 100. I have trouble sleeping (describe): _____
_____
0 1 2 101. I cut classes or skip school
0 1 2 102. I don't have much energy
0 1 2 103. I am unhappy, sad, or depressed
0 1 2 104. I am louder than other kids
0 1 2 105. I use drugs for nonmedical purposes (***don't*** include alcohol or tobacco) (describe): _____
_____
_____
_____
0 1 2 106. I like to be fair to others
0 1 2 107. I enjoy a good joke
0 1 2 108. I like to take life easy
0 1 2 109. I try to help other people when I can
0 1 2 110. I wish I were of the opposite sex
0 1 2 111. I keep from getting involved with others
0 1 2 112. I worry a lot

Please be sure you answered all items.

Please write down anything else that describes your feelings, behavior, or interests:

Appendix 13: SCAN-A

SCAN·A

A Test for Auditory Processing Disorders in Adolescents and Adults

Robert W. Keith

Name / I.D. No. _____

School _____

City _____ State _____

Age _____ Grade _____ Gender M F

Examiner _____

Position _____

Is English the subject's dominant language? Yes _ No _

Date of Testing _____ YEAR MONTH DAY

Date of Birth _____ YEAR MONTH DAY

Chronological Age _____ YEAR MONTH DAY

Pure Tone Results

	500 Hz	1000 Hz	2000 Hz	4000 Hz
RE				
LE				

Behavioral Observations

Tympanogram Results Results

	Pressure	Shape	Compliance
RE			
LE			

Middle ear pressure reported in mm H20 or daPa.
Tympanogram shape reported as peaked (P), rounded (R), or flat (F).
Compliance reported in cc equivalent volume.

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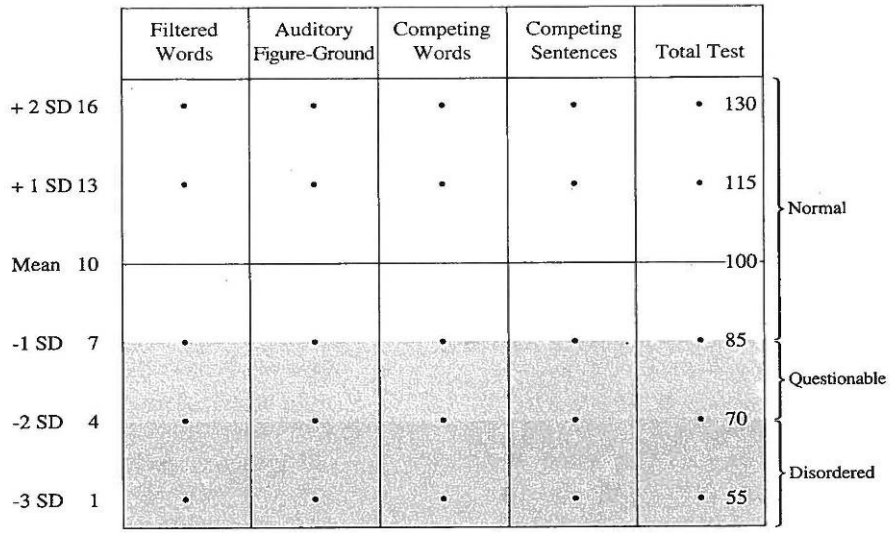
SCORING SUMMARY

Age _____	Raw Score	Standard Score	Standard Score Confidence Range 68% Confidence Level	Percentile Rank
Filtered Words			to	
Auditory Figure-Ground			to	
Competing Words			to	
Competing Sentences			to	
Sum of Standard Scores				
Total Test Standard Score			to	



Competing Words Ear Advantage	
Right Ear Total	
Left Ear Total	—
Ear Advantage	
Right Ear Advantage _____ Left Ear Advantage _____	

Subtest 1 Filtered Words

IMPORTANT: Make certain that headphones are placed over the correct ears.

DIRECTIONS: After the Practice Items are presented to each ear, the Test Items are presented to the RIGHT ear first. Circle + for words repeated correctly. Circle – for an incorrect response or no response. *Optional:* Write substitutions on the line beside the word. Mark a line through omitted words.

RIGHT EAR				LEFT EAR			
Practice Items							
a. that	+	–		c. man	+	–	
b. white	+	–		d. room	+	–	
Test Items							
1. had	+	–		21. those	+	–	
2. did	+	–		22. grew	+	–	
3. need	+	–		23. air	+	–	
4. own	+	–		24. mouth	+	–	
5. leave	+	–		25. low	+	–	
6. you	+	–		26. great	+	–	
7. on	+	–		27. such	+	–	
8. may	+	–		28. hot	+	–	
9. find	+	–		29. wide	+	–	
10. if	+	–		30. duck	+	–	
11. yes	+	–		31. card	+	–	
12. while	+	–		32. way	+	–	
13. most	+	–		33. put	+	–	
14. bad	+	–		34. five	+	–	
15. true	+	–		35. box	+	–	
16. no	+	–		36. ride	+	–	
17. ship	+	–		37. hit	+	–	
18. lay	+	–		38. is	+	–	
19. them	+	–		39. sing	+	–	
20. wait	+	–		40. tree	+	–	

Right Ear Score _____ / 40 Left Ear Score _____

Filtered Words Subtest Score _____

Subtest 2 Auditory Figure-Ground

IMPORTANT: Make certain that headphones are placed over the correct ears.

DIRECTIONS: After the Practice Items are presented to each ear, the Test Items are presented to the RIGHT ear first. Circle + for words repeated correctly. Circle – for an incorrect response or no response. *Optional:* Write substitutions on the line beside the word. Mark a line through omitted words.

RIGHT EAR				LEFT EAR			
Practice Items							
a. race	+	–	_____	c. his	+	–	_____
b. cat	+	–	_____	d. turn	+	–	_____
Test Items							
1. all	+	–	_____	21. sheep	+	–	_____
2. back	+	–	_____	22. loud	+	–	_____
3. end	+	–	_____	23. hurt	+	–	_____
4. take	+	–	_____	24. pass	+	–	_____
5. coat	+	–	_____	25. bee	+	–	_____
6. me	+	–	_____	26. drop	+	–	_____
7. gray	+	–	_____	27. quick	+	–	_____
8. case	+	–	_____	28. nest	+	–	_____
9. thick	+	–	_____	29. thank	+	–	_____
10. sell	+	–	_____	30. sled	+	–	_____
11. next	+	–	_____	31. frog	+	–	_____
12. got	+	–	_____	32. park	+	–	_____
13. path	+	–	_____	33. neck	+	–	_____
14. bag	+	–	_____	34. bus	+	–	_____
15. day	+	–	_____	35. shop	+	–	_____
16. feet	+	–	_____	36. key	+	–	_____
17. rain	+	–	_____	37. fat	+	–	_____
18. fair	+	–	_____	38. shoe	+	–	_____
19. waste	+	–	_____	39. tall	+	–	_____
20. ball	+	–	_____	40. feed	+	–	_____
Right Ear Score _____				Left Ear Score _____			

Auditory Figure-Ground Subtest Score _____

Subtest 3 Competing Words

IMPORTANT: Make certain that headphones are placed over the correct ears.

DIRECTIONS: In the right-ear-first task, the subject should repeat both words, saying the word heard in the RIGHT ear first. In the left-ear-first task, the subject should repeat both words, saying the word heard in the LEFT ear first. Circle + for words repeated correctly. Circle + even if the subject repeated both words, but in reverse order. Circle – for an incorrect response or no response.

RIGHT-EAR-FIRST TASK						LEFT-EAR-FIRST TASK					
Practice Items											
a. low	+	–	smile	+	–	c. is	+	–	put	+	–
b. else	+	–	bad	+	–	d. true	+	–	great	+	–
Test Items											
1. waste	+	–	cage	+	–	1. most	+	–	ball	+	–
2. need	+	–	case	+	–	2. pass	+	–	seed	+	–
3. may	+	–	them	+	–	3. fall	+	–	card	+	–
4. feed	+	–	path	+	–	4. laugh	+	–	dress	+	–
5. large	+	–	find	+	–	5. lay	+	–	rain	+	–
6. feet	+	–	thank	+	–	6. ride	+	–	gray	+	–
7. dog	+	–	thick	+	–	7. fire	+	–	you	+	–
8. dark	+	–	hot	+	–	8. name	+	–	bank	+	–
9. show	+	–	clown	+	–	9. hide	+	–	knee	+	–
10. race	+	–	home	+	–	10. shake	+	–	car	+	–
11. bag	+	–	day	+	–	11. wide	+	–	use	+	–
12. sell	+	–	fly	+	–	12. yes	+	–	as	+	–
13. white	+	–	get	+	–	13. mouth	+	–	grew	+	–
14. dad	+	–	on	+	–	14. air	+	–	camp	+	–
15. are	+	–	cow	+	–	15. duck	+	–	ship	+	–

Right Ear Score _____ Right Ear Score _____ Right Ear Total _____

Left Ear Score _____ Left Ear Score _____ Left Ear Total _____

Competing Words Subtest Score _____

Subtest 4 Competing Sentences

IMPORTANT: Make certain that headphones are placed over the correct ears.

DIRECTIONS: In the right ear task, the subject should repeat the sentence heard in the RIGHT ear. In the left ear task, the subject should repeat the sentence heard in the LEFT ear. Circle + for sentences repeated verbatim. Circle – for an incorrect response or no response.

	RIGHT EAR		LEFT EAR	
Practice Items				
a.	R. The rain came down. L. She found her purse.	+ –	R. They broke all the eggs. L. The box was full.	+ –
b.	R. They helped the driver. L. He climbed the ladder.	+ –	R. They knocked on the window. L. He dropped his money.	+ –
Test Items				
1.	R. The park is near the road. L. The dog drank from a bowl.	+ –	R. The child drank some milk. L. They skated on the pond.	+ –
2.	R. The dinner plate is hot. L. The lady ate a pear.	+ –	R. The scissors are sharp. L. The oven is hot.	+ –
3.	R. The floor looked clean. L. The man came early.	+ –	R. The baby was pretty. L. Some people are coming.	+ –
4.	R. People are going home. L. The lady washed the shirt.	+ –	R. The fruit came in a box. L. They met some new friends.	+ –
5.	R. The washing machine broke. L. The bath water was warm.	+ –	R. She brushed her hair. L. They're staying for supper.	+ –
6.	R. The ground was very hard. L. The kitchen clock was wrong.	+ –	R. The store closed for lunch. L. The football game is over.	+ –
7.	R. They washed in cold water. L. The family bought a house.	+ –	R. The match fell on the floor. L. He wore his yellow shirt.	+ –
8.	R. The room is getting cold. L. The dog jumped on the chair.	+ –	R. The grass is getting long. L. The boy slipped on the stairs.	+ –
9.	R. They broke all the eggs. L. The tire had a flat.	+ –	R. The children are all eating. L. The mother heard her baby.	+ –
10.	R. The car is going fast. L. The paint dripped on the ground.	+ –	R. The police chased the car. L. The apple pie was hot.	+ –

Right Ear Score ____ Left Ear Score ____

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Competing Sentences Subtest Score _____

17 18 19 20 A B C D