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Cognitive Factors in Sexually Aggressive Children

by

David L. Burton

A dissertation submitted in partial fulfillment
of the requirements for the degree of

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Approved by Louayne Gilchrist
Chairperson of Supervisory Committee

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Doctoral Dissertation

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A handwritten signature in black ink, appearing to be "J. E. ...", written over a horizontal line.

Date

3-7-96

University of Washington

Abstract

Cognitive Factors in Sexually Aggressive Children

by David L. Burton

Chairperson of the Supervisory Committee: Professor Lewayne Gilchrist
School of Social Work

This project explored a Social Cognitive Model applied to 6-12 year old male sexually aggressive children in Washington state care. The 37 sexually aggressive children's results on cognitive measures (Children's Knowledge of Abuse Questionnaire, Social Problem Solving Measure, Matson's Evaluation of Social Skills for Youth) and behavioral measures (Child Behavior Checklist, Eyeberg's Inventory, Child Sexual Behavior Inventory), were compared to physically aggressive children (17) and non aggressive children (15) also in state care using development and Intelligence Quotient as mediator variables (Vineland Inventory, Inventory of Piaget's Developmental Tasks and Kaufman's Brief Intelligence Test). The sexually aggressive and physically aggressive children have distortions about their aggressive behaviors. The sexually aggressive children have some distortions regarding touching. Cognitive deficiencies were not found.

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Dedication

This is dedicated to Anne, William David and Julia. We are all only at the beginning. I love you all!

Chapter 1

Literature Review

Introduction

Child abuse and child sexual abuse have been increasingly addressed in social work and psychology research (Trocme, McPhee & Tam, 1995; Ronai, 1995; Coulborn-Faller & Corwin, 1995; Berliner, 1993; Mennen, 1993; Conte, 1992; Rasmussen, 1994). One element within these general problem areas has received far less attention: children who sexually abuse other children. This social problem has been increasingly visible in the past 10 years. In 1988 three articles were published in professional journals about “sexually aggressive children” (Johnson, 1988; Friedrich and Luecke, 1988; Cantwell, 1988). All three were published by clinicians who also were involved in research. They were only the first group of clinicians to notify the professional community of the issue. Shortly, news about sexually aggressive children began to be seen in popular literature (Bellingham-Herald, 1990; Rolling Stone Magazine, 1991; Seattle Post Intelligencer, 1993; Houston Chronicle, 1991). Simultaneously, concern about definitions and conceptualization of the problem (Okami, 1991, 1992), and more research and treatment ideas were published in the professional journals (Johnson & Berry, 1989; Henderson, English and MacKenzie, 1989; Gil & Johnson, 1994; Berliner & Conte, 1993; Cunningham & MacFarlane, 1991; Friedrich, 1993). As concern grew and awareness spread, treatment programs have rapidly developed. From Cantwell’s complaint over lack of services in Colorado in 1988 and Johnson and Berry’s (1989) discussion of the one nationally known treatment program in the same year, there are now over 400 programs nationally which work with

sexually aggressive children with new programs starting each week (Freeman-Longo, 1994). Despite the fact that many treatment programs are now in place, surprisingly little theory based empirical work has sought understanding of the mechanisms behind sexually aggressive behavior in children. This dissertation project builds on the knowledge available regarding sexually aggressive children by studying latency aged boys in the social welfare system of Washington state.

This chapter discusses definitions and challenges of defining sexually aggressive behavior. It provides scientific background regarding sexually aggressive children and concludes with a section summarizing the significance of the problem.

Defining the Problem of "Sexually Aggressive" Behavior

Defining sexual aggression by adults or by children is not a simple task. Many behavioral and cognitive factors have been considered, yet no definitive definition has been agreed upon. More has been written about sexually aggressive adults who abuse children than about sexually aggressive children. In such a discussion, Conte (1991) explains that:

“Professionals working with victims have tended to define sexual abuse of children along three dimensions: an age *difference* of five years or more between the child and offender; *specific sexual behaviors*...and sexual intent wherein the intent of the behavior is the sexual gratification of the adult. It is assumed that a child cannot give *informed consent* to sexual contact with an adult...and that the child does not have the power to decline involvement”
(p.16) (Emphasis in original).

Conte (1991) finds a lack of clarity in the various definitions of sexual abuse of children by adults. Issues which lack precision include the abusers intent and how sexual behaviors might have different meanings in individual families or across different cultures. He concludes that clinical judgment is required for this sort of decision on a case by case basis; "The 'gray' area cases cannot be finally resolved here. It is important to note that defining behavior between an adult and child as *sexual abuse* does, in some cases, require professional judgment"(p.17).

When children have sex with other children there is even less clarity of definition and perhaps greater need for professional judgment. In the case of child-child abuse, the age difference between the victim and the perpetrator is often less than 5 years, consent giving and taking is not much different for children who are close in age and there is less power differential between individuals. Nonetheless, there are some child-child sexual abuse cases that seem to provoke no argument when force is used by one child to unwilling penetrate another sexually (Gil & Johnson, 1994; Friedrich, 1992). A more ambiguous situation can be seen in the clinical case example of Felicia X. Felicia is 8 years old. She was watching over her 6 year old brother as her mother was in bed with a fever. While watching TV, the children began to play a game of 'Doctor' in which each would undress and examine each other's body, including genitalia. When Felicia examined her brother's penis, she put it into her mouth, saying that she was taking its temperature. At that moment, a neighbor happened to look into a window on the side of the house and saw the incident. The neighbor then immediately called Children's Protective Services (CPS). In this actual case, the CPS investigation revealed that neither child was upset, consensus between the

children was not clearly violated and no force was used. This case may not be amenable to current rules or definitions of sexual aggression by children. Conte's conclusion regarding the lack of ability to resolve the gray areas and the need for professional judgment to decide whether or not a child-child interaction is sexually abusive fits well with service provision for children who act sexually who may not be clearly sexually aggressive.

Johnson (1988, 1989) and Johnson and Berry (1989), in their work with sexually aggressive children, used a set of standards for admission to a treatment program in California where she undertook her research. Johnson and Berry wrote that each child must meet all of the following criteria.

1. They had acted in a sexual way with another child.
 2. They had used force or coercion in order to obtain the participation of the other child, or the victim was too young to realize he/she was being violated and did not resist the sexual behavior, or it was an offense such as exhibitionism.
 3. There was generally an age differential of at least two years for children 9 years or older. The age differential for younger children may be less. It was not always the older child who initiated the sexual behaviors.
 4. There was a pattern of sexually overt behavior in their history
- (Johnson & Berry, 1989, p.188)

Comparing Johnson's work to the points in Conte's discussion of definitions for adults, the areas of age difference, sexual behavior, possible inability to give informed consent, and use of force are included in both discussions as well as a history of overt sexual behavior for children. Similar to Conte's (1991) concerns about the definition of sexual abuse or use of children, problems of definition are not resolved for sexual abuse or sexual aggression between children. Some parts of Johnson and Berry's definition have been sharply criticized by Okami (1992) who is concerned about this use of the undefined terms of 'coercion' and 'force'. This field of research is still relatively new. Such concern with definitions is an expected heuristic and an important struggle as the field develops.

"Normative" Sexual Activity for Children

As with any problem behavior, it is helpful and important to ask what non-problematic, normative, or in this case, non-aggressive, sexual behavior among children is. Bill Friedrich and colleagues have examined this question using a sample of 880, 2-12 year old, community children who responded negatively to an interview asking if they had been sexually abused (Friedrich, Grambsch, Damon, Hewitt, Koverola, Lang, Wolfe and Broughton, 1992). This study was conducted specifically to develop a scale of sexual behavior for children. The researchers found that "The frequency of different behaviors varied widely, with more aggressive and sexual behaviors and behaviors imitative of adults being rare" (p.456). The information collected was via the Child Sexual Behavior Inventory (CSBI) which is administered to parents. The following table represents a sampling of the 42 behaviors and percentages of those who reported their children as engaging in them (see Table 1.1).

Table 1.1
A Range of Responses to CSBI

Scratches crotch	52.2%
Touches sex parts at home	45.8%
Sits with crotch exposed	36.4%
Talk flirtatiously	10.6%
Uses sexual words	8.8%
Imitates intercourse	1.1%
Inserts objects in vagina/anus	.9%
Puts mouth on sex parts	.1%

Note. From Friedrich et al. (p.460); n=880

The researchers found that children do things that might be considered sexual, such as touching one's own genitalia, or acting flirtatiously. Items such as kissing non- family children (33.9%) and trying to look at people undressing (28.5%), as reported by parents, were things that may be seen as common and probably not as indicative of an abuse history from a clinical perspective (Coulborn-Faller & Corwin, 1995). Yet no item of actual sexual interaction with or touching of others (other than kissing) was reported by more than 6% (touches others' sex parts). Friedrich (personal communication, November, 1994) does not see these findings as constituting a standard for normalcy, but rather as the beginning of understanding sexual behavior of children.

The issue of defining normative sexual behavior for children is unfinished. The differences between sexual play or 'Playing Doctor', and the forced and non-consensual sexual penetration of other children that has been reported in the professional literature (Friedrich & Luecke, 1988; Johnson, 1988) may seem clear,

but the lines between normal sexual behavior and somewhat aggressive sexual behavior is an area for much research and consideration.

One approach to studying abnormal behavior is to look at statistically unusual or aberrant behaviors. Burton, Nesmith, and Badten (1995) used Friedrich's et al.'s (1992) standards and their clinical experience to develop a table of abnormal sexual behaviors for children. Note however that these behaviors are numerically rare, based on Friedrich et al.'s work and the researcher's clinical experience with children and families (see Table 1.2).

Table 1.2

An Operational Definition of Sexually Abnormal Behaviors

Abnormal for all age groups:

Verbal threats and/or

use of force and/or

Physical restraint..

...when used to solicit sexual interaction and/or when offering a misleading or tempting gift or promise in exchange for sexual interaction

<u>Age</u>	<u>Normal</u>	<u>Abnormal</u>
0-6	Touching own genitals	Genital kissing
	Discussing bodily functions	Oral-genital sex
	Interest in looking at other's	Simulated intercourse
	bathroom activities	Penetration with finger,
	Touching another's genitalia,	object, or penis into mouth,
	but quickly responding to	anus, or vagina of another.
	re-direction	
	Showing genitals to peers	

(Table 1.2 Continued)

6-10	Touching own genitals Masturbating Interest in viewing other's bodies Using sex words, sex jokes Seeking information about sex	Genital kissing Oral-genital sex Simulated intercourse Penetration with finger, object, or penis into mouth, anus, or vagina of another.
10-12	Masturbating With peers, consensual: kissing, fondling, sexual penetration and/or same sex activity	Sexual activity with children 2 or more years younger than subject.

Note. From Burton, Nesmith & Badten, 1995 (p. 4).

This table was distributed as selection criteria for a survey regarding sexually aggressive children detailed below. Five respondents to the survey voiced some concern about these definitions. Other researchers have also run into concerns regarding specific parts of definitions or selected terminology and have stopped using 'sexually aggressive' as a term and instead have begun to use the term 'children with sexual behavior problems'. This places the definition of the problem on a moral or societal standard rather than on objective criteria. This is how social problems are often defined. For an answer to this dilemma, each researcher must then use clear definitions or at least agreed upon, well delineated standards for his/her operational definitions based upon the apparently agreed upon foundations, even if defined differently in various studies, which include force, lack of consensus, and sexual behavior.

"Sexual Aggression" Among Children

While we have very little data about what is normative sexual behavior, there is a small history in the professional literature about sexual aggression by children. Waggoner and Boyd (1941) presented twelve case studies of varying degrees of sexual inappropriateness and molestation by adolescents. Waggoner and Boyd observed sexually aggressive behaviors at early ages, stating that, "in at least one-half of the cases the perverse practices began between the ages of 6 and 10 years" (p. 289). This study concluded that etiology of the sexually abusive behavior could be traced to ineffective parenting, poor relationships between children and parents, lack of community supports, and to the youth's disposition. Bender and Grugett (1952) also reported on the histories and experiences of children who had atypical sexual experiences. Of the 14 children they discussed, 9 clearly exhibited sexually aggressive and coercive behavior towards other children. Bandura and Walters (1963) utilized cases of children with sexually inappropriate behaviors as case examples to explain social learning theory regarding sexual aggression.

Limited descriptive information regarding sexually aggressive children is available, and is usually gathered outside of an existing theoretical perspective. Johnson (1988, 1989) described some of the behaviors of both boys (n=47) and girls (n=13) in a treatment program for sexually aggressive children (see Table 1.4).

Table 1.3
Sample of Sexually Aggressive Boy's Behaviors

Fondling	37%
Genital contact without permission	20%
Anal penetration with penis	12%
Oral copulation	10%
Vaginal penetration with penis	8%
Anal penetration with finger	4%
Simulated intercourse	3%
Vaginal penetration with finger	3%
Exposing of the genitals	2%
Anal penetration with objects(s)	2%

Note. From Johnson, 1988; n=47.

Sample of Sexually Aggressive Girl's Behaviors

Fondling	13%
Genital contact without permission	13%
Oral copulation	12%
Simulated intercourse	11%
Anal penetration with finger	8%
Vaginal penetration with finger	6%
Vaginal penetration with objects(s)	6%
Intercourse	1%
French kissing	1%

Note. From Johnson, 1989; n=13.

In Johnson's work the mean age of the boys at the time they committed the first known act of sexual perpetration was 8 years, 9 months, while the mean age for the girls was 6 years, 7 months.

The two other descriptive studies (Burton, Nesmith & Badten, 1995, Friedrich & Luecke, 1988) reported similar behaviors. Johnson was the first to detail the specific sexual acts and to outline some of the criterion for study

inclusion. All of the studies also reported correlates of sexually aggressive behavior in their samples.

Correlates of "Sexual Aggression" Among Children

Consistent and strong correlates of sexual aggression by children in the professional literature include a history of the child having been sexually abused or victimized, parental chemical dependency and parental histories of having been sexually abused. These findings have been reported in at least two of the four descriptive studies of sexually aggressive children (Burton, Nesmith & Badten, 1995; Friedrich & Luecke, 1988; Johnson, 1988, 1989). Additional correlates reported in at least one study include the children having a mental health diagnosis, school problems, poor child-parent relationships, and parental pathology.

The most consistent correlate is that of the sexually aggressive children having been sexually abused. In Friedrich & Luecke's (1988) investigation of a sample of 16 sexually aggressive children, thirteen (81%) of the children had been sexually abused. Johnson (1988, 1989) reported on 50 children in her two descriptive studies of sexually aggressive children. Forty-nine percent of the boys (n=47) and 100% of the girls (n=13) were known to have been sexually abused. Additionally, Johnson discovered that children who began their sexually aggressive behaviors by age 6 or younger had a significantly higher incidence of sexual victimization themselves than children who began perpetrating between 7 and 11 years old. Burton, Nesmith and Badten (1995) in a survey of clinicians regarding sexually aggressive children with whom they were working (n=287) found that 44% of the children were sexually abused by their father, foster father,

or father figure, while 16% were sexually abused by their mother, foster mother, or mother figure .

The next consistent finding was that the sexually aggressive children's parents were chemically dependent. Friedrich and Luecke (1988) reported that many of the parents (mothers) were chemically dependent. Johnson (1988, 1989) reported that 73% of her sample's parents had a history of drug and/or of alcohol abuse. While Burton, Nesmith and Badten (1995) found that the children had an average of 1.5 chemically dependent caretakers. Of those responding to the question, 70% indicated at least one chemically dependent caretaker

Two of the studies reported that many of the sexually aggressive children's parents had been sexually and/or physically abused. Johnson (1988, 1989) found that over 80% of the parents were physically or sexually abused. Burton, Nesmith and Badten (1995) reported that 48% of the children had at least one parent who was known to have been sexually abused, usually their mother (30%).

Other correlates have been reported in at least one of the four studies. Friedrich & Luecke found that in this study the children all had DSM-III diagnoses "characterized by aggressiveness" (p.160) including conduct and oppositional disorder. They also reported that all of the school-aged children had school problems and they observed that fifty percent of the parent-child relationships were judged as poor and that only one was rated as good. They also assessed parental pathology in some of the families using the Minnesota Multiphasic Personality Inventory (MMPI) with several positive findings indicating personality problems.

Significance of "Sexual Aggression" by Children

Prevalence of sexual abuse by children is indeterminable at this time. Given all of the data reviewed above, less than 400 sexually aggressive pre-pubertal children have been discussed in the research and treatment literature. This information has come from the states of Washington, California and Minnesota with one study being national in scope (Burton, Nesmith & Badten, 1995). Yet there are 400 programs for sexually aggressive children nationally (Freeman-Longo, 1994). The problem of sexual aggression by children appears to be reaching the awareness of treatment providers as well as researchers.

The motivation behind practitioner's and researcher's increased interest is not necessarily evident upon first examination of the small amount of data about sexually aggressive children. It seems as if it might be a small problem which affects very few people. However, there is much data available on adult and adolescent sexual aggressors which illustrates facts which clarify the need for further research and treatment provision. A majority of sexually aggressive men report that they have been sexually aggressive and/or had sexually aggressive fantasies from adolescence and childhood (Abel & Rouleau, 1990; Prentky & Knight, 1993). Hunter (1994) has found that sexually aggressive adolescents have a trajectory, a development, from childhood into adolescence that begins with less intrusive behaviors such as exhibitionism and leads to more severe behaviors such as rape. In some cases, this progression may be very short in time, in other cases it may take many months or years. A similar progression can also be found for aggression of other sorts (Hall & Hirschman, 1993). These children, or some of them, may then develop into adult sexual aggressors. Sexual aggressors have

reported an average of 22 to over 300 victims each prior to incarceration and/or treatment (Able & Rouleau, 1990; Groth & Freeman-Longo, 1979).

The problem of sexual abuse is quite large. Incidence has been reported at .7 per 1000 children per year (Peters, Wyatt & Finkelhor, 1986). Prevalence rates have been reported as being "...from 6% to 62% for females and from 3% to 31% for males" (Peters, Wyatt & Finkelhor, 1986). Often used prevalence figures are 20% for females and 10% for males (Finkelhor & Lewis, 1988; Finkelhor, Hotaling Lewis & Smith, 1990). Even if these figures are somewhat varied (due to different definitions and methodologies) these numbers added to the cases which must go unreported due to social and legal sanctions result in the conclusion that sexual abuse of children is a large social problem. While it is probably safe to assume that not all sexual abuse is perpetrated by adults who were sexually aggressive children, any sexual abuse that can be halted by stopping potential perpetrators early in their careers is worth great effort.

Chapter 2

The Role of Theory in Understanding Sexual Aggression

Many theories have been used to explain the etiology of sexually aggressive behavior. Biological researchers have investigated hormonal imbalance, brain waves, brain structure and dysfunction as causal factors for sexual aggression. They have found that biological dysfunction can be seen as contributory in some cases, but is not sufficient to explain sexually aggressive behavior (Flor-Henry, Lang, Koles & Frenzel, 1991; Howitt, 1995; Bain, Langevin, D'Costa, Sanders & Hucker, 1988; Langevin, 1990; Quinsey, 1984; Regestein & Reich, 1978).

In the psychodynamic approaches Freud considered perversion to begin in childhood development, "...as being given up by the child in response to social conditioning and educational pressures" (Howells, 1981, p.57). In later writings Stoller (as cited in Howells, 1981) saw perverse thoughts as ego defenses to childhood trauma. Feminist approaches are frequently credited for bringing attention to the problem (Marshall, Laws & Barbaree, 1991) and discuss normal socialization as a large part of the cause of sexual aggression (Daigle & Harris, 1989; Brownmiller, 1975). Attachment theory (Marshall & Eccles, 1993), evolutionary adaptation (Thornhill and Thornhill, 1992), multi-component atheoretical explanations (Finkelhor, 1986; Marshall & Barbaree, 1990; Hall & Hirschman, 1992), and learning and cognitive theories (Johnston, Hudson & Marshall, 1992; Ryan, 1987; Howitt, 1995; Abel & Rouleau, 1990) have all been applied. The most frequently used approach is derived from learning and cognitive theories (Howitt, 1995). As early as 1888 Binet wrote that sexual deviation was

learned behavior (as cited in McGuire, Carlisle & Young, 1965). Learning theory approaches were originally posited within behavioral or conditioning paradigms.

This chapter outlines learning and cognitive-behavioral theories and their application to aggression and sexual aggression. It then offers the utilization of Bandura's (1986) social cognitive theory, a descendent of the earlier learning approaches, to sexual aggression by children and concludes with an outline of research implied by this theory.

This choice of theory for sexual aggression by children is guided by Popper's (1963) work which is frequently used for guidelines in evaluation of theory. He wrote that "...potential satisfactoriness...characterizes as preferable the theory which tells us more; that is to say, the theory contains the greater amount of empirical information or *content*; which is logically stronger; which has the greater explanatory and predictive power; and which can therefore be *more severely tested* by comparing predicted facts with observations." (p.217)

A critical and often discussed part of Popper's work was his belief that, ideally, theory should be easily testable or potentially refutable by empirical evaluation. For this to occur, theoretical conceptualization has to have great internal logic (so that the theory is not tautological and is internally consistent) and external logic (so that the theory does not attempt to contradict data already in hand). Variables have to be clearly defined and separable from one another and their relationships need to be clear. These ideas and concepts are frequently revisited in discussions of theory (Sheldon, 1995).

In discussing evaluation of theory as applied to social work, Sheldon (1995) agrees with Popper's concepts and adds useful applicability of a chosen

theory to a chosen problem as an important criterion for judgment of theoretical conceptualization. Theory should lead directly to practice. Cognitive-behavioral theory has been helpful in understanding the behavior of adult sexual offenders and since cognitive-behavioral theory and methods have proven useful around a variety of clinical issues with children, it is my contention that this approach can be usefully extended to children's sexual behaviors. It is the most frequently claimed and used theory in addressing sexual aggression by not only children (87% of the programs known in the largest survey available with an n of 400 programs) but also by adolescents and adults (Freeman-Longo, 1994). Yet, even with this degree of use, cognitive-behavioral models have not been tested or evaluated empirically for children. The theoretical application proposed in the next sections was chosen as the best fit for the problem by both Popper's and Sheldon's criteria.

Conditioning and Learning Approaches to Aggression and to Sexual Aggression

The traditional explanatory mechanisms of learned behavior are: classical conditioning, operant conditioning and modeling or vicarious learning. After reviewing these three forms of learning, material from a derivative theory, cognitive-behavioral theory, is reviewed and applied to aggression and sexual aggression.

Classical Conditioning

In classical conditioning, Pavlovian or respondent conditioning, a process of learning occurs which begins with an unconditional stimulus (e.g., the smell of fresh bread) and an unconditional response (e.g., salivation). A relationship between these two already exists prior to new learning. A conditioned stimulus

(e.g., the ringing of a bell) is then paired with the unconditional stimulus. This results in a conditioned response (e.g.; salivation to the sound of the bell).

In research with adults, McGuire, Carlisle and Young (1965) originally conceptualized that pairing of masturbation with deviant fantasies would result in deviant sexual behaviors. The origin of the deviance might be a negative early sexual experience such as being sexually abused (this occurred for three-quarters of their 45 patients). The resultant fantasies paired with masturbation would increase in deviancy over time as recall and 'accidental focus' on particular parts of the fantasies occur. McGuire, Carlisle and Young conceptualized that the offender would eventually act on these deviant fantasies.

Rachman (1966) paired pictures of women's boots and erotica for men and found that eventually the picture of the boots alone would elicit erectile response. Seeing that the boots may have some erotic meaning prior to the experiment for some of the men, McConaghy (1970) used what seemed to be a truly neutral stimulus, red circles and green triangles which he found could eventually elicit erectile responses. These studies evaluate the ability of erectile response to be linked to and stimulated by originally neutral stimuli, not whether conditioning is the method of obtaining or maintaining deviant sexual interest. After McGuire, Carlisle and Young (1965) and Rachman (1966), consideration of learning in sexual aggression grew in the professional literature and other forms of learning were considered.

Operant Conditioning

Operant conditioning is the form of learning in which the acquisition of new responses results from the consequences of behavior. It can be found in more recent research on sexual aggression (Howell, 1981; Haugaard & Tilly, 1988).

Ryan (1987) hypothesized this form of learning for sexually aggressive adolescents. She hypothesized consequences of sexually aggressive behavior, including orgasm and possible social or other consequences, result in increased frequency of the behavior. The question implicit in this type of learning is what is it that a person finds rewarding? Rewards for sexual behavior could be of many types including physical (e.g., orgasmic), emotional (e.g., feelings of control or satisfaction) and social (e.g., being socially praised by an abuser for abusing another child). The application of this form of learning to sexual aggression is most frequently faulted for not being able to explain why a person would sexually aggress in the first place. Thus, the third form of learning, vicarious learning, has been most often applied to sexual aggression.

Vicarious Learning

Vicarious learning or modeling is the form of learning which might best be called 'imitation'. It is the process through which behavior is observed and then imitated and hence learned. Speech is frequently given as an example of a vicariously learned behavior (Sheldon, 1995). Vicarious learning has been applied to aggression as well as to sexual aggression. Once the behavior is modeled and imitated it is assumed that a person's knowledge or cognitions about the behavior has been learned and/or altered in some form. Recent research of this sort has

been labeled as cognitive-behavioral as not only the behavioral but also the learning or cognitive elements of this process have been considered.

Vicarious Learning and Cognitive-behavioral Research on Physical Aggression

"All theoretical models of aggression assume that aggressive behavior is, to some degree...learned" (Festbach as cited in Goldstein, 1986). The concept of learned aggression has been utilized and explored for many years. Research has amply supported the concept that when aggression is modeled for a child, it is more likely to be learned and to be reenacted when the child reaches adulthood than for a child who has not experienced or witnessed aggression. (Goldstein, 1986; Chilano, 1994). For sexually aggressive children, many of whom have been sexually abused, thereby for whom sexual aggression has been modeled, there appears to be a greater likelihood that they learned their sexual aggression by vicarious learning, although this has not yet been investigated as other than a correlate.

The cognitive correlates of children witnessing aggression and then exhibiting similar behaviors, or of learning physical aggression via modeling, have been researched. Primarily this research can be found regarding two cognitive problems: cognitive distortions and cognitive deficiencies. Cognitive distortions can be facts that have been taught which are incorrect or thoughts that were derived from experience which disagree with society's conventional rules. Dodge & Newman (1981) found that aggressive children tend to mis-attribute motives in vignettes in which people are behaving ambiguously towards them. If a person walks up to the child and his/her intent is unclear then the aggressive child may tend to think that the person is hostile and is going to attack them, perhaps

leading the child to be very defensive and perhaps offensive in the interaction. The child could have a belief system which indicates that people with ambiguous behaviors are hostile. This would be called, according to this literature, a cognitive distortion. These distortions may be the basis for their aggressive behaviors. Dodge & Frame (1982) found that in problem solving tasks aggressive children's responses to social problems are aggressive, especially when the problems involve a clearly hostile or ambiguous act towards the child.

Cognitive deficiencies have also been found in aggressive children by several researchers. A cognitive deficiency is either a lack of a cognitive skill or a lack of cognitive resources. Dodge & Frame (1982) found that in problem solving, for example, aggressive children will come up with fewer and deficient (unlikely to accomplish the stated goal) solutions when compared to non-aggressive children. Keltikangas-Jarvinen and Kangas (1988) also found a lack of problem solving skills in aggressive children. Kendall and colleagues have similarly reported that aggressive and impulsive children have cognitive deficiencies in problem solving and other cognitive skills in several studies (Kendall & Braswell, 1993; Kendall, 1985; Kendall, Reber, McLeer, Epps & Ronan, 1990).

Neither Dodge and colleagues nor Kendall and colleagues have yet extended their ideas to sexually aggressive behavior by children, though similar ideas have been applied to research on adult sexual aggressors.

Vicarious Learning and Cognitive-behavioral Research on Sexual Aggression

In applying vicarious learning and cognitive-behavioral theories to sexually aggressive individuals, two issues have frequently been discussed; childhood victimization (i.e., sexual abuse) and resultant cognitive distortions

regarding sexual behavior. The most frequently discussed cognitive-behavioral correlate of sexually aggressive behavior is sexual aggressors' experience of sexual victimization as a child based on the assumption that through this experience, the sexual aggressor learns sexually aggressive behaviors. This victimization may be as a victim or as a witness or both. Studies have indicated that 30% to 55% of adult sexual aggressors have experienced and/or witnessed sexual victimization as a child (Garland & Dougher, 1990; Longo & McFaddin, 1982; Hunter, 1994; Groth & Freeman-Longo 1979). This is also true for adolescents, but at a higher rate (50-65%; Becker, Cunningham-Rathner & Kaplan 1987; Hunter, 1994). Lastly, for sexually aggressive children, rates of having been sexually victimized range from 65% - 100% (Hunter, 1994, Gil & Johnson, 1994; Friedrich & Luecke, 1988; Burton, Nesmith &, Badten, 1995).

The hypothesis of victims turning into aggressors as a learned reaction to their personal experiences with sexual aggression has been discussed and debated for many years (Finkelhor, 1986; Ryan, 1989; Garland & Dougher, 1990; Freund, Watson & Dickey, 1990). Garland and Dougher (1990) in a thorough review of this literature found rates of up to 57% of adult sex offenders who molest children reporting that they had been sexually victimized. They comment on methodological difficulties including difficulties in obtaining samples (and the characteristics of those available as related to external validity) and problems in measurement. In their analysis they report a number of factors that may "...interact with sexual contact with an adult to contribute to the intergenerational perpetuation of this behavior" (p.500). The child's age at the time of the abuse may be a factor, although the literature is unclear as to whether a younger or older

child is more "traumatized" by sexual interaction with adults. Another factor they consider important is that of "pre-existing emotional disturbance or psychiatric disorder" (p. 500) which may make the child more likely to repeat the behaviors. Social skills deficits may be an important lack which may increase the likelihood of sexual aggression as a child struggles to attain appropriate relationships. If social skills are lacking, sexual aggression may be more likely as a way to obtain intimacy, power, or other rewards. Situational factors (e.g., severity, frequency, and type of perpetration) may also be important factors that may increase the likelihood of learning sexually aggressive behaviors. Lastly, the "...child's knowledge and attitudes about sex" (p.501) may also be incorrect, differing from beliefs normally agreed upon. For example, the child may have incorrect beliefs or cognitive distortions (e.g.; it is all right to force someone to have sex) based upon observation and interpretation of his/her own victimization.

Cognitive distortions which are apparently the result of sexual victimization have been explored in the sexual aggression literature. Abel, Becker, and Cunningham-Rathner (1984) have argued for a cognitive approach to understanding sexual aggression. In a clinical research project, they developed a list of ten cognitive distortions found in clinical work with adult sexual aggressors. An example of one of these is "Having sex with a child is a good way for an adult to teach the child about sex" (p.99). Abel, Becker, and Cunningham-Rathner did not say whether these cognitive beliefs were post hoc rationalizations or ideas that the aggressor (perhaps from being sexually abused himself) learned from others. From this point, Abel (as cited in Gore, 1988) developed a cognitive

distortions scale which was designed to measure whether or not and to what degree an adult person has these distortions.

Gore (1988) evaluated the ability of Abel's measure to discriminate groups of sexual aggressors from professionals and others available to fill out the survey who were not known as sexual aggressors. Gore asked series of questions with the Cognitive Distortions Scale such as:

... If a young child stares at my genitals it means the child likes what she (he) sees and is enjoying watching my genitals.
 ... A child who doesn't physically resist an adult's sexual advances, really wants to have sex with the adult. (From Gore, 1988, p. 134)

Gore then asked for endorsement using a five point likert scale going from strongly disagree to strongly agree for each question. The instrument was easily able to discriminate between the sexually aggressive and other groups in a statistically significant fashion.

Stermac and Segal (1989), based on Abel's work, developed a process to evaluate some of the cognitive distortions. They presented case examples to adult subjects which varied on degree of sexual contact (touching only to genital contact with ejaculation) and on the child's response (smiling to crying and resistant). These were followed by a list of questions designed to elicit the distortions such as "1.) Do you think the child enjoyed what happened?" and "2.) Do you think the child wanted this to happen" (p.577). Their procedure was able to discriminate between groups of adult male sexual aggressors and non-aggressors, supporting the existence of cognitive distortions in the sexual aggressors.

Other researchers have similarly found cognitive distortions about sexuality in sexual aggressors. Hanson, Gizzarelli and Scott (1994) investigated the belief systems of 50 adult incest offenders and compared them to 25 physically battering men and to 25 non-treatment community volunteers. The adult sexual aggressors were significantly different from the other two groups in their attitudes about children's sexual attractiveness and motivation and the amount of harm caused to a sexually abused child by sexual aggressors in the expected direction. Briere, Malamuth, and Check (1985) in investigating rape supportive beliefs, or cognitive distortions, found positive relationships between those beliefs and sexually aggressive behaviors.

Although only one study was found, cognitive deficits have also been identified in adult sexual aggressors. Lipton, McDonel, and McFall (1987) found cognitive deficits in social cue interpretation of imprisoned rapists when compared to incarcerated non-rapists.

Research has also found cognitive distortions in adolescent sex offenders. Ryan, Lane, David and Issac (1987) share case histories of adolescents with cognitive distortions about sex and sexual aggression as they posit an essentially cognitive model of sexual aggression. Becker, Hunter, Stein and Kaplan (1989) found that "adolescent sex offenders, with a history of sexual victimization, who in turn had sexually abused male children, showed a more deviant erectile response pattern than those adolescents who had not been so abused" (p. 360) supporting their contentions that a) the abuse may have affected the learning of this group of offenders and that b) this learning was exemplified by the physiological behavior of erection. It is important to note that this research was a

comparison of sexually aggressive youth who had been abused and who had not been abused. The etiology of the sexually aggressive behavior of the group of those who have not been abused is not examined in this study or others and is a weakness in application of the theory to date. It is possible that many of those in the non-abused group did not report being abused due to shame or other reasons (Abel & Rouleau, 1990); yet, this seems unlikely to account for all of that group.

Research regarding cognitive distortions and sexually aggressive children has not yet been undertaken. However, preliminary work regarding children, vicarious learning and sexual aggression has begun with the investigation of apparent behavioral effects or sequelae of being sexually victimized. Friedrich, Urquiza, and Beilke (1986) evaluated a sample of 85 abused children using the Child Behavior Checklist (CBCL) which evaluates problem behaviors. "The fact that a much larger than expected number of the children were displaying significant behavior problems...suggests that for many children, the abuse appears to have an impact reflected in behavior problems"(p.54). Most commonly elevated behavioral problems for boys "were aggression, depression and social withdrawal...sexual behaviors were also very much more common in this sample than expected " (p.55). These researchers found that both thoughts and behaviors were affected by sexual abuse. While a pre and post design was not used the data were compared to norms for the instrument involved. Yet it is difficult to know how these children acted and thought prior to their abuse thereby disallowing a causal model that rules out alternate etiologies for thoughts and behaviors.

Kendall-Tackett, Williams, and Finkelhor (1993) undertook a meta-analysis of 45 studies of abused children and reported related findings. Of the

behaviors reported in sexually abused children, the most frequently cited sequelae of sexual abuse is that of inappropriately sexualized behavior (as reported in 25 of the studies). Eight of these 25 studies used comparison groups and six found that the sexually abused children demonstrated more sexualized behavior than did the non-abused children. The average effect size for this behavior was .66. Similar results were reported for aggression, which was reported in 24 of the studies with an effect size of .66. Other areas were also assessed in the meta analysis including the more cognitive areas of depression, self esteem, and learning problems. All of these areas were reported in several studies as being exhibited by sexually abused children and in some studies as being exhibited more often by sexually abused children than by non-abused children. These findings seem to validate and clarify Friedrich, Urquiza, and Beilke's (1986) earlier conclusions that sexual abuse does indeed affect sexual behavior and cognitive skills and products.

One study attempted to investigate the cognitive changes resultant from being victimized in sexually aggressive children. Burton, Nesmith, and Badten (1995) applied a simple triadic social learning model (behaviors, experience and cognition relating to and changing each other) to sexually aggressive children. The variables in the model were drawn from clinician's perspectives about the children's learning environment including abuse, family background and parenting information as well as whether or not the children believed that sexually aggressive behavior was normal. Remembering the potential validity problems of a clinician and a clinical sample and of the question of 'normality' in particular, the clinicians reported that a majority of the children did express the cognitive distortion that sexually aggressive behavior was normal (68.8%) and that this

group of children started showing sexually aggressive behaviors at significantly earlier ages compared with the children who did not feel that sexually aggressive behaviors were normal.

The unclear link in these discussions is one of understanding the relationship between thoughts and behaviors. Researchers and clinicians alike assume, or so the research seems to reflect, that if one exhibits sexually aggressive behaviors it is due to some greater distortion of cognitive process and/or product (beliefs). The questions that arise from this presumption include; what was learned, how was it learned, how does this learning change behavior and why do some children learn these things and not others? These important questions have not yet been answered. Before answering these challenges, basic model development and research regarding sexually aggressive children's cognitive learning and experiences is in order.

Social Cognitive Theory

Developed from vicarious learning approaches and inclusive of cognitive-behavioral approaches to behavior, Bandura (1986) has outlined his social cognitive model to include four overall processes in the learning of behavior which begins with observation. Using this model he explains his primary understanding of how people learn and then act out behaviors.

Attentional processes, regulate exploration and perception of modeled activities; through *retention processes*, transitory experiences are converted for memory representation into symbolic conceptions that serve as internal models for response production and standards for response corrections; *production processes* govern the organization of constituent subskills into new response

patterns; and *motivational processes* determine whether or not observationally acquired competencies will be put to use (Bandura, 1986, p.51).

The first area that Bandura discusses in the process of learning is characteristics of the events that are learned or modeled (i.e.; attentional processes). Bandura discusses *salience, prevalence, affective valence, complexity, and functional value* (of the new behavior) as factors which may change the way a modeled event is learned. Salience may be increased as instructors of a behavior try to capture more attention by using increased emotion or other methods. The greater the prevalence of the modeling event the more likely it will be learned. Affective valence is related to the learner's emotions regarding the person modeling the behavior as well as the learner's current emotional state. A learner is more likely to learn accurately if he/she is emotionally close to the person modeling behaviors (e.g.; a parent vs. a stranger).

In terms of the observer's cognitive attributes under attentional processes, Bandura writes that the greater the level of skill the observer has in this area, the more capable the observer will be able to learn the behavior accurately. If the event is too complex for the observer, due to cognitive factors or deficits, the learning will be "fragmentary" (Bandura, p. 53). This may result in non-successful or inaccurate production of the behavior. Sexual aggression can be a very complex behavior involving not only sexual acts but things such as victim grooming, detailed and complex planning of the aggression (Conte, 1991), and other potentially non-visible or hard to conceptualize behaviors given a child's developmental level.

In retention processes, coding of words and experiences into the memory in some coded or imagery form is required for learning to be stored. This process is not completely understood, but storage of knowledge is assumed to occur for later retrieval and reenactment. Bandura posits that greater cognitive skills and development would result in greater retention, learning ability and accuracy of performance.

In behavioral production, Bandura conceptualizes that learned and stored imagery or process translates into behavior. Bandura writes that new behaviors are generally learned as a whole and then reproduced rather than learned and reproduced in parts. A concept or *cognitive representation* has been learned. A child then enacts the concepts and observes how closely his behavior matches his concept ("concept matching"). Errors can occur in the original conception of the behavior, in the enactment, in misunderstanding the feedback or in any of the other parts of this process.

Lastly, Bandura addresses motivations for behavior by outlining different types of incentives and motivations for behaviors. He writes that incentives can be completely internal, reminds the reader that delayed gratification is always possible, and that this is one of the most debated parts of his theory of human behavior (p. 74). Bandura (1986) states that :

In the social cognitive view, observational learning occurs through cognitive processing during exposure to modeled events before any responses have been performed and does not necessarily require extrinsic reward...incentives are facilitative rather than necessary, because factors other than anticipated consequences can influence what people attend to (p. 76 & 77).

Bandura also discussed "nonrewarded modeling" for children who may have found that experience in the past has told them that they should follow what adults say.

Application of Social Cognitive Theory to Sexually Aggressive Children

Applying the four parts of Bandura's model to sexually aggressive children, attentional processes are foremost. A sexually aggressive child, who may have fewer cognitive skills, may also have had attentional processes which were exaggerated when he was victimized. He may have had greater severity of, or higher exposure to, sexual abuse. Children who are more severely abused more often act out sexually, sometimes aggressively (Kendall-Tackett, Williams, Finkelhor, 1993; Friedrich, Urquiza & Beilke, 1986). Evaluating this situation, two results in learning are probable. The first is that the child may have problems in accuracy of learning due to cognitive deficits. He may directly learn cognitive distortions from his aggressor (i.e.; his sexual perpetrator) or he himself may conclude various things about sexual aggression (e.g., "...painful and forced sex is good"). The second is that the sexually aggressive child may have been more likely to learn this behavior in some fashion due to greater opportunities (due to greater severity or exposure to sexual abuse) or to exaggeration of attentional processes.

The second part of the model is that of retention of learned information. Throughout Bandura's theoretical positions, he writes that increased cognitive skill and ability will result in more accurate learning at every stage of the process. A sexually aggressive child may have stored or coded the cognitive representation of the behavior incorrectly, thereby enacting it incorrectly or incompletely due to

its complexity, with internal incentive processes leading him to continue the behavior. He may have realized that he was not enacting the behavior correctly, but not understood what was wrong so continued to repeat the behavior to match his cognitive representation.

The next part of the model is the production of behavior from the encoded information. A sexually aggressive child, due to possible cognitive deficits and the characteristics of his abuse and attentional processes, is also a likely candidate for poor production of sexually aggressive behavior. A child with less severe abuse may be less likely to act out sexually or to become sexually aggressive (Kendall-Tackett, Williams & Finkelhor 1993; Friedrich, Urquiza & Beilke, 1986). A child with greater cognitive skill might have learned about the behavior including its punishment, or may have been better able to resolve the cognitive distortions he was exposed to as he learned about relationships and sexuality from many different sources (beyond just his abuser) thereby decreasing the likelihood of being sexually aggressive.

Finally, the motivation or incentives for sexually aggressive behavior by children must be evaluated. This question has been discussed for adult sexual aggressors many times and the hypotheses essentially state that the motivation for the behavior can be sexual, one of power and motivation or related to a need to decrease anxiety (Wolf, 1988; Bentovim, 1991; Hollin & Howells, 1991; Marshall & Barbaree, 1990. Ryan (1989) discussed physical pleasure as a strong incentive for adolescent sex offenders. For sexually aggressive children, although not researched, discussion has included similar factors and the re-mastery of traumatic

experiences (for those children who have also been sexually victimized) using a Post-traumatic Stress Disorder model (Gil & Johnson, 1994).

Other events may have led to cognitive distortions for a sexually aggressive child. His mother may have also been sexually abused (Friedrich & Luecke, 1988; Burton, Nesmith & Badten, 1995). She may not have known, due to her own trauma, what to teach her child about sexuality and she may herself have been confused on the topic, thereby unintentionally misleading her child. Perhaps the child's errors in cognitive process led him to develop cognitive distortions via poor symbolic representation resulting in his thinking that it is acceptable to sexually aggress against others even when they asked him to stop.

English (personal communication, September, 1995) has found in preliminary results that many of the sexually aggressive children in DSHS care are labeled cognitively impaired. Kahn (personal communication, March, 1995) who works clinically with many sexually aggressive children, also reports that a large number of those he sees are cognitively impaired. Rather than assuming that all sexually aggressive children are cognitively impaired and/or have cognitive distortions and deficiencies, a smaller group may fit this description. This is the group of children (and of adults and adolescents) who have been the focus of research, the clinical and incarcerated population identifiable as sexually aggressive and available to researchers. Some of these people have not been or have not reported being sexually abused as children, but the distortions and deficiencies may be the results of other learning experiences. Friedrich et al. (1992) found that family nudity was associated with increased sexual behavior, perhaps resulting in cognitive distortions about appropriate nudity and sexual

behaviors with others. Howells (1981) proposed a sexual learning theory in which children who are sexual become conditioned to being aroused by young bodies. Considering the number of the sexually aggressive children's parents who have been abused themselves, perhaps the learning process is more subtle and added to other learning experiences which may lead to reinforcement resulting in sexually aggressive behaviors for some youth.

Sexually aggressive children, or at least many of them, have been sexually abused or witnessed sexual abuse. From the theoretical discussion above, it seems that children with fewer cognitive skills and abilities may also have cognitive distortions about sexual behavior. In combination, these two cognitive problems result in an increase in the likelihood of sexual aggression occurring once it has been modeled for a child. Other variables such as increased severity of and exposure to abuse should also affect learning and later behavior (Kendall-Tackett, Williams, Finkelhor, 1993; Friedrich, Urquiza & Beilke, 1986). Similarly, cognitive mediators that make learning difficult may also make exposure to actual sexual behavior, or stimulus such as sexually explicit video tapes, result in greater sexual aggression by a child. Once the behavior begins and if the learning continues to be reinforced by any of several paths, the behavior may become prolonged and advanced.

Given the large number of children who have been victimized and the much smaller number of perpetrators, it is evident that most abused children do not become sexual perpetrators. The above model would posit that sexual perpetrators who are children would be cognitively more deficient and perhaps have had more severe abuse than children who have been victimized but who are

not aggressors. Before proceeding to the research implications of this theoretical model, one last consideration must be discussed.

A critical part of any discussion of children's behaviors and thinking is cognitive development. It is unclear exactly how children develop cognitively and much discussion and debate can be found in the professional literature on this point. Arguments cover many arenas including whether or not the growth is linear and/or should be considered in stages (Rutter and Rutter, 1993). Since it is evident that older children tend to know more and are able to solve more complex problems with time, regardless of the exact process of change, development must be included as a factor of relevance in theoretical views of behavior and in empirical research. Additionally, the meaning of these changes in complexity and ability in terms of the connection between cognition and behavior should be addressed for the best understanding of the intersection of these ideas. Children's thinking about sex and the complexity of their thinking may indicate not cognitive errors or distortions, but simple developmental differences over various ages.

Goldman and Goldman (1982) undertook a study in which they surveyed children internationally and evaluated their knowledge and process for thinking about sex. They found data that led them to a set of conclusions which supported a Piagetian stage development theory in terms of children's sexual knowledge and which encouraged sex education in the home and school. Including concepts of development by either controlling statistically for differences in developmental progress, or by applying understanding of cognitive abilities in terms of stages, or both, may be very important to any model attempting to understand children and sexuality in general and, sexual aggression specifically.

In conclusion, the implications of this general approach lead to a search for cognitive deficiencies and distortions, in a developmentally sensitive fashion in sexually aggressive children. If the deficiencies can be found the next step is to better understand the cognitive distortions. The theory, as it stands, would be unable to differentiate between what are probably two different categories of distortions: those that are learned versus those that are essentially made up post hoc to deal with cognitive dissonance. The implementation of the research design needed to distinguish these is beyond the scope of the current project. However, the first exploratory steps, as mentioned previously, can be taken.

Purpose of the Current Project

The current project provides exploratory evidence to undergird a social cognitive learning theory model of sexually aggressive behavior by children in public care. The four domains of information, as discussed previously, cognitive distortion, cognitive deficiency, behavior (sexually aggressive and aggressive) and development are the focus of concern for the current study.

Specifically, the project asks the three following questions. The first is: can cognitive distortions, as predicted by social cognitive learning theory, be detected in sexually aggressive children? Expectations from the theory are that sexually aggressive children will have more cognitive distortions regarding sexual behavior and social behavior in general than non-sexually aggressive children. Aggressive children would also be expected to have more distortions about social behavior (e.g., assertiveness) than non-aggressive children, but not more distortions about sexual behavior.

The second question is: can cognitive deficiencies be found in sexually aggressive children as predicted by theory? Cognitive deficiencies can be of many different types including social problem solving (as seen in aggressive children) and general knowledge processing. Expectations for this area are that sexually aggressive children in public care will have fewer problem solving abilities and lower overall cognitive ability when compared with non-sexually aggressive children. Aggressive children would also be expected to have fewer problem solving abilities and lower overall cognitive ability than non-sexually aggressive and non-aggressive children.

The third research question, focused solely upon the sexually aggressive sample and the theory as applied to it is: can sexually aggressive children's responses on measures of cognitive distortions and cognitive deficiencies be predicted by the severity of their sexual and physical abuse (i.e., attentional processes; Bandura, 1986; Garland & Dougher, 1990).

Data in the domain of behavior regarding sexual aggression and physical aggression must also be collected for basic differentiation and description of the groups of children. This is necessary to evaluate the effectiveness of the selection procedures for the groups.

Finally, a number of mediators which may affect the outcome scores must be included in analysis. Many of these were discussed previously in Garland and Dougher's (1990) writing on the intergenerational transmission of sexual aggression wherein they identified many of these variables as factors which may "...interact with sexual contact with an adult to contribute to the intergenerational perpetuation of this behavior" (p.500). The first of these is the domain of

cognitive development which must be assessed to account for variation in measures due to developmental differences as opposed to cognitive distortions or deficiencies. Overall social, behavioral and physical development and age may also be considered similar potential mediators of cognitive and behavioral data. Another potential mediator which may affect group comparisons of cognitive data is intelligence or IQ. A group with lower intelligence scores may also have lower scores on all the cognitive measures. A final potential mediator of beliefs about sexuality among sexually aggressive children, relevant to the third research question only, is treatment history. If the instrument chosen measures cognitive distortions typical in sexually aggressive treatment and treatment is designed to change these distortions, a clear mediating effect may be present. These mediator variables must be measured and considered in the analyses.

Chapter 3

Methodology

Design & Constraints

Research with sexually aggressive children is a methodological challenge. For children to be identifiable as sexually aggressive an adult must be aware of the sexually aggressive behavior. Such awareness leads to a high likelihood that the behavior will be reported to an interventive authority. The fact that many sexually aggressive children have also been sexually abused means that many of the identified children are in treatment for their own sexual or physical victimization as well as for sexual aggression against others and that many are also in foster care.

Overall convenience samples of clinical volunteers are generally used for the type of research described in the dissertation. This sampling approach results in small samples precluding use of many available statistical modeling procedures (Friedrich & Luecke, 1988; Johnson, 1988; Gil & Johnson, 1994). The clinical sample biases current knowledge towards a few clinical practices and the constituencies they serve. Many lower income children reported for sexually aggressive behavior come to the attention of Child Protective Services (CPS). In Washington state, CPS is a division of the Department of Social and Health Services (DSHS). If this source of subjects is chosen, recruitment logistics for the children become complex as DSHS must be involved in the Human Subjects Review of the research and in access procedures to the children and their families. It appears that the use of a DSHS sample may result in selection bias towards

lower socio-economic status groups than samples reported from private clinician samples or for-profit treatment programs.

Since the best resource for sexually aggressive child research subjects in Washington state was determined to be DSHS, comparison samples were drawn from the same source to control, as much as possible, for effects from background variables common among children who are in DSHS care (e.g.; socioeconomic status).

Focus on an exclusively DSHS sample resulted in one alteration of the planned study design. The DSHS Human Subjects Review Committee did not approve use of the only available measure of sexual distortions in the control groups and only approved use of the measure with the sexually aggressive children.

Additional complications arose in designing specific recruitment procedures. In order to recruit each subject, access arrangements with DSHS stipulated that the following group of people had to be contacted: an administrator, a caseworker, the child's guardian, the child's caretaker, and the child. Breakdown in the necessary communication was frequent.

Operating within these limits, a cross-sectional, multi-measure, multi-informant interview design was implemented. The children were asked directly about cognitive deficits, distortions, and development while the child's caretakers were interviewed about the children's development and observable behaviors (both sexual and aggressive). The caseworkers were interviewed regarding treatment type and length.

The children in the final sample are all 6 through 12 years old. These limits were selected as the instruments selected are normed for children from 6 through 12. Additionally, the typical onset of puberty in North America is shortly after 12 years of age (Roche, Wellens, Attie, Siervogel, 1995) Thus, the vast majority of the children in the sample are at a pre-pubertal stage of development, thereby avoiding the hormonal effects of puberty on sexual thinking and behavior.

Only boys were used in the present study since the total population of sexually aggressive girls in this age range in DSHS care is very small, too small for meaningful analysis. Limitations resultant from the methodological constraints will be discussed in the final chapter.

Recruitment & Selection

Administrators, supervisors and caseworkers in DSHS were made aware of the study in several ways. Materials developed for each level of staff were handed out by the official in charge of all treatment services for DSHS children to all regional area coordinators and from them to all administrators, supervisors and caseworkers. In cases where any level of staff were aware that the staff below them did not have any cases that fit the study (e.g.; incarcerated adolescents), materials were not distributed. The DSHS official, assisting the coordinator of the study, presented the recruitment information to meetings at three of the regional Community Service Offices and sent representatives to two others to recruit subjects directly from caseworkers. The author also went to four supervisors' meetings and eight caseworkers' meetings to explain the project.

After caseworkers checked with families for assent, the families were called by a Social Work Master's student who was volunteering with DSHS, and

who explained the project to them. If they were interested, appropriate consents were sought. In some cases this involved not only DSHS as case manager and/or legal guardian and/or care provider, but other persons including; guardians, parents, other social service agencies contracted by DSHS to provide services, and guardians ad litem. Once all consents were approved, an appointment was set with the family for an interview either at the family's home or at the University of Washington Adolescent Clinic. Between 11 and 35 actual phone contacts were made for each interview. In one case over 50 attempts were made to gain information.

Three groups were identified by caseworkers based on selection criteria provided to them in written form (see Table 3.1).. Base criteria were that the children were male, and from 6-12 years of age. In the sexually aggressive boys group, some boys were receiving Sexually Aggressive Youth (SAY) funds set aside by the Revised Code of Washington (# 74.13.071) for children under the age of 13 who are sexually aggressive. The children receiving this program have undergone a sexually aggressive youth assessment, administered by DSHS. The assessment is primarily a clinical interview which rules out children who are not aggressing against others (but who may be acting sexually in public with behaviors such as exhibitionism or public masturbation) and clarifies treatment and case management needs. In two referred cases, the assessment process was not clear and the children were receiving SAY funds and had acted out sexually (e.g.; exhibitionism), but had not been aggressive directly against another child. These children were turned down for the study. There were no apparent ambiguities about the other groups that could not be easily resolved by going over

the guidelines with the caseworkers. Data was not collected as to why the children were in public care. However, it became apparent that many were in care due to having been abused within their families of origin or due to being very sexually aggressive.

Table 3.1

Selection Guidelines

Sexually aggressive boys: these are boys who have been aggressive against another child sexually. Many of these children will be receiving SAY funding (e.g.; forced anal penetration of another child, forced vaginal rape, sexual torture of another child).

Physically aggressive boys: these are boys who regularly get into physical fights with other children, have been adjudicated or in treatment for aggression and/or who have been removed from a placement due to aggression and/or who have been in repeated fights at school. These children have never been known to be sexually aggressive.

Non aggressive boys: these boys do not fit either category above. They do not fight regularly and have never been know to sexually aggress against another person.

Note. from recruitment information

Using these methods and guidelines there were 124 referrals. Fifty-five of these either couldn't be used or declined to participate (see Table 3.4). In some

cases this was due to difficulty in obtaining all needed information from caseworkers.

Table 3.2

Referrals Which Couldn't be Used or Which Refused

Referrals Which Couldn't be Used (n=33)

	Sex. Agg.	Phy. Agg.	Non Agg	Total
No phone # or				
address obtainable	4	3	13	20
No one answered				
phone	1	0	1	2
Didn't show for appt.	1	0	0	1
Returned to Mom				
in another state				
w/out WA DSHS	2	0	0	2
Moved to another state				
by DSHS	0	0	1	1
Language barrier	1	0	0	1
DSHS couldn't				
track the names				
in their databases	3	0	0	3
Sexually acting out				
but not agg.	2	0	0	2
Other	1	0	0	1

(Table 3.2 Continued)

Total	15	3	15	33
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Eligible and Contacted but Declined (n=22)

	Sex. Agg.	Phy. Agg.	Non Agg Total	
No explanation				
given	8	2	1	11
Child too unstable/				
in transition	3	0	0	3
Family illness	1	0	0	1
Already in enough				
studies	2	0	0	2
Custody contest	0	0	1	1
Parent angry w/				
group home	0	1	0	1
Caregiver too				
busy	0	1	0	1
Couldn't obtain all				
permissions	2	0	0	2
Total	16	4	2	22

Participants

Included in the present study are 69 boys between 6 and 12 years of age ($M = 9.582$, $SD = 1.632$) in DSHS care in Washington state. The primary group within the sample consisted of 37 sexually aggressive boys. Two small comparison groups were also included in the study. One group consisted of 17 physically aggressive boys; the other of 15 non aggressive boys. The groups were all selected in the same fashion. All of the children were in DSHS care in one of three capacities: (1) living with their biological family but on DSHS caseloads for monitoring and care, (2) in foster care or (3) in residential group care (e.g., a group home with 50 children) (see Table 3.3).

Table 3.3

Child Subject Demographics

<u>Age</u>				
	Sex. Agg.	Phy. Agg.	Non Agg	All
	n=37	n=17	n=15	n=69
age average	9.89	9.68	8.72	9.58
age SD	1.62	1.37	1.72	1.63
SES	For all groups <u>current (not family of origin)</u> household income was \$25,000-\$35,000			
<u>Placement</u>				
	Sex. Agg.	Phy. Agg.	Non Agg	Total
foster	12	5	6	23

(Table 3.3 Continued)

group	16	5	3	24
at home	9	7	6	22
Total	37	17	15	69

Race

column percent	Sex. Agg.	Phy. Agg.	Non Agg	Total
'Bi-Racial'	2.7	0	0	1.4
African American	18.9	23.5	6.7	17.4
African American/ Caucasian	10.8	5.9	6.7	8.7
Caucasian	56.8	58.8	66.7	59.4
Hispanic	0	5.9	0	1.4
Hispanic/Caucasian	2.7	0	0	1.4
Japanese	0	0	6.7	1.4
Native American	2.7	5.9	13.3	5.8
Native American/ Hispanic	5.4	0	0	2.9
Total	100	100	100	100

Note. No significant differences were found between groups using χ^2 .

Current caretakers were used for the adult portion of the interviews in all but two cases in which caretakers who had more knowledge and very recent

history were available (i.e.; two mothers who had the children for years and had just placed them in group homes). This group consisted of adults in various roles who were considered by the caseworkers to be the best source of data available (see Table 3.4).

Table 3.4

Relationship of Adult Respondents to Child Respondents

column percent	Sex. Agg.	Phy. Agg.	Non Agg	Total
Natural Mother	13.5	23.5	26.7	31.9
Foster Mother	35.1	29.4	26.7	18.8
Natural Father	13.5	5.9	5.9	11.6
Foster Father	10.8	5.9	20	10.1
Social Worker	10.8	29.4	13.3	15.9
Other Care Provider	10.8	0	5.9	7.2
Missing	5.2	5.9	0	2.8
Total	100	100	100	100

Note. No significant differences were found between groups using χ^2 .

Materials

Ten instruments were used in the interviews. The instruments were selected to assess four domains; cognitive distortion, cognitive deficiency, aggressive behaviors and developmental level. Additional information was collected regarding mediator variables and demographics. See table 3.5 for an

overview. Detailed instrument information including psychometric properties follows.

Table 3.5

Domains, Measures and Sources of Data

Domain	Measure	Sources of data				
		<u>Foster</u> <u>Parents</u>	<u>Case-</u> <u>worker</u>	<u>Children</u>		
				<u>SA</u>	<u>AG</u>	<u>NA</u>
Cognitive Dispositions						
Sex: Touching/ Aggression	Children's Knowledge of Abuse Questionnaire/ MESSY			X		
				X	X	X
Cognitive Dispositions						
Problem Solving/	Social Problem Solving Measure (SPS) (Interview)			X	X	X
Behaviors						
Sexual Aggression	Child Sexual Behavior Inventory	X				
Aggression: Physical/ Verbal & Physical	Child Behavior Checklist/ Eyeberg's Inventory	X				
Developmental						
Overall/ Cognitive	Vineland Inventory/ Inventory of Piaget's Developmental Tasks	X			X	X
Mediator Variables						
IQ	K-Bit			X	X	X
Treatment Type & Length	Yes/No, length and if TX for sexual aggression, how long		X			
Demographics						
Victimization Type & Severity	Dichotomous and Likert Scales		X			
	Demographic Sheet	X				

Cognitive Distortions Domain

Measurement of the domain of cognitive distortion in children is a formidable task due to the hidden nature of cognitive process and products and the questionable reliability of required self report methods used to capture these variables. Questions dealing with sexuality result in a new set of ethical and moral questions. The operationalization of cognitive distortions about sexuality for children was based on the children's responses to a measure which evaluates children's cognitions about various types of touching (Children's Knowledge of Abuse Questionnaire). DSHS Human Subjects Review prohibited this measure being administered to any group other than the sexually aggressive boys. A measure of children's perception of their behavior was selected to evaluate their distortions about their aggressive behavior (Matson's Evaluation of Social Skills for Youth).

The Children's Knowledge of Abuse Questionnaire (CKAQ) (Tutty, 1995) was selected, after extensive searching, as this is the only instrument available which measures children's thoughts or cognitive products about sexual behavior (versus sexual reproduction/biology). It evaluates children's beliefs or cognitive products about different types of touching (e.g.; stranger touching, affection between friends, sexual touching without consent). The psychometric properties of the original 40 item CKAQ were established with a group of children ranging from 6-12 (n=332). The reported alpha coefficient of the instrument is .86. "A new factor analysis suggests that a 33-item version would adequately measure knowledge of abuse prevention concepts." (Tutty, 1995, p. 23). This was selected

for the study. The instrument was designed and normed with kids who are neither sexually aggressive nor sexually abused.

The Matson Evaluation of Social Skills with Youngsters (MESSY) is a 62 item test for children designed to evaluate "...interpersonal behaviors that help the individual in society" (Matson, 1990, p. 2). This instrument was selected in order to evaluate cognitive distortion in the area of aggression for the sample. It is one of very few that is useful for children as young as 6 years of age. The reliability coefficient (alpha) is .80 based on a sample of over 700 children. The Guttman split half reliability was reported at .87. Factor analysis has indicated factors as hypothesized by the designer. The instrument has strong concurrent validity with the presence of DSM diagnoses and with scores on the Child Behavior Checklist. The instrument has been used extensively since the early 1980's.

Cognitive Deficiency Domain

For this domain, two instruments assessing cognitive skill as proposed by a social cognitive approach were selected. The first evaluates problem solving (The Social Problem Solving Measure) and the second evaluates overall intellectual ability (Kaufman's Brief Intelligence Test) were chosen.

The Social Problem Solving Measure (SPS) (Dodge, 1994) is an interview for children consisting of eight items evaluating the child's ability to solve social problems. It is the only measure available for this particular skill for aggressive behavior and was selected to evaluate this social cognitive skill for sexually aggressive children. For each item the child is given a brief social scenario and a drawing depicting the scenario. The child is then asked to develop as many solution as possible to the social situation and these solutions are rated for quality

and content. The measure has been used in many studies by the Dodge Lab Group at Vanderbilt University for the investigation of problem solving for different groups of children, especially for aggressive children (Personal communication, Ken Dodge, December, 1994) . The rating systems result in inter-rater reliability kappas ranging from .82-.95 based on 180 children's responses. The alpha coefficient for the responses generated which are coded as aggressive is .88 (Dodge, 1980; Dodge & Frame, 1982; Schwartz, 1994).

Behavioral Domain

In this domain, in which all instruments were given to the adult caretakers, sexual behaviors were evaluated with the Child Sexual Behavior Inventory. Additionally, an inventory which includes aggressive behavior, and a few questions on sexual behavior, was selected (Children's Behavior Checklist) along with a measure which evaluates not only physical aggression but also verbal aggression (Eyeberg's Inventory).

The Child Sexual Behavior Inventory (CSBI) (Friedrich, Grambsch, Damon, Hewitt, Koverola, Lang, Wolfe & Broughton, 1992) is a 35 item parent checklist assessing a broad range of sexual behaviors over the 6 months prior to the interview. The inventory has been used with a large community sample of 880 non abused children to help determine a set of norms for sexual behavior for children. The inventory has been shown to discriminate between sexually aggressive and non sexually aggressive children with a Cronbach's alpha of .82 for the normative sample. A test re-test (4 weeks) reliability of .85 was also reported. A single factor factor analysis and supportive scree plot has supported the conceptual framework of the inventory.

The Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1978) is an often used parent inventory of many childhood behaviors. It was previously used on 13 sexually aggressive children as reported by Friedrich & Luecke (1988) to investigate internalizing and externalizing scores as well as overall behavioral problems. Of greatest relevance to the primary aims of the study, the CBCL has a frequently used aggression subscale. The instrument also has questions about sexual behaviors with others and about sexual thinking. It contains many items of relevance to sexual behavior including items regarding cruelty to animals and setting fires (both of which have been found frequently in the backgrounds of sexually aggressive adults and adolescents).

Test re-test (four weeks) reliability figures range from .92 to .98 and at three months from .83 to .97. The authors of the instrument and literally hundreds of others offer copious results regarding the reliability, validity, utility and psychometric properties of the inventory. The measure has substantial norms, good concurrent validity with DSM diagnosis, the Diagnostic Interview Schedule for Children (Jensen, Salzberg, Richters & Watanabe, 1993) and many other measures (Tharinger, Laurent & Best, 1986; Garrison & Earls, 1984; Rey, Schrader & Morris-Yates, 1992).

Eyberg's Inventory was designed to measure "child conduct problems" (Eyberg & Ross, 1978). This inventory was selected for the sample for two reasons. It offers an intensity score for problem behaviors, as it uses a likert scale as well as a measure of whether or not a problem is present. This allows a score of variability of behavior problems as opposed to just the presence of behavior problems. It also measures not only physical aggression, but also verbal

aggression. It is a 36 item inventory with two responses asked for each item. A sample question is "Hits Parents" followed by a 7 point likert scale regarding how often this behavior occurs with the respondent's child and then by a yes/no question asking if the particular behavior is a problem for the respondent. Using a sample of 512 children, the inventory has a Cronbach's Alphas of .86 and a test - re-test correlation of .96. Factor analysis has found one factor.

Development Domain

For the developmental domain, instruments were given to the children and to the adult subjects. A standard parent measure of development (Vineland) and a cognitive development measure (Inventory of Piaget's Developmental tasks) administered to the children were selected. The scores on these instruments should assist in understanding variation in other measures due to developmental differences while also offering an overall developmental picture of the sexually aggressive children.

The Vineland Adaptive Behavioral Scale (VABS) (Sparrow & Cicchetti, 1985) is a well used parent interview of childhood development selected as a measure of overall development for the sample which may be a mediating variable for the other cognitive measures. It contains 60 questions regarding behavior and knowledge which represent the child's development. The interview has a test - re-test reliability coefficient (based on a sample of 3000 children and their parents) of .95 as a whole and between .84 and .90 across the four domains of development it evaluates. Construct validity is evidenced by an increase in scores across ages as would be predicted by the Piagetian scheme of development as evaluated by behavioral measures and observations. Criterion validity is reported by correlation

with other developmental measures including the Adaptive Behavior Inventory (.58) for children, the Adaptive Behavior Scale (.40-.70) and the Kaufman Assessment battery for Children (.52) and several less well used scales (Oakland & Houchins, 1985; Sparrow & Cicchetti, 1985; Britton & Eaves, 1986). This measure is used as a standard in research and clinical work with children.

The Inventory of Piaget's Developmental Tasks (IPDT) (Furth, 1972) is a 20 item paper and pencil evaluation of Piaget's concept of development. Few other instruments exist to measure this area of cognitive development. It is given to children in the form of a workbook. Areas including conservation of quantity, conservation of weight, perspective taking, conservation of volume and inferential thinking are measured by children's responses to pictorial and written questions. Test - re-test reliability has ranged from .62 to .95 and alpha coefficients of reliability have ranged from .63-.84. The inventory has been used by several researchers since 1980 and scores have been normed for age and IQ levels (Branden-Muller, Elias, Gara & Schneider, 1992; Pancer & Weinstein, 1987).

Mediator Variables

The Kaufman Brief Intelligence Test (K-BIT) (Kaufman & Kaufman, 1990) is a brief pencil and paper measure of 130 items. The instrument was selected to evaluate the overall cognitive ability of the children in a pragmatic and time reasonable (for the children and the interviewers) fashion. Overall cognitive ability was seen as a possible mediating variable for responses to the other cognitive measures. The instrument has a standardization sample of over 2000 children tested at 60 sites nationwide. Split half reliability has been reported at .92 and test - re-test reliability has been reported at .94. The K-BIT has been found to

have good criterion validity with a .83 correlation with the Weschler Intelligence Scale for children (Naugle, Chelune & Tucker, 1993) and .81 correlation with the Stanford-Binet (Prewett & McCaffery, 1993).

Treatment Questions were used in place of a chart review which proved to be useless as the data desired was not consistently in the charts and obtaining the charts was frequently not possible. These questions were asked of the caseworkers: length of any treatment/counseling/etc.; whether or not the treatment was centered on sexual aggression and if so, how long that part of the child's treatment lasted.

Demographics

The Demographics Sheet was designed for the study to collect some basic background variables and some possible confounding variables including the age of child, race, foster family income, time of placement, physical abuse and severity, sexual abuse suspected or confirmed and severity, developmental delay suspected or confirmed and severity, mental retardation and its severity.

Victimization Variables were collected with a set of four questions asked of caseworkers. They were a set of dichotomous Y/N questions asking if the child had been physically or sexually abused. The second set of questions were five point likert scales asking for severity of the abuse which had "not severely" at number 1 and "very severely" at number 5. Originally a chart review was designed to gain this information, but due to poor or no data being available in the charts, this method was chosen.

Procedures

Eighteen interviewers were trained. Of the 18, 7 were MSWs, 9 were second year MSW students, one was a certified drug and alcohol counselor with over 30 years of professional interviewing experience and one was a certified teacher with 35 years of experience, a master's degree and a sixth year degree in primary education. Training took approximately 12 hours and included basic interviewing skills, education about CPS and emergency referral if needed, assessment for child abuse and research interviewing skills (e.g.; not using leading questions, voice intonation for interviews, not offering interpretation of the responses to the instruments). On the one instrument which was an interview and which was subjectively scored, inter-rater agreement of .93 was obtained across all interviewers (VBS). On the instrument which was coded at the site of the interview a reliability of .84 was obtained (SPS). Many of the interviewers had also been trained, in conjunction with the project, in basic research skills and concepts, earning from 3-9 academic credits across a one year period for this training.

The interviews were double interviews in which one interviewer would query the child participant and one the adult, simultaneously. The interviews took from 1 1/2 hours to 3 hours and were done from May, 1995 through October, 1995. The interviewers first visited with both participants to go over the study in general. The child interviewer then would leave the room or the premises in order to retain ignorance regarding the subject's group membership as the one subjectively coded instrument could have been biased if the interviewer knew the group status prior to coding it. The adult interviewer would then explain the study

and obtain all necessary consent forms. The consent forms were labeled and were different by group in accordance with DSHS Human Subjects Review Committee requirements. At the end of the child's interview, the interviewer opened a sealed envelope which either contained the CKAQ, and a debriefing regarding appropriate responses to the CKAQ as required by DSHS human subjects review committee (thereby identifying the child as sexually aggressive) or blank sheets of paper.

After the interview, the child received \$15 in a gift certificate to Toys 'R Us and a certificate thanking him for participation . He was also welcome to enjoy granola bars and fruit snacks during the interview. The adult received \$30 for his/her participation. The interviewers received chocolate candy kisses.

During the initial phone call and during the verbal explanation of the project and as indicated on the consent forms, any child or adult could drop out of the project at any time for any reason. No subject did this. However, one subject did fail to appear for two scheduled meetings.

To protect confidentiality, all instruments were identified by subject number only. The data was entered into and analyzed with the use of SPSS for Windows, version 6.0. Twenty percent of the data were randomly selected and verified by a second individual for accuracy of entry. The rate of accuracy was 99.8%.

Chapter 4

Results

Introduction

This chapter discusses analyses aimed at exploring the answers to the research questions previously stated. Characteristics of development and IQ, which might confound group analyses, are considered as possible mediating variables between groups utilizing ANOVA analyses. A second set of mediating variables, prior victimization and treatment history are also analyzed using ANOVA procedures. Differences in both victimization type and severity were found between the groups as were differences in type of treatment, these were used as controlling variables in further analyses.

The next phase in the analyses considered validation of the group selection procedures by ANOVA analyses of the behavioral domain variables. Differences were found between groups, primarily on the sexual behavioral measures and aggression measures.

An evaluation of cognitive distortions and deficiencies using ANOVA analyses is next. All three groups of children felt that they were non aggressive on the MESSY. The sexually aggressive group answered slightly differently from the norms on the CKAQ. While the instrument selected to evaluate cognitive deficiencies in problem solving (PSI) indicated no differences between the groups. This is followed by a hierarchical regression test of the Social Cognitive Model for the sexually aggressive children, which controls for the development.

Mediator Variable Analysis

Sample characteristics of development and IQ are discussed in the following section. Both of these are considered possible mediator variables for responses on cognitive tests which could confound group comparisons.

Each subject's development was measured by the Vineland Inventory (Vineland) and by the Inventory of Piaget's Developmental Tasks (IPDT). On the Vineland the sample falls on the low end of normal. The three groups did not differ significantly on any of the four scales in the inventory (see Table 4.1), although the group difference did approach significance for the communication scale ($p=.059$). Following the analysis of variance (ANOVA) group comparison procedure with a conservative post hoc Scheffé's analysis no significant differences between any two groups were found. The overall development score is a sum of the first three scales. Group comparison for this scale and the separate Maladaptive scale were also negative. Reliability for this measure was acceptable ($\alpha = .75$).

Table 4.1

Vineland Scores

Means and Tests for Significant Group Differences

	Non Agg.	Phy. Agg.	Sex. Agg.	F
Communication	17.87	22.82	23.14	2.95*
Daily Living	23.73	26.18	25.89	.486
Socialization	16.40	17.59	18.68	.750

(Table 4.1 Continued)

Total Score	58	66.59	67.70	1.71
Maladaptive Behavior	10.80	8.41	10.46	.817

Note. * $p < .1$

On the Inventory of Piaget's Developmental Tasks, the overall group score was 8.33 (SD=3.58) out of a possible 20 points. Unlike previously reported acceptable reliability coefficients for this inventory, the measure proved to have very poor reliability within this sample ($\alpha = .0081$). The measure was therefore not used for any further analyses

In sum the group overall was found to have no significant differences on the remaining measure of development. A third variable which is frequently used as a proxy for development, age, was analyzed for group differences in the Methods section. No significant differences were found in the age of the three groups using an ANOVA procedure.

Intelligence Quotient

The measure for overall intelligence in this study was the Kaufman Brief Intelligence test (K-BIT). The overall sample was found to have an average Intelligence Quotient (IQ) (see Table 4.2). The K-BIT authors offer standardized scores which control for age. The resultant scores are based on a standard distribution as regularly used for IQ with 100 points being average. The sample averaged 97.224 (SD=11.305) with a relatively normal curve (Kurtosis = .077,

Skewness = -.558). The group analysis was not significant, the difference in the three group's mean total score covering a span of .73 of a point.

Table 4.2

K-BIT

Means and Tests for Significant Group Differences

	Non Agg.	Phy. Agg.	Sex. Agg.	F
Standardized Verbal	95.07	96.76	100.08	1.02
Standardized Matrix	99.79	97.47	95.50	.60
Standardized Total	97.07	96.76	97.5	.02

Victimization History

The analysis regarding victimization history of the subjects indicated significant group differences in the occurrence of sexual victimization and in the severity of sexual and physical victimization between the three groups using an ANOVA procedure (see Table 4.3). The sexually aggressive children were victimized physically and sexually more often than the other groups. The physically aggressive children were the least physically victimized, but were more sexually victimized than the non aggressive children. As the measures used were designed for the purpose of this study, a normative comparison is not available.

The post hoc Scheffé analyses indicate that the differences between groups on occurrence of physical victimization is between the sexually aggressive children and the non aggressive children. The difference on occurrence of sexual victimization is between the sexually aggressive and the physically aggressive groups. The Scheffé analysis for severity of victimization indicates that the severity of sexual victimization was different between the physically aggressive (the least often and least severely sexually abused group) children and the other two groups.

Table 4.3

Victimization Occurrence and SeverityOccurrence of Victimization by Type†

	Non Agg.	Phy. Agg.	Sex. Agg.	F
Physical Abuse %	40%	30%	84%	4.25 **
Sexual Abuse %	33%	19%	65%	6.26 ***

Severity of Victimization by Type††

Physical Abuse	3.25	2.80	3.78	2.8 *
Sexual Abuse	3.80	2.00	3.71	2.8*

Note. †A dichotomous 'yes'/'no' question, with suspected cases being placed in the 'no' category, was used for the occurrence of abuse questions. ††Likert scales from 1 (not severely) to 5 (very severely) were used for the severity questions.

* $p < .1$ ** $p < .05$ *** $P < .005$ **** $p < .0005$

Treatment History

Treatment history on the groups illustrated no overall differences in number of months of treatment for problems other than sexually aggressive behavior. However there was a difference, as would be expected, in number of months of treatment for sexual aggressive behavior (see Table 4.4). The sexually aggressive children had more treatment for sexually aggressive behavior. Post hoc analysis indicated no significant differences between groups.

Table 4.4

Treatment

<u>Months By Group</u>	Non Agg.	Phy. Agg.	Sex. Agg.	F
Months of TX for				
Other Problems	4.63	5.82	5.40	.0389
Months of TX for				
Sex. Agg Beh.†	.33	1.00	2.68	7.24*

Note. † Two non aggressive and five aggressive children had been in treatment for sexually acting out (e.g.; exhibitionism), but not for sexual aggression. They were placed in these categories by Caseworkers and were retained for conservatism of results. * $p < .1$

Summary

The potential mediator variables of age, development, and IQ were found not to be significantly different between the three groups. They are therefore not used for control variable in further analyses. The differences in abuse occurrence and severity will be considered in further analyses of the Social Cognitive Model as causative factors. The treatment variables will be evaluated as a mediating effect for both cognitive factors below.

Analysis of Group Selection Procedures

The three behavioral measures (caretaker respondent measures) all indicated significant differences between groups as expected, verifying subject group assignment methods. Between group and normative comparisons are reported below for behavioral and aggressive behavior problems (Child Behavior Checklist), intensity of behavioral problems (Eyberg's Inventory) and sexual behavior by children (Children's Sexual Behavior Inventory).

Overall Behavioral Problems and Aggressive Behavior

On many of the sub-scales of the Child Behavior Checklist (CBCL), the aggressive and sexually aggressive groups scored as "borderline clinical range" (see Table 4.5). These two groups within the sample appear to be considered very problematic by their caretakers. Reliability for this measure was high ($\alpha = .93$). ANOVA analyses of the sub-scales indicated several differences across the three groups. The physically aggressive children are more aggressive than the other groups, but not much more than the sexually aggressive children. The sexually aggressive children have more sex problems than the other groups.

Table 4.5

CBCL ScoresMeans and Tests for Significant Group Differences

	Non Agg.	Phy. Agg.	Sex. Agg.	F
Aggressive Behavior	12.53	24.41++	22.35++	6.6 ***
Anxious/Depressed	6.53	11.41++	10.02+	2.86*
Attention Problems	7.27	8.59	9.95+	1.76
Delinquent Behavior	3.53	9.29++	9.11++	9.41****
Externalizing ^a	16.07	33.71++	31.45++	8.77****
Internalizing ^b	12.33+	17.94++	16.0++	1.27
Sex Problems	.533	1.59	3.03	5.5 ***
Social problems	4.13	5.35	6.49+	2.67*
Somatic Complaints	1.53	1.71	1.76	.03
Thought Problems	2.33	3.71+	3.57+	.71
Withdrawn	5.07	5.82	4.97	.37

Note. Higher scores mean that a child is rated as having more problems.

+="borderline clinical range" between 95th & 98th percentile

++="beyond borderline clinical range" above the 98th percentile. ^aExternalizing

= aggressive + delinquent; ^b Internalizing score = withdrawn + depressed/anxious

+ somatic. * $p < .1$ ** $p < .05$ *** $P < .005$ **** $p < .0005$.

The sex problems score has been determined as one on which less than 5% of the norm sample has a score above zero. The authors of the instrument therefore do not provide norms for this scale. In the current sample, 13% (2/15) of the non aggressive children have scores exceeding zero, 29% (5/17) of the aggressive children have scores exceeding zero and 81% of the sexually aggressive children have scores exceeding zero.

Following the ANOVA tests with post hoc Scheffé analysis to find the specific group differences, it appears that there are no differences between the sexually aggressive and aggressive children on any of the scales (see Table 4.6) and that the significant differences fall between these two groups and the non aggressive group.

Table 4.6

CBCL Scores Scheffé Analyses

Significant* Scheffé Post Hoc Analysis of Group Differences

	Non. x Phy.	Phy. x Sex.	Non. x Sex.
Aggressive Behavior	X		X
Anxious/Depressed			
Attention Problems			
Delinquent Behavior	X		X
Externalizing ^a	X		X
Internalizing ^b			

(Table 4.6 Continued)

Sex Problems	X
Social problems	
Somatic Complaints	
Thought Problems	
Withdrawn	

Note. * = at the .05 level. ^a=Externalizing = aggressive + delinquent; ^b=
Internalizing score = withdrawn + depressed/anxious + somatic.

Intensity of Behavior Problems

The Eyberg Inventory scores indicated that the sample has behavioral problems, when compared to established normative responses, and that there are differences between the groups on the intensity or variability of those problems. These results agree with the CBCL data (see Table 4.7). The inventory has two scales. The first is an Intensity score which is determined by using a likert scale after each problem listed, with higher numbers indicating that the behavior is more frequent. The Problem score is a sum of dichotomous yes/no questions which ask if the behavior is a problem for the adult respondent. Reliability was high for this measure ($\alpha=.8781$ on the intensity scale, $\alpha=.911$ on the problem scale). Post hoc Scheffé analysis indicates that the difference is between the intensity scores for the sexually aggressive and non aggressive groups, with the sexually aggressive children having greater intensity of problems.

Table 4.7

Eyberg InventoryMeans and Tests for Significant Group Differences

	Non Agg.	Phy. Agg.	Sex. Agg.	F	Norm
Intensity Score	112.67	131.76	144.38	3.19**	100
Problem Score	56.6	55.06	58.25	.66	4.57

Note. ** $p < .05$

Sexual Behavior

The Child Sexual Behavior Inventory (CSBI) analysis indicates significant differences on scores between the three groups. The CSBI uses a sum score. The higher the score the more sexual behavior the respondent reported for the child (see Table 4.8). The sexually aggressive children scored higher than the other two groups. Follow up Scheffé analysis indicates that the sexually aggressive group is significantly different from both of the other groups. Reliability for this instrument was high ($\alpha = .9261$).

Table 4.8

Children's Sexual BehaviorMeans and Tests For Significant Group Differences

	Non Agg.	Phy. Agg.	Sex. Agg.	F
CSBI Score	14.60	16.18	30.22	11.12 ****

Note. **** $p < .0005$

Summary

The sample is considered by the respondents to have more behavioral problems than the normative samples for each of the behavioral instruments. The physically aggressive and sexually aggressive children appear to group together and to have many problems according to the CBCL data. The sexually aggressive children have a greater intensity of problem behaviors than the non aggressive children as measured by the Eyberg Inventory. Both instruments measure a wide range of problem behaviors, with differences in number of questions and in type of response. The sexually and physically aggressive children seem to group together in the post hoc analyses while the non aggressive children are different from these two groups. The sexually aggressive children are more sexual in their behavior than the other two groups based on the CSBI. These findings indicate that the foster parent's reports agree with the caseworker's group assignment, thereby supporting the subject assignment methods used for the study.

Group Comparison of Cognitive Distortions and Deficiencies

Some evidence supporting the existence of cognitive distortions was found, but not of cognitive deficiencies. Cognitive distortions regarding touching (Children's Knowledge of Abuse Questionnaire) and aggressive behavior (Matson's Evaluation of Social Skills for Youth) were measured. Cognitive deficiencies in the area of problem solving skills were also evaluated (Social Problem Solving Measure).

Distortions About Touching

Distortions about touching were measured with the Children's Knowledge of Abuse Questionnaire (CKAQ), for the sexually aggressive group only, using norms on that instrument. The CKAQ did not correlate significantly with length of treatment ($r=.24$, $p=.257$ for months of treatment for other problems and $r=-.23$, $p=.147$ for months of treatment for sexual aggression), so this variable was not used as a covariate in this analysis. The children in the sample scored differently from the children in the normative sample by an average of 5% in the expected direction. This small difference may be conservative as the 6th and 7th graders in the sample are both compared to 6th grade norms (the highest available) (see Table 4.9). The reliability for this instrument was high ($\alpha = .9261$).

Table 4.9

CKAQ Comparisons

Grade	n	CKAQ Mean % Correct	Norm % Correct	Mean Dev.†
1	2	73%	60%	13%
2	1	45%	70%	-35%
3	3	78%	73%	5%
4	8	75%	85%	-10%
5	8	77%	79%	-2%
6	9	82%	89%	-7%
7††	6	82%	89%	-7%

Note. † = Mean Deviation = $[(^a(\% \text{ correct} - \text{norm correct}))/n]$; negative scores indicate that the sample was, on average, lower than the norm value. †† = In the normative sample, data was collected only up to the 6th grade. For this analysis, seventh graders were compared to those norms. The seventh graders in the sample averaged the same as the sixth graders, but had a larger range of scores.

Distortions About Aggression

Distortions about aggression were measured using Matson's Evaluation of Social Skills for Youngsters (MESSY). The MESSY has several sub-scale scores. The group analysis did not indicate any difference between groups on any of the items nor on the total scores (see Table 4.10), including the sub-scale specifically chosen to measure distortions about aggression, the inappropriate assertiveness

sub-scale. Months of treatment for other problems and months of treatment for sexual aggression did not correlate significantly with any MESSY scale so this variable was not used as a covariate for these analyses. Correct normative results for this measure are not available. The reliability for this instrument was acceptable ($\alpha = .7966$).

Table 4.10

MESSY

Means and Tests For Significant Group Differences

	Non Agg.	Phy. Agg.	Sex. Agg.	F
Appr. social skills	90.73	90.35	91.32	.0291
Impulsivity	10.80	12.59	11.24	1.05
Inappr. Assertive.	32.53	33.88	32.24	.1470
Jealousy	7.93	6.82	8.03	.8881
Miscellaneous	26.40	25.47	25.22	.1735
Overconfidence	10.13	10.41	10.97	.3045
Total score	178.53	179.53	180.17	.0226

The lack of difference between groups on all scales indicates that all three groups responded that they were equivalent in social skills including inappropriate assertiveness. In previous research, group differences between clinically anxious,

clinical non anxious controls, and non clinical control subjects have been found on the MESSY Inappropriate Assertiveness sub-scale (Kazdin, Dulcan and Last, 1989). Additionally, the MESSY Inappropriate Assertiveness sub-scale score and the CBCL Aggressiveness sub-scale have been found to significantly correlate (Kazdin, Matson and Esveldt-Dawson, 1984). The children in the aggressive groups might therefore be expected to have higher scores than the other groups if their cognitions were accurate and in agreement with the adult respondents. The adult respondents' data significantly discriminated between groups on the CBCL, however, the MESSY data did not. The correlation between the MESSY Inappropriate assertiveness scale and the CBCL aggression sub-scale was .1490. This supports the hypotheses that the aggressive and sexually aggressive children have cognitive distortions about their aggressivity.

Cognitive Deficiencies in the Social Problem Solving

The Problem Solving Inventory (PSI) has been analyzed in five ways in the past. The first is to analyze the differences between groups on the proportion of aggressive solutions generated across all eight scenarios. The second is to analyze the differences between groups on the total number of solutions generated. The third is to analyze the difference between groups on effectiveness of first responses to each scenario. The fourth is to analyze differences in proportions of aggressive responses to the two situations in the instrument in which the antagonist is aggressive (numbers 3 and 7). The fifth is to analyze the effectiveness of the remaining responses to the two aggressive scenarios. Investigating possible mediating variables, neither months of treatment for other problems nor months of treatment for sexual aggression was found to correlate

significantly with the results of this measure so neither was used as a controlling variable. Group comparisons using ANOVA procedures indicated no significant differences on any of the five analyses (see Table 4.11).

Table 4.11

Problem Solving Inventory

Means and Tests for Significant Group Differences

	Non Agg.	Phy. Agg.	Sex. Agg.	F
Proportion of Agg.				
Solutions	.04	.07	.06	.4291
No. of Solutions	19.3	21.71	21.43	.3259
No. of Effective First				
Responses	5.47	6.47	6.16	1.39
Proportion of Agg.				
Solutions to				
Hostility	.12	.06	.17	1.37
Effectiveness of First				
Responses to				
Hostility	1.47	1.67	1.35	.844

Summary

In sum, the measure on beliefs about touching (CKAQ) indicates that the sexually aggressive group had slightly lower scores (fewer correct answers) than

the norm sample. Cognitive distortions regarding aggressive behavior are found in the lack of expected difference between groups on their beliefs about their aggressive behavior as measured by the MESSY. Significant differences in cognitive skills regarding problem solving were not found between the three groups using the Problem Solving Inventory.

Test of the Full Model

The Social Cognitive Model posited in Chapter Two would indicate that sexually aggressive children's learning based on their experiences of sexual abuse would account for differences in their cognitive measures. As argued previously, development must be considered in such analysis as a covariate. Hierarchical Multiple regression analysis was attempted using severity of physical and sexual abuse as independent variables attempting to predict scores regarding distortions about touching (CKAQ), aggression (MESSY Inappropriateness scale) and problem solving skills (PSI) with development (Vineland Inventory total score) entered first to control for its effects (see Tables 4.12-4.18). These analyses did not support the hypothesis. However, they illustrate the necessity of considering development in analyses regarding the cognitive skill of problem solving (see tables 4.14, 4.17 & 4.18).

Summary of Hierarchical Regression Analysis for Variables Predicting Cognitive Scores of Sexually Aggressive Children (N = 37)

Table 4.12

CKAQ scores

Variable	<u>B</u>	<u>SE B</u>	β
Step 1			
Vineland Total Score	.003942	.002190	.410421
Step 2			
Severity of Sexual Abuse	-.015619	.053948	-.151947
Severity of Physical Abuse	.002989	.053591	.030939

Note. $R^2 = .168$ for step 1. $\Delta R^2 = .013$ for step 2. No significant results

Table 4.13

MESSY Inappropriate Assertiveness Scores (n=37)

Variable	<u>B</u>	<u>SE B</u>	β
Step 1			
Vineland Total Score	-.053414	.167044	-.077321.
Step 2			

(Table 4.13 Continued)

Severity of Sexual Abuse	-2.991907	3.158664	-.431798
Severity of Physical Abuse	4.497542	3.173959	.620384

Note., $R^2 = .00598$ for step 1. $\Delta R^2 = .00598$ for step 2. No significant results.

Table 4.14

PSI Proportions of Aggressive Solutions (N=37)

Variable	<u>B</u>	<u>SE B</u>	β
Step 1			
Vineland Total Score	-.012165	.004416	-.555552**
Step 2			
Severity of Sexual Abuse	-.165918	-.173359	.754761
Severity of Physical Abuse	-.181642	-.197613	.818291

Note., $R^2 = .30864$ for step 1. $\Delta R^2 = .02751$ for step 2. ** $p < .05$

Table 4.15

PSI Number of Solutions (n=37)

Variable	<u>B</u>	<u>SE B</u>	β
Step 1			
Vineland Total Score	-.111883	.183840	-.14602
Step 2			
Severity of Sexual Abuse	-.422414	3.599987	-.054965
Severity of Physical Abuse	2.453849	3.617419	.305173

Note. $R^2 = .02132$ for step 1. $\Delta R^2 = .05757$ for step 2. No significant results.

Table 4.16

PSI Number of Effective First Responses (N=37)

Variable	<u>B</u>	<u>SE B</u>	β
Step 1			
Vineland Total Score	.038676	.026515	.33351
Step 2			
Severity of Sexual Abuse	-.178253	.515308	-.153249
Severity of Physical Abuse	.466928	.517804	.383675

Note. $R^2 = .11123$ for step 1. $\Delta R^2 = .06488$ for step 2. No significant results.

Table 4.17

PSI Number of Aggressive Solutions to Hostile Scenarios (n=37)

Variable	<u>B</u>	<u>SE B</u>	β
Step 1			
Vineland Total Score	-.068684	.028156	-.509202**
Step 2			
Severity of Sexual Abuse	-.063587	.560420	-.046999
Severity of Physical Abuse	-.169733	.563134	-.119906

Note., $R^2 = .25929$ for step 1. $\Delta R^2 = .02046$ for step 2. ** $p < .05$

Table 4.18

PSI Number of Effective First Solutions to Hostile Scenarios (N=37)

Variable	<u>B</u>	<u>SE B</u>	β
Step 1			
Vineland Total Score	.037025	.014928	.515476**
Step 2			
Severity of Sexual Abuse	-.154671	.298275	-.21469
Severity of Physical Abuse	.159050	.299719	.211004

Note., $R^2 = .26572$ for step 1. $\Delta R^2 = .01474$ for step 2. ** $p < .05$

Summary

The three group analysis of cognitive variables for children was followed by a model test which pertains only to the sexually aggressive group. Investigating possible mediating variables, the three groups did not vary in development or IQ. They did vary in both treatment length, with the sexually aggressive group understandably having more treatment for sexual aggression, and in victimization history. Treatment length was tested in each group analysis for possible correlation and confounding effects. Victimization history was tested as an explanatory variable for cognitive outcomes. The accuracy of the assignment of subjects to each of the three groups was demonstrated by the match between the independent data from the subject's caretakers and the caseworker's placement of the subjects.

The children in the three groups varied little on their perceptions of their own aggressive behavior, while the data from their caretakers differentiates the three groups. This finding supports the hypothesis that aggressive children have distortions about their aggressive behavior. The sexually aggressive children were, on average, 5% less correct than the normative sample on the measure of cognitions about touching. There were no differences among the three groups on the measure of problem solving. The full model test was negative, but did point out the importance of including development in such analyses.

Chapter 5

Discussion

Introduction

This study was an early exploratory application of the Social Cognitive Model to sexually aggressive children in public care. This section discusses conclusions based upon the results of the study including a review of the findings, implications for research and research methodology and practice implications.

Research Questions

Three research questions were posited at the end of Chapter 2. The first asked if sexually aggressive children in this sample have cognitive distortions about touching and about their own aggressive behavior. The second research question asked if sexually aggressive children in this sample have cognitive deficiencies in the area of social problem solving. The third research question asked if sexually aggressive children's responses on measures of cognitive distortion about touching and aggressive behavior and their skill in social problem solving could be predicted by the severity of their sexual and physical abuse. This section reviews the findings of the project.

Cognitive Distortions & Deficiencies

The sexually aggressive and physically aggressive children were found to have distortions about their aggressive behavior. All three groups of children considered themselves to be equal regarding aggressive behavior whereas the adult respondents found the sexually aggressive and aggressive children similar regarding severely aggressive behaviors in contrast to the non aggressive children.

Previous research has identified group differences between aggressive and non aggressive children with the instrument used.

The sexually aggressive children were found to have distortions regarding touching, but the difference between the sample and the norms was small. The measure of distortions about touching (CKAQ) was given to the sexually aggressive children only, per institutional constraints. The sexually aggressive children were found to have fewer responses correct than the normative sample by 5%.

Cognitive deficiencies were not found to be different for any of the groups nor were they found to vary from the norms for the instrument used. Aggressive children have previously been found to have both distortions and deficiencies with the use of one of the measures in this study, the Problem Solving Inventory. This measure has been administered by one Lab Group at Vanderbilt for several years. It is easily conceivable that the lack of findings in this study are due to differences in administration of the interview, the small sample size of the study or both.

Social Cognitive Model

The social cognitive model was not supported for this sample. Neither sexual abuse nor physical abuse severity was able to predict responses on the cognitive variables when development was used as a covariate in the multiple regression analyses. The sample size may have been too small to capture the differences between the groups. Additionally, only a few variables of the model posited were investigated due to various constraints. Other variables of interest could include the abuse history of the family, more detail about the severity of the abuse and the children's victimization history, more detail about the children's

sexually aggressive behaviors and about all three group's cognitions about sex. Will children whose families have a greater history of abuse (e.g.; the parents were victimized more severely as children), be more than the families of the children who have not been abused, but are currently sexually aggressive as the model implies (Burton, Nesmith & Badten, 1995)? Will children with more severe victimization histories have more frequent and more severe sexually aggressive behaviors? Will the non aggressive children and aggressive children have different cognitions about sex?

Methodological Implications

Introduction

This section will discuss the areas of measurement, access to sexually aggressive children and confounding variables. Implications of the group assignment as defined by the study will also be offered.

Measures

Assessment of cognition is challenging when compared to the assessment of behavior. Behavioral measures, usually based on either observation or self-report, are often used as proxy measures for cognition based on the assumption that cognitions are strongly related to behavior. The assessment of cognitions via self-report is troublesome as the concurrent validity of the measurements cannot be evaluated. Social desirability or fear of the information being reported to authorities may also negatively affect the results from self-reports of cognitive activities.

In the case of the study of sexually aggressive children other issues are added. The CKAQ was originally designed for the purpose of evaluating the

effectiveness of programs designed to teach children how to avoid being abused. The CKAQ does not directly reflect the cognitions found in adult sex offenders (Able, Becker and Cunningham-Rathner, 1984; Stermac & Segal, 1989), but was the closest reliable instrument available and acceptable by Human Subjects Review and ethical constraints. Designing an instrument focused specifically upon sexual thinking by children would be of great importance in assessment of a Social Cognitive model for sexually aggressive children. It may also provide a measure of change in cognitions over the course of treatment. Such change is implied by this model and assumed by most treatment providers for sexually aggressive children (Longo-Freeman, 1994). The measure would need to be developed and used in a clinical setting to provide protection for the children from any possible re-traumatization (since so many of the children have been sexually and/or physically abused) due to the administration of the instrument. The first step may be to discover what non aggressive children think about sex. This unknown, barely touched upon area of research is critical to understanding differences in how sexually aggressive children think about sex.

Two other areas are also difficult to measure for this population, sexually aggressive behavior and sexual victimization. The analysis of the measure which was used for children's sexual behavior (CSBI) supported its ability to discriminate between sexually aggressive and other children. However, as with all sexual aggression, the measurement of unseen behavior is not possible. The children themselves seem an unreliable source for this information. Asking them about their sexual behavior and about their sexually aggressive behavior is also ethically challenging for a research endeavor. However, interviewing children

about their sexual behaviors frequently is a component of treatment for sexually aggressive children. Research tasks seeking detailed sexual information from children would probably best fit within a treatment program.

The measure of victimization history is also difficult. Chart reviews proved futile in this study and most information collected in charts about victimization is verbal, non quantitative and may suffer from threats to reliability and validity. Future research projects should ensure the quality and content of the available chart notes in the planning stages of their efforts. Collecting the information directly from the children, instead of using chart information, introduces the possibility of re-victimization of the children. Well designed and ethical measures used in the evaluation of sexually abused and sexually aggressive children are lacking and are needed by the field to better understand these children's experiences. Defining severity is also a dilemma here. Is one event of penetration more severe than five of fondling? How would the question be answered if the first perpetrator was a brother and the second was a father? Even with such measures, it becomes evident that such a task may again be better placed in a treatment framework.

Another methodology which should be considered, given the early stage of investigation of sexually aggressive children and these methodological constraints would be a mixture of ethically designed and developmentally sensitive qualitative interview and quantitative behavioral analysis.

Access

Access to sexually aggressive children is complicated by the apparently small number of identified sexually aggressive children and by several, ethically important, barriers to access to such children. Working through, rather than within, treatment and service provision systems is time consuming and results in the loss of research integrity at the ethically valid cost of protection for the children. If the children are in foster care, several layers of individuals must be considered in terms of access and data collection. In this project, guardians ad litem, foster care case workers, custodial parents whose children were in foster care and case managers all had to be consulted and contacted for consent in addition to the foster parents and the children themselves, prior to data collection. With so many possible failure points in the access process, sample size, selection procedures and actual data collection are all severely threatened. The implications from this again lead to studying the children from within the treatment system as is underway in two current studies (Walker, Grey & Berliner, 1994). In those circumstances, access could automatically be part of the assessment and evaluation of treatment processes. Another method for a similar project may be to work with adolescents in treatment or correctional facilities using retrospective questions. This method is not without access barriers, but may have fewer possible failure points.

Confounding Variables

In this study, development, IQ, treatment length and, treatment type were used as theoretically important variables to assist in explaining differences in children's cognitive distortions and deficiencies. Other variables that might be

responsible for variation in cognitive variables could include treatment content (i.e., does the treatment actually address the questions in the measures), variables of educational experience (i.e., sex education and schooling in general) and verbal and written performance, which might affect the quality of the results. This is a relatively new set of possibly confounding variables to consider with sexually aggressive children and may also be important for assessing the cognitions of sexually aggressive adults.

Group Assignment

While the assignment procedures appear to have been verified in this study, there is another level of classification that may be very important for sexually aggressive children. Many researchers of adult sexual aggression have struggled with classification of offenders by behavior (Knight & Prentky, 1990) and other variables (Conte, 1991) including offender personality (Duthie & McIvor, 1990; Schlank, 1993). The efforts at classification are an attempt to understand both the etiology of different behavioral types of sexual offenders and the most effective treatment for sexual offenders. Some of these typologies deal with severity of offense in terms of level of penetration of the victim (Mair, 1993). Other attempts to classify offenders have worked with the number of victims the offender has assaulted (MacHovec & Wieckowski, 1992). Perhaps similar strategies would be useful with sexually aggressive children to understand the relationship between their past learning experiences and their present cognitions and sexually aggressive behavior. Are the learning experiences of an 8 year old rapist of three children, all strangers, the same as the learning experience of the 8 year old who forces his sister to perform oral sex upon him? Another variable,

revealed only by implication during the research interviews and which is part of the behavioral history, is that of the context of behavior. Is the 8 year old who rapes a 6 year old boy behind the school exhibiting the same behavior as the 8 year old who rapes a 6 year old boy at their home? What of the child who is sexually aggressive in public versus those who have only been aggressive as reported by their victims or accidental observers? Another variable of possible interest regarding sexually aggressive children is differences in development between victim and perpetrator. When considering sexually aggressive adults, the adult is nearly always presumed to be more developmentally advanced, at least physically and socially, than his/her victim. But what of the case, revealed in the interviews, where the perpetrator was 7 and the victims were 8, 9 and 6? What does this imply about the perpetrator and his learning experiences when compared to the case wherein the perpetrator was 10 and the victims were all under the age of 5? Multi-dimensional typologies may be necessary to consider all of the differentiating variables for sexually aggressive children's behavior and its etiology.

Practice Implications

This study would seem to offer few practice implications given its small sample size and uncertain findings. While 37 sexually aggressive children's data cannot be generalized to all male sexually aggressive children from 6-12 years of age, it may be possible to apply the findings to male children in Washington state in DSHS care, as 37 is estimated as more than 1/2 the identified population in the age range in the state (Stone, personal communication, September, 1995). Two findings may be of direct interest. The first is that the sexually aggressive children

(and the aggressive children) do not consider themselves to be aggressive as measured by the MESSY. Issues discussed above in terms of social desirability or fear of reporting behaviors to authorities may be involved with the data. However, the MESSY has found significant differences in groups previously (Matson, Macklin & Helsel, 1985). Assuming that when working to assist a child in changing aggressive behavior recognition of the behavior is required, it appears that the children may not be aware of the problematic behaviors they exhibit. Is this because sexually aggressive behavior is "normal" for them? Burton, Nesmith and Badten (1995) attempted to view this issue through the eyes of clinician respondents, finding that many of the clinicians felt that the children they worked with who were sexually aggressive did see their behavior as "normal". In relationship to clinical practice, this finding might imply a re-teaching of new information to children rather than an emphasis on correct versus incorrect behavior; a greater emphasis on teaching rather than behavioral change strategies.

The second practice implication is that the results of the CKAQ, albeit not a measure designed for this purpose, do not correlate with time in treatment for sexual aggression. Such a correlation was expected since this instrument has many topics that are found in treatment manuals (Cunningham & McFarlane, 1991) and articles (Johnson and Berry, 1989) for sexually aggressive children which are used by 100's of programs (Freeman-Longo, 1994). A child's results might be expected to correlate with treatment time, although it may just not be able to measure cognitions and it may also suffer from response to social desirability by the children. Treatment time correlates with the sexual behavior score in a positive direction. Perhaps treatment time is a measure of severity of behaviors, for this

group, rather than of opportunity to change cognitions in treatment. Perhaps treatment is not helping change the cognitions being measured or even those being considered. The relationship between thought and behavior, which is assumed, but not yet clear, may involve other elements, such as emotion, that are not measured or that have not been considered to date for sexually aggressive children or may be a process that is not elucidated by measures of cognitions and behaviors alone.

Conclusions

While the Social Cognitive model has not previously been directly applied to sexually aggressive children, the elements of cognitive distortion and deficiency have been found to be important considerations in treatment for adults (Able, Becker & Cunningham-Rathner, 1984; Stermac & Segal, 1989; Alexander, 1994) and are assumed to be important in changing the sexually aggressive behavior of sexually aggressive children (Cunningham & McFarlane, 1994, Rassmussen, 1994; Friedrich, 1992; Gil & Johnson, 1994).

This study found some support for these components of the model. Given the importance of cognitive variables in treatment for children, more research into the model and into the effectiveness of the current approaches to treatment are clearly called for. This study focused upon only one part of a full theoretical model. Other areas of the four part model are worth exploring. For example, the study of motivational process, further examination of attentional processes based on the characteristics of the individual modeling the behavior or of the process of behavioral production might all be fruitful. Each of these areas is similarly beleaguered by the difficulty of measurement of cognitive process and product and other methodological constraints that must be creatively addressed, but such

study is necessary before the model can be confirmed or rejected. The present research, as an early exploratory study, is a small step in the full evaluation of the Social Cognitive Model as applied to sexually aggressive children.

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Walker, A., Grey, J., & Berliner, L. (1994, November, 1994). Preliminary research results for sexually aggressive children. Paper presented at the ATSA Conference, San Francisco.

Washington, R. C. W. (1992). RCW # 13 Engrossed House Bill 1110 .

Wolf, S. C. (1988). A model of sexual aggression/addiction. Journal of Social Work & Human Sexuality, 7(1), 131-149.

Wyer, R. S., Jr., & Srull, T. K. (1986). Human cognition in its social context. Psychological Review, 93(3), 322-359.

DAVID L. BURTON

Curriculum Vita

Current Address:

School of Social Work
4064-C Frieze Building
University of Michigan
Ann Arbor, MI 48109-1285
(313) 763-6580

Education

March, 1996 *Ph.D. In Social Welfare*
University of Washington, School of Social Work
May 1991: *Master of Social Work*
University of Houston, Houston, Texas
May 1986: *Bachelor of Science, Psychology Major*
University of Houston, Houston, Texas

Academic Honors

1986 University of Houston: B.S. with departmental honors; psychology.
1982 University of Connecticut: Dean's list

Teaching Experience

January, 1995: *Instructor*
Recipient of Student's Choice Award from 2nd Year MSW students
Fall 1994-Spring, 1996: *Instructor*
University of Washington, School of Social Work
Course: Human Behavior in the Social Environment
Fall 1994-Present: *Instructor*
University of Washington, School of Social Work
Course: Research on Sexually Aggressive Children (MSW - 11 students, 3 quarters).
Winter-Spring 1994: *Co-instructor (with Robert Lehman, M.D.)*
University of Washington, Division of Adolescent Medicine
Course: Assessing the Need for a Mall-Based Clinic (multi-disciplinary - 9 students)
Fall 1992-Winter 1994: *Teaching Assistant*
University of Washington, School of Social Work
Course: Human Behavior in a Social Environment (MSW - up to 40 students per section, 2 quarters)
Winter-Spring 1993: *Instructor*
University of Washington, School of Social Work
Course: Research on Sexually Aggressive Children's Therapists (MSW - 3 students, 2 Quarters)
Spring 1993: *Instructor (Teaching practicum)*
University of Washington, School of Social Work
Course: Social Work Research I (MSW)

Areas of Teaching Interests

Aggression and Violence (especially sexual)	Medical Social Work
Children, Youth and Family Issues	Social Work Practice
Diversity	Psychopathology
Human Behavior in the Social Environment	Statistics
Research Methodology	
Human Sexuality and Sexual Behavior	

Employment/Work Experience

January 1996- Present: *Assistant Professor*

University of Michigan, Ann Arbor, Michigan

October 1993-1996: *Acting Social Work Discipline Head, half-time position.*

University of Washington, Division of Adolescent Medicine, Seattle, Washington
Multi-disciplinary training clinic, teaching practicum for up to 7 MSW (1st and 2nd year) students in clinical and/or administrative work, family, individual and group therapy at 4 sites. Development of an empirically based practice evaluation.
Marketing and speaking at educational forums.

April 1994-Present: *Statistical Consultant*

The State of Washington, Department of Social and Health Services, Seattle, WA
Data analysis including multiple regression analyses, factor analysis and discriminant function analysis of a dataset regarding sexually aggressive children.
Development and delivery of a 6 hour statistics workshop for state employees.

June 1992-January 1994: *Researcher/Statistician*

The University of Washington, Innovative Programs Research Group, Seattle, WA
Original literature research and research development contributing to a grant from the University Royalties Fund to explore domestic violence with men anonymously over the telephone. Contribution to the development of the primary survey instrument, and the research plan. Entire data analysis of the project.

Summer 1992: *Family Therapist*

Family Services, Seattle Washington
Co-leader of group of battering men in the Anger Management Institute.

May 1991-June 1992: *Family Therapist*

Family Service Center, Houston, Texas
Group, family and individual therapy to child and adult victims and perpetrators of sexual abuse, families experiencing violence, and clients suffering from depression and chemical dependency. Identified, designed and led group for sexually abusive latency age boys. Group design and operation including parents of juvenile sex offenders, clients with chronic mental illness regarding relationships and social skills, family violence, and latency age boys who are victims of abuse. Program design including ongoing development of Juvenile Sex Offenders Program and revision of Children's Protective Services program (the largest in Houston).

May 1991-June 1992: *Group Therapist and JCAHO Cont. Quality Improvement Consultant*

Charter Hospital of Kingwood, Kingwood, Texas
Group therapy. Psychosocial assessments and histories. Supervision of group therapists and students. Development of Continuing Quality Improvement measures and monitors with Hospital Assistant Administrator.

September 1990-May 1991: *Field Work for the University of Houston*

Family Service Center, Houston, Texas (1250 hours total).

- Group and family therapy.
- June 1990-May 1991: *Field Work for the University of Houston*
 Charter Hospital of Kingwood, Kingwood, Texas. (1100 hours total).
 Group and family therapy. Designed ongoing research and outcome measures for Charter Kingwood Day Hospital; presented at national conference and published.
- October 1988-June 1990: *Program Director*
 The Fairweather Lodge Program, Tri-County Mental Health and Mental Retardation, Conroe, Texas
 Operation and expansion (115%) of residential/vocational program under the Fairweather Model. Development of community training and program manuals utilized by other Fairweather Lodges across Texas. Budgeting. Staff supervision, hiring, training and program evaluation.
- September 1989-March 1990: *Researcher & Statistician*
 University of Houston, Houston, Texas
 A.B.A. White Resolution Dispute Center Grant. Association of Retired Citizens Grant.
- June 1986-October 1988: *Assistant Director/ Director*
 The Gathering Place, Houston, Texas
 Operation and program development of psycho-social rehabilitation program for the chronically mentally ill. Obtained continuation of a \$22,000 grant.
- September 1987-June 1992: *Computer Consultant/Programmer*
 Self Employed, Houston, Texas
- May 1986-June 1986: *On Call Behavioral Modification Specialist*
 Reach Inc., Houston, Texas
- February 1984-May 1986: *Teacher*
 Avondale House, Inc., Houston, Texas
 Developed and implemented training programs and evaluation of programs for autistic, developmentally delayed, educationally disabled, learning disabled, mentally retarded, and multiply psychologically handicapped children.

Community and Professional Service

- 1993-present: Board member of the Gay, Lesbian, Bisexual, Transgenderal Research Project
- 1992-present: Council on Social Work Education, Member
- 1991-present: National Association of Social Workers (NASW), Member. Co-Chair of the Minorities Committee of the Houston Chapter of the NASW, 1991.
- 1990-1992: Professional Liaison for The New Both Sides Now consumer operated social club for the chronically mentally ill
- 1987-1992: National, Texas, and Houston Alliances for the Mentally Ill, Member. In the Houston Alliance: co-author Closaril Chronicle, 1991, 1992 (used by National Alliance for the Mentally Ill); communications second chair, 1989, newsletter editor, 1987 - 1988
- 1990-1991: Texas Fairweather Association, two chair positions: Communications & Membership

Research and Publications

- Gantner, R., Burton, D., & Storey, L. (1992) Adult Partial Hospitalization Treatment Outcome Monitors. Journal of Partial Hospitalization, 8,(1), 57-64.
- Graunke, B, & Burton, D. (1987). Law enforcement and the mentally ill. Texas Police Journal, (Summer, 1987), 75-93.
- Burton, D. (1986). Satisfaction with graduate training in clinical psychology at the doctoral level, Senior Honors Thesis, University of Houston, 1986.

Under revision for Social Work:

MSW's opinions and work with HIV clients. Co-author with Harvey Gochros and Jean Gochros.

Under review:

"An analysis of sexually aggressive children and their families: a theoretical approach"

In Analysis:

"Accounting for the variance in the behaviors of Sexually Aggressive Youth" with Diana English

"Gay, Lesbian, Bisexual and Transgenderal Youth Support Networks: A First Look" with Andrea Nesmith and T.J. Cosgrove.

Areas Of Research Interest

Children's Aggression
Sexual Aggression
Children's Sexual Behavior
Human Sexuality

MSW's work with people
with HIV disease
Practice Evaluation

Presentations/Training:

- June 1994: "Group Therapy with Adolescents" at Adolescent Clinic, Seattle, WA
- May 1994: "Adolescence: Chaos by Design" at The Hamilton Middle School PSTA
- April 1994: "An Empirical Understanding of Sex Education" at Adolescent Clinic, Seattle, WA
- March 1994: "Angry Young Men's Groups" at National Violence Conference, Seattle, WA
- March 1994: "MSW's Views on People with HIV Disease" Lead presenter with Harvey and Jean Gochros at the 1994 CSWE APM, Atlanta, GA
- February 1994: "Solving the Puzzle of Recognition of Sexual abuse: A Multi-disciplinary approach" at Adolescent Clinic, Seattle, WA
- April 1992: "Working with Juvenile Sex Offenders", for the Department of Corrections of Harris County, Houston, TX
- October 1991: "AIDS: Safer Sex", Co-Trainer, for The Family Service Center, Houston, TX
- October 1991: "Research Development and Monitoring of Special Programs" Co-presenter at the American Association of Partial Hospitalization,

San Antonio, TX

October 1991: "How to Keep Your Children Safe" 2 radio interviews, Houston, TX

July-Aug 1991: Mediation for the Houston Catholic League for Peace, Houston, TX

June, 1991: "Group dynamics as particular to families of juvenile offenders" for the Poly-Abusive Families Training Conference, Family Service Center, Houston, TX

November 1991: "Supervision of the Juvenile Sex Offender" a 2 day training for the Department of Corrections for the State of Texas, Amarillo, TX

April 1991: "Assisting the Chronically Mentally Ill in Developing Social Clubs and Support Networks". Presented to the Humble Alliance for the Mentally Ill, Humble, TX

Grants

1988: The Hogg Foundation, \$22,000 for The Gathering Place vocational program.

1985: University Limited-Grant-in-Aid program, University of Houston, \$1,000 for Senior Honors Thesis research

Certification

1992-1996: Mental Health Professional Certificate in Washington

May 1991-1993: Certified Social Worker, Texas Department of Human Resources

December 1990: Certified Mediator, University of Houston, Graduate School of Social Work