An examination of parent-child play as influential in the development of aggression in

preschool boys

by

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ABSTRACT

Children displaying high levels of aggression have repeatedly been shown to be at significant risk for continued behavior problems and other social and emotional challenges throughout their lifetimes. The current project includes two papers that examine factors contributing to the development and maintenance of aggression in preschool-aged children, especially focusing on preschool boys. The first paper reviews theoretical and empirical literature addressing the development of aggressive behavior problems. Specific attention is given to influences within the child's family environment, including positive parental involvement, harsh discipline practices, and play activities of the child both individually and jointly with his or her parent or caregiver. The second paper presents results of an empirical investigation of the relationship between parent behaviors during parent-child interactions and teacher-reported problem behaviors in preschool boys. A stratified sample of 34 three- to five-year old boys and their primary caregivers were observed in their homes engaged in unstructured free-play and a problem-solving task. Behaviors of primary caregivers in each interaction were examined in relationship to teachers' ratings of the boys' externalizing behaviors in a child care setting. Parenting characteristics in the play, but not problem-solving, interaction were found to have a statistically significant relationship with boys' externalizing scores. Positive characteristics of the caregiver in play, such as warmth and sensitivity to the child, accounted for a statistically significant amount of variance in boys' teacher-reported externalizing scores beyond that accounted for by the negative characteristics, such as intrusiveness and hostility. The findings are discussed in relation to previous literature that has addressed both the development of behavior problems in young

children and the role of parent-child play interactions in child development. Clinical

implications for this population are also discussed.

CHAPTER 1.GENERAL INTRODUCTION TO PROJECT

Introduction

In a preschool classroom of three-year-old children, Travis is sitting alone in the art center appearing to be drawing a picture. Brianna enters the art center and sits down next to Travis stating that she wants to color, too. Travis says, "No!", and refuses to let her sit down next to him. The teacher approaches, attempting to talk with him about the situation and encouraging him to color with Brianna. He refuses and is, therefore, told to leave the art center and play somewhere else. He then moves to the block area and appears to play cooperatively with Nicholas, building towers and then knocking them over. However, after about ten minutes he leaves the blocks and proceeds to the dramatic play area where Morgan and Payten are playing house. Travis takes a doll from Morgan, who resists his efforts and calls for a teacher. The teacher encourages Travis to instead ask the girls if he may play with them or have a turn with the doll when they are finished. However, Travis stomps away from the dramatic play area in frustration, not seeming to understand why he cannot take toys away from other children. Later after lunch is served, the children are settling onto their mats for naptime. Teachers move through the room helping the children to fall asleep, but when the teacher instructs Travis to get ready for a nap, he refuses to lie down despite clearly being tired. The teacher offers to pat his back or look at a book with him, but he refuses. Instead, he lay on his mat kicking his feet against the floor until he fell asleep.

These exchanges, unfortunately, were not uncommon in my experiences as Travis' preschool teacher six years ago. It is, however, important to emphasize that Travis did have positive moments in which he engaged in play with peers or talked excitedly with a teacher

about his family's weekend plans, but these moments were often soon followed with negative exchanges. Despite the best efforts of highly trained staff, Travis continued to regularly display aggression and defiance toward both his teachers and peers. Most children in the classroom avoided interactions with him, with the exception of two other boys who also had tendencies to display aggression and defiance. Travis' parents were encouraged to seek professional guidance for his behavioral problems; however, to the knowledge of facility staff these efforts did not result in the family seeking any form of intervention.

Nonetheless, as a graduate student in marriage and family therapy at the time, I desired to understand the developmental and familial processes at work in situations like Travis', and I especially wanted to develop clinical skills that could be helpful for these children. Thus began my current journey. I was surprised to discover that, although individual and family models of intervention into conduct problems were abundant, few had been subjected to empirical research in order to determine their effectiveness. Further exploration also revealed substantial gaps in empirical knowledge about the development of these behavior problems in children, especially during the preschool years. It became clear to me that the development of an effective clinical intervention first had to be preceded by a systemic understanding of the factors influencing the emergence and continuity of the problem behaviors. The present study is my first step toward this goal.

Organization of Dissertation

Following are two articles that will be submitted separately for publication. First is a review and integration of the two areas of research and theory that have informed the current study: the development of early-onset behavior problems and the significance of parent-child play interactions within child development. The primary goal of this review is to highlight

what is known about the development of problem behavior in young children and to identify remaining gaps in the literature. The second article, then, is a summary of the empirical investigation of the effects of parent behaviors during parent-child interactions on boys' teacher-reported externalizing behaviors. Two types of parent-child interactions were contrasted: free-play and a challenging problem-solving task. Developmental and clinical implications of the findings are then discussed.

CHAPTER 2. CONTRIBUTIONS OF THE PARENT-CHILD RELATIONSHIP TO THE DEVELOPMENT OF AGGRESSION IN PRESCHOOL CHILDREN: A REVIEW OF LITERATURE

A paper to be submitted to *Family Process*

Becky Davenport[1,2] and Susan Hegland[2]

Abstract

Children displaying high levels of aggression have repeatedly been shown to be at significant risk for continued behavior problems and other social and emotional challenges throughout their lifetimes. After defining a developmentally appropriate conceptualization of aggression in preschool children, the body of literature addressing contributing factors within the development of early-onset aggression and other externalizing behavior problems is reviewed, with a focus on variables within the parent-child relationship. A summary of literature examining the relationship between children's play and developmental outcomes follows, with an emphasis on the contribution of parents' to children's play activities. Parent-child play interactions are then explored as potentially significant within the development of aggression in preschool children.

Introduction

Aggressive behavior problems in children have received a great deal of empirical and theoretical attention. These behaviors have been consistently found to be relatively stable across time in the absence of interventions (Cummings, Iannotti, & Zahn-Waxler, 1989; Olweus, 1979). Several longitudinal studies have shown that these children are at significant

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risk for future social and emotional problems (Loeber, 1990; Olson, Bates, Sandy, &

Lanthier, 2000; Patterson, DeBaryshe, & Ramsey, 1989). Additionally, although not all

aggressive preschool children will continue to display problematic behaviors as adolescents

and adults, early aggressive behavior problems are highly predictive of later antisocial

behaviors of continually increasing severity that are emotionally and materially very costly to

society on many levels (Caspi, Elder, & Bem, 1987; Coie & Dodge, 1998; Loeber, 1982;

Patterson, Reid, & Dishion, 1992; Tremblay et al., 1999).

A large majority of the literature in this area is focused on school-aged and adolescent

children; however, the focus is increasingly falling on the preschool period in order to

identify early developmental and contextual precursors to later problematic behaviors (e.g.,

Campbell, 2002). Furthermore, attempted interventions with school-age children and

adolescents with severe behavioral problems are often unsuccessful (Forgatch & Patterson,

1998; Kazdin, 1995). However, since behaviors indicative of later problems are identifiable

in preschoolers (Campbell, Pierce, March, Ewing, & Szumowski, 1994; Moffitt, 1990),

several authors have emphasized the potential for interventions during this timeframe in

order to redirect development away from problematic trajectories (Dodge, Pettit, & Bates,

1994; Fonagy, 1998; Linfoot, Martin, & Stephenson, 1999; Tremblay et al., 1999).

This review has a number of goals. First, due to a lack of clarity in what is meant by

aggression, an appropriate operational definition of the term will be determined for the

application to preschool children. Second, the typical social developmental process will be

discussed in order to contrast problematic behavioral trajectories. Third, variables that have

been empirically and theoretically linked with these problematic trajectories will be explored,

with an emphasis on those related to the parent-child relationship. Finally, play interactions between parents and their children, particularly pretend play, will be examined as a potentially useful source for assessment of and intervention into aggressive behavioral problems in preschool children.

Definition of Aggression

Definitions and boundaries around what is meant by aggression vary within relevant literature, posing potential problems in interpretation and application across research findings. Often, researchers do not explicitly state their operationalization of the concept of aggression. Additionally, definitions put forth within aggression literature are often age-specific, and must be modified in order to be developmentally appropriate within a focus on preschool children. In a meta-analysis, Frick and colleagues (1993) found that conduct problems, including aggression, have consistently differed in structure during the preschool years as compared to later childhood and adolescence, suggesting a developmental progression from oppositional behaviors in early childhood to violations of property and status in adolescence and adulthood. However, depending on the operational definition used, these behaviors may or may not be included within the umbrella of aggressive behavior.

Without reference to a specific age group, Tremblay et al. (1999) advocate for a narrow definition of aggression focusing exclusively on physical acts of violence. Use of this narrow definition for preschool children would limit what is considered as aggression to acts such as biting, hitting, and kicking. Perceived advantages to this limited definition primarily focus on measurement issues, including concerns about decreased reliability in reports across observers (i.e., parent, teachers, children, and professional observers) if more covert or

nonphysical acts are included under the label of aggression. Physically aggressive behaviors are more concrete, thus more easily observed and measured. Also, in contrast to some other forms of aggression, there is a general consensus across societies that physical aggression is an undesirable and feared behavior, yet commonly occurring in the United States and most other countries.

Furthermore, Tremblay et al. (1999) argue for the differentiation of verbal aggression from physical aggression based on the assumption that physical aggression is almost always carried out intending both physical and mental harm, whereas mental harm is not often a cause of physical harm. However, the instrument used by these authors to measure aggression also included verbal threats of physical actions that do not have to be carried out in order to be classified as aggression; this definition seems to confuse this argument since intimidation can be mentally damaging to its victims (e.g., Schwartz, Dodge et al., 1998; Schwartz, McFadyen-Ketchum, Dodge, Pettit, & Bates, 1998).

The advantages put forth by Tremblay et al. (1999) give rise to questions and potential drawbacks to defining aggression as exclusively physical, leading most to utilize a more broad definition that includes behaviors beyond physical aggression, such as verbal acts and violations of property (Coie & Dodge, 1998). Notably, ease of measurement should not be equated with quality of measurement. Because the intent of the act is generally seen as significant within both narrow and broad definitions (Coie & Dodge, 1998), any valid measure must go beyond the observable actions in order to accurately depict the actor's intentions. In contrast to studies of non-human animals, definitions of aggression in humans based solely on behavioral observations of physical acts have been found to be invalid and

unreliable due to the wide range of aggressive behaviors in humans, as well as the advanced

mental processes unique to humans (Coie & Dodge, 1998; Parke & Slaby, 1983). For

example, Parke and Slaby (1983) include the intent of the aggressor within their definition:

"behavior that is aimed at harming or injuring another person or persons" (p. 550, quoted in

Coie & Dodge, 1998, p. 781). This inclusion is endorsed by Coie and Dodge (1998);

however, controversy exists within psychological and developmental literature over making

assumptions of conscious individual intent and control over behaviors due to interactional

determinants and physiological arousal that are also influential in aggressive actions of

humans of any age. Extending this broader definition to preschool children would include

such acts as temper tantrums, taking others' toys, name calling, and oppositional behavior.

All of these behaviors indicate limited development of the child's ability to regulate and

inhibit his or her own emotions and behaviors.

Beyond the immediate context of behaviors, human aggression must also be defined

within a developmental perspective and the larger cultural context of the values placed on

different behaviors (e.g., Campbell, 2002; Cicchetti & Toth 1991; Coie & Dodge, 1998). A

developmental perspective recognizes that what is considered normal, albeit undesirable,

behavior for a two-year-old would be viewed much differently if performed by an adult. For

example, a toddler hitting another child in order to obtain a toy (i.e., personal property),

would generally not be perceived as abnormal behavior although it would be defined as

aggressive. However, an adult who uses physical violence in the course of obtaining the

property of another would be charged with assault and theft. Additionally, within most

societies including the United States, physical aggression is generally viewed as more

appropriate for males than females, leading to different socialization experiences regarding

the form of aggressive expressions for females (e.g., Coie & Dodge, 1998; Dodge et al.,

1994; Olson et al., 2000). It is important to consider these effects within the definition of

aggression due to the potential of limiting the application of empirical findings and clinical

interventions if researchers exclusively focus on physical acts as proposed by Tremblay et al.

(1999).

In addition to deciding the boundaries of the aggression term, researchers have also

distinguished between subtypes of aggression (e.g., Coie & Dodge, 1998; Hartup, 1974). One

recurrent distinction within aggression literature is between reactive aggression that occurs

due to antecedent conditions, such as hunger or fear for personal safety, and proactive

aggression committed due to its anticipated outcome, such as theft or robbery (Coie &

Dodge, 1998). The intent or motivation of the aggressor is pivotal in each scenario; however,

its influence is different. To illustrate, a four-year-old child may seek out a peer with the

intent of hitting him or her due to anger (reactive aggression based on antecedent conditions),

or the child may seek out a peer with the intent of obtaining his or her toy (proactive

aggression based on anticipated outcome). This distinction is similar to that made between

"hostile, person-directed" and "object-oriented, instrumental" aggression in early aggression

literature (Hartup, 1974, p. 337). Additionally, oppositional behaviors in preschoolers, such

as temper tantrums, that are of interest within a broadened, developmentally appropriate

definition of aggression can also be similarly classified. For example, a preschool child may

have a tantrum in a grocery store candy aisle with the expectation, from multiple previous

experiences, that the parent will eventually buy candy when publicly embarrassed (i.e.,

proactive behavior based on anticipated outcome). This differs from a child having a tantrum in the grocery store when hungry and not allowed to consume his or her favorite food that is sitting in the grocery cart (i.e., reactive behavior based on antecedent conditions).

Another distinction that addresses both the form and intent of aggressive acts is that of overt and relational types of aggression (Crick, Casas, & Mosher, 1997). Overt aggression includes both physical and verbal acts of aggression with the intent of causing or threatening to cause physical or mental harm, such as pushing another child in order to take away a toy. Relational aggression functions to hurt others through harming peer relationships. A child who purposefully and maliciously excludes another from play is acting aggressively, despite never physically acting toward the victim. In this case, the intent of the actor is very significant. For example, children will often exclude another child from their play when he or she is aggressive or lacking in social skills. These actions would not generally be considered an aggressive act on the part of the group, but rather a defensive act by children who sincerely do not want to play with the other child. This action differs from that of a group being led by an influential child to not allow another to play for the purpose of retaliation or anger.

A potential disadvantage to a broader definition is the possibility of equating aggression with antisocial behaviors or clinical diagnostic categories. Antisocial behaviors are generally discussed within adolescence and adulthood and include criminal violations such as robbery, theft, drug use, vandalism, and assault. Aggressive acts, including both physical and verbal assault and coercion, are contained within the category of antisocial behaviors and often occur within the context of antisocial acts (Coie & Dodge, 1998; Elliot &

Morse, 1989; Jessor, Donovan, & Costa, 1991). The significant overlap of aggressive acts

with antisocial behaviors led Coie and Dodge (1998) to advocate for including aggression as

a subclass of antisocial behaviors in order to understand the development of aggression.

However, they also maintain that aggression is not synonymous with antisocial behavior.

The above distinctions become complicated by the further consideration of clinical

diagnostic categories that address aggressive behaviors. The *Diagnostic and Statistical*

Manual of Mental Disorders (DSM-IV-TR; APA, 2000) contains several means of

evaluating antisocial behaviors in children and adults, although no specific category is

distinguished solely for aggression. Oppositional Defiance Disorder (ODD) and Conduct

Disorder (CD) are diagnostic categories used for children and adolescents, while Antisocial

Personality Disorder (APD) is used when behaviors persist past the age of 18. ODD is

typically seen as a developmental precursor to CD; ODD does not specifically require the

occurrence of overtly aggressive acts, but a diagnosis of CD includes intensified violation of

rules and aggression against people, animals or property.

For preschool children, only ODD and ADHD are generally seen as appropriate

diagnoses, and many clinicians even hesitate to formally assign these to this age group

(Campbell, 2002). The DSM-IV specifically states that diagnoses of ODD or CD should be

made with extreme caution for preschool-aged children due to developmental differences in

the occurrence of oppositional behaviors (APA, 1994), and it is rare for preschool-aged

children to receive either of these diagnoses (Robins, 1991). Critics of the DSM diagnostic

framework for children (e.g., Cicchetti & Toth; 1991) describe current conceptualizations of

childhood disorders as being downward extensions of adult disorders as opposed to being

informed by a developmental framework, including biological and environmental influences.

Taking the issues discussed above into consideration, the broader definition of

aggression as a physical, verbally, or relationally harmful action intentionally directed toward

another person or object is advocated here for preschool children. This definition continues to

include the intent of the aggressor; however, it requires that the aggressive behavior be

intentionally directed, though not intentionally harmful due to developmental limitations in

the understanding of cause and effect for children in this age group. This distinction also

excludes accidental harm inflicted due to lack of physical coordination or social skills, such

as hitting a peer with a ball when missing the basket or leaving a peer out of a playgroup

simply because of misunderstanding his or her desire to participate.

A definition beyond physical aggression is also preferred within empirical studies

targeting preschool children in order to more accurately compare and contrast findings with

those of other researchers. As noted in earlier reviews (e.g., Coie & Dodge, 1998; Tremblay

et al., 1999), a majority of research conducted on aggression operationalizes the construct

more broadly than physical aggression alone. For example, the Externalizing Problems

subscale of the Child Behavior Checklist (CBCL; Achenbach, 1991) and Teacher Report

Form (TRF; Achenbach & Edelbrock, 1986) are among the most commonly used instruments

to measure aggression in children. The preschool-aged versions of these parent- and teacher-

report instruments target characteristics such as physical aggression, angry mood, and

disobedience, thus providing a broad yet developmentally appropriate indicator of behaviors

found to predict later aggression and conduct problems.

Based on an extensive review of clinical and developmental literature, Campbell (2002) states that the "frequency, intensity, chronicity, constellation, and social context" (p. 77) are what ultimately differentiate normal from abnormal behaviors for preschool children. A definition of aggression that goes beyond physical aggression will also sufficiently include age-specific behaviors in preschool children, such as temper tantrums and conflicts with peers, which in the context of a recurring pattern of problem behaviors have been found to be indicative of atypical development potentially warranting some type of intervention due to associations with increased risk of future conduct problems and antisocial tendencies (Campbell, 2002).

Aggression within Typical Early Social Development

The preschool period is critical within the development of aggressive behavior problems, as deviant developmental trajectories begin to take shape across these years (Campbell, 2002). However, in order to more completely understand the various developmental pathways traveled by preschoolers who will later display problematic aggressive and antisocial behaviors, it is first necessary to briefly describe the typical processes of social and emotional development in early childhood. Between the periods of infancy and school entry, children are generally expected to accomplish a vast number of developmental tasks, such as learning to identify and express one's own emotional states, empathize with the feelings of others, effectively solve problems that arise within social interactions, and inhibit undesirable behaviors based on social contexts. Continual advances in motor skills and cognitive abilities facilitate social interactions with parents, caregivers, and peers. Additionally, the emergence of language and more complex communication skills

is of particular importance in social development. Finally, the development of emotion regulation and impulse control is central within the child's emerging abilities to inhibit aggression (Cicchetti, Ackerman, & Izard. 1995; Landy & Menna, 2001).

The emergence of aggressive behaviors in children coincides with the onset of emotional experiences, such as frustration, fear, and anger. In an early drive theory, Dollard, Doob, Miller, Mowrer, and Sears (1937) viewed aggression as a universal human reaction to the frustration experienced when one perceives he or she is being blocked from achieving a goal. Empirical studies disproved this theory; although physical aggression is one empirically identified response, humans react to this type of frustration in a variety of ways (Coie & Dodge, 1998). However, the remnants of this drive theory can be seen within perspectives that emphasize the role of frustration in eliciting emotional arousal, generally anger, associated with aggression (e.g., Berkowitz, 1989). Others emphasize beneficial functions of these universal human emotions within the survival and adaptation of individuals to their environments (Coie & Dodge, 1998), as well as in the motivation for their actions (Lemerise & Dodge, 1993).

Frustration and anger are particularly common experiences during the toddler and preschool years as children struggle to develop skills necessary to interact with their environment, including social relationships with adults and peers. In her classic study of naturally occurring expressions of anger and aggression in preschoolers, Goodenough (1931) found that the frequency of angry outbursts for children per hour reported by mothers peaked at about 18 months of age for both boys and girls, with girls showing slightly more outbursts. However, after this peak the frequency for girls dropped and remained below that of boys.

Researchers generally report increases in physical aggression through the age of two or three years; thereafter, physical aggression decreases in frequency while verbal and relational aggression increases with the onset of language skills (Coie & Dodge, 1998; Tremblay et al., 1999). Verbal aggression then typically peaks at approximately four years of age (Coie & Dodge, 1998).

Goodenough (1931) also found that proportionately fewer of children's interactions contain aggressive behaviors across early childhood. As children increased in age, outbursts became less extreme, more differentiated, more symbolic, and more targeted. Throughout the preschool period, angry outbursts were observed more often in boys than girls. Over the course of the preschool years, the context of angry outbursts also changed somewhat. More outbursts for infants through three years of age were related to care-giving activities, whereas children older than three were more likely to have outbursts in the context of social conflicts in addition to continued conflict with caregivers.

With a primary focus on physical aggression, Tremblay et al. (1999) recently echoed many of Goodenough's (1931) results within a sample of 511 children. In addition, Tremblay et al. found that 80% of parents reported the onset of physical aggression by 17 months of age. Teacher reports of these behaviors showed a peak during the kindergarten year. By three to four years of age, parents reported that the majority of children became able to inhibit physical aggression. Those who did not accomplish this task during this time were found to have greater difficulty doing so later, leading Tremblay et al. to suggest a sensitive period for the task during the preschool years.

Going beyond primitive behavioral indicators of emotions, the ability of a child to actually communicate his or her own emotional experiences, including anger and frustration, is quite a complex accomplishment. He or she must conceptualize him or herself as a distinct individual separate from others, attain a cognitive capacity that allows for conscious awareness of one's own emotional state, and also identify symbolic descriptors (i.e., language) necessary to communicate one's internal state to others (Lewis, 1993; Saarni, Mumme, & Campos, 1998). Based on a review of an extensive body of literature, Lewis (1993) concludes that by three years of age, the typically developing child will have obtained at least an elementary ability to communicate with others regarding his or her emotional experiences. Additionally, a large body of literature has illustrated the ability of two- and three-year-old children to reference both past and future emotional experiences during conversations with both playmates and parents (e.g., Saarni et al., 1998). Furthermore, during this age period, children utilize a variety of sources, such as one's developing knowledge of cultural standards and social referencing of role models, in order to determine culturally appropriate means of emotional expression or inhibition (Lewis, 1993; Saarni et al., 1998). Social interactions between parents and children provide numerous opportunities for parents to provide emotional labels for children, thus facilitating this developmental process. Numerous developmentalists (e.g., Galyer & Evans, 2001; Levine, 1988; Russell, Pettit, & Mize, 1998) especially emphasize the role of parent-child pretend play in the development of emotional awareness in both oneself and others.

Individual Differences in the Development of Childhood Aggression

The vast majority of violent and antisocial adults are found to have displayed problem behaviors, including aggression, beginning in early childhood (Campbell, 2002; Caspi et al., 1987). Additionally, research has consistently found at least a moderate level of continuity in aggressive behavioral problems across childhood (e.g., Campbell & Ewing, 1990; Moffit, 1990), with the highest levels found for children exhibiting the most severe behaviors. However, it is imperative to emphasize that not all aggressive young children will grow up to be violent adults (Campbell, 2002). Using diverse theoretical approaches, researchers have identified numerous variables that influence problematic deviations from the typical developmental process of aggression across childhood, leaving the child at risk for continued behavioral problems in the future (e.g., Campbell, 2002; Coie & Dodge, 1998; Shaw & Bell, 1993).

Proximal variables directly affecting these individual differences are primarily found within the interactions between biological characteristics of the child and the environment created by primary caregivers, including parental warmth, parental discipline, and violence witnessed by the child (e.g., Campbell, 2002; Gottesman, Goldsmith, & Carey, 1997; Olson et al., 2000; Sameroff, 2000). Other factors such as gender, race or ethnicity, socioeconomic status (SES) and family structure are generally described as distal variables that influence the development of aggressive behaviors through their impact on these proximal variables (e.g., Coie & Dodge, 1998; Dodge et al., 1994; Patterson et al., 1992). Developmental outcomes for children depend on the complex interaction between these variables, with the presence of multiple risk factors increasing the likelihood of continued behavioral problems (Campbell,

2002; Deater-Deckard, Dodge, Bates, & Pettit, 1998; Olson et al., 2000; Sameroff, 2000). Depending on the specific social and familial contexts of an individual child, several deviant trajectories are possible, each leading to a similar outcome of continued problematic aggressive behavior of the child throughout much of the life span.

Distal Variables

Gender

Gender is a primary moderating variable in the development of aggression across the lifespan. Specifically, males are generally reported to be at significantly greater risk for persistent behavioral problems, including aggression, from preschool to adulthood (Keenan and Shaw, 1997; Olson et al., 2000), due in part to biological factors such as higher activity levels (Snow & McGaha, 2003). Gender is also a significant organizing variable in the socialization of children. Numerous studies have documented differences in the reactions of caregivers to aggression in boys and girls. Goodenough (1931) found that mothers of children younger than three years of age responded to anger in both boys and girls with such tactics as distracting, redirecting, or ignoring. After this point, though, the tactics began to differ for boys and girls. Girls' anger was ignored, while boys received both more attention and punishments for their angry outbursts. Similarly, Radke-Yarrow and Kochanska (1990) more recently reported that boys were more likely to be indirectly rewarded for anger, but girls increasingly receive a direct message from their mothers that anger is inappropriate and should not be expressed. Dodge et al. (1994) also found that low SES mothers were likely to more strongly endorse values supporting aggression for sons than for daughters. Due to these biological and sociological factors, several authors (e.g., Patterson et al., 1992) have

supported separate examination of the developmental trajectories of behavioral problems in boys and girls.

However, the exact nature and extent of gender differences in the occurrence of aggressive actions depends on several factors, including how aggression is defined. For example, Crick et al. (1997) found preschool girls to be significantly more relationally aggressive than preschool boys, while boys were more overtly aggressive than were girls. Additionally, Tremblay et al. (1999) examined the ages at which 511 toddlers' mothers reported that their children first displayed physical aggression, and found that sex differences in the frequency of acts of physical aggression in toddlers and preschoolers were highly dependent on the environmental contexts in which children lived. Children without siblings did not differ significantly regardless of gender, while those with siblings displayed both more frequent and earlier acts of aggression. Boys with siblings displayed the highest levels of aggressive acts, but girls with siblings also exhibited frequencies two times greater than both boys and girls without siblings. The source of measurement is also significant, with mothers often reporting no differences in aggression based on gender (e.g., Olson et al., 2000), while teachers generally report boys to be much more aggressive than girls (e.g., Deater-Deckard et al., 1998).

Socioeconomic Status

Studies of aggression in childhood with sufficiently diverse samples consistently find SES to be another significant moderating factor, leading Dodge et al. (1994) to state that "the socialization experienced by children at the relatively low ends of the socioeconomic spectrum is the type that seems to be the breeding ground for aggressive behavior

development" (p. 662). These researchers found that children in the lowest SES class differed significantly from the rest of the sample in that they were predominantly nonwhite and from single-parent (mother-headed) households, they had more siblings, and the parent with whom they lived was more likely to be a high school drop-out and/or illiterate. Additionally, the mothers of these children were significantly younger than the other mothers in the sample, most being in their teens at the time of the target children's births.

In all four years of the study, the SES of the family during the year prior to the target child beginning kindergarten significantly predicted both teacher- and peer-reported aggression in the target child. Low SES children were three times more likely to be scored in the clinically significant range on the Teacher Report Form (Achenbach & Edelbroch, 1986), and their ratings of aggression continued to increase with age. Based on a series of multiple regression and structural equation analyses, the effects of SES on the development of childhood aggression were found to operate primarily through its effect on the child's environment, including the parent-child relationship, exposure to aggressive models of behavior, family life stressors, mother's lack of social support, and lack of cognitive stimulation for the child.

Race and Ethnicity

Parallel to SES, racial and ethnic influences operate within the development of childhood aggression through their impact on the child's social environment, including family structure and discipline practices. For example, race and cultural context are often found to be a moderating factor in the effects of physical punishment on children's display of aggressive behaviors (e.g., Dodge, 2002; Simons et al., 2002). Additionally, the correlation

between race or ethnicity and SES must be considered within interpretations of findings as illustrated by Dodge et al. (1994). The numerous differences found between white and nonwhite children became nonsignificant when controlling for SES, leading the authors to conclude that SES is the overriding factor leading to differing socialization experiences and higher teacher ratings of aggression for African-Americans.

Family Structure

A significant body of literature has examined the effects of various presentations of family structure on the behavioral and emotional outcomes of children, with the vast majority of research in this area focusing on the effects of either living in a single-parent household (most often single-mother) or exposure to parental conflict and divorce. Despite widespread cultural assumptions that a two-parent biological family will produce the best child outcomes, Lansford, Ceballo, Abbey, and Stewart's (2001) comparison across various family structures represented within the National Survey of Families and Households (NFSH; Sweet and Bumpass, 1996) supported the hypothesis that processes within the families, not the structure and composition of the family per se, were most predictive of child outcomes.

A high level of conflict between parents is often found to be associated with child behavioral and emotional problems, regardless of whether the parents are married (Crockenberg & Covey, 1991) or divorced (Leon, 2003). However, as Crockenberg and Covey (1991) emphasize, one cannot simply assume a unidirectional, causal link from conflict to child problems. Negative outcomes for children who witness high levels of parental conflict are said to occur through a number of different pathways, including a direct negative effect through behaviors modeled during the course of the conflict. Additionally,

more indirect effects have been found in some circumstances to operate through personal characteristics of the parents contributing simultaneously to both high levels of marital conflict and ineffective parenting.

Prolonged marital conflict can also negatively impact parenting skills, thus creating an environment more conducive to the development of problem behaviors. The longitudinal work of Elder, Caspi, and Downey (1986) found that intergenerational patterns of problem behaviors across the life span were maintained through unstable family relations, especially marital relationships, that created the environmental context conducive for the development of problems in the next generation.

Social Environment and Processes

Peer Rejection

As children age, proportionately more of their social conflict will occur with peers, most often over possessions during the preschool years (Fabes & Eisenberg, 1992). Aggression within peer interactions is often initially reinforced for young children (i.e., they learn they can obtain desired possessions and avoid being targeted for bullying); however, frequent aggressive behaviors quickly result in a child being rejected by his or her peers. Early peer rejection has far-reaching effects through its impact on later opportunities for social interactions (Cicchetti & Toth, 1991). Rejected aggressive and antisocial children are then directed toward children with similar behavioral problems in a process that reinforces their behaviors and further isolates them from positive peer interactions (Rubin, Hymel, Mills, & Rose-Krasnor, 1991).

Social Information Processing

A large body of literature has found that chronically aggressive children process environmental stimuli differently than nonaggressive children, leading to higher probabilities of aggressive responses (e.g., Coie & Dodge, 1998; Dodge, 1993). Dodge (1993) describes the biased social information processing in chronically aggressive schoolchildren as developing primarily due to multiple models of aggressive social interactions and insecure attachments with caregivers, often including physical abuse of the child. These factors combine to create a mental representation of one's surrounding as a hostile environment. In processing social information, these children attend to fewer social cues and are more sensitive to hostile cues, leading them to make less accurate interpretations of social situations. Chronically aggressive children then display what is called a "hostile attribution bias" (Nasby, Hayden, & DePaulo, 1979), being more likely to interpret benign, non-threatening social and environmental cues as hostile. This attributional bias has been found as early as the preschool years, prior to the onset of chronic aggression (Dodge, Bates, & Pettit,1990), leading Dodge (1993) to suggest a causal influence of these mental processes on later behavior. Highly aggressive preschool children are subsequently able to generate fewer and more aggressive response choices within social situations than nonaggressive children. These children are less skilled at critically evaluating the outcomes and consequences of these response choices, often evaluating the aggressive responses less negatively than nonaggressive children do. Ultimately, this problematic processing of information is self-perpetuating in that hostile behaviors on the part of the child come to elicit hostile reactions from his or her environment (Burks, Laird, & Dodge, 1999).

Parent-Child Relationship Variables

Most studies examining the sociodemographic variables discussed above have found their largest influence within the development of aggressive problem behaviors to function through their effects on the parent-child relationship and the parents' capacities to provide adequate care and support for their children (e.g., Coie & Dodge, 1998; Dodge et al., 1994; Elder et al., 1986). Additionally, sociodemographic risk factors have been found to be less consistently associated with behavioral problems than are those risk factors related to the parent-child relationship (e.g., Shaw, Owens, Vondra, Keenan, & Winslow, 1996). Therefore, many researchers advocate for further examination of the early parent-child relationship(s) in order to further the understanding of the development of problematic aggressive behaviors and develop prevention and intervention models (e.g., Campbell, 2002; Patterson, 2002).

However, even within the context of the parent-child relationship numerous avenues of investigation remain. The vast number of variables conceptualized within this context can be generally classified within the intersection of two dimensions: the presence or absence of negative parenting characteristics, such as harsh discipline and negative parental perceptions of the child, and the presence or absence of positive parenting characteristics, such as warmth, support, and positive involvement. These dimensions have been found to exert independent influence on child behavior, including aggression (e.g., Pettit, Bates, & Dodge, 1997). For example, Pettit and Bates (1989) found discipline practices and maternal involvement to each contribute uniquely to the development of childhood behavior problems from birth to age four.

Within theoretical and empirical literature, contradictions exist as to which domain is most influential within the development of problematic aggressive behaviors in children, with discrepant findings being largely attributable to methodological differences. Variations in the ages and gender of research participants, the population from which the sample was drawn (i.e., clinical versus community), longevity of evaluation, and the source(s) of data gathered can lead to variations in the outcomes of empirical research. Each of these methodological issues has implications for future investigations into the development of childhood aggression.

Negative Parenting Characteristics

Harsh discipline and coercive parent-child interactions are among the negative parental characteristics most often causally linked to aggressive behavioral problems in children (e.g., Campbell, 1991, 2002; Elder et al., 1986; Nix, Pinderhughes, Dodge, Bates, Pettit, & McFadyen-Ketchum, 1999; Patterson et al., 1992). A meta-analysis conducted by Rothbaum and Weisz (1994) found these parent-child variables to be characterized by an absence of positive characteristics, such as warmth or support. Notably, empirical studies identifying these negative parenting characteristics as the most influential aspect of the parent-child relationship contributing to the development of aggressive behavioral problems are often characterized by either older children or adolescents as research subjects, a sample drawn from clinical or other nonnormative samples, or both. Also, gender has been identified as a key moderator in the effects of harsh or coercive interactions on child outcomes (for example, McFadyen-Ketchum, Bates, Dodge, and Pettit, 1996). Research linking negative maternal attributions of children to negative child outcomes provides

another example emphasizing the presence of negative parental characteristics (e.g., Bickett, Milich, & Brown, 1996; Nix et al., 1999; Olson et al., 2000); however, these studies have been conducted longitudinally with comparably younger children in nonclinical samples, and often support findings equally emphasizing the importance of positive parenting characteristics, such as warmth and support.

Harsh discipline and coercive interactions. One of the most consistent findings throughout aggression literature is the connection of harsh discipline practices by parents and subsequent aggressive and other behavioral problems in children. However, in many contexts physical punishments must be differentiated from harsh discipline. Based on an extensive review of literature, Dodge (2002) concluded, "physical discipline practices will exert a negative impact on the child only to the extent that they communicate rejection and harshness" (p. 222). Parents generally report using harsh discipline with the goal of deterring antisocial activities and as a result of environmental stress (Dodge et al., 1994); however, these strategies often escalate into coercive exchanges between the parent and child, which ironically can actually promote the development of aggressive behaviors in the children (Dodge et al., 1994; Patterson et al., 1992).

Gerald Patterson and colleagues at the Oregon Learning Center have conducted decades of research focusing on coercive parent-child interactions as a primary cause of antisocial behavior problems in children and adolescents. Within their model, these interactions evolve over a long period of time, usually beginning in the preschool years with ineffective discipline by parents, which is characterized by continual scolding and badgering about relatively insignificant issues and unsubstantiated threats of punishment. This

ineffective discipline, especially in the absence of positive parental involvement and family

management skills, produces an escalating process through which the child learns to respond

to parental discipline efforts with coercive behaviors in order to escape punishment. The

child learns that his or her own aversive behaviors (tantrums, crying, etc.) result in direct

positive reinforcement by both allowing the child to escape undesired outcomes and

effectively stopping the aversive behaviors of the parent(s). Over time, this coercive process

around oppositional behaviors results in the intensification of aggression and other antisocial

behaviors of the child, as well as an increased likelihood of physical aggression in all family

members. The child then becomes increasingly difficult for the parent(s) to monitor as

coercive tactics continue to be used to maintain autonomy and control within the family.

These coercive patterns are also manifested in interactions with other authority figures (e.g.,

teachers and other school personnel) and peers, which creates the context for the emergence

of other risk factors for delinquency and continued antisocial behaviors as adults, such as

academic failure and association with deviant peers (Patterson et al., 1992; Patterson, 2002;

Snyder & Stoolmiller, 2002).

However, this conceptualization of the development of aggression has primarily been

empirically supported in school-aged males. The frequently referenced cross-sectional study

by Patterson et al. (1992), through which a significant portion of the above theory was

supported, utilized a small, high-risk sample of adolescent boys. In contrast, McFadyen-

Ketchum et al. (1996) found that coercive interactions between mothers and daughters

actually resulted in a *decrease* in coercive and aggressive behaviors on the part of the child.

From a larger sample (N = 585), a subset of 165 five- to eight-year-old children, stratified

based on high, medium, and low levels of aggression, were observed in their homes with their families in order to examine the coercion and affection between the mothers and the target children, and the relation of these variables to initial levels and subsequent changes in aggression. Observational measures included both global and event-based assessments made by multiple coders. These researchers are among a select few to include the gender of the child as a moderating variable, and found that the coercive cycle resulting in increased aggression over time was only found for boys. In contrast, highly coercive interactions between mothers and daughters were associated with decreasing rates of aggression.

The authors stated that the differences found for boys and girls could be partially due to higher levels of aggression occurring in boys. In other words, high coercion in mother-child interactions may be effective in decreasing aggression when the levels of aggression are lower (i.e., as with girls). Findings for both boys and girls were also said to be in line with Patterson et al.'s (1992) coercion theory; however, the relation of these findings to the theory was highly speculative and went far beyond the data reported by the authors. The authors suggested that, because boys have been found to be more likely to respond with aggression when faced with aversive events while girls are more likely to become compliant, mothers would be more likely to be reinforced for coercion with daughters. Contrarily, mothers using coercion with boys are subject to escape conditioning, in that the mothers will shift to a more neutral or positive interaction when met with aggressive responses from their sons, thus inadvertently reinforcing the aggression of the son.

However, researchers utilizing much younger samples, including infants followed longitudinally, have suggested that coercive interactional patterns may emerge at least

partially through the operation of negative parental attributions of the child. Illustrative of this research is the Bloomington Longitudinal Study (BLS; Bates, Olson, Pettit, & Bayles, 1982; Bates, Bayles, Bennett, Ridge, & Brown, 1991; Pettit & Bates, 1989; Olson et al., 2000). Data were gathered from a community sample recruited from birth records beginning at six months of age across childhood and adolescence. Although the majority of their findings focused on the absence of positive parenting characteristics (see below), a major finding from the study was that mothers' self-reported perceptions of their children as unresponsive or rejecting of them during preschool years were the strongest predictor of the children's self-reported aggression and other externalizing problems at age 17 (Olson et al., 2000).

Nonetheless, negative maternal attributions may not have such straightforward effects on aggression across time as the above results suggest. Utilizing a longitudinal design with a larger and more diverse sample, Nix et al. (1999) found that maternal hostile attributions about the intent of children's behavior, assessed through mothers' responses to hypothetical vignettes, was only predictive of high levels of aggressive behavior when accompanied by harsh discipline practices, suggesting the simultaneous emergence and interaction of these variables within the onset of problematic aggressive behaviors. Significant methodological differences that may partially account for the discrepancies between these findings include the more direct assessment technique used within the BLS (Olson et al., 2000) and a more at-risk sample recruited by Nix et al. which had a greater number of children rated at or near the clinical cut-off on the aggression subscale of the CBCL upon kindergarten entrance. Also, Nix et al. had only followed their sample across the four years from kindergarten through

third grade, while the BLS sample (Olson et al., 2000) had been assessed from six months of age through age 17. Therefore, the BLS findings could indicate that negative maternal attributions have longer-term, independent effects that may also be observed at a later point in time within the Nix et al. sample.

Positive Parenting Characteristics

Despite the relative volume of research examining the contribution of negative parenting characteristics within the development of childhood aggression, attention has also been directed to positive parental influences. Patterson et al. (1992), among others, suggest that the presence of positive parenting characteristics, such as positive involvement, may be relatively more influential for younger children who have minimal or no behavioral problems, such as those in the BLS sample discussed above (Olson et al., 2000). Indeed, research supporting the absence of positive parenting characteristics as more influential in problematic child outcomes than the presence of negative parenting characteristics has generally been conducted longitudinally beginning with younger children, including infants and preschoolers, drawn from nonclinical samples.

Additionally, as compared to negative parental influences, there appear to be a greater number of positive avenues through which parental characteristics may contribute to the development of aggression and other child outcomes. For example, Pettit et al. (1997) suggest that greater multidimensionality is found in positive parenting than in negative or harsh parenting. In other words, there are many more ways to be a good parent than to be a bad parent. Therefore, the present review will only discuss a sample of studies highlighting

variables that appear to represent the general body of literature regarding the contribution of positive parental influences, or absence thereof, to childhood aggression.

Parental warmth and support. An authoritative parenting style (Baumrind, 1967; 1971) balancing firm discipline with warmth and support has been repeatedly linked with positive child outcomes (for example, see Darling & Steinberg, 1993). Similarly, the absence of warm, supportive interactions between a parent and child has often been linked to aggressive behavior problems, operating independently of the effects of negative or harsh parenting practices (Pettit & Bates, 1989; Pettit et al., 1997). As stated above, these findings are particularly common among studies utilizing younger children with low levels of behavioral problems. For example, in addition to their findings regarding negative maternal attributions, Olson et al. (2000) found the absence of observable affectionate mother-child interactions during the preschool years to predict higher levels of aggression in children across each developmental period assessed in the community sample of the Bloomington Longitudinal Study. This finding was consistent regardless of the agent used to assess the child's aggression, including mothers, teachers, and adolescent self-report at age 17. Predictive differences in observed maternal warmth, supportiveness, and enjoyable interactions with a child were observed as young as six months of age, which the authors emphasize is "well before coercive parent-toddler transactions become established" (p. 131).

Pettit et al. (1997) also found the absence of warm and supportive parent-child interactions to be a significant contribution within the development of behavior problems in children, even after controlling for the effects of harsh discipline practices. These authors initially assessed 585 preschool children with their mothers (one third of father data was

missing, so it was dropped), and followed them through the sixth grade. Observational

measures of interaction qualities were based on global assessments made immediately after

researchers interacted with families, as compared with event frequency measures utilized

within the BLS. Although the absence of maternal warmth was a significant factor in the

development of problem behaviors, its presence was also a significant predictor of better

social skills for African-American children as well as better academic performance for girls.

Positive involvement. Positive parental involvement can take many forms, including

positive discipline techniques and monitoring of peer interactions. For example, Pettit et al.

(1997) found one of the best predictors of the presence or absence of behavioral problems for

children entering kindergarten was mothers' reported use of calm discussions to solve

problems. Furthermore, mothers' inability to generate proactive, preventative strategies for

dealing with child misbehavior remained predictive of higher rates of externalizing behavior

problems from kindergarten to the sixth grade. However, these results were based exclusively

on mothers' responses to hypothetical vignettes, leaving open the possibility of different real-

life responses to similar situations.

In contrast, Pettit and Bates (1989) operationalized positive involvement as an event

in which the mother was observed either initiating social contact or seeking to teach the child

in a positive manner (i.e., lacking harshness). Although less stable over time, these measures

of positive involvement were found to be better predictors of concurrent child behaviors than

negative parent-child interactions, including coercion. When social contact was most often

initiated proactively by the mother, it was negatively correlated with concurrent maternal

ratings of aggression. In contrast, the child having to be largely responsible for initiating

social contact with his or her mother was found to be positively correlated with mothers' CBCL ratings.

Secure attachment. Another positive element within parent-child relationships often examined within the development of childhood aggression is a secure attachment bond between the child and one or more significant caregivers. However, attachment security must be differentiated from any global assessment of the parent-child relationship, as well as warmth or discipline. Bowlby's (1969/1982, 1973, 1980) attachment theory and subsequent empirical findings of attachment classification identify the consistent availability and responsiveness of a caregiver as key determinants of the level of security demonstrated toward the caregiver by the child. The cumulative influence of a few significant attachment bonds is then merged into an internal working model of self, others, and one's environment to be used by the child to anticipate and plan for the future.

During their preschool years, children who maintain secure attachment bonds with primary caregivers will experience relationships that provide guidance for cognitive, emotional, and social development by allowing experiences such as open communication about emotions experienced (Greenberg & Speltz, 1988; Shaw & Bell, 1993). The development of insecure attachment bonds, specifically an avoidant or disorganized attachment style, with primary caregivers has been found by numerous researchers to be associated with the early development of behavioral problems, including aggression (Lyons-Ruth, 1996; Marcus & Kramer, 2001; Shaw et al., 1996).

Attachment literature also emphasizes the influences of a child's temperament on attachment security within his or her relationship with a caregiver (e.g., Cassidy, 1999).

Characteristics of children with a difficult temperament include a high activity level, high

sensitivity to environmental stimuli, less adaptability to change, and a predominance of

negative mood (Chess & Thomas, 1996). Temperamental qualities are associated with

predispositions toward behaviors related to aggression such as risk taking, sensation seeking,

and the ability to remain calm in stressful situations (Gottesman et al., 1997), as well as pain

sensitivity (Séguin, Pihl, Boulerice, Tremblay, and Harden, 1996). Despite temperamental

differences between children, most caregivers are able to adjust their contributions to

interactions with difficult children in order to help prevent negative outcomes (Crockenberg,

1981).

Although the direct contributions of temperament and other biological factors are

usually modest (Cicchetti & Toth, 1991; Gottesman et al., 1997), children rated by their

caregivers, most often mothers, as having a difficult temperament remain at greater risk for

the occurrence of externalizing disorders (e.g., Patterson, 2002), including high levels of

aggressive behaviors. This continued empirical relationship is attributed to the moderating

effect of temperament on numerous factors associated with these behavioral problems, such

as an insecure attachment with the caregiver (Lyons-Ruth, 1996; Marcus & Kramer, 2001),

less warmth and fewer positive interactions elicited from parents and caregivers (Olson et al,

2000), negative parental perceptions and interpretations of the child (Olson et al, 2000), and

peer rejection (Rubin et al., 1991). However, it is important to note a key methodological

weakness of almost exclusive reliance on retrospective maternal reports of temperament,

which is frequently acknowledged within the measurement of infant temperament, especially

in light of influential negative biases discussed above that are found in some parents'
attributions about their children.

Father-Child Interactions

The vast majority of the literature reviewed above is representative of research
focusing on child behavior outcomes in that only mothers are typically included when
examining parent-child relationship variables. The exclusion of fathers has historically
occurred for a variety of both theoretical and logistical reasons, including a pervasive cultural
belief that the mother-child relationship is more influential in child development as well as a
greater level of difficulty in recruiting and engaging a sufficiently diverse sample that
includes fathers. Researchers who do include fathers have found that one risks an incomplete
picture of family processes when neglecting to include data regarding both the father's
involvement with the child and the father's perspective on the child's behavior (e.g.,
DeKlyen, Biernbaum, Speltz, & Greenberg, 1998; DeKlyen, Speltz, & Greenberg, 1998).

In extensive literature reviews, DeKlyen, Speltz, and Greenberg (1998) and Lamb
(1997) provide several points in support of specifically examining the contribution of fathers
to the emergence of conduct problems, especially in boys. Fathers spend significant amounts
of time with their children; recent findings suggest that the time fathers spend with their
children has been increasing over recent years, with potential consequences for the impact of
the father-child relationship on child development (Lamb, 1997). The time fathers do spend
with their children often differs qualitatively from that spent by mothers in that fathers are
often preferred as playmates providing physical stimulation (DeKlyen, Speltz, & Greenberg,
1998). Fathers are also given positions of power within many families, potentially making

their actions and role within the family disproportionately strong in relation to the time they spend with their families. In addition, fathers are likely to have a stronger impact on their sons as male role models, and are likely to have a higher level of involvement with sons (DeKylen, Speltz, & Greenberg, 1998; Lamb, 1997). However, Kazura (2000) highlighted several potential obstacles between present-day fathers and high levels of involvement. These include the role of mothers in many ways as gatekeepers between fathers and children, the absence of socialization experiences emphasizing nurturance and caregiving as significant male contributions within the family, and subsequently, an absence of positive male family role models to provide a clear definition of fatherhood.

Several reviews of empirical investigations inclusive of fathers have found aspects of the father-child relationship to be as or more influential in the development of externalizing behavioral problems than parallel aspects within the mother-child relationship. For example, the review by Loeber and Stouthamer-Loeber (1986) reports the father-child relationship to be even more influential than the child's relationship with his or her mother, particularly for boys, although the meta-analysis of Rothbaum and Weisz (1994) did not support this conclusion. Paralleling the discussion above, Rothbaum and Weisz (1994) speculate that the discrepancy may result from Loeber and Stouthamer-Loeber's (1986) predominant focus on clinical samples of older children and adolescents.

Likewise, Campbell (2002) suggests that positive paternal involvement is even more important for children at risk for externalizing behavior problems, regardless of children's ages, largely because of the effects of fathers' noninvolvement on maternal resources and family context. Within a review of a small number of studies with high-risk samples that

included father data, DeKlyen, Speltz, and Greenberg (1998) report that fathers' involvement in discipline is associated with higher levels of behavior problems, regardless of the degree of negative interactions involved. However, these authors caution that the present state of empirical knowledge does not allow for a firm conclusion regarding the directionality of this association. Fathers' negative involvement with aggressive children may be an effect of child behaviors instead of a cause, since mothers may solicit greater levels of discipline support when dealing with children displaying problem behaviors. Therefore, more empirical investigation is needed in this and other areas related to fathers' influences in the development of behavioral problems.

DeKlyen, Speltz, and Greenberg (1998) report findings from a cross-sectional analysis of both mothers' and fathers' data from the Preschool Families Project (DeKlyen, Biernbaum et al., 1998) that are illustrative of current knowledge of fathers' influences in the development of problem behaviors. Parent-child interaction quality and attachment security of boys in a clinical sample were compared to those from a nonclinical comparison group. Both positive and negative parenting characteristics were assessed through interviews with parents. Additionally, the child's attachment style with each parent was assessed with the Preschool Attachment Assessment System, an observation measure similar to the more commonly known Strange Situation (Ainsworth, Blehar, Waters, & Wall, 1978) to classify attachment behaviors based on the child's responses to separation and reunions with his parent. Results supported further examination of the unique contributions of fathers in the development of childhood behavioral problems (DeKlyen, Speltz, & Greenberg, 1998). Negative and harsh discipline by fathers was found to have the same negative effects on child

behaviors as that of mothers. Father-son attachment security, found to be independent of mother-son attachment, also uniquely contributed to predictions of the child's membership in the clinical subsample.

In combination with other findings, the absence of significant influences of positive paternal involvement on children's behaviors in DeKlyen, Speltz and Greenberg's (1998) analysis is interpreted to suggest that the mechanisms through which fathers' involvement may contribute to children's development, and specifically to the emergence of behavioral problems, may differ from those of mothers' involvement (i.e., through warmth, support, and positive interactions). This conclusion is echoed in a review by Lamb (1997), who suggested that the effects of father involvement on child development are largely determined by context, meaning that indirect influences from the marital context, cultural and economic factors, and family of origin practices are important in determining the impact of fathers on their children. Lamb (1997) separates specific characteristics of parents from the overall parent-child relationship, stating that, "characteristics of individual fathers—such as their masculinity, intellect, and even their warmth—are much less important, formatively speaking, than are the characteristics of the relationships that they have formed with their children" (p. 13). Several researchers (e.g., K. Grossmann, K. E. Grossmann, Fremmer-Bombik, Kindler, Scheuerer, & Zimmermann, 2002; Kazura, 2000) have supported that the quality of father-child play interactions as not only an indicator of parent-child relationship quality, but also a potential determinant of children's developmental outcomes.

In a longitudinal study of 49 German children and both of their parents, K. Grossmann et al. (2002) found several elements of parent-child play interactions to be

predictive of later attachment conceptualizations, especially for fathers. Families were recruited in hospitals prior to the births of the target children. Along with a variety of measures completed throughout infancy and toddlerhood, home observations were conducted of mother-child and father-child free play interactions when the target children were two and six years of age. These interactions were coded by the Sensitive and Challenging Interactive Play (SCIP) scale developed by the authors, which assesses the quality of the parents' responses to their children within play. Scoring is formulated so that "parents who cooperate, take the child's point of view when explaining the material, provide information in accordance with the cognitive ability of the child, motivate the child, and make suggestions that are usually accepted by the toddler, are given a high score" (p. 316).

Fathers with a greater understanding of and appreciation for the significance of attachment bonds, as measured by the Adult Attachment Interview (Main & Goldwyn, 1984/1992), were both more involved in their children's day-to-day lives and received higher scores on the SCIP when their children were both two and six years old. Fathers' play sensitivity was found to be more consistent than that of mothers across these assessment points. Additionally, fathers' SCIP scores at age two and six were predictive of later developmentally appropriate measures of children's attachment security at ages 10 and 16. However, the same relationship was not found for play sensitivity of mothers. In light of these and similar findings, it seems imperative to further examine play interactions as a significant element of parent-child relationships.

Pretend Play within the Parent-Child Relationship

Play, distinguished by many as the most significant activity of preschool children (e.g., Duncan & Tarulli, 2003; Vygotsky, 1967, 1978), is an instinctive behavior in children that develops throughout the course of the preschool years. Levine (1988) defined play as "those sequences of behavior that occur in both solitary and collective settings, emphasize process rather than a goal and involve the substitution of one object, action, or person for another, resulting in an 'as-if' or 'what-if' quality that transforms reality as it is ordinarily experienced" (p. 165). There is overwhelming theoretical and empirical consensus as to the developmental significance of play for children (e.g., Duncan & Tarulli, 2003; Hughes, 1999).

A diverse body of literature has also examined significant contributions made by the active participation of a parent or caregiver in children's play. However, conclusions drawn from this literature seem to depend on the conceptualization of play's intended outcome. Several authors suggest that parental involvement in play has minimal impact on the long-term quality of the child's play itself (e.g., Fein & Fryer, 1995); however, others emphasize the need to look at other child outcomes, such as positive social and behavioral development, to find lasting effects of parental participation in children's play (e.g., Bortstein & Tamis-LeMonda, 1995). This literature will be reviewed below, including studies pointing specifically to parent-child play interactions as influential in the development of conduct problems in young children.

Development of Play in Children

Social play of children is characterized by a developmental sequence (Hughes, 1999), generally differentiated within the literature by Parten's (1932) hierarchical categories that progress from solitary play in infants and toddlers to cooperative play in older preschoolers that is characterized by a common goal dependent on all participants. Similarly, pretend play begins soon after the child's first birthday and develops alongside language and cognitive representational abilities (Campbell, 2002; Hughes, 1999). Initially, children engage in short periods of pretending to perform familiar activities using concrete props, such as pretending to sip juice from a play cup. At approximately 18 months of age, pretend play begins to shift from self-referenced to other-referenced play, meaning that the child becomes able to direct play at another object or person, such as pretending to also give his or her stuffed animal a sip of juice from the play cup (Campbell, 2002; Rubin, Fein, & Vandenberg, 1983).

By approximately 30 months of age, others become active agents within the child's play instead of the child simply acting on them. Sequences of play also become much more complex, and more symbolic props can be substituted within the play. For instance, a child at this age can pretend that his or her stuffed animal is independently drinking some juice and eating some cake from imaginary dishes, followed by pretending to clean the table (Campbell, 2002; Rubin et al., 1983). After the age of two years, children become increasingly involved in dramatic play, allowing them to act out many social and family roles (Hughes, 1999). Corresponding with the ongoing increase in children's emotional development, emotional terms are also much more prevalent in pretend play after this time (Saarni et al., 1998). By three years of age, preschoolers also clearly understand the

difference between reality and make-believe, demonstrated by their abilities to explicitly request that peers or adults 'pretend' with them, as well as switch back and forth between reality and pretending during episodes of play, for example stopping play to give directions to playmates about how to play or direct the theme of the play (e.g., "Now you say..."; Hughes, 1999).

Theories of the exact functions and purposes of children's play are varied; however, there is general agreement that play facilitates development in a number of ways (Hughes, 1999). Piaget (1962, 1965), for example, believed that the purpose of play was to facilitate the child's learning about and adaptation to the environment through the assimilation of new material into his or her cognitive structures, and to a lesser extent accommodating existing structures to incorporate new material within the play. Others focus on the significance of pretend play within socio-emotional development, including the child's abilities to self-regulate his or her own emotions and take the perspective of another person or object (Hughes, 1999; Landy & Menna, 2001).

Similarly, Vygotsky (1978) describes pretend play as a means for coping with frustration that results when a child cannot obtain what he or she desires in reality:

> To resolve this tension, the preschool child enters an imaginary, illusory world in which the unrealized desires can be realized, and this world is what we call play. Imagination is a new psychological process for the child; ...and represents a specifically human form of conscious activity. Like all functions of consciousness, it originally arises from action. The old adage that child's play is imagination in action

must be reversed: we can say that imagination in adolescents and school children is

play without action. (1978, p. 93)

Thus, Vygotsky viewed play and imagination as paralleling his conceptualization of the

relationship between early, non-targeted spoken words and thought; the actions of play will

eventually become internalized as imagination (Smolucha, 1992).

Additionally, it is important to emphasize the role of frustration within Vygotsky's

theory of play. Play is seen as a means of developing emotional skills for coping with and

inhibiting negative expressions of frustration, with caregivers having the ability to scaffold,

or facilitate these developmental processes in order for the child to obtain optimal outcomes

(Vygotsky, 1976). Research has begun to emerge that supports Vygotsky's ideas. By

following the lead of the adult, children can enhance their understanding of social situations,

relationships, and emotional experiences (e.g., Campbell, 2002; Levine, 1988). Although

often characterized by horizontal, nonhierarchical interactions qualities (Russell, et al, 1998),

parent-child pretend play often relies heavily on the skills of the more socially sophisticated

parent to maintain and manage the play themes. Similarly, Smolucha (1992) also emphasizes

distinctions in Russian grammar that are said to emphasize Vygotsky's intent to

communicate that a child is actively guided by another (e.g., parent or caregiver) in the use of

object substitution, such as using a stick to represent a horse for riding. She then contrasts

this view with that of Piaget (1962) which proposed that children largely develop these skills

within solitary play.

Impact of Parental Involvement in Children's Play

Parents provide many additional direct and indirect contributions to their children's

play, for instance structuring and designing the home play environments, interpreting real

and play situations for children, modeling roles to be portrayed by children within play, and

serving as an audience to support play behaviors (Levine, 1988). The rather limited body of

research examining parental involvement in their children's play activities generally

addresses two main topics: contributions of parent involvement to the quality of children's

play, and contributions of parent-child play to specific cognitive or social developmental

outcomes.

Contributions of Parental Play Involvement to Children's Play Quality

Pretend play of parent-child dyads has been found to be of higher quality than that of

children when playing alone (e.g., Goudena & Vermeulen, 1997; Haight & Miller, 1992;

Slade, 1987). Children will often not reach a resolution or conclusion within their pretend

play while playing alone or with a same-aged playmate (Bretherton, 1989). Additionally,

when a skilled parent is also engaged in play, differences emerge in the quality of children's

play in relation to a number of variables, such as the child's social-status (Goudena &

Vermeulen, 1997) or social competence (Galyer & Evans, 2001), the attachment style of the

parent-child dyad (Kazura, 2000; Slade, 1987), and maternal depression (Rubin, Both, Zahn-

Waxler, Cummings, & Wilkinson, 1991). Parental factors that can enhance or inhibit

children's pretend play include parents' appreciation of fantasy, parents' abilities to facilitate

the child's imagination, and the extent to which parents participate in play (Hughes, 1999).

Haight, Parke, and Black (1997) also found that parents differed in their views of the

developmental importance of pretend play, and these views were significantly related to the actual play practices of the parents.

Nonetheless, contrary to the expectations of most play theorists, the beneficial effects of parental participation typically are often not found to translate into increased long-term sophistication in the child's solitary play (for review, see Fein & Fryer, 1995). However, this line of research seems to focus too exclusively on play as its own outcome (i.e., playing to improve play skill) instead of play as facilitating a developmental process that results in other outcomes, such as cognitive or social skills. Even when conceptualizing play as an indicator of cognitive development, outcome measures are often limited to play measures and samples are often limited in size and diversity.

For example, Haight and Miller (1992) conducted a longitudinal observational study of mother-child play interactions in a small nonrandom sample ($n = 9$) following typically developing children from age 12 to 48 months. Despite the tremendous limitations for generalization due to sampling issues (small sample size, plus all mothers were college-educated, full-time caregivers), these authors provide rich data regarding the progression of pretend play for these children over time. Mothers were found to initiate almost all pretend play exchanges until children were 24 months old; at this point children became more active agents in developing pretend play themes. Mothers in this sample tended to most often use indirect questions or prompts to facilitate their children's pretending, as opposed to direct instructions. Mothers' participation in play was found to increase the complexity and longevity of pretend play episodes prior to the age of 48 months. Notably, at the 48-month observation, children were found to seek mothers as play partners less often, preferring

siblings or other children as playmates instead. Pretend play with peers, then, was found to be more advanced than the solitary play of the children at the age of 48 months.

With the goal of examining the relationship between Baumrind's (1967) categories of parenting styles and children's play behaviors, Clawson and Robila (2001) observed the naturally occurring play behaviors of 228 children (aged 22-61 months) within their university-based preschool classroom during four separate five-minute periods. The highest level of play displayed during each 20-second interval was recorded for each child. Seven possible levels of play ranged from solitary play to the highest level referred to as complex social play, which included both pretend play with a peer in addition to communication with the peer about the play. Mothers and fathers were also given a questionnaire to classify their parenting styles into the categories of authoritative, authoritarian, and permissive.

Clawson and Robila's (2001) findings suggested a relationship between parents' reported parenting styles and the play competence of their children. Specifically, fathers' self-reported authoritative parenting practices were positively associated with higher levels of play, particularly in boys. For both mothers and fathers, permissive parenting practices were negatively associated with children's parallel play, and authoritative practices were negatively associated with all lower levels of play observed. However, these authors only observed children at play with peers. Their play behaviors with parents may be quite different since, as discussed above, parents are generally more capable of scaffolding play interactions to facilitate children's development in a number of ways. Additionally, these findings are solely based on parents' self-reported parenting behavior. Observational studies

are still needed in order to further develop an empirical understanding of the effects of parenting practices on play behavior.

These studies exemplify this line of empirical study in that rich data are gathered regarding play behaviors, but authors are often disappointed in their efforts to find long-term effects of parent-child play interactions on children's play behaviors. Fein and Fryer (1995) summarized the generally demonstrated effects as primarily motivational, in that children seem to be more motivated toward higher levels of play while the parent or other skilled partner is engaged, but the effect generally does not continue in the absence of the other person.

A frequently cited exception is Slade (1987), who examined attachment security as a mediating variable within the effects of parental involvement within children's play and found differences in play quality of securely attached versus insecurely attached mother-child dyads. Fifteen children and their mothers were observed in several free play episodes over a twelve-month period, beginning when the children were approximately 18 months-of-age. In addition, free play episodes were preceded with a situation requiring the mother to carry on a conversation with a research associate while her child played in the same room. Attachment security was assessed through the Strange Situation procedure (Ainsworth et al., 1978) prior to beginning play observations.

Slade (1987) reported a strong maturation effect across the observation sessions, finding that children engaged in more pretend play and developed more complex skills over the time of the study. However, several differences also emerged based on the attachment styles of the mother-child dyads. First, secure attachment was associated with longer

episodes of symbolic play and more time spent planning play in later observations. Additionally, mothers of securely attached children were more involved in their children's play, which facilitated longer, more complex play episodes. Even when they were engaged in conversation with another adult, these mothers remained relatively constant in their responsiveness to their children's play, often continually making comments to the children about their play. In contrast, mothers of insecurely attached children engaged in very little contact with their children during this portion of observations.

Slade (1987) discussed these results as supporting Vygotsky's (1978) concept of the proximal zone of development, in that children's play was moved to a more complex level through the mothers' contributions. Similarly, Kazura (2000) found attachment security to significantly affect play quality as well, but only in father-child dyads. Based on cross-sectional findings, Kazura (2000) suggested that father-child play interactions might be more important in determining the quality of the father-child relationship than are parallel play interactions in the mother-child relationship. A nonclinical, convenience sample of 27 families was recruited through preschools and community advertisements, approximately half with children between the ages of 12 and 16 months and the other half with children aged 22 to 26 months. Mothers and fathers were each observed with the target child during separate, counterbalanced visits. Each visit began with the Strange Situation procedure (Ainsworth et al., 1978), followed by a series of three play segments: child playing alone in presence of parent, joint free play, and joint pretend play. During joint pretend play, toys relating to either a picnic or circus theme were introduced, and the dyad was asked to enact one of these events.

Both the quality of play and the social interactions of parent-child dyads within the videotaped play segments were analyzed. Although mothers reported spending more time interacting with their children, only fathers were found to have significant positive effects on the play quality of their children, particularly in securely attached dyads. Children were found to play at significantly higher levels during joint pretend play when playing with their fathers than with their mothers. Fathers were also more directive than mothers during joint play. However, children were equally likely to engage and participate in play with either parent.

Potential reasons for the discrepancies between these two studies include Slade's (1987) exclusive focus on mothers, thus, preventing comparisons to fathers. Furthermore, Kazura (2000) included two groups of children, one similar in age to those within Slade's (1987) sample and another younger group. These issues may contribute to a lack of consistency between the findings, but because of the similarities in definitions of play quality across studies, more research is needed to continue to examine differential contributions of mothers and fathers to their children's play quality. However, Levine (1988) interpreted Slade's (1987) findings to suggest that maternal involvement in play may be more reflective of the overall quality of the mother-child relationship instead of being crucial in the development of toddlers' skills within pretend play. Therefore, it may be necessary to examine other aspects of the parent-child relationship, such as warmth or discipline practices, in combination with play interactions in order to begin to establish the relative significance of play within children's development.

Contributions of Parent-Child Play to Developmental Outcomes

Empirical evidence relating parental variables to the quality of children's play is of little value within the examination of the development of childhood aggression without a further link between children's play quality and aspects of child development that have been related to the emergence of aggressive behavior problems. An increasing number of researchers have extended the conceptual link from parental influences on children's play to more specifically examine effects on social and cognitive development through play interactions, with more promising results. Existing studies have supported parental play involvement as potentially influential within cognitive and social development (e.g., Lindsey & Mize, 2000; Youngblade & Dunn, 1995), and specifically within the emergence of conduct problems (e.g., Galyer & Evans, 2001; Gardner, Ward, Burton, & Wilson, 2003; Landy & Menna, 2001). A predominant theme that emerges from these studies, similar to Slade (1987) and Kazura (2000) is the significance of the affective quality of the parent-child play interactions (for further discussion, see Bornstein & Tamis-LeMonda, 1995), which directly parallels research discussed above emphasizing the significance of positive and negative parenting characteristics in the development of aggression in children.

Contributions to cognitive and social development. Lindsey and Mize (2000) conducted the first empirical examination of the relative contribution of parent-child pretend play versus physical play to the development of social competence in children. The group of families used in their analyses was a subset from a larger sample recruited from preschool programs; complete data had to be present for both mothers and fathers of the four- to six-year-old children in order to be included in the analyses. Observations of both mother-child

and father-child play sessions were assessed using both time-sampling and event-sampling

procedures to determine the parents' levels of involvement in play, along with who initiated

play and what response he or she received.

These authors found high quality parent-child play interactions to be positively

correlated with peer- and teacher-reported measures of children's social competence. In

general, more sophisticated pretend play with both mothers and fathers was associated with

higher ratings of social competence. Mutual responsiveness between the parents and children

within both pretend and physical play was identified as a critical factor in the positive

contributions of parent-child play to children's abilities to demonstrate an understanding of

emotional experiences and expressions. Higher levels of joint pretend play between fathers

and sons were also positively correlated with better emotional understanding skills in sons.

Similarly, in order to examine the relationship between pretend play with family

members and children's understandings of others' emotions and perspectives, Youngblade

and Dunn (1995) conducted a longitudinal study that included several naturalistic

observations of 50 second-born children's spontaneous occurrences of pretend play at home

with mothers and siblings (fathers were apparently not in the home during most of the

observations). Approximately half were girls and half were boys; gender of the siblings was

also mixed. Two 1-hour and 15-minute unstructured home observations were conducted one

week apart when the target children were 33 months of age. Families were instructed to go

about their normal routines and given no instructions or limitations regarding interactions.

Dyadic interactions were coded from videotapes for measures targeting pretend play and

conversation characteristics. Additionally, all dyadic interactions (i.e., mother-child, child-

mother, child-sibling, sibling-child) were coded on a five-point scale for some or all of the following variables: conflict, cooperation, responsiveness, attention, control/intrusiveness, and affection. Approximately one year later, two cognitive measures were conducted with the children: a false belief task and an affective understanding task. The false belief test assessed the child's ability to conceptualize that someone else might believe something to be true even though the child knows it is not true, and the affective labeling task measured the child's ability to correctly identify facial expressions and situations likely associated with the emotional states of happy, sad, angry, and afraid.

A large variability was found in the frequency and sophistication of pretend play in which the children engaged during the observation visits, and children engaged in more pretend play with their siblings than with their mothers. Frequent conversations with family members about "inner states" (i.e., feelings, emotions, or beliefs) was associated with increased frequency and sophistication of pretend play. Furthermore, these conversations with siblings accounted for a statistically significant amount of variance in the frequency and sophistication of the target child's pretend play. These results were interpreted as possibly meaning that children who were dealing with more emotional issues were more likely to talk about these within their family, and were also more likely to use pretend play as an emotional outlet of sorts. The greater the age difference between the siblings, the more influence the older often had on the younger.

In an exploratory factor analysis, mother-to-child interaction variables of attention, affection, responsiveness, and control/intrusiveness loaded on a single factor that was labeled "maternal involvement". Therefore, a composite score of these measures was used in

analyses. This composite was significantly positively correlated with both the affection shown to the mother by the target child and the amount of time the mother was engaged in pretend play with the target child individually or together with his or her sibling. Consistent with previous studies (e.g., Haight & Miller, 1992; Slade, 1987), children's play quality was found to improve during the times mothers were directly involved. Qualities of the children's relationships with their siblings, however, were found to have a greater number of significant relationships with play variables, such as the diversity of play themes and role enactments within play. Intercorrelations between sibling-child and mother-child relationship variables were not reported, but the target child's play with each play partner was found to be largely unique to each relationship context.

Finally, correlations between play variables and children's performances on the false belief and affective tasks indicated the only statistically significant relationships to be positive correlations between the frequency of children's role enactments and the false belief task, as well as between total pretend play participation and children's emotional understanding. Surprisingly, these authors do not report taking these analyses a step further to examine direct influences of the children's relationships with either their mothers or siblings on the cognitive measures. Given the exploratory nature of the study (variables selected for analyses were largely determined based on correlational data, and stepwise regressions were often used), it is quite possible these analyses were conducted and found to be nonsignificant and, therefore, not reported.

These findings provide promising information about the impact of positive interactions with family members on children's play, and further connect these play variables

to potential cognitive and social outcomes. However, several notable limitations to the study exist, in addition to the exploratory nature of the analyses. First, this was a generally homogeneous sample of Caucasian children from middle- and upper-middle-class families. Second, all children were second-born, which leaves numerous questions about the impact of birth-order on the findings. For example, a remaining question is whether mothers would participate more in play if there were no older sibling present. Finally, it is possible that play measures, as well as relationship measures, would be found statistically more influential in cognitive or social measures if a sample is specifically recruited for diversity on the outcome measures (such as Gardner et al., 2003, discussed below).

Contributions to problem behaviors. A related study conducted by Galyer and Evans (2001) speaks more directly to predictors of children's skills associated with managing aggressive themes experimentally introduced within play. Strange or highly aggressive themes introduced by children within pretend play are potentially reflective of other behavioral or developmental problems (Campbell, 2002; Landy & Menna, 2001). Children's abilities to effectivly deal with these themes within play can potentially translate into effective skills for coping with anger and frustration within other nonplay relationships. Galyer and Evans (2001) engaged 51 New Zealand kindergarteners one-on-one in a block building "game" that was designed to be interrupted by a "hungry crocodile" who was going to eat all of the game pieces and destroy what the child had constructed. The ability of each child to respond to this negative event in a way that (1) stopped the crocodile from causing harm and (2) allowed the play to continue (i.e., did not result in the symbolic destruction of the game) was coded for analysis. The child's ability to continue the game, but not to stop the

crocodile, was found to be significantly related to parent-reported emotional regulation skills of the child and frequency of the child's engaging in pretend play with a more experienced playmate, including the child's parents.

However, this study has several noteworthy limitations. First, these authors included teacher-based reports on the Social Skills Rating Scales (SSRS, Gresham & Elliott, 1990), a commonly used assessment of social skills and problem behaviors in preschool- and school-aged children, but reported no significant associations between the SSRS subscales and children's play quality. This failure to identify a relationship is most likely due to the homogeneity of the social skills of the children sampled. From their sample of 51 children, only 14 were reported to have received SRSS scores beyond one standard deviation from the age-specific norms. Additionally, although the authors emphasize the significance of pretend-play between caregivers and children, they did not make any observations of these interactions within their sample. Therefore, it is impossible to know how these play interactions might differ from those occurring more naturally between children and their parents.

Gardner et al. (2003) conducted a longitudinal study of the contributions of mother-child play to changes in sixty children's conduct problems from three to four years of age. Low SES children in the United Kingdom were recruited at three years of age for the study based on nominations from public health workers regarding the occurrence of conduct problems. As a part of a government program, these workers had been conducting home visits with all families in a given area from birth through preschool ages. Sixty-eight percent of the sample was identified by workers as having oppositional or conduct problems, and the

remainder of the sample was specifically recruited based on workers' nominations of children in the same neighborhoods with no existing behavior problems. The Child Behavior Checklist (CBCL, Achenbach, 1991) was administered to parents as an additional measure of children's behaviors for use in quantitative analyses. The average CBCL scores for children nominated for high problem behaviors was at the 85th percentile, with the other children scoring significantly lower (percentile not reported). A semistructured interview was also conducted with the child's mother prior to observations as an additional measure of child behavior problems. Children's behavior problems were again assessed one year later.

Two one-hour, unstructured home observations were conducted at three years of age, in addition to an initial visit to administer questionnaires and interviews. Each 30-second interval of observation videotapes from three years of age was coded for the "predominant type of interaction or activity taking place" (p. 367). This variable contained seven possible categories that were hierarchically conceptualized in the following order: conflict, joint play, joint conversation, child playing alone, maintenance, sibling interaction, and child unoccupied. Conflict is reportedly listed first, so that in order for an interaction to be coded as joint-play, for example, conflict could not be simultaneously occurring.

All analyses of conduct scores at four years of age were conducted controlling for scores at three years of age, as these behaviors are generally found to be consistent over time. Maternal depression was also used as a control variable in regression analyses due to its significant correlation with children's conduct scores at three and four years of age. Frequency of mother-child joint play during the home observations at three years of age was found to significantly predict improvements in conduct scores from three to four years of age

(Adjusted R^2 = .09), after considering mother-child conflict as Step 1 in the hierarchical regression. Similarly, the amount of time the child spent unoccupied during the observations at three years of age predicted change in child conduct scores from three years of age to four years of age (Adjusted R^2 = .09). When interpreting these findings, however, it is important to note that there was not a significant zero-order correlation between joint play at three years of age and conduct scores at either age. However, time spent between the parent and child playing OR talking at three years of age was significantly negatively correlated with the amount of time the child spent unoccupied, suggesting that both of the above regressions may be measuring the same construct- the extent to which the parent positively engages the child. The authors suggest that joint play provides an opportunity for the parent to be responsive to the child in a nondiscipline context, which increases the likelihood that the child will comply with future parental requests. However, data were not available to examine the affective quality of mother-child interactions, nor the relationship between positive play interactions and child conduct scores.

Finally, with the goal of identifying affective and relational themes within play interactions between aggressive children and their mothers, Landy and Menna (2001) observed 60 dyads engaged in play activities. Half of the children in the dyads were classified as aggressive based on mother-reported CBCL (Achenbach, 1991, see above for description) scores in the clinical range above the 95th percentile; the remaining 30 scored within the normal range of the CBCL and functioned as a comparison group matched for gender and age. A variety of toys was made available to facilitate pretend play, including toys like plastic dinosaurs specifically chosen to elicit aggressive play themes.

The mothers' responses to their children's aggressive play were recorded and coded, with findings suggesting significant differences for mothers of aggressive children as compared to the mothers of the nonaggressive children. Mothers of aggressive children were less likely to join in the play metaphor, and reflect their children's feelings in the play. These mothers often made value judgments regarding their children's play and withdrew from play when the level of aggression became unacceptable to them. Additionally, mothers of nonaggressive children were in tune with their children's affects and able to effectively alter the play toward more prosocial themes before it had escalated out of control. Finally, mothers of nonaggressive children had a more positive affect, seemed to be more comfortable and familiar playing with their children, and were more responsive and sensitive to their children in the separation and reunion task.

Landy and Menna's (1997; 2001) findings, if replicated, hold many implications for clinical interventions for young children displaying problematic levels of aggressive behaviors. However, several limitations must also be considered and addressed in future research. First, father-child interactions were not included within this research, leaving no means of determining paternal contributions to their children's behaviors. This omission is significant in light of the research reviewed above related to father-child play. Also, the absence of father-child interactions prevents an examination of relative contribution between mothers and fathers.

Second, the gender of the child was not considered within play interactions. Although approximately two-thirds of the participating children were boys, no efforts were made to examine differential responses to aggressive behavior based on gender. Goodenough's

(1931) seminal findings of significant differences that emerged during the preschool years in the responses of mothers to the angry or aggressive expressions of their children suggest this to be an important examination to be made within any study of parent-child interactions.

Finally, Landy and Menna (1997; 2001) made no comparisons between parental behavior within play interactions and other parenting characteristics. A vast body of literature details a number of parenting variables that have been found to significantly relate to childhood aggression, such as harsh discipline or sensitivity. Given the depth of empirical support for the impact of such parenting characteristics on the development of aggression in children, variables within play that are associated with aggression would also be expected to correlate with these parenting characteristics.

Taken as a whole, the limited body of literature examining parent-child play and social outcomes suggests that parental involvement in children's play may significantly influence important child outcomes, even in the absence of consistent findings regarding long-term effects of parental involvement on children's play quality without direct parental participation. However, many questions remain unanswered. For example, it is unclear whether characteristics shown by parents within play with their children are unique influences to the play interaction or simply extensions of general parenting characteristics, and therefore similar to those experienced by the child in problem-solving or disciplinary contexts. Also, no studies have fully examined differential influences of play with mothers as compared to fathers. With few exceptions (e.g., Kazura, 2000), the literature reviewed above almost exclusively focuses on mother-child play interactions, leaving many questions about fathers' roles.

Conclusion

The emergence of problem behaviors, including physical aggression and defiance,

during the preschool period signals a significant potential for worsening behavioral problems

into adolescence and even adulthood (Loeber, 1990; Olson, Bates, Sandy, & Lanthier, 2000;

Patterson, DeBaryshe, & Ramsey, 1989). A substantial body of literature has examined

numerous factors that contribute to the development of these behaviors, with the vast

majority of direct influences during early years repeatedly being identified within the child's

family environment (Campbell, 2002; Coie & Dodge, 1998; Patterson, 2002). Negative

parental characteristics, such as harshness or hostility, are often emphasized as most

influential for older children and adolescents (e.g., Patterson et al., 1992); however, for

younger children, including preschool ages, the presence or absence of positive parental

characteristics such as warmth and sensitivity has emerged as a primary predictor in the

development of behavior problems (e.g., Olson et al., 2000; Pettit et al., 1997).

Researchers and clinicians alike are increasingly turning to the preschool period as a

potentially significant time to intervene in the development of problem behaviors (e.g.,

Campbell, 2002; Patterson, 2002). Play interactions are viewed by many as an integral

component within practically all successful forms of therapeutic interventions for children

(Botkin, 2001; Gil, 1994; Hughes, 1999). In addition, children's play has long been held as

an immensely influential mechanism within children's cognitive and social development

(e.g., Duncan & Tarulli, 2003; Piaget, 1962; Vygotsky, 1978). Therefore, it is imperative to

develop an empirically-based understanding of how parents can influence children's play, as

well as how parental involvement within play relates to positive and negative parenting

characteristics empirically linked to the emergence and continuity of children's behavior problems. If replicated and extended, the findings from the studies discussed here would suggest examinations of experimental interventions into the affective quality of parent-child play as a possible treatment method for early-onset problem behaviors. However, more detailed information is needed about the directionality and specific mechanisms within identified influences. Nonetheless, this emerging body of literature holds exciting promise for greatly increasing the empirical understanding of the early development and prevention of children's behavior problems.

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CHAPTER 3. A COMPARISON OF PARENT-CHILD FREE-PLAY AND STRUCTURED INTERACTIONS IN RELATION TO PROBLEM BEHAVIORS IN PRESCHOOL BOYS

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Abstract

A stratified sample of 34 three- to five-year-old boys and their primary caregivers were observed in their homes engaged in unstructured free-play and a problem-solving task. Behaviors of primary caregivers in each interaction were examined in relationship to teachers' ratings of the boys' externalizing behaviors in a child care setting. Parenting characteristics in the play, but not problem-solving, interaction were found to have a statistically significant relationship with boys' externalizing scores. Positive characteristics of the caregiver in play, such as warmth and sensitivity to the child, accounted for a statistically significant amount of variance in boys' teacher-reported externalizing scores beyond that accounted for by the negative characteristics, such as intrusiveness and hostility. The findings are discussed in relation to previous literature that has addressed both the development of behavior problems in young children and the role of parent-child play interactions in child development. Clinical implications for this population are also discussed.

Introduction

A large body of empirical and theoretical literature has addressed the topic of externalizing behavior problems in children, especially school-aged children and adolescents.

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Several longitudinal studies have found these behaviors to be stable across time (e.g.,

Campbell & Ewing, 1990; Cummings, Iannotti, & Zahn-Waxler, 1989; Olweus, 1979) and

often resistant to interventions in later childhood and adolescence (Kazdin, 1995). Children

who exhibit high levels of externalizing behaviors during early childhood have repeatedly

been shown to be at substantial risk for an array of future social and emotional problems

(Caspi, Elder, & Bem, 1987; Coie & Dodge, 1998; Loeber, 1982; Olson, Bates, Sandy, &

Lanthier, 2000; Patterson, Reid, & Dishion, 1992). Therefore, numerous researchers and

clinicians have recently begun to examine the preschool years in order to better understand

the early developmental processes at work in the emergence of behavioral problems (e.g.,

Campbell, 2002; Olson et al., 2000; Patterson, 2002). As a more complete empirical picture

of these early processes emerges, empirically-based intervention and prevention programs

can then be developed.

Effects of the Parent-Child Relationship on Externalizing Behavior Problems

An overwhelming consensus exists within the literature regarding the significant

impact of the family environment, especially parent-child relationship(s), on the development

of children's externalizing behaviors during the preschool years. Empirical and theoretical

literature addressing the effects of the parent-child relationship on children's externalizing

behavior problems comes primarily from two bodies of literature. A number of studies have

found specific parental behaviors to be predictive of children's problem behaviors. Findings

from these studies can be summarized based on the effects of negative (i.e., harsh discipline;

Pettit & Bates, 1989; Weiss, Dodge, Bates, & Pettit, 1992) and positive (e.g., warmth and

sensitivity; e.g., DeKlyen, Speltz, & Greenberg, 1998; Pettit, Bates, & Dodge, 1997)

parenting characteristics on child outcomes, with the presence or absence of positive parenting characteristics often found to be more influential during early childhood (e.g., Olson et al., 2000; Pettit & Bates, 1989). In addition, several studies within the literature focusing on the developmental significance of children's play have found a significant relationship between children's social skills and parent-child play interactions (e.g., Galyer & Evans, 2001; Gardner, Ward, Burton, & Wilson, 2003; Goudena & Vermeulen, 1997; Landy & Menna, 2001; Youngblade & Dunn, 1995).

Negative Parenting Characteristics

Harsh, ineffective discipline and coercive parent-child interactional patterns are consistently found to strongly predict the development and maintenance of behavior problems in children (e.g., Dodge et al., 1994; Patterson et al., 1992; Patterson, 2002). A large body of research finds an evolution of negative parent-child interactions over the course of childhood, with ineffective discipline strategies of the parent(s) being met with aversive behaviors of the child (tantrums, defiance, etc.). Over time, these behaviors of the child are reinforced when they are effective in preventing discipline, resulting in decreased monitoring of the child and increasingly negative behaviors by the child within most interpersonal relationships, including those with teachers and peers (e.g., Patterson, 2002). Dodge (2002) states that these parental influences, especially harsh discipline practices, have lasting effects on the child's social information processing, teaching the child that "parents (and the world more generally) are rejecting and that the child's primary orientation must be defensive" (p. 222).

However, the exact mechanisms of these developmental processes during the preschool years are still not well understood. Longitudinal studies across infancy and preschool years (e.g., Nix et al., 1999; Olson et al., 2000; Pettit & Bates, 1989) have found mothers' negative or hostile attributions of infant and toddler behaviors to contribute to the emergence of coercive interactions later in childhood. Other researchers have also supported insecure attachment styles as contributing factors within the early development of problem behaviors (e.g., Greenberg & Speltz, 1988; Lyons-Ruth, 1996; Marcus & Kramer, 2001; Shaw, Owens, Vondra, Keenan, & Winslow, 1996).

Positive Parenting Characteristics

Instead of the presence of negative parenting characteristics, the absence of positive parenting characteristics is often supported as more influential in the development of problem behaviors within samples of younger children, as well as samples exhibiting less extreme levels of behavioral problems (e.g., Olson et al., 2000; Patterson et al., 1992; Pettit et al., 1997). For example, in a longitudinal study that followed children from infancy through late adolescence, Olson et al. (2000) found observable differences in maternal warmth, supportiveness, and positive engagement as early as six months of age to be predictive of children's externalizing measures rated by multiple informants, including the self-report of the target child at age 17. These authors emphasize that these differences in positive parenting characteristics were observed prior to the solidification of coercive interactional patterns between the child and his or her parents. Other studies have found positive parenting characteristics to operate independently of harsh discipline and other negative parenting characteristics (e.g., Pettit & Bates, 1989; Pettit et al., 1997).

Parent-Child Play Interactions

Developmental theories have long held children's play behaviors as crucial within

social, emotional, and cognitive development (e.g., Duncan & Tarulli, 2003; Piaget, 1962,

1965; Vygotsky, 1976). Developmentalists emphasize play behaviors as an important aspect

of early education (e.g., Zigler & Bishop-Josef, 2004). In addition, play is often a central

component in therapeutic interventions with young children (e.g., Johnson & Chuck, 2001),

including children with externalizing behavior problems (e.g., Jernberg & Booth, 2001). Play

therapy models have traditionally focused on the child alone, viewing play as a means of

accessing the child's fears and needs (e.g., Freud, 1965; Scarlett, 1994). Typically, parents

are infrequently included within these models, often meeting with the therapist for the

primary purpose of being informed of the child's progress. However, more recently models

have emerged that seek to incorporate parents into the therapeutic process (e.g., Gil, 1994),

often through the parents' participation in play interactions (e.g., Jernberg & Booth, 2001).

Although play therapy models have generally not been subjected to the same level of

empirical evaluation as other interventions, such as behavioral models that focus primarily on

improving parental skills for child management (e.g., Forgatch & Patterson, 1998; Patterson,

Dishion, & Chamberlain, 1993), a small number of empirical examinations have supported

their effectiveness for young children with a variety of presenting problems (e.g., Bratton &

Ray, 2000; Ray, Bratton, Rhine, & Jones, 2001).

Numerous studies have found parental involvement in children's play to have a

significant effect on children's play behaviors, as well as other developmental outcomes. For

example, children engaged in pretend play with a skilled parent not only play at higher levels

than when playing alone (e.g., Goudena & Vermeulen, 1997; K. Grossmann et al., 2002; Slade, 1987), they also have higher levels of social competence and better understandings of emotional experiences (e.g., Galyer & Evans, 2001; Lindsey & Mize, 2000; Youngblade & Dunn, 1995). These findings are supportive of Vygotsky's (1976; 1978) conceptualization of play as a means for the child to not only develop the cognitive skills necessary to generate internal imagination, but also to learn to cope with frustrations brought about by limitations experienced within relationships.

In the only known longitudinal study of conduct problems to have included measures of parent-child play interactions, Gardner et al. (2003) found the frequency of joint mother-child play occurrences during an unstructured home observation when the child was three years old to significantly predict improvements in a mother-based measure of children's externalizing behaviors from three to four years of age. However, it is important to note that no statistically significant zero-order correlation was found between joint play and children's conduct scores at either three or four years of age. Instead, the frequency of joint play interactions was significantly negatively correlated with the amount of time the child spent both playing alone and unoccupied, indicating that the predictive power of these findings may be more indicative of the parents' abilities to positively engage their children than in the play interactions per se. The authors suggest that parent-child play is influential in that it provides a unique opportunity for the parent to be positive and responsive to the child at the child's level. Unfortunately, measures were not included within the study to allow for a more thorough examination of specific influences within the play interactions, including the affective qualities of the mothers' contributions to the play.

However, with a more specific focus on the quality of parent-child play interactions, Landy and Menna (2001) found significant differences in the play contributions of mothers of aggressive and nonaggressive preschool-aged children. Specifically, mothers of nonaggressive children were more skilled at redirecting play metaphors away from aggressive themes and accurately verbalizing emotional labels from the play for the child. Additionally, these mothers were more in-tune with their children's emotional experiences and levels of arousal, allowing them to prevent the escalation of physical or aggressive play. Mothers of aggressive preschoolers, on the other hand, were more likely to stop or withdraw from play with the child when aggressive themes appeared, often even punishing the child for the play.

These findings were interpreted to suggest that interventions into parent-child play interactions could facilitate the development of prosocial behaviors in clinically referred children. However, this research is limited in several ways that would impede its ability to inform clinical interventions. Primarily, the researchers did not include any measure of parenting practices or the parent-child relationship outside of play; therefore, it is impossible to empirically relate these findings to variables known to be significant in the development of aggression, such as the absence of parental warmth or the presence of harsh discipline in other contexts outside of play. Additionally, since the group of children identified as aggressive were recruited from a clinical population, generalization of the findings may be limited to the extreme problem behaviors found in this population.

Additional Influential Variables

Although often found to have statistically significant relationships with children's

externalizing behavior problems, other more distal influences—such as race, socioeconomic

status and family structure—are generally found to operate through their impact on family

processes (e.g., Dodge, Pettit, & Bates, 1994; Lansford, Ceballo, Abbey, & Stweart, 2001).

Gender has also been found to be a primary moderating variable within the development of

externalizing problems (e.g., McFadyen-Ketchum, Bates, Dodge, & Pettit, 1996; Pianta &

Caldwell, 1990; Webster-Stratton, 1996). For example, McFadyen-Ketchum, et al. found that

high levels of coercion within mother-child interactions over time were only associated with

significant increases in boys' levels of aggression from kindergarten to third grade. In

contrast, high levels of coercive interactions were found to have a negative relationship with

changes in girls' aggression levels over time. Additionally, due to both biological and

sociological factors (e.g., Dodge et al. 1994; Goodenough, 1931; Radke-Yarrow &

Kochanska, 1990), males are found to be at higher risk for persistent behavioral problems

across the lifespan (e.g., Coie & Dodge, 1998; Keenan & Shaw, 1997; Olson et al. 2000).

Because of these differences, several researchers (e.g., Patterson et al. 1992; McFadyen-

Ketchum et al. 1996) have advocated for the examination of distinct developmental

trajectories for behavioral problems in boys and girls. Therefore, preschool boys were chosen

as the exclusive focus in the present study.

Summary of Present Study

In an effort to extend and merge two bodies of literature, one examining the

development of externalizing behavior problems and the other examining the significance of

parent-child play on children's developmental outcomes, the present study examined the relationship between boys' teacher-rated externalizing scores and parenting characteristics observed during dyadic interactions between preschool boys and their primary caregivers in both free-play and a problem solving task. In contrast to the majority of previous studies, including most reviewed above, the "primary caregivers" of the boys were specifically recruited as participants in the observed interactions. Family researchers have begun to increasingly target primary caregivers, as opposed to mothers or fathers specifically, in order to identify which caregiver provides the majority of care (for example, Conger, Gibbons, Cutrona, & Simons, 1995; McWayne, Hampton, & Fantuzzo, 2004).

Two primary research questions were posed. First, the continuity of parenting characteristics was examined across two caregiver-child interactions: dyadic free-play and a challenging problem solving task. Play interactions provide opportunities for warm, nurturing exchanges between caregivers and children. In contrast, the puzzle selected for the problem solving interaction in this study was designed to elicit frustration from the child, thus requiring the parent to structure and guide the activity based on his or her knowledge of the child's abilities. Therefore, although moderate correlations were expected between parenting characteristics across these contexts, some variations were expected due to the differing demands on parents in each situation.

Secondly, parenting characteristics in each situation were examined in relation to teacher-reported externalizing behavior scores for the child. The absence of positive parenting characteristics, such as warmth or supportive interactions, and the presence of negative parenting characteristics, such as intrusiveness and coercive tactics, in both contexts

were expected to significantly predict teacher-rated externalizing behaviors. Based on the

previous literature emphasizing the greater relative influence of positive parenting

characteristics for young children, these variables were examined for a unique contribution to

externalizing behaviors over and above the contribution of negative parenting characteristics.

Method

Participants

Thirty-six caregiver-child dyads were identified for participation in this observational

study through childcare facilities in a small Midwestern city. Thirteen childcare facilities

were solicited, most of which served working-class neighborhoods; each granted permission

for information packets to be sent to all parents or guardians of enrolled three- to five-year-

old preschool boys. Boys were specifically recruited for the present study based on

substantial differences in both typical levels of externalizing behaviors and developmental

trajectories toward problem behaviors (e.g., Coie & Dodge, 1998; McFadyen-Ketchum et al.,

1996). Packets included a brief description of the research project, a demographic

questionnaire, and a permission form allowing their son's teacher to complete an assessment

of the child's social skills. Additionally, parents were asked within the demographic

questionnaire to identify the primary caregiver for the child when he was not attending the

childcare facility, and to indicate if this individual would be willing to participate in a single,

one-hour in-home observation. Parents of 91 boys granted permission for the social skill

assessment to be completed by the children's teachers, and primary caregivers of 59 children

additionally expressed an interest in participation in the in-home observation.

From this group of 59, a stratified, random sample of 36 caregiver-child dyads was chosen for the home observations based on teacher-reported problem behaviors. The final sample size became 34 caregiver-child dyads after one family dropped out of the study (reporting "too busy" for the evening home visit), and another was excluded after the revelation that the child had recently been diagnosed with bipolar diagnosis and had begun taking medications between the times of the initial assessment and the in-home observation. The boys in the observation subsample ranged in age from 39-66 months, with a mean age of 52.5 months ($SD = 8.1$ months). Approximately 74% of the boys were Caucasian ($n = 25$), 15% biracial ($n = 5$), 6% Hispanic or Latino ($n = 2$), 3% Asian-American ($n = 1$), and 3% African-American ($n = 1$). As for birth order, 27% were only children ($n = 9$), 35% were the youngest ($n = 12$), 24% were the oldest ($n = 8$), and 15% were middle children ($n = 5$). Sixty-eight percent of the boys lived in the same home with both parents (i.e., parents married or cohabitating; $n = 23$), one child lived with his grandparents, and the remainder (32%; $n = 11$) lived in single-parent households.

Recruitment materials specifically asked for the participation of the individual who was responsible for the majority of the child's care during the time outside of the childcare facility in order to identify the individual likely to have the strongest influence on the child's development. The vast majority of participating primary caregivers were mothers ($n = 30$), in addition to two grandmothers and two fathers who reported providing the majority of care for the target child. Of these individuals, approximately 6% ($n = 2$) had not received a high school diploma, 15% ($n = 5$) reported a high school diploma as their highest level of education, 15% ($n = 5$) had some college, 42% had completed a bachelor's degree ($n = 14$),

and 21% ($n = 7$) had completed a graduate or professional degree. One participating mother did not report her highest level of education.

Independent t tests were conducted for continuous demographic variables to examine potential differences between the full sample and the observation subsample. None of these tests were significant at the $p < .05$ level; however, the mean externalizing score for the observation group ($M = 5.9$; $SD = 2.9$) was slightly higher than that of the full sample ($M = 5.2$, $SD = 2.7$). This trend was not surprising because the selection of the stratified sample resulted in over-sampling boys who received higher externalizing scores. Finally, a Pearson's chi-square conducted within a contingency table analysis revealed no group differences in ethnicity, χ^2 (1, $N = 91$) = .06, $p = .50$, Cramér's $V = .03$.

Measures and Instruments

Social Skills Rating System- Teacher Form, Preschool Level. The Social Skills Rating System (Gresham & Elliott, 1990) is a set of standardized assessment instruments that includes developmentally appropriate measures for preschool-aged children with gender- and age-specific national norms. The teacher form at the preschool level typically requires less than 15 minutes for administration and includes two domains: social skills and problem behavior. The social skill domain includes 30 items that comprise three subscales: cooperation (e.g., follows directions, puts material away, participates in group activities, etc.), assertion (e.g., invites others to join activities, appropriately questions rules perceived to be unfair, helps teacher without being asked, etc.) and self-control (e.g., controls temper with adults and peers, follows rules, accepts criticism well, etc.). The problem behavior domain contains subscales for externalizing (six items, including has temper tantrums,

disturbs ongoing activities, and is aggressive toward people or objects) and internalizing

behaviors (four items, including appears lonely and says nobody likes him or her). Teachers

are asked to rate how often the target child performs the behaviors described in each item.

Choices for teachers on each item are 0-"Never", 1-"Sometimes", and 2-"Very Often". Raw

scores for social skills and problem behaviors are calculated as the sum of the item responses.

The published version of the SSRS separately lists items within the social skill and problem

behavior domains, with both domains clearly labeled. For the purposes of this study,

permission was obtained from the publishers to randomly insert the externalizing subscale

items within the social skill items and remove domain headings in order to prevent a

response set from the teachers completing the forms. The items targeting internalizing

behaviors were not administered as a part of the present study.

All forms of the SSRS have been found to have adequate internal consistency (Social

Skill and Problem Behavior Total Scale coefficient alphas range from .73 to .88, respectively

for preschool boys; Gresham & Elliott, 1990). Additionally, Gresham and Elliott (1990)

report good to excellent test-retest reliability for both forms of the SSRS ($r = .65 - .87$).

Finally, the criterion validity of the SSRS was supported through comparison to other

established instruments, such as the Child Behavior Checklist (CBCL, Achenbach &

Edelbrock, 1983).

The SSRS was chosen for use in the present study for several reasons. First, the

specific standardized norms for preschool-aged boys are very valuable in determining group

assignments. Secondly, subscales of the SRSS have been found to correlate highly with

corresponding measures within the Child Behavior Checklist-Teacher Report Form (CBCL-

TRF; Achenbach & Edelbrock, 1983), which has been used in many previous research studies. For example, Gresham and Elliott (1990) report a correlation of .75 between the externalizing scales of the CBCL-TRF and SSRS. This concurrent validity allows for comparisons of findings from the present study to previous research. Finally, in contrast to the CBCL, a large majority of items on both parent and teacher versions of the SSRS are positively worded, which was expected to facilitate participation by both school administrators and parents.

Positive and negative parenting characteristics. Selected Dyadic Interaction and Parenting scales from the Iowa Family Interaction Rating Scales (IFIRS; Melby et al., 1998) were applied to caregiver behaviors toward the target child during free-play and problem-solving tasks. The IFIRS contain a total of 60 macro-level observer-based rating scales, which measure a wide array of behaviors on both individual and dyadic levels. A number of scales were selected to measure positive parenting characteristics, such as Warmth/Support and Sensitive/Child Centered, and negative parenting characteristics, such as Hostility, Indulgent/Permissive, and Intrusive (see Appendix A for a description of all scales used). Possible scores for each scale range from 1 (not at all characteristic) to 9 (mainly characteristic). Numerous factors are included in assigning scale scores, including the intensity, frequency, and affective quality of the observed behaviors. In a slight modification to the general IFIRS coding procedures, coders were instructed to also consider metaphorical interactions within the free-play segment. For example, a mother who, pretending to be a dinosaur, continually attacks or fights with her son's dinosaur, would likely be rated highly on the Hostility scale.

Franck and Anderson (2004) identified 54 published research articles that utilized some part of the IFIRS, most of which were linked to either the Iowa Youth and Family Project (R. D. Conger, Elder, Lorenz, Simons, & Whitbeck, 1994; R. D. Conger, K. J. Conger, Elder, Lorenz, Simons, & Whitbeck, 1992) or the Iowa Family Transitions Project (e.g., Conger & Elder, 1994; Conger, Neppl, Kim, & Scaramella, 2003). Interrater reliability based on intraclass correlation coefficients generally ranged from .54 to .85 (Franck & Anderson, 2004; Melby & Conger, 2001). When composite scores based on a combination of scales were created, internal consistencies were reported to range from .54 to .95 (Franck & Anderson, 2004). Convergent validity of the IFIRS was supported through correlations with both self-report and reports from other family members about the focal member ($r = .15$ to .56).

Although the IFIRS were originally developed with a specific focus on family interactions involving adolescents (Lorenz & Melby, 1994; Melby & Conger, 2001), the system has undergone continual development and expansion to also allow for use within the evaluation of a variety of family interactions, including those between romantic partners (e.g., Conger, Rueter, & Elder, 1999), and parents with young children (e.g., Conger et al., 2003; Thornberry, Smith, Krohn, Lizotte, & Rodriguez, 1997). Psychometric properties when applied specifically to parent-child interactions involving preschool-aged children have also been acceptable. For example, Conger et al. (2003) report findings based on several scales within the IFIRS, with interobserver reliability of $r = .85$. Additionally, Conger et al. reported a significant relationship between a composite of the IFIRS scales, Hostility, Angry

Coercion, and Antisocial, with indicators of aggressive behavior problems on the Preschool form of the Child Behavior Checklist (CBCL, Achenbach, 1992; $r = .47$, $p < .01$).

Four previously trained coders from the Iowa State University Institute for Social and Behavioral Research were employed for the present study. All were female, averaging 8.7 years of IFIRS coding experience (range 4.5-14 years) and ranged from 32 to 60 years of age; three of the four had a master's degree. Each had completed approximately 240 hours of initial training on the IFIRS (200 hours on the general use of the IFIRS, plus an additional 40 hours of training on the parenting or problem solving scales) and demonstrated an ability to perform at the criterion level of 80% perfect-match or 1-step difference on all scales in applications to activity-based tasks. All had at least four years of experience coding parent-child interaction in activity-based tasks. Coders attended a 1.5-hour orientation to the present study and viewed two 'practice' interactions in order to become familiar with the procedures used, but coders were kept blind to the research questions of the study.

Inter-rater reliability was established by randomly selecting approximately 18% of the caregiver-child interactions for evaluation by two independent coders. Tasks then were randomly assigned to coders so that, with one exception, a different coder served as the primary coder for the play and puzzle tasks of each participating dyad. The average percentage agreement between scores assigned by independent coders was 76% perfect match or 1-step difference between scores (on 9-point scale). Consensus meetings were held to reconcile any differences between coders. These meetings were scheduled between the original coders or conducted within coder group meetings, and originally assigned scores

were not viewed prior to these discussions. Original scores were used in examinations of interrater reliability, but reconciled scores were used in all analyses.

Procedure

Sample identification. Upon receiving approval from the Iowa State University Human Subjects Review Committee, information packets including permission forms were distributed for parents of preschool boys three to five years old enrolled in participating childcare facilities. Approximately two-thirds of the participating facilities were selected due to their locations within working-class neighborhoods in the targeted city; the rest were selected from throughout the city, including more affluent neighborhoods. After written parental permission was received, teachers then completed SSRS forms for boys in their classrooms (SSRS; Gresham & Elliott, 1990). Teachers also reported their own educational background and experience level when completing each SSRS. Teachers were uninformed of the goals and hypotheses of the present study throughout the duration of their participation; however, the researchers promised that results and information on social skill development would be made available to any interested teacher after the projects completion. Children's books were donated to teachers' classrooms as an expression of gratitude for their assistance with the project.

After SSRS forms were completed and returned, the stratified random sample was selected for home observations based on raw scores on the externalizing subscale, which ranged from 0 (indicating teacher response of "Never" for each of 6 items) to 12 (indicating teacher response of "Very Often" for each of the 6 items). Sample statistics were examined to identify quartile rankings, which were then used as cut-off points. An externalizing raw score

of 4 was found to represent the 25th percentile, and a raw score of 8 represented the 75th

percentile. The mean externalizing raw score was 5.48 for the full sample, and 5.73 when

only including those who were potential participants in the home observation. Thirty-six

boys were then randomly selected from the 59 whose parents or guardians expressed an

interest in observation participation; nine boys were selected with externalizing scores

ranging 0-3, 16 boys scoring 4-7, and 11 boys scoring 8-12. Parents or guardians were then

contacted by phone and given an opportunity to have any questions answered. All families

contacted agreed initially to participate in the home observations; one later was excluded

stating they were 'too busy'.

Each observation visit lasted approximately 45 minutes and consisted of five events: a

brief set up period, a fifteen-minute parent-child free play session, an untimed practice

puzzle, a ten-minute puzzle task, and a five-minute clean-up task. All events were

videotaped. Observations were conducted with only the caregiver-child dyad in the room

when at all possible; however, some family contexts did not allow for this. A few interactions

included younger siblings who were unable or unwilling to leave the room; however,

caregivers in these situations were directed to focus on the interaction with the target child.

Coders were also instructed to only attend to the caregivers' behaviors toward the target

children.

Free-play session. Upon the researcher's arrival at the family's home, the target

parent or guardian was presented with consent forms addressing participation in the

videotaped observation session for themselves and the child. During this time, the researcher

invited the child to begin exploring the toys brought for the free play session. These toys

were then spread out in an area designated for the observation, generally an open living area. The same set of toys was used for each observation session, and consisted of toys selected to elicit aggressive play themes (plastic lion, crocodile and dinosaurs; hand puppet that could be viewed as a dinosaur or crocodile) as well as toys likely to elicit more neutral or prosocial pretend play (other plastic animals; cat, dog, and rabbit hand puppets). During this set up period, the child was also given the opportunity to examine the video recorder in order to alleviate anxiety and satisfy curiosity before beginning the main tasks. After the parent or guardian had completed the consent forms, the parent and child were instructed to play with the toys provided for 15 minutes in whatever manner they would normally play together.

Problem-solving task. After the 15 minutes had passed for the free-play session, the researcher then brought out the first of two puzzles. Toys from the free-play interaction were left accessible to the child, typically on the floor near the puzzle, thus presenting a potential distraction for the child that the caregiver would have to address. Both puzzles were very similar in appearance (see Appendix B for photograph), each constructed on 9"x12" clear plexiglass base. Both puzzles then had six shapes (three circles and three triangles) cut out of the same plexiglass material, and each shape had three holes that correspond to pegs affixed to the base. When matched correctly with the pegs, each shape fit onto the base. The pegs were placed so that the shapes were arranged in two rows on the base. The first puzzle was presented as a "practice puzzle". The shapes on this puzzle were interchangeable with the same shapes (i.e., all triangles fit in each triangle position, and all circles fit in each circle position), as the pegs were arranged on the base in the shape of an equilateral triangle. When presenting the practice puzzle to the caregiver-child dyads, the researcher demonstrated that

the pieces were interchangeable, and then directed them to work the puzzle together in whatever manner they normally would.

After the first puzzle was completed by the caregiver-child dyad, it was then removed from view and the second puzzle was presented and described as being "a little bit harder than the first", in that "each piece has its own place and won't fit where the others fit". This puzzle was designed to elicit frustration from the child (Doak, 1968; Kontos, 1980) in order to observe caregiver responses. The puzzle was not impossible for a preschool child to complete; however, positive caregiver facilitation and guidance greatly increased the likelihood of successful completion and avoidance of extreme frustration on the part of the child. The pegs for this puzzle were not arranged to form an equilateral triangle; thus, each shape only fit onto the base in a single way (with 36 potential locations on the pegs for the first shape).

After giving instructions for the second puzzle, the researcher then removed the pieces from the base, mixed them up (including turning two of them upside-down), and again instructed the caregiver-child dyad to work the puzzle in whatever manner they "would normally do something like this together". The caregiver-child dyad was also told they would have 10 minutes to work on the puzzle together. The session was ended when the puzzle was completed or the 10 minutes had passed, whichever came first. Only the first four minutes of interaction during the completion of the frustration puzzle was coded for the present study. This decision was made in order to focus the analyses on the initial behaviors of the caregiver during the interaction. Other researchers have found this brief time-period to yield useful information regarding interactional differences (e.g., Melby, 1988). A clean-up period

followed the puzzle interaction, with the caregiver being told that the child needed to return all of the researcher's toys to a large container. This interaction was also videotaped with the intent of including it within analyses; however, the researchers decided to omit this task from analyses after preliminary examinations found little variation in caregivers' behaviors or children's willingness to pick up the toys.

Results

Descriptive Statistics

Descriptive data, including distribution and range, were examined for all IFIRS scales in both play and puzzle interactions (see Tables 1 and 2). Some variables, particularly those reflecting negative parenting characteristics were found to have smaller than anticipated ranges and skewed distributions when considered individually, indicating that most caregivers in this sample did not frequently demonstrate extreme levels of negative behaviors. Because of these distribution issues and the high level of intercorrelation between conceptually linked IFIRS scales within each interaction (see Appendix C), composite variables were created for use in analyses by summing conceptually and empirically linked scales to reflect positive and negative parenting characteristics within both the play and puzzle interactions. Components of and descriptive statistics for the composite variables are shown in Table 3. Composite variables for negative parenting characteristics in both the play interaction and the puzzle task were standardized in order to more closely approximate a normal distribution. Demographic variables, including family status (i.e., two-parent or single-parent family) and caregivers' highest levels of education, did not have statistically significant correlations with the composite variables nor children's teacher-reported

externalizing scores (see Appendix D); therefore, these variables were not included in further analyses. An examination of the reliability coefficients for each composite variable revealed higher reliability within the composites for positive parenting characteristics ($\alpha = .81$ in play; $\alpha = .73$ in puzzle) than for negative parenting characteristics ($\alpha = .49$ in play; $\alpha = .65$ in puzzle) due largely to more modest intercorrelations of scales included within the negative composites (see Appendix E for details of reliability analyses).

Relationship between Parenting Characteristics in Play and Puzzle Task

Statistically significant relationships were found between the composite scores across the play and puzzle interactions, and play interaction composite variables were found to have statistically significant relationships with children's externalizing scores (see Table 4; see Appendix F for Intercorrelation Table of individual scales). In order to examine the first research question, if parenting characteristics within the play and puzzle interactions were distinct to each context, two multiple regression analyses were conducted to examine the shared variance between parenting characteristics in the play interaction and those in the puzzle task (see Table 5). First, negative and positive composite variables for the play interaction were entered as predictors of the positive puzzle composite. Parenting characteristics in the play interaction were found to share approximately 28% of variance with positive parenting characteristics in the puzzle task, $R^2 = .28$, adjusted $R^2 = .23$, $F(2, 31) = 5.99$, $p = .006$. However, negative parenting characteristics in the puzzle task were not found to share statistically significant variance with the combination of composite scores from the play interaction, $R^2 = .16$, adjusted $R^2 = .11$, $F(1, 32) = 3.00$, $p = .06$.

Relationship between Parenting Characteristics and Teacher-Reported Externalizing Score

Lastly, in order to answer the second research question regarding the effect of parenting characteristics in each interaction context on teachers' ratings of children's externalizing behavior problems, two hierarchical multiple regression analyses were conducted (see Table 6). First, parenting characteristics in the play interaction were examined as predictors of children's teacher-reported externalizing scores. The negative composite was entered as Step 1, followed by the positive composite in Step 2 in order to examine both the unique and combined influence of these variables on the outcome variable.

The composite variable of negative parenting characteristics within the play interaction was found to be a statistically significant predictor of teacher-rated externalizing scores, $R^2 = .14$, adjusted $R^2 = .11$, $F(1, 32) = 5.03$, $p = .03$. However, by adding positive parenting characteristics to the model, approximately 24% of the variance in externalizing scores was accounted for ($R^2 = .29$, adjusted $R^2 = .24$, $F(2, 31) = 6.23$, $p = .005$. The addition of the positive composite produced a statistically significant change in the amount of variance for which the model accounted, R^2 change $= .15$, F change $(1, 31) = 6.56$, $p = .016$. Furthermore, the addition of the positive composite in Step 2 resulted in the influence from the negative composite becoming statistically nonsignificant (see Table 6).

Second, parenting characteristics in the puzzle task were entered as predictors of externalizing scores, again with the negative composite in Step 1 and the positive composite in Step 2. Neither model was found to be a statistically significant predictor of externalizing scores, (Model 1, including only negative composite: $R^2 = .01$, adjusted $R^2 = -.02$, $F(1, 32) = .27$, $p = .61$; Model 2, adding positive composite: $R^2 = .09$, adjusted $R^2 = .03$, $F(1, 31) =$

1.59, $p = .22$). The change produced through the addition of the positive composite was also statistically nonsignificant, R^2 change = .09, F change $(1, 31) = 2.89$, $p = .10$.

Discussion

The present study examined the effects of a number of caregiver characteristics in two distinct interaction settings, free-play and a challenging puzzle task, on teachers' ratings of preschool boys' externalizing behavior. Consistent with previous research (e.g., Olson et al., 2000; Pettit & Bates, 1989; Pettit et al., 1997), intercorrelations among these variables were found to support two main constructs: positive parenting characteristics and negative parenting characteristics. In contrast with previous researchers who have found these constructs to be independent (e.g., Pettit & Bates, 1989; Pettit et al., 1997), however, the present study found these constructs to be statistically significantly intercorrelated in both the play and puzzle interactions. In addition, parenting characteristics within the free-play interaction, but not the puzzle task, were found to be statistically significant predictors of boys' teacher-reported externalizing behavior, with positive parenting characteristics contributing to a statistically significant amount of variance above and beyond that accounted for by negative parenting characteristics. These findings, interpreted within the context of previous theory and empirical studies, contribute to the empirical understanding of both the significance of parent-child play interactions and the development of behavior problems in preschool boys, and hold further implications for potential intervention techniques that may be used within this population.

Influence of Negative and Positive Parenting Characteristics on Teachers' Ratings of

Externalizing Behaviors

The composite variable for negative parenting characteristics within the free-play

interaction—comprised of Hostility, Indulgent/Permissive, and Intrusive scales—was found

to have a statistically significant, predictive relationship with teacher-reported externalizing

behavior scores for boys. Additionally, the combination of Warmth/Support, Listener

Responsiveness, Prosocial, and Sensitive/Child-Centered as indicators of positive parenting

characteristics within parent-child play interactions was found to be a strong predictor, over

and above negative parenting characteristics observed within the same play interactions. In

fact, when the composite variable for positive parenting characteristics was entered into the

regression analysis, it appeared to erase any contribution made by negative parenting

characteristics within the same interactions. These findings also suggest that, despite

moderate negative correlations, the presence of positive parenting characteristics cannot be

equated with the absence of negative parenting characteristics due to the differences in

distributions and ranges across these variables. Furthermore, the negative composite variable

in the puzzle task was not found to have a statistically significant relationship with

externalizing scores. These findings are consistent with previous studies (e.g., Olson et al.,

2000; Pettit et al., 1997) that have suggested that negative parenting characteristics may be

less influential than positive parenting characteristics during the preschool period.

However, interpretation of the regression analyses must consider the restricted range

of negative parenting characteristics that were observed within this sample. Even when a

participating caregiver demonstrated moderate or high levels on one scale included within the

negative composite variables, such as hostility, the same caregiver often did not demonstrate high levels on the other scales selected to measure negative parenting characteristics. In other words, caregivers in this sample were likely to demonstrate negativity in a variety of ways, including hostility or antisocial behaviors, but they generally did not demonstrate more than one type of negative behavior during these interactions. These relationships were also evident in the low level of internal consistency for the composite negative parenting score. Therefore, the negative composite variables may be best interpreted as indexes of parenting behaviors generally indicating an 'either/or' measure of negative interactions.

When considering the influence of both positive and negative parenting characteristics in the play interaction, it is also important to emphasize that pretend and literal behaviors were considered equivalently when assigning IFIRS scores to caregiver behaviors. Indeed, many of the caregiver-child dyads engaged almost exclusively in pretend play during the free-play interaction, meaning that composite scores are highly indicative of the caregiver behaviors within pretend, nonliteral interactions. Additionally, the toys presented to the caregiver-child dyad, including dinosaurs and wild animals, were likely to elicit higher levels of aggressive themes in pretend play. Higher scores on the negative composite within the play interaction, consequently, indicate higher levels of hostility, intrusion, and permissiveness by both the caregivers *and* the characters they pretended to be within play. Interestingly, Hostility and Antisocial were highly intercorrelated, but neither individually had a statistically significant relationship with children's teacher-reported externalizing behaviors.

Taken alone, these findings could suggest that levels of aggression and antisocial behaviors by parents within play are unrelated to children's behavior problems in a child care setting. However, all of the scales included within the negative composite (i.e., Hostility, Antisocial, Indulgent/ Permissive, and Intrusive) have statistically significant, negative correlations with the components of the composite variable for positive parenting characteristics within the play interaction (i.e., Warmth/Support, Listener Responsiveness, Prosocial, and Sensitive/Child-Centered). These intercorrelations suggest that the negative behaviors may be most influential in that they decrease the likelihood that positive behaviors will be demonstrated within the play interaction.

Additionally, it is important to consider the possibility that caregivers' levels of negative behaviors within pretend play were influenced by the level of aggressive and antisocial behaviors introduced by the children. Indeed, a review of a sample of videotaped free-play interactions in which the caregivers were rated highly on negative parenting characteristics found numerous examples of caregivers following the lead of the child within aggressive play themes. In this sample of tapes, high scores on the Hostility scale were almost exclusively due to aggressive play themes, and high scores on other negative elements were often due to caregivers completely ignoring aggression in children's play (i.e., Indulgent/Permissive scale) or, conversely, responding to it in a way that was disruptive or overly directive of the play (i.e., Intrusive scale). The influence found in the present study of negative parenting characteristics on children's externalizing behaviors is strongly supportive of previous findings by Landy and Menna (2001) who linked children's behavior problems with parents' inability to respond to children's aggressive or antisocial play in a way that

could move the play toward a more prosocial theme. Continued research is needed to confirm this conclusion.

The puzzle interaction was not found to elicit a wide range of negative parenting characteristics within this sample, and indeed this task may not be as useful in studying these behaviors as might be a situation designed to elicit disciplinary strategies. The only incidences within the puzzle task in which participating caregivers specifically demonstrated any discipline strategies within the present study were two situations where children became bored or overly frustrated in the puzzle and then became defiant. It is important to note, though, that both of these incidents happened after the caregiver had been unsuccessful in engaging the child in the puzzle task. Therefore, the primary issue may remain as whether or not the caregiver is able to interact with the child during the task in a way that prevents the child from losing interest or becoming frustrated. Previous research that has included a wider range of negative behaviors, including harshness and coercive tactics that are most consistently associated with behavior problems (e.g. Dodge et al., 1994; Patterson et al., 1992), has typically included some measure of parental behaviors in discipline situations, including observational (e.g., Olson et al., 2000; Pettit & Bates, 1989) or self-report measures (e.g., Nix et al, 1999; Pettit et al., 1997); none of which were included within the present study. It is possible that the inclusion of these measures would have contributed to the interpretation of the present findings. A clean-up task was included at the end of each home observation with the goal of eliciting some disciplinary behaviors; however, little variation was found in children's willingness to pick up the toys present. Almost all of the boys complied with the request to return the toys to the container. It is possible that including

more toys (i.e., and a bigger mess that was more challenging to clean up) would have elicited a wider array of caregiver and child behavior.

Implications for Role of Parent-Child Play in Development of Children's Behavior Problems

The present study found parenting characteristics in parent-child play interactions, but not problem-solving interactions, to be statistically significant predictors of boys' teacher reported externalizing behaviors. Positive characteristics of the caregiver in the play interaction were statistically significant predictors over and above negative characteristics. The lack of consistency in findings across the play and puzzle interactions suggests that something about parent-child play may be a unique influence within the development of behavior problems in preschool boys.

Considering the present findings within the context of previous empirical and theoretical literature, however, two distinct possibilities exist that must be examined in future research; play guided by a warm and sensitive caregiver may have unique developmental effects, or alternatively, positive parenting characteristics in play may be manifestations of more global constructs. Grounded in developmental theories that view children's play as contributing to cognitive and social development processes (e.g., Piaget, 1962; 1965, Vygotsky, 1976; 1978), several previous studies have suggested unique effects on child outcomes through parental involvement in their children's play (e.g., Gardner et al., 2003; Galyer & Evans, 2001; Landy & Menna, 2001; Lindsey & Mize, 2000; Slade, 1987). These authors generally interpreted findings based on theoretical assumptions regarding the developmental significance of play. However, questions remain as to whether developmental outcomes are due to play interactions in and of themselves. For example, Gardner et al.

(2003) found a statistically significant contribution from the engagement in parent-child play to changes in children's conduct scores from age three to age four. Yet these authors reported nonsignificant zero-order correlations between the frequency of parent-child joint play interactions and children's conduct scores at both ages, indicating that mere engagement in play did not have a relationship with children's conduct scores. However, these authors did not examine differences in the affective quality of these play interactions, which the present study and others (e.g., K. Grossman et al., 2002; Landy & Menna, 2001; Slade, 1987) have found to have a strong impact on child outcomes.

In contrast, findings from other studies suggest that a construct of positive parenting characteristics that is predictive of behavior problems may not be unique to parent-child play interactions. Research by Pettit et al. (1997) and Olson et al. (2000) included measures from naturalistic, unstructured home observations of parents and children at several different points across infancy and preschool years, not specifically examining play interactions within these observations. Pettit et al. found the absence of warmth and supportiveness in parent-child interactions to be a statistically significant predictor of children's behavior problems, even after considering the influence of harsh discipline practices. Furthermore Olson et al. found predictive differences in maternal responsiveness and warmth even when the child was six months of age, and the predictive significance of these variables remained regardless of the source of measurement for children's externalizing behavior (mother, teacher, and even child's self report at age 17).

In addition, although no measure of attachment security was included within the present study, numerous conceptual links exist between parental behaviors known to elicit a

secure attachment style from a child, such as responsiveness and sensitivity (Ainsworth et al., 1978; Cassidy, 1999), and the construct of positive parenting characteristics observed within the present study. For example, the Sensitive/Child-Centered scale included in the positive parenting characteristics composite variable for both the play and puzzle task is very similar to K. Grossman et al's (2002) description of the Sensitive and Challenging Interactive Play measure used as an indicator of parental behaviors conducive to a secure attachment style. Inclusion of an attachment measure in future studies could potentially contribute to an examination of whether the positive characteristics found to be statistically significant predictors within the present study are uniquely influential in play interactions or are manifestations of more global parenting characteristics, such as those linked to secure attachment.

Implications for Early Intervention

The stratified sample utilized in the current study included several children reported by their teachers to display very high levels of externalizing behaviors. It can be assumed based on a large body of literature (e.g., Campbell & Ewing, 1990; Caspi et al., 1987; Moffitt, 1990) that these boys, in the absence of an effective intervention, are at substantial risk of continued social and behavioral problems. The most influential predictor of externalizing scores in the present study was the absence of positive parenting characteristics within free-play, suggesting a potentially significant focus of intervention. In both literal and nonliteral, pretend interactions, caregivers of boys with high externalizing scores exhibited less warmth and sensitivity, fewer prosocial behaviors, and were less child-centered. These findings provide potential support for family play therapy interventions, such as those

developed by Jernberg and Booth (2001) that seek to facilitate play interactions between parents and children in order to modify simultaneously the parent-child relationship and the child's problem behaviors.

A review of a sample of interactions in which the caregiver was rated low on positive parenting characteristics found these caregivers to appear less comfortable playing with the child, and less in-tune with the child's feelings and desires within the interaction. For example, in one situation a mother continually tickled her son with a puppet, despite behavioral cues, such as pulling away and frowning, that he was not enjoying being tickled. Pretend play within these dyads was often sporadic and short-lived. In contrast, caregivers of boys rated in the normal ranges of externalizing behaviors seemed very at ease playing with their children, appearing to anticipate what the child would enjoy within the play and seeking the continually engage the child in play. The present findings, along with those of other researchers that point to a strong impact of positive parenting characteristics outside of play interactions (e.g., Olson et al., 2000; Pettit et al., 1997), suggest that the inclusion of an emphasis on the affective quality of parent-child interactions may have potential to increase the effectiveness of clinical interventions. Behavioral intervention models generally have the benefit of empirical support for clinical efficacy (e.g., Patterson et al, 1993); however, most of these studies also find that a sizable number of clients do not show improvements with these models (Forgatch & Patterson, 1998). Parent-child play provides a context full of potential for positive parent-child interactions and may also present an opportunity for interventions into these interactions that can then alter the development of children's behavior problems.

Limitations of Study

Several limitations within the present study must also be noted. First, although several studies (e.g., Lansford et al., 2001; Shaw et al., 1996) have found family process variables to be more influential than demographics, replication of these findings with a more racially and socioeconomically diverse sample is necessary. The present sample intentionally recruited participants from child care facilities that served working-class families with the goal of obtaining some socioeconomic diversity; however, the majority of willing participants were Caucasian and most participating caregivers were college-educated. Additionally, the current study focused exclusively on boys due to their increased risk for developing long-term behavioral problems; therefore, these findings cannot be generalized to girls due to large body of research identifying gender as a strong moderating variable in the development of behavior problems (e.g., Dodge et al., 1994; McFadyen-Ketchum et al., 1996). In addition, despite the power of these cross-contextual findings, measures of children's behaviors within the home environment were not collected for this sample. Therefore, it is unknown to what extent these findings would be consistent if using parent- or observer-based measures of children's problem behaviors as an outcome instead of the teacher-based instrument included in this project.

In addition, the present study focused on the primary caregiver in relation to the target child. Although this approach provides meaningful information regarding influences from one of the most influential relationships for the child, the inclusion of secondary caregivers (primarily fathers) in future studies will likely broaden the scope of empirical knowledge by allowing for observation and measurement of more complex interactional processes.

Similarly, no measures were included within the present study of the children's contributions to either the play or puzzle interactions, including the level of aggression demonstrated in play. It is certain that children's behaviors during the interactions function as both a cause and an effect on parental behavior. For example, child's negative behaviors may occur in part to gain attention from the parent and may also impede opportunities for the parent to displaying positive parenting characteristics.

Finally, it is important to emphasize that, despite assumptions of causal relationships between these variables based on theoretical and empirical foundations, causality cannot be assumed based on the present cross-sectional data. Extensive longitudinal data, similar to that obtained in the Bloomington Longitudinal Study (Olson et al., 2000) but including specific attention to parent-child play interactions, is needed to determine causality of parenting characteristics within play interactions on externalizing behaviors. However, causality can also be inferred from experimental manipulations; therefore, if intervention techniques targeting parent-child play were found to be effective in altering development of behavior problems, a causal connection could also be supported.

Conclusions

In summary, the present study contributes to several areas of literature. Consistent with findings of previous researchers (e.g., Olson et al., 2000; Pettit et al., 1997), positive parenting characteristics, such as warmth and responsiveness, observed within parent-child play interactions were found to have statistically significant relationships with teachers' ratings of children's externalizing behaviors. These parenting characteristics were found to be both distinct from negative parenting characteristics, such as hostility and intrusiveness,

and were more powerfully related to children's externalizing scores. Furthermore, because the effects of parenting characteristics were only observed within the free-play interaction, the present study extends previous findings (e.g., Gardner et al., 2003; Landy & Menna, 2001) that support parent-child play interactions as contributing to developmental outcomes in children. Specifically, the combination of caregiver warmth, sensitivity, prosocial behaviors, and responsiveness during play interactions predicted approximately one quarter of the variance in child behaviors within the preschool setting.

These findings, when considered within the context of previous empirical and theoretical literature, suggest that these positive parenting characteristics demonstrated in parent-child play interactions may facilitate the child's social development, including decreasing the likelihood that the child will develop externalizing behavior problems. Dodge (2002), stated that over time parents transmit to children understandings of "how the world works" (p. 222). The present findings support play interactions as potentially important opportunities for the transmission of these messages. Vygotsky's (1978) views of children's play activities as a means of developing both cognitive skills, such as creativity and symbolic capacity, and the ability to inhibit negative emotions, such as frustration and anger, converge with Dodge's social learning perspective, and are supported by the present findings as well. Finally, the differences observed across parent-child interactions also provide implications for clinical practice, lending support to intervention models that utilize play as a therapeutic resource for children and actively incorporate parental involvement in treatment.

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Tables

Table 1

Descriptive Statistics for Parent Characteristics in Play Interaction

	M	*SD*	Minimum - Maximum	Skewness (*SE* = .40)
Hostility	3.71	2.20	1 - 9	.38
Antisocial	4.00	2.03	1 - 9	.49
Indulgent/Permissive	1.97	1.57	1 - 6	1.36
Intrusive	1.53	1.19	1 - 6	2.41
Warmth/Support	3.82	1.71	1 - 7	.10
Listener Responsiveness	6.76	1.50	2 - 9	-1.24
Prosocial	5.97	1.53	2 - 9	-.54
Sensitive/Child Centered	5.32	1.53	3 - 8	.07

Table 2

Descriptive Statistics for Parent Characteristics in Puzzle Interaction

	M	*SD*	Minimum - Maximum	Skewness (*SE* = .40)
Hostility	1.65	1.04	1 - 4	1.30
Antisocial	2.85	1.44	1 - 6	.27
Intrusive	3.26	1.81	1 - 7	.36
Indulgent/Permissive	1.41	1.05	1 - 5	2.43
Warmth/Support	2.85	1.79	1 - 7	.60
Assertiveness	6.03	1.14	3 - 8	-.84
Listener Responsiveness	3.97	1.71	1 - 7	-.07
Sensitive/Child-Centered	3.18	1.57	1 - 7	.49

Table 3

Descriptive Statistics for Composite Variables

Variable Name	Component Scales	Score Range	M	SD	Skewness (SE =.40)
Positive Parenting Characteristics in Play Interaction	Warmth/ Support, Listener Responsiveness, Prosocial, Sensitive/Child-Centered	10-32	21.88	5.00	-.54
Negative Parenting Characteristics in Play Interaction	Hostility, Indulgent/Permissive, Intrusive	3-15	7.21	3.60	.68
Positive Parenting Characteristics in Puzzle Interaction	Warmth/Support, Assertiveness, Listener Responsiveness, Sensitive/Child-Centered	6-27	16.03	4.66	.16
Negative Parenting Characteristics in Puzzle Interaction	Hostility, Antisocial, Indulgent/Permissive, Intrusive	4-18	9.18	3.83	.39

Table 4

Correlations of Children's Externalizing Scores and Composite Variables

	Ext	1	2	3
1. Positive Parenting Characteristics in Play Interaction	-.53**			
2. Negative Parenting Characteristics in Play Interaction	.37*	-.58**		
3. Positive Parenting Characteristics in Puzzle Interaction	-.29	.53**	-.34*	
4. Negative Parenting Characteristics in Puzzle Interaction	.09	-.40*	.29	-.58**

Note: $n = 34$.

**$p < .01$ (2-tailed)

*$p < .05$ (2-tailed)

Table 5

Summary of Regression Analyses Examining Shared Variance between Parenting Characteristics in Play and Puzzle Interactions

Variable	Outcome Variable = Positive Parenting Characteristics in Puzzle Task			Outcome Variable = Negative Parenting Characteristics in Puzzle Task		
	B	*SE B*	*β*	*B*	*SE B*	*β*
NPC Play	-.23	.87	-.05	.08	.20	.08
PPC Play	.46	.18	.50*	-.07	.04	-.35

Note: NPC Play = Composite Variable for Negative Parenting Characteristics in Play Interaction; PPC Play = Composite Variable for Positive Parenting Characteristics in Play Interaction

*$p < .05$

Table 6

Summary of Hierarchical Regression Analyses for Variables Predicting Teacher-Reported Externalizing Behaviors

in Preschool Boys

Variable	Play Interactions			Puzzle Interactions		
	B	$SE\ B$	β	B	$SE\ B$	β
Step 1						
Negative Parenting	1.09	.48	.37*	.27	.52	.09
Step 2						
Negative Parenting	.27	.55	.09	-.35	.62	-.12
Positive Parenting	-.28	.11	-.48*	-.23	.13	-.36

Note: In analysis of Play Interaction, $R^2 = .14$ for Step 1, $\Delta R^2 = .15$ for Step 2 ($ps < .05$);

In analysis of Puzzle Interaction, $R^2 = .01$ for Step 1, $\Delta R^2 = .09$ for Step 2 ($ps > .05$).

*$p < .05$

CHAPTER 4. GENERAL CONCLUSIONS

This project was born out of a desire to contribute to the empirical understanding of

the development of aggression in preschool children as well as to begin a process of

developing an empirically-based model of clinical intervention for young children with

behavior problems. In order to advance toward this goal, the present observational study

sought to examine the relationship between boys' teacher-rated externalizing behavior and

parental contributions to play interactions. Thirty-four child-primary caregiver dyads were

observed in free-play and a problem-solving task. Parenting characteristics of the primary

caregiver within the play interaction—specifically the positive characteristics of warmth and

support, prosocial behaviors, and responsiveness and sensitivity to the child—were found to

have a statistically significant relationship with externalizing scores. However, no

statistically significant relationships were found between boys' externalizing scores and

either negative or positive parenting characteristics in the problem-solving interaction.

General Discussion

These findings extend those of other authors (e.g., Gardner, Ward, Burton, & Wilson,

2003; Landy & Menna, 2001) who have found a relationship between parent-child play

interactions and behavior problems in preschool children. The present study found behaviors

of the parent or caregiver that were conceptually associated with the affective quality of the

interaction to have a statistically significant relationship with boys' teacher-reported

externalizing scores. Despite the differences between the relationships of externalizing scores

with parenting characteristics in the play and problem-solving interactions, these cross-

sectional, correlational findings cannot be assumed to indicate a causal link between parent-

child play and externalizing behaviors in children. The fact that play interactions were the only context within the present study in which parenting characteristics were statistically significantly related to externalizing behaviors suggests that there is something unique about parent-child play interactions. However, authors of previous studies examining the development of behavior problems have reported similar findings of parenting characteristics having a statistically significant influence on child outcomes (e.g., Patterson, Reid, & Dishion, 1992), with positive characteristics often being found to have a stronger influence on younger children (e.g., Olson, Bates, Sandy & Lanthier, 2000; Pettit, Bates, & Dodge, 1997). These studies almost exclusively focused on parent-child interactions outside of a play context.

It is quite possible, therefore, that the present findings related to parent-child play interactions are somehow reflective of more global parenting characteristics that are manifested within the play context. For example, Gardner, et al.'s (2003) findings suggested that the influence of joint play on the continuity of conduct problems was possibly related to the parents' ability to positively engage the child as opposed to the frequency of joint play interactions. Continued research is necessary in order to isolate or rule out any unique causal contribution to externalizing behaviors from parent-child play interactions, as well as to determine the extent of applicability of the present findings within a clinical setting. Nonetheless, the present study supports the conceptualization of play interactions between parents and their children as potentially significant within child development.

Recommendations for Future Research

The findings of the present study hold implications for future research examining both the contributions of parental involvement in play to child development as well as the

emergence of behavior problems in young children. Future examinations of the role of parent-child play in behavior problems could benefit from analyzing the contents of play behaviors in relation to parenting characteristics demonstrated in the interactions. Previous studies have found significant relationships between child outcomes and the complexity and sophistication of children's play, with or without an adult involved (e.g., Clawson & Robila, 2001; Galyer & Evans, 2001; Kazura, 2000; Slade, 1987). Similar examinations are needed of play sophistication in relation to the development of behavior problems.

For example, future research needs to examine if children demonstrating more sophisticated skills within pretend play are less likely to also demonstrate higher levels of problem behaviors. Similarly, an examination of parental contributions to this sophistication in play could also yield beneficial information regarding these developmental processes. Another example of examining the content of play would be the extension of Landy and Menna's (2001) findings regarding specific maternal responses to aggression in their children's play that were associated with clinical levels of behavior problems. Replication and extension of these findings hold promise within clinical application as well, because these behaviors are potentially teachable skills that parents can learn and apply within interactions at home.

Several quality longitudinal studies have been conducted following children from early ages into middle childhood, adolescence and beyond (for example, the Bloomington Longitudinal Study, Pettit & Bates, 1989; Olson, et al., 2000). These studies have produced rich descriptions of developmental processes relating to the onset of behavior problems. Future longitudinal studies should also include measures of parent-child play interactions in order to examine the development of parent-child play interactions in relationship to other

parent-child variables known to contribute to behavior problems, such as harsh or ineffective discipline strategies and insecure attachment bonds. In addition, cross-sectional and longitudinal findings need to be replicated within multiple racial groups, such as African-American or Hispanic subcultures, as parenting practices are often found to vary widely across groups and have different effects of child outcomes (e.g., Simons, et al., 1996).

In addition, these findings can inform future clinical research designed to enhance the effectiveness of treatment models for early-onset conduct problems. Several clinicians (e.g., Jernberg & Booth, 2001) have developed intervention strategies that address similar parent-child relationship dynamics as those found to be influential in the present study. These models warrant systematic examination, including analyses of their efficacy and effectiveness. Empirical evidence of the effectiveness of experimental interventions into parent-child play interactions could provide support for a causal link between play and the development of behavior problems. Finally, analysis of the therapeutic process within successful cases utilizing these models could also contribute to an empirical understanding of the mechanisms of change for clients whom they help, and the role of play interactions within these changes. Clearly, a large number of questions remain in relation to the understanding and treatment of young children with behavior problems. However, each single study provides a step toward the goal.

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APPENDIX A-SELECTED DYADIC AND PARENTING SCALES FROM THE IOWA

FAMILY INTERACTION RATING SCALES*

Dyadic Interaction Scales-

1. Hostility (HS): the extent to which hostile, angry, critical, disapproving, rejecting or contemptuous behavior is directed toward another interactor's behavior (actions), appearance, or personal characteristics. Also includes behaviors coded within six other dyadic interaction scales:

   a. Verbal Attack (VA): personalized and unqualified disapproval of another interactor's personal characteristics; criticism of a global and enduring nature

   b. Physical Attack (AT): aversive physical contact, including hitting, pinching, grabbing, etc.

   c. Contempt (CT): a specific form of hostility characterized by disgust, disdain, or scorn of another interactor.

   d. Angry Coercion (AC): control attempts that include hostile, contemptuous, threatening, or blaming behavior.

   e. Escalate Hostile (EH): building onto one's own hostile behaviors toward another interactor.

   f. Reciprocate Hostile (RH): extent to which the focal reciprocates in like manner the hostility of another interactor.

2. Dominance (DO): attempts and successful demonstrations of control or influence (either positive or negative) of another interactor and/or the situation.

*Reprinted from Melby, et al. (1998) with permission.

3. Warmth/Support (WM): expressions of care, concern, support, or encouragement toward another interactor. Also includes behaviors coded within four other dyadic interaction scales:

    a. Endearment (ED): personalized and unqualified approval of another interactor's personal characteristics; approval of a global and enduring nature.

    b. Physical Affection (AF): affectionate physical contact such as hugs, caresses, and pats.

    c. Escalate Warmth/Support (EW): building onto one's own warm/supportive behaviors toward another.

    d. Reciprocate Warmth/Support (RW): extent to which the focal reciprocates in like manner the warmth/support of another interactor.

4. Assertiveness (AR): the focal's ability, when speaking, to express self through clear, appropriate, neutral and/or positive avenues using an open, straightforward, self-confident, non-threatening and non-defensive style.

5. Listener Responsiveness (LR): the focal's nonverbal and verbal responsiveness as a listener to the verbalizations of the other interactor through behaviors that validate and indicate attentiveness to the speaker.

6. Prosocial (PR): demonstrations of helpfulness, sensitivity toward others, cooperation, sympathy, and respectfulness toward others in an age-appropriate manner. Reflects a level of maturity appropriate to one's age.

7. Avoidant (AV): the extent to which the focal physically orients self away from another interactor in such a manner as to avoid interaction.

Parenting Scales

1. Indulgent/Permissive (IP): the degree to which the parent is excessively lenient and tolerant of the child's misbehavior <u>or</u> has given up attempts to control the child; a <u>laissez faire</u> or a <u>defeated</u> attitude by the parent regarding the child's behavior.

2. Easily Coerced (EC): the extent to which the parent is overwhelmed or intimidated by the child; the child's demonstrated ability to manipulate or control the parent through angry or guilty coercion.

3. Intrusive (NT): the extent to which the parent is domineering and overcontrolling during interactions with the child; parent's behavior is adult-centered rather than child-centered.

4. Sensitive/ Child Centered (CC): parents' responses to child are appropriate and based on child's behavior and speech: they offer the right mix of support and independence so child can experience mastery, success, pride, and develop effective self-regulatory skills.

APPENDIX B- PHOTOGRAPH OF PUZZLE USED IN PROBLEM-SOLVING TASK

Table 7

Correlations between Parenting Characteristics in Play Interaction and Teacher Ratings of Children's

Externalizing Behaviors

Externalizing (EXT)	EXT	HS	WM	LR	PR	AN	AV	IP	EC	NT
Hostility (HS)	.15									
Warmth/Support (WM)	-.34*	-.17								
Listener Responsiveness (LR)	-.48**	-.46**	.33							
Prosocial (PR)	-.53**	-.41*	.70**	.69**						
Antisocial (AN)	.14	.89**	-.17	-.57**	-.54**					
Avoidant (AV)	.09	.33	-.16	-.29	-.23	.40*				
Indulgent/Permissive (IP)	.32	.39*	-.31	-.47**	-.58**	.41**	.34			
Easily Coerced (EC)	.19	.22	-.28	-.33	-.43*	.32	-.04	.30		
Intrusive (NT)	.41*	.26	-.21	-.35*	-.24	.26	.19	.01	-.21	
Sensitive/Child Centered (CC)	-.35*	-.25	.28	.51**	.61**	-.26	.18	-.35*	-.21	-.18

** Correlation is significant at the 0.01 level (2-tailed).

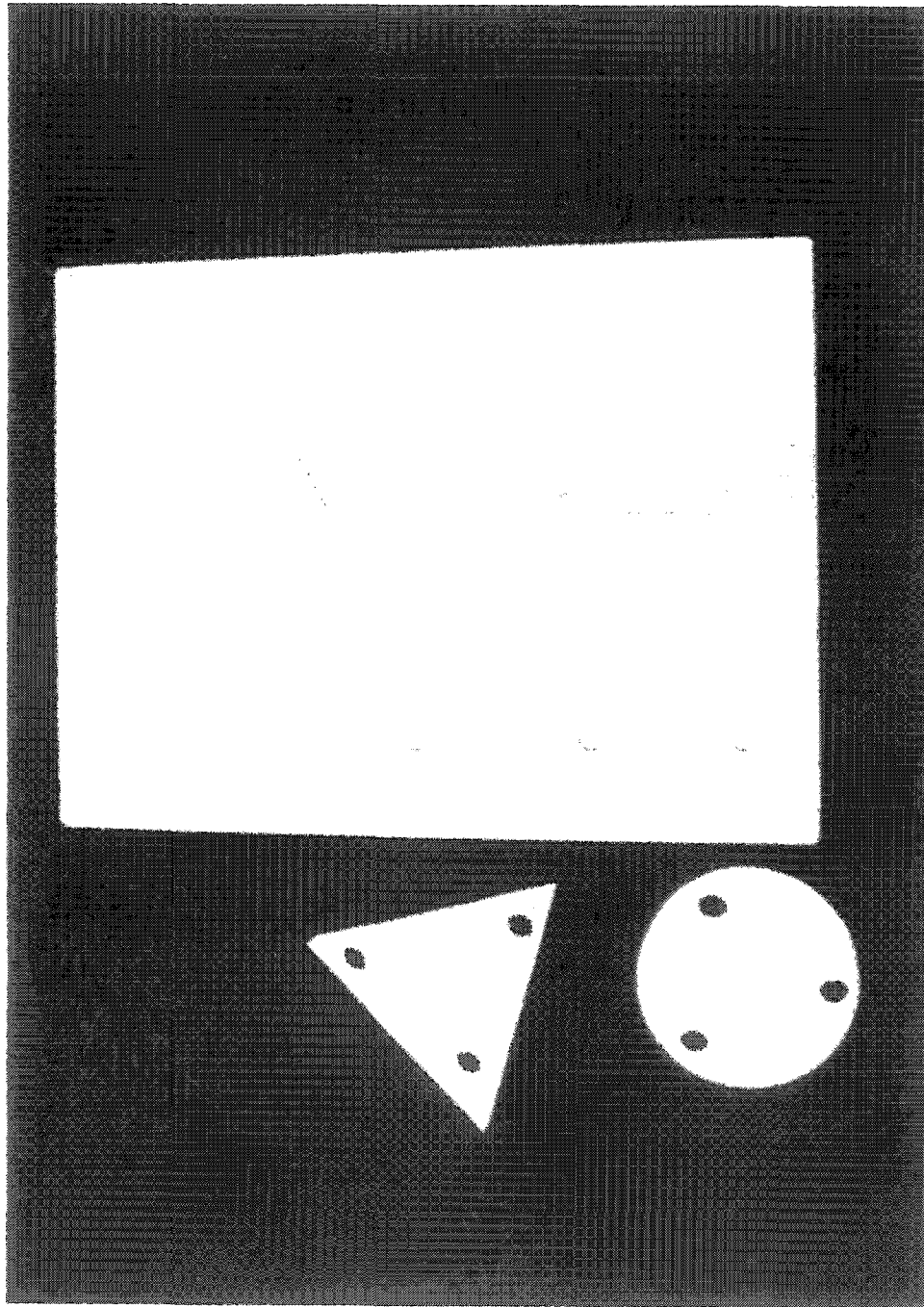* Correlation is significant at the 0.05 level (2-tailed).

Table 8

Correlations between Parenting Characteristics in Puzzle Interaction and Teacher Ratings of Children's Externalizing Behavior[1]

Externalizing (EXT)	EXT	HS	WM	DO	AR	LR	PR	AN	IP	NT
Hostility (HS)	.33									
Warmth/Support (WM)	-.06	-.30								
Dominance (DO)	.04	-.02	.10							
Assertiveness (AR)	-.24	-.55**	.31	.37*						
Listener Responsiveness (LR)	-.24	-.35*	.47**	.05	.53**					
Prosocial (PR)	-.11	-.39*	.86**	.21	.53**	.68**				
Antisocial (AN)	.12	.59**	-.30	-.04	-.61**	-.57**	-.53**			
Indulgent/Permissive (IP)	-.09	.25	-.23	-.68**	-.47**	-.06	-.37*	.24		
Intrusive (NT)	-.04	.10	-.23	.21	-.24	-.45**	-.43*	.74**	-.03	
Sensitive/Child Centered (CC)	-.36*	-.30	.42*	-.01	.37*	.18	.48**	-.27	-.05	-.18

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

[1] Insufficient variance was found in both the Avoidant and Easily Coerced scales within the puzzle task to allow for analysis; therefore, these scales are not shown within the correlation table.

APPENDIX D- CORRELATIONS OF DEMOGRAPHIC AND OUTCOME VARIABLES

Table 9

Correlations of Demographic and Outcome Variables

Caregiver's Highest Education (1)	1	2	3	4	5
Family Status (2)	.61**				
Ethnicity (3)	-.29	-.16			
Child's Age in Months (4)	.23	.30	-.07		
Number of Children in Family (5)	-.25	-.17	.10	-.28	
Externalizing Score (6)	.07	.21	.02	-.04	.05
Positive Parenting in Play	.16	.12	-.13	.16	-.06
Negative Parenting in Play	-.13	.15	.10	-.14	.17
Positive Parenting in Puzzle	.32	.29	-.22	.29	-.08
Negative Parenting in Puzzle	-.09	.03	.22	-.15	.21

** Correlation is significant at the 0.01 level (2-tailed).

Note: Family Status coded as 0 = Single-parent family or living with grandparent, 1 = Two-parent family; Ethnicity coded as 0 = Non-Caucasian, 1 = Caucasian.

APPENDIX E- RELIABILITY ANALYSES FOR COMPOSITE VARIABLES

Table 10

Reliability Analysis for Composite Variable Positive Parenting Characteristics in Play Interaction

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item – Total Correlation	Alpha if Item Deleted
Warmth/ Support	18.06	15.27	.51	.82
Listener Responsiveness	15.12	15.62	.60	.77
Prosocial	15.91	12.99	.88	.63
Sensitive/ Child-Centered	16.56	16.01	.54	.80

Note: α = .81; N = 34.

Table 11

Reliability Analysis for Composite Variable Negative Parenting Characteristics in Play

Interaction

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item – Total Correlation	Alpha if Item Deleted
Hostility	3.50	3.89	.49	.02
Indulgent/ Permissive	5.24	7.58	.34	.36
Intrusive	5.68	10.16	.18	.57

Note: $\alpha = .49$; $N = 34$.

Table 12

Reliability Analysis for Composite Variable Positive Parenting Characteristics in Puzzle

Interaction

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item – Total Correlation	Alpha if Item Deleted
Warmth/ Support	13.18	11.97	.53	.66
Listener Responsiveness	12.06	11.94	.58	.62
Assertiveness	10.00	15.76	.52	.68
Sensitive/ Child-Centered	12.85	13.71	.48	.68

Note: $\alpha = .72$; $N = 34$.

Table 13

Reliability Analysis for Composite Variable Negative Parenting Characteristics in Puzzle

Interaction

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item – Total Correlation	Alpha if Item Deleted
Hostility	7.53	10.92	.39	.61
Antisocial	6.32	6.29	.88	.19
Indulgent/ Permissive	7.76	12.43	.16	.72
Intrusive	5.91	7.30	.42	.63

Note: $\alpha = .65$; $N = 34$.

Table 14

Intercorrelations of Parenting Variables across Interactions (Rows- Play; Columns- Puzzle)

	HS	WM	DO	LM	AR	LR	PR	AN	IP	NT	CC
Hostility (HS)	.34	-.21	-.23	.33	-.44**	-.14	-.26	.28	.31	-.06	-.36*
Warmth/Support (WM)	.03	.28	-.05	.19	.25	.17	.28	-.27	.19	-.39*	.33
Dominance (DO)	.27	-.26	.18	.03	-.04	-.58**	-.37*	.19	-.16	.08	-.28
Lecture/Moralizing (LM)	.01	-.03	-.01	.20	.08	.13	.14	-.04	-.12	-.05	.10
Assertiveness (AR)	.02	.26	-.02	-.05	.15	.03	.20	-.17	.03	-.07	.16
Listener Resp. (LR)	-.39*	.38*	-.06	-.17	.16	.17	.31	-.45**	-.03	-.23	.39*
Prosocial (PR)	-.29	.34*	-.14	-.03	.30	.27	.33	-.42*	.07	-.29	.57**
Antisocial (AN)	.36*	-.22	-.08	.37*	-.30	-.06	-.28	.35*	.27	.07	-.49**
Avoidant (AV)	.26	-.12	-.01	-.01	.06	.23	-.03	.17	.14	.05	.07
Indulgent/Permissive (IP)	.27	-.01	-.04	.01	-.19	-.14	-.06	.21	-.03	-.02	-.13
Easily Coerced (EC)	-.08	.14	.09	.03	-.14	-.03	.01	.15	-.18	.09	-.37*
Intrusive (NT)	.13	-.12	.29	.09	-.06	-.22	-.12	.23	-.08	.26	-.07
Sensitive/Child-Centered (CC)	-.38*	.23	-.05	.09	.34*	.41*	.26	-.42*	.05	-.12	.44**

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

APPENDIX G- IOWA STATE UNIVERSITY RESEARCH COMPLIANCE

DOCUMENTATION

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office of Research Compliance
Vice Provost for Research and
Advanced Studies
2810 Beardshear Hall
Ames, Iowa 50011-2030
515-294-4566
FAX 515-294-4267

TO: Becky Davenport

FROM: Ginny Austin, IRB Administrator

PROJECT TITLE: *"The Interrelationship between Children's Social Skills, Parenting Styles, and Parent-child Play Interactions"*

RE: IRB ID No.: 04-086

APPROVAL DATE: February 17, 2004   REVIEW DATE: February 17, 2004

LENGTH OF APPROVAL: 1 Year   CONTINUING REVIEW DATE: February 16, 2005

TYPE OF APPLICATION: ☒ New Project   ☐ Continuing Review

Your human subjects research project application, as indicated above, has been approved by the Iowa State University IRB #1 for recruitment of subjects not to exceed the number indicated on the application form. All research for this study must be conducted according to the proposal that was approved by the IRB. If written informed consent is required, the IRB-stamped and dated Informed Consent Document(s), approved by the IRB for this project only, are attached. Please make copies from the attached "masters" for subjects to sign upon agreeing to participate. The original signed Informed Consent Document should be placed in your study files. A copy of the Informed Consent Document should be given to the subject.

If this study is sponsored by an external funding source, the original Assurance Certification/Identification form has been forwarded to the Office of Sponsored Programs Administration.

The IRB must conduct **continuing review** of research at intervals appropriate to the degree of risk, but not less than once per year. Renewal is the PI's responsibility, but as a reminder, you will receive notices at least 60 days and 30 days prior to the next review. **Please note the continuing review date for your study.**

Any **modification** of this research project must be submitted to the IRB for review and approval, prior to implementation. Modifications include but are not limited to: changing the protocol or study procedures, changing investigators or sponsors (funding sources), including additional key personnel, changing the Informed Consent Document, an increase in the total number of subjects anticipated, or adding new materials (e.g., letters, advertisements, questionnaires). Any future correspondence should include the IRB identification number provided and the study title.

HSRO/ORC 8/02

Approval letter
Page 2
Davenport

You must promptly report any of the following to the IRB: (1) all serious and/or unexpected adverse experiences involving risks to subjects or others; and (2) any other unanticipated problems involving risks to subjects or others.

Your research records may be audited at any time during or after the implementation of your study. Federal and University policy require that all research records be maintained for a period of three (3) years following the close of the research protocol. If the principal investigator terminates association with the University before that time, the signed informed consent documents should be given to the Departmental Executive Officer to be maintained.

Research investigators are expected to comply with the University's Federal Wide Assurance, the Belmont Report, 45 CFR 46 and other applicable regulations prior to conducting the research. These documents are on the Human Subjects Research Office website or are available by calling (515) 294-4566.

Upon completion of the project, a Project Closure Form will need to be submitted to the Human Subjects Research Office to officially close the project.

C: HDFS
      Susan Hegland

HSRO/ORC 6/02