FATHER-CHILD PLAY: A LONGITUDINAL STUDY ON FATHERS' PARENTING AND COGNITIVE DEVELOPMENT AND ACADEMIC ACHIEVEMENT ACROSS THE TRANSITION TO SCHOOL

THESIS

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By

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ABSTRACT

This study examined associations between biological, co-resident father-child play at 54 months and child cognitive development and academic achievement at first grade for 699 father-child dyads who took part in the National Institute of Child Health and Human Development Study of Early Child Care. Fathers interacted with their child at 54 months in play oriented tasks and fathers’ sensitive and stimulating parenting were measured. Then, in first grade, children’s cognitive abilities and academic achievement were measured using the Woodcock-Johnson Psycho-educational Battery—Revised. Analyses using Structural Equation Modeling (SEM) revealed that fathers’ parenting during the play session at 54 months significantly predicted children’s cognitive development and there was a trend for predicting academic achievement at first grade. These results held true even after controlling for mothers’ parenting and parental education (which was used as a measure of SES). There were no moderating effects of child gender.
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CHAPTER 1

INTRODUCTION

Empirical and Theoretical Findings on Fathering

Traditionally, the study of fathering has been on the “back burner,” neglected not only by researchers, but by theorists as well (Roggman, 2004). A resurgence in studying fathers occurred in the late 1960s and 1970s, as fathers were now viewed as being nurturing parents (Lamb, 2000). However, throughout this period, father research mainly focused on the effects on the family of father absence (Bronfenbrenner, 1967; Rosenberg & Landy, 1968). In 1981, Lamb and Sherrod edited Infant Social Cognition: Empirical and Theoretical Considerations, in which fathers were described as contributory to child development through enhancing children’s cognitive, social, and moral abilities. Throughout the 1980s and 90s, father research mainly dealt with the quantity of time mothers and fathers spent with their children (Lamb, 2000). Currently, however, research on the quality of the father’s relationship with his child has become increasingly popular due to the changing roles in the family, the expectations society puts on fathers, and the concomitant increase in father involvement (Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000; Costigan & Cox, 2001; McBride, Schoppe-Sullivan, & Ho, 2005; Paquette, 2004). These shifting social attitudes undoubtedly will affect fathers as well as the family unit and the larger socio-cultural
context. However, although there has been a drastic cultural shift, research shows that the cultural shifts may not have been significant enough to make fathers equal partners in the coparental relationship (Wall & Arnold, 2007). The coparental relationship involves the extent to which parents communicate to each other about their child’s physical, emotional, social, mental, and spiritual needs (Markham, Ganong, & Coleman, 2007).

Over the past three decades parental contributions to their child’s academic achievement have been studied. In fact, research suggests that children’s academic achievement is positively correlated with parental involvement (e.g., Hoover-Dempsey, Battiato, Feinstein & Symons, 1999; Georgiou, 1999). However, there have been far fewer studies that explored the parents’ individual contributions (McBride et al., 2005). In addition, even less research has been conducted specifically on the benefits of father involvement (Flouri & Buchanan, 2004). Research might have primarily focused on the parents in general because where fathers are involved, mothers are also involved (Amato, 1994), and fathers are more likely to be involved when the coparenting relationship is strong (Coiro & Emery, 1998). Similarly, father involvement decreases when marital conflicts increase (Coiro & Emery, 1998; Jouriles & Farris, 1992; Volling & Belsky, 1991).

However, there has been increased interest specifically in fathers, as studies have documented the important contributions fathers make to children’s development (see Lamb, 2004) such as fostering positive behavioral outcomes in children, cognitive growth, positive peer relationships, and language and social development (Roggman, Boyce, Cook, Christiansen, & Jones, 2004). Additionally, fathers have historically
played a role in their children’s cognitive and language development (Pleck & Pleck, 1997; Tamis-LeMonda, 2004). However, as researchers complete more studies on fathers, debates about how to measure fathers’ contributions ensue (Hawkins & Palkovitz, 1999; Marsiglio, Amato, Day, & Lamb, 2000). In fact, current research suggests that men and women are biologically designed differently for parenting (Stolz, Barber, & Olsen, 2005), and therefore new theories may need to be developed about fathers before father research can yield proper conclusions (Grossman, Grossman, Fremmer-Bombik, Kindler, Scheurer-Englisch, & Zimmerman, 2002; Paquette, 2004; Pleck, 2007).

To more fully understand the role of fathers in the 21st century and their contributions to their children’s lives, it is important to view fatherhood from a theoretical, as well as an empirical perspective. Initially, it may be best to review the empirical studies on fathers, in order to understand what research has already shown. Subsequently, fathers can be viewed from a theoretical perspective, specifically the perspective of Attachment and Evolutionary theories. Attachment theory has been extremely influential over the past half century and because fathers were starting to be seen as nurturers (Lamb, 2000), much research has been done on fathers using Attachment theory. However, some researchers posit that Attachment theory is too narrow and that father research should be guided by a more general theory (Paquette, 2004); therefore, Evolutionary theory will also be discussed to foster understanding of how fathers have interacted with their children throughout history, so that a more accurate picture of fathers’ contributions to their child’s development might be constructed.
Father Involvement

Starting in the 1960s (Bronfenbrenner; 1967; Rosenberg & Landy, 1968), research has focused on family structure and the outcomes of those structures to see if having a father in the household contributed any benefits. One outcome that researchers have been particularly interested in is cognitive development, which is typically measured via academic performance. Many of these studies dichotomize families, comparing father-present versus father-absent households (Milne, Myers, Rosenthal, & Ginsburg, 1986). J.L.T. (2005) looked at 90,000 students, ages 12-18, from the 1995 National Longitudinal Study of Adolescent Health, and found that those children living in two-parent households were less likely to be involved in deviant behavior and less likely to repeat grades compared to those in one-parent households. Nord, Brimhall, and West (1997) reviewed data on 16,910 K-12 grade children collected by the National Household Education Survey (NHES) from January to April 1996. Embedded in this sample were 5,440 nonresident fathers. They found that only 31% of nonresident fathers participated in their child’s school activities, whereas 75% of resident fathers participated in their child’s school activities. Also, consistent with J.L.T.’s study, the authors found that when nonresident fathers were involved in their children’s schools, even after controlling for resident mothers’ involvement in the school, education, and household income, children, especially those in 6th through 12th grade, were less likely to have ever been suspended, expelled, or repeated a grade compared to those whose nonresident fathers were not involved. Also, the child’s academic achievements did not differ significantly when comparing families with involved nonresident fathers compared to intact two-parent families. This means that only those fathers who were not
involved in their child’s life negatively affected their child’s academic performance. Mulkey, Crain, and Harrington (1992) found similar results, but added to the discussion on the importance of fathers by finding that living in a father-absent household has no direct effect on scores on vocabulary or science tests and only weak effects on grades, while living in a mother-absent household has no effect on vocabulary, but a small direct effect on scores on science tests and on grades. Additionally, Mulkey et al. found that socio-economic status, as measured by parental income, does not influence the child’s GPA. That is, after controlling for the student’s behavioral conditions, such as student absenteeism, lateness, not doing homework, and changing schools, SES has no significant effect on a child’s GPA. However, what might alter a child’s grades is the extent to which the father is nurturing or restrictive, as this has an effect on the child’s motivation toward school work (Epstein & Radin, 1975).

Additionally, Menning (2006) reviewed data on over 2400 adolescents from the first two waves of the National Longitudinal Study of Adolescent Health (Add Health) from 1994 through 1996, which focused on adolescents in 7th though 12th grade. Menning determined that children with non-resident fathers who were involved in their children’s lives were more likely to succeed in school. Consequently, when fathers were uninvolved, children’s academic success diminished. Similarly, Kelly (2000) found that if a father stayed involved in his child’s life after a divorce, then that child would have fewer declines in academic performance, would be less likely to be expelled or suspended, and would like school better than those children with non-involved fathers. In fact, a non-resident father who is involved in his child’s life does not differ significantly from a resident father. However, a non-resident father, especially due to
divorce, may be more likely to be an uninvolved father (Shannon, Tamis-LeMonda, London, & Cabrera, 2002). For example, research suggests that a father who lives with the mother may be involved in his child’s life, but after divorce his involvement level drops significantly (Cairo & Emery, 1998).

However, even resident fathers differ in their levels of involvement with their children. In a study of resident fathers, McBride, Schoppe-Sullivan, and Ho (2005) gathered data from the 1997 Child Development Supplement (CDS) of the Panel Study of Income Dynamics (PSID). Data from 1,334 children between the ages of 5 and 12 were used in this study, which constituted a subsample of the CDS. The subsample was comprised of children who lived with a secondary caregiver: father, stepfather, or father-figure. The data indicated that those children who had involved biological fathers and those who had white fathers scored significantly better on reading and math than those children who were reared by nonbiological fathers or were not white. Results also suggest that father involvement adds to the child’s academic achievement independently of mother involvement; therefore, when fathers are involved there is a positive and independent impact on the child’s academic achievement. Also, like Nord et al.’s study, McBride and colleagues found father involvement in the child’s school activities was a mediator of his child’s academic achievement. Martin, Ryan, and Brooks-Gunn (2007) found similar results when looking at low-income resident fathers. They found that both mothers’ and fathers’ parenting when their child was 2 predicted children’s math and language abilities at age 5. In fact, those children with two supportive parents scored the highest, while those children with two unsupportive parents scored the lowest on math and language tests.
In a meta-analysis Sarkadi, Kristiansson, Oberklaid, and Bremberg (2008) reviewed 24 papers, including data on 22,300 individuals ranging in age from infancy through young adulthood. They concluded that father involvement decreases the occurrences of behavioral problems in boys and psychological issues in young women. Father involvement also reduces the likelihood of criminal behaviors and increases cognitive development, especially in low SES families. For example, Yogman Kindlon, and Earls (1995) reviewed data on 985 low-birth weight, premature infants. They followed these children longitudinally from birth through 3 years of age, measuring how often fathers played with their child, as well as how much caregiving they provided. Yogman, (1995) found that highly involved low-SES black fathers increased their child’s IQ by 6.00 points compared to low-involved black fathers, even after controlling for family income, neonatal health, treatment group status, and paternal age.

To help explain why a father is involved and his contributions to his child’s life, one needs to review this empirical research from a theoretical perspective. Over the past half century, Attachment theory has been at the forefront of explaining parental contributions and so we turn our attention there.

Attachment Theory

Attachment theory is rooted in evolutionary theory (Pleck, 2007), whereby the attachment relationship protects children from predators through developing a secure-base relationship with an adult, typically the mother (Waters & Cummings, 2000). John Bowlby (1979), one of the founders of attachment theory, described two variables that led an infant to form affectional bonds: 1) a caregiver serving as a secure base for their infant, and 2) a caregiver encouraging their infant to explore. Ainsworth (1978) was
another founder of attachment theory and she focused mainly on mothers and their sensitivity to their offspring. Over the past three decades, many studies have focused on the mother-infant dyad in relation to sensitivity, especially with respect to the mother’s role as a secure base. To help measure the extent to which the mother was considered a secure base by the infant, Ainsworth (1978) developed the Strange Situation Procedure (SSP). This assessment is a laboratory procedure designed to measure the infant’s attachment style to his/her mother, which has become the trademarked methodology in attachment research. Ultimately, children with a secure attachment are expected to have better developmental outcomes (Ainsworth, Blehar, Waters, & Wall, 1978; Kochanska, 2001; Mangelsdorf & Frosch, 2000). For example, securely attached children are more autonomous and less dependent, are less likely to have behavior problems, are lower on negative affect, show less crying/whining, are better able to form peer relationships, have more positive affect, and are more socially and emotionally competent than those who are insecure (Matas, Arend, & Sroufe, 1978; Rothbaum et al., 2000). However, fewer studies have investigated the relationship between cognitive development and attachment (Van IJzendoorn, Dijkstra, & Bus, 1995).

According to Attachment theory, exploration can lead to social, emotional, and cognitive advances for the child (Sroufe & Waters, 1977). Van IJzendoorn et al. (1995) evaluated the limited amount of work on attachment and cognitive development in a meta-analysis. They found that securely attached children were more cognitively developed and had a better grasp of language than insecurely attached children. Attachment researchers attributed this to internal working models. Internal working models, which are based on the child’s own experience with his or her caregiver, aid
children in developing expectations about the behaviors of others, and because of this, cognition, social development, and emotional development are all promoted through having a positive internal working model (Pleck, 2007; Waters & Cummings, 2000). In fact, research has shown that even infants have the cognitive abilities to create internal working models, well before infants can behaviorally express themselves (Johnson, Dweck, & Chen, 2007).

Yet, in the current attachment literature, there are some additional gaps. Although mother-child attachment relationships have been studied for decades (Ainsworth, 1967; Belsky & Russell, 1988; Colin, 1996; Finkel, Wille, & Matheny, 1998), researchers are only beginning to examine the father-child attachment relationship (van IJzendoorn & De Wolff, 1997). In addition, the bulk of father-child research has focused on behavioral outcomes in children (Page & Bretherton, 2003; Page, 2001), while few studies have looked at the father-child attachment relationship as it relates to children’s cognitive development in the preschool years (Suess, Grossmann, & Sroufe, 1992). This lack of attachment research may be due to researchers arguing if taking a purely attachment approach is the correct model for fathers (see Grossman et al., 2002; Paquette, 2003).

*Evolutionary Theory*

Attachment theory has been at the forefront of the study of parents’ contributions to their child’s development for the past 50 years, but is a narrow theory in explaining the roles of fathers. Because attachment theory is rooted in evolutionary theory (Pleck, 2007) and because evolutionary theory is a broader theory, it may be relevant to view the contributions of fathers from an evolutionary perspective. In
looking at father involvement, it is important to not only look at our (humans) own past, but also to look at our ancestral relatives. By looking from these two viewpoints, researchers can investigate how fatherhood developed biologically, ecologically, and socially (see Geary, 2000). In fact, most (95%-97%) nonhuman male primates, including chimpanzees and bonobos (de Waal & Lanting, 1997), humans’ closest relatives, have little to no male parental investment with their children (Clutton-Brock, 1989). This leads to the underlying question: Why do human males invest in their offspring at all (Geary, 2007)?

Paternal investment appears to require monogamy. Those primates who are monogamous tend to provide more parental investment than those primates in promiscuous societies (Paquette, 2004). However, for monogamy and paternal (and maternal) investment to increase, the benefits of being so must out-weigh the benefits of not being that way (Geary, 2000; Geary, 2007). That is, where there are more benefits to being with multiple partners, males will be promiscuous (Dunbar, 1995). However, although most monogamous monkeys remain monogamous due to fewer mating opportunities (Dunbar, 1995), humans are uniquely monogamous, as they are surrounded by cities of people. This is not to suggest that humans are always monogamous (and are perhaps better classified as serial monogamous), but that unlike other primates who live in a familial community, humans are tempted to be promiscuous because there are thousands or millions of people in one central location (Geary, 2000). As a result of our species not obligatorily needing fathers to be involved, fathering tends to have diverse and wide-ranging effects on the quantity and quality of
the father-child relationship (Geary, 2007). However, there are many factors that contribute to human fathers being invested in their offspring.

In fact, both sexes have motivation for ensuring father involvement. On a general level, males are monogamous in Western culture due to legal and moral issues, as well as females' preference for monogamy. Because of this, males typically mate with fewer women and invest more in parenting (Geary, 2007). Females stress monogamy in a number of ways, such as refraining from casual sex, concealing their ovulation, and prohibiting other females from joining their social group (Geary, 2000). Additionally, females may aggressively defend their male companion from other females (Dunbar, 1995). Although these tactics do not directly influence father involvement, the limitations make it easier for females to choose a male high in parental investment. On the other hand, men may have adapted to being more monogamous than promiscuous to ensure that the child is indeed biologically his and to increase the survival rate of his offspring (Geary, 2000).

Another reason why humans may have high male parental investment (MPI) is because of the child's prolonged period of development (Paquette, 2004). Because the human brain is so large and complex, children need several years of parental investment (McHenry, 1994). Therefore, women, it is believed, were the impetus for father involvement, as the enormous amount of expense raising a child could be significantly reduced with the help of a partner. In addition, male parental investment is related to maintaining a strong marital relationship (Belsky, Gilstrap, & Rovine, 1984). Moreover, those children who had both parents raising them had cognitive and behavioral
advantages, allowing them to be more competitive in the social world (Geary & Flinn, 2001).

Evolutionary theory stresses that fathers would only become involved in their child’s lives if there were added benefits, independent of the mother’s benefits, to his offspring (Geary, 2007). In looking at the contributions fathers make, Amato (1998) determined that fathers account for more of the variance with respect to his child’s education (which accounted for four times the variance of the mothers’ contribution), psychological distress, and self-esteem than the mother. However, the mother accounted for more variance with respect to the child’s human relationships, like those with family members and close friends. Because of these differential relations, it may be relevant to view the contributions fathers make through a unique lens—one not necessarily derived from research and theory on mothers and mother-child relationships.

New Fathering Theories

New fathering theories and research are starting to point toward the specific benefits of father-child play (Grossman et al., 2002; Paquette, 2003). In fact, some authors even argue that a new measurement be devised for assessing the quality of the father-child relationship through father-child play activities. Given that Attachment theory stresses the need for exploration (Bowlby, 1979), and because father-child play inherently encourages exploration, it would not be surprising to see positive child outcomes when the quality of father-child play is high. Paquette et al. (2003) claims that human fathers spend more time than mothers with their children engaged in play from when the child is two to ten years old, and that this leads to exploration and autonomy for the child.
However, before advocating the use of a new measurement tool for assessing the father-child relationship, it is important to understand why current measures might not be the most appropriate. According to Attachment theory (Ainsworth, 1978), the Strange Situation Procedure (SSP) measures the infant’s ability to explore his/her surroundings, while using his/her caregiver as a secure base. Paquette argues that using the SSP is not conducive to studying fathers, as it does not place a great enough emphasis on exploration and play, and Paquette is not alone in this argument (see also Völling & Belsky, 1992). Grossmann et al. (2002) also argue against use of the SSP with fathers. Going back to Bowlby’s two variables, research shows that caregiving/nurturance sensitivity is to the mother-infant dyad as encouragement of exploration (play sensitivity/stimulation) is to the father-infant dyad; therefore, the mother and the father should not be assessed using the same procedure (Grossman et al., 2002). For example, Grossman et al. state that the secure-base concept differs from the secure-exploration concept because the child only returns to the secure base when cautious or afraid. However, if the parent is involved in the child’s activities and able to provide immediate sensitivity, if needed, then there is no need for the child to be cautious or afraid. To assess this, Grossmann et al. used 49 families who participated in the Bielefeld Longitudinal Study which began recruitment in 1976/77. They studied children at ages 12-18 months, 6 years, 10 years, and 16 years. They found that the infant-father attachment assessed in the SSP predicted the child’s attachment at age 6, but not at age 10 or 16. If fathers do encourage more exploration and play, then there may be a fundamental difference between father-infant (play) and mother-infant
(caregiving) attachment relationships; therefore, a new measure may need to be created to more fully understand the benefits of fathering.

Grossman and colleagues set out to find a better measure of the father-child dyad. They found that using a measure that assesses the sensitivity of emotional support and gentle challenges in toddler-father play strongly predicts the child’s attachment representation at ages 10 and 16. This measure was not significant for the toddler-mother dyad, which further suggests differences in the measurement of mothers and fathers. Also, when measuring secure attachments at 10 years of age using the Attachment and Current Relationship Interview (ACRI), the authors found a correlation between infants who were securely attached to their mother and toddlers who were securely attached to their father. In other words, mother’s caregiving sensitivity to her infant was correlated with the ACRI when her child was 10 years old and father’s play sensitivity to his toddler was also correlated with the ACRI when his child was 10 years old. These results suggest that attachment relationships may form at different times and in different ways for mothers and fathers and therefore a different measurement tool may be needed for each parent.

As indicated above, fathers may have more of a role in their child’s development in terms of the child’s relations with and exploration of the broader social and cognitive world. Because of this, some research has been done on fathers’ play and how measuring the father-child dyad in this type of context might be best for determining the father’s contributions. For example, fathers who play with their children have children who are better able to control their emotions, develop social competence, have fewer behavioral and psychological issues, and are more popular with peers compared to
fathers who do not play with their children (Carson, Burks, & Parke, 1993; see Geary, 2000; Geary, 2007; see Paquette et al., 2003). Moreover, father engagement in play with his child seems to be universal, as it does not differ across employment status, level of schooling, income, or demographic location (rural/urban) (Paquette, et al., 2003; Roggman et al., 2004).

Tamis-LeMonda, Shannon, Cabrera, and Lamb (2004) analyzed data on low-income resident fathers, while taking into account the effects of the mother-child relationship. They viewed the father-child and mother-child relationships during a 10 minute free play session when the child was 24 months and again at 36 months of age. The results revealed that fathers were just as sensitive, positive, and cognitively stimulating as mothers. Moreover, these low-income fathers did not display more negative or controlling behaviors than mothers. The results also indicated that through the quality of play engagements, both mother’s and father’s supportive parenting, a construct of sensitivity, positive regard, and cognitive stimulation, independently predicted children’s language and cognitive development. Feldman and Klein (2003) also viewed the father-child and mother-child relationships through sensitivity during free play. They concluded that both mothers’ and fathers’ sensitivity during free play was correlated with children’s self-regulated compliance.

Play offers a unique experience for the child to practice their communication and negotiation skills, as well as how they react to turn-taking abilities, allowing the child’s language and cognitive abilities and social competencies to increase (Roggman, Boyce, Cook, Christiansen, & Jones, 2004). Specifically, Roggman, et al. (2004) assessed 74 father-infant dyads at 10, 14, 24, and 36 months in a social toy play setting.
They found that father-toddler play was not influenced by the father’s age, education, and parenting distress, but did find that father-toddler social toy play predicted children’s cognitive and language development and emotional regulation at 24 and 36 months. Similarly, Black, Dubowitz, and Starr (1999) found that fathers who were nurturant during play had children with better cognitive and language competence, even after controlling for maternal age, education, and parenting satisfaction.

The benefits derived from father-child play are not new concepts. Easterbrooks and Goldberg (1984) evaluated father involvement, stating that father involvement increased more when the father and child were completing a problem-solving task (play-like) compared to the father-child attachment relationship, which focused on how the father provided nurturance and sensitivity to his child. In fact, fathers’ participation in caregiving activities (feeding, diapering) was not significantly associated with any child characteristics. Therefore, they concluded, father involvement was more strongly related to sociocognitive tasks than to socioemotional tasks.

Moreover, during different types of play, fathers and mothers may communicate differently with their child (Ryccebusch & Marcos, 2004). Ryccebusch and Marcos found that toddlers in problem solving play rely more on their parents for action speech. Action speech refers to requests for objects, verbal instructions on how to perform a task, and replies for clarification on how to perform a task. They also found that fathers are more likely to participate in the problem-solving play activity than mothers; therefore, toddlers rely more on their fathers for explanations on how to perform tasks. In contrast, informational and expressive speech, such as messages stating the parent’s attitudes about what the child is doing, was more common in mothers and was more
commonly asked for during free play sessions. This suggests that children as young as 2 years of age differentiate which parent they will ask a question to, depending on if they are looking to solve a problem or to know if they are doing a good job.

However, Roggman (2004) points out that parents are more similar than some researchers account for, citing several sources where parents are either playing together or where fathers are interacting in more verbal didactic play. Shannon, Tamis-LeMonda, London, and Cabrera (2002), for example, showed that fathers who were responsive during didactic play encourage children’s use of language and promote positive social behaviors.

Although roles can be reversed (see Roggman, 2004), Paquette says that the fathers provide exploration and risk-taking, which makes unique contributions to the child’s development. However, regardless of whether or not mothers and fathers play differently or if fathers play with their children more than mothers, play may be a particularly good context in which to assess fathers’ parenting. Since fathers do play so much with their children and because play has shown to lead to cognitive advances, assessing fathers from a play perspective might be an informative way to measure the father-child relationship.

*Future Father Research*

Father research has come a long way over the past two decades, but is still lacking in three major areas: theoretically, methodologically, and empirically.

*Theoretically.* Pleck (2007) argues for four theoretical perspectives when studying fathers: attachment theory, social capital theory, ecological theory, and “essential father” theory. He argues that attachment relationships will allow the child to
develop a positive internal working model, which will lead to cognitive, social, and emotional development. Another way for father research to improve is to view fathers using social capital theory. Social capital theory highlights the importance of financial, as well as family and community social capital. Using this approach, fathers’ monetary contributions, which may be correlated with community social capital, as this links the family to community resources, will positively affect the child. Additionally, family social capital may also yield positive outcomes for the child’s cognitive and social development, school readiness, and educational ambition. Third, Pleck suggests taking an ecological perspective, which promotes viewing children as embedded in mircosystems (parents, peers, and teachers), mesosystems (linking home and school), the exosystem (similar to community social capital, where the child is affected by his/her surroundings, but has no control over them), and the macrosystem (social and cultural policies). He argues that the ecological perspective can help to explain all the relationships a child has with various individuals, such as peers, teachers, siblings, and parents. Lastly, Pleck discusses essential father theory, which emphasizes that both boys and girls need an involved father and that adult outcomes, such as educational attainment, financial wealth, and marriage, shape how fathers parent.

However, by taking four theoretical perspectives, Pleck is essentially saying two things: that there are many different avenues that can be explored to fully understand the role of fathers and that all of these theories can fit in to the broader theory of evolution. By considering fathers through an evolutionary lens, researchers can see how fathers have historically played a role in their child’s development, as well as how they continue to contribute in today’s changing world. Therefore, it makes more rational
sense to view fathers from a broader perspective until researchers can conclude which specific theory yields the most accurate results for fathers.

However, since Attachment theory has been at the forefront of father research for the past several decades, advances using this framework will probably continue. If this is true, then it is important to view the family as a whole when calculating the fathers’ role. Family systems theory (e.g., Minuchin, 1985) posits that each individual is affected and affects every other individual in the family. By taking a family systems perspective, researchers will be able to see the unique contributions of each parent, as well as their combined contributions to child development (Cowan, 1997), which Marsiglio et al. (2000) advocate as the best avenue for understanding the unique and combined contributions of the father and mother. Viewing the family as a whole unit is essential to understanding the role of fathers, because to explain how fathers contribute to their child’s development, researchers must also account for the mother’s contributions, as well as the shared variance.

Methodologically. Currently, devising a measurement of fathers through attachment tactics may yield the quickest advances since much of the research on fathers’ contributions has been conducted from an attachment perspective. As measurements of the father-child relationship improve, however, father research may or may not continue using attachment methodologies, as the attachment approach may be too narrow for encompassing all of fathers’ contributions. For example, using reliable and valid measurements such as the SSP may yield positive, but skewed results, because there is considerable overlap between caregiving and play (Paquette, 2004).
To get the most accurate and complete information about how the father influences their child, new measurements should be devised. Quantitative measurements like the A-CASI (audio, computer-assisted self-interview) enhance privacy concerns, since the interviewees enter their answers into a computer. This would allow more accurate information on fathers to be collected, especially in relation to sensitive material like child support payments and discipline techniques (Marsiglio, Amato, Day, & Lamb, 2000). When measuring the father, it may also be important and relevant to use qualitative measures, since the father-child relationship is so complex (Brown, McBride, Shin, & Bost, 2007; see Lamb, 2004).

Empirically. Moreover, empirical research on fathers needs to focus on both the quantity and quality of time fathers spend with their children (Marsiglio, et al., 2000), as research suggests that the quality of the father-child relationship may be more important than the quantity of time fathers spend with their children (Palkovitz, 2002). In fact, some research suggests that if fathers spend a lot of time with their children, but the quality of fathering is low, then the father-child relationship may bring about negative outcomes (Brown, McBride, Shin, & Bost, 2007). Surprisingly, there are only two longitudinal studies on infant-father quality of attachment (see Grossmann et al, 2002); therefore, more longitudinal research will be needed to assess the roles and contributions of fathers. However, it may be disadvantageous to solely rely on existing longitudinal studies, since the measurements for fathers may not be state-of-the-art. Therefore, in addition to starting new longitudinal studies, it may be beneficial for researchers to also produce cross-sectional research on the contributions of fathers. This cross-sectional work will allow research to be conducted quickly, while producing valid
and reliable results on theories and measurements that will lead other researchers to more accurately explain fathers’ contributions.

The Current Study

The current study sought to add to the literature on father involvement by focusing on fathers’ play activities with their children. This longitudinal research, conducted using data collected by the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care (SECC), examined relations between father-child play at 54 months and child cognitive development/academic achievement in the 1st grade. This study sought to answer two questions: 1) Does father-child play sensitivity and stimulation at 54 months affect the child’s cognitive development and academic achievement at first grade? 2) Does any effect of fathers hold after controlling for mothers’ parenting and socio-economic status (SES)? 3) Does child gender moderate the relations between parenting and child cognitive development and academic achievement? It was hypothesized that fathers’ sensitivity to and stimulation of their child during play would predict greater child cognitive development and academic achievement. Moreover, fathers’ play sensitivity and stimulation was expected to contribute to children’s academic achievement independent of mothers’ sensitivity and stimulation and SES. The latter two questions help to distinguish the effects of fathers’ parenting from other confounding variables. For example, by controlling for SES, the current study is showing that fathers are beneficial beyond simply their income and education levels. Similarly, by controlling for mothers’ parenting, the current study is showing that fathers’ parenting is adding above and beyond mothers’ parenting to the child’s outcomes. It is also important to examine the
moderating effects on child gender, as past research has shown that fathers parent more with boys than girls (Katzev, Warner, & Acock, 1994; Harris & Morgan, 1991; Lamb, 2000; Lundberg, McLanahan, & Rose, 2007; Raley & Bianchi, 2006; Sarkadi et al., 2008), while other research shows that there are no moderating effects of gender (Flouri & Buchanan, 2004; Flouri, Buchanan, & Bream, 2002; Gibbs, 1989; Russell & Saebel, 1997). To further add empirical research to this debate, it is important to examine this aspect.
CHAPTER 2

METHOD

Measuring the Father-Child Dyad

Participants

The NICHD-SECC study. Participants were drawn from the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care (SECC). The SECC was designed to examine children’s development in relation to their childcare experiences, but also includes data on parent-child relationships and children's social, behavioral, and cognitive development. Participants in this research were drawn from or near 10 cities throughout the U.S. from January to November 1991: Little Rock, AR; Irvine, CA; Lawrence, KS; Boston, MA; Philadelphia, PA; Pittsburgh, PA; Charlottesville, VA; Morganton, NC; Seattle, WA; and Madison, WI. In all, 8,986 mothers were screened at 31 hospitals in or near these cities. Of these mothers, 5,416 met eligibility requirements, as well as agreed to participate in the study. The main requirements were that mothers were at least 18 years old, planned to continue living in the city they were recruited from for at least 3 years, had babies without obvious disabilities and were conversant in English. However, the researchers then used conditional random sampling to get a more accurate representation of the population at each site. The NICHD-SECC study researchers wanted to have reasonable percentages of mothers at different employment levels (full-time, part-time, and stay-at-home),
different education levels, and have a representative racial/ethnic sample of the population participants were recruited from. After using conditional random sampling, the number of participants dropped to 1364 participating families in 1991 (Phase I). Phase I followed the infant from birth to 3 years of age. Phase II data, with 1,095 participating families, contains information regarding children from 54 months through the first grade. Phase III, conducted from 2000-2004, had 1,073 participating families, with data on children’s development from 2nd to 6th grade. The most recent phase, Phase IV (2005-2007), is currently collecting data on participating families and children as children enter high school.

Current study sample. There were 699 children who were observed interacting together with their biological, co-resident fathers at 54 months, and for whom information concerning their cognitive development and academic achievement at first grade was available. Of participating children, 50% were males and 89.7% were White (5.4% Hispanic). Other races included Black (5.2%), Asian (1.6%), Native American (0.3%), and Other (3.3%). Mothers had a mean of 14.95 years of education ($SD = 2.40$), and fathers were slightly more educated ($M = 15.10$ years; $SD = 2.60$). Family income ranged from $5148 to $856,000, with a median income level of $55,000 in 1994.

Measures

Father’s and mother’s parenting quality. Children were observed interacting together with each of their parents at 54 months using the Mother-child interaction and Father-child interaction task, respectively. To measure mothers' and fathers' sensitive and stimulating parenting, mothers and fathers were each videotaped while interacting with their child for 15 minutes. Each dyad was given three semi-structured activities
that were designed to be challenging for the child, but also enjoyable. Observers rated mothers' and fathers' parenting using rating scales (modified from Egeland and Hiester, 1993) tapping aspects of sensitive and stimulating parenting.

At 54 months, the mother-child dyad was asked to complete three activities. The first activity was an Etch-A-Sketch maze. The parent was to help the child maneuver through the maze using the turn knobs on the Etch-A-Sketch. The second activity involved block building. The participants were given a multitude of differently shaped blocks and asked to make several towers of equal height. The third task was to play with a set of six hand puppets, comprised of 2 parrots, 2 frogs, and 2 blue alligators.

In the father-child interaction task at 54 months, two activities were administered. First, the father and child used Marbleworks (Discovery Toys), which involved father and child building towers, chutes, and ramps for marbles to roll over. This helped to measure the child’s emotional regulation as well as how the father interacted with his child. The second involved the father and child playing in an unstructured setting using African animal families and jungle props. The reliability for the interaction tasks was moderate to high (see NICHD SECC manual).

*Children's cognitive development and academic achievement.* At 54 months and at first grade, the child's cognitive development and academic achievement were measured using the Woodcock-Johnson Psycho-educational Battery—Revised (WJ-R; Woodcock, 1990; Woodcock & Johnson, 1989). The WJ-R is composed of two main parts: the Tests of Cognitive Ability (WJ-R COG) and the Tests of Achievement (WJ-R ACH). This test was chosen for six reasons: 1) the WJ-R measures seven cognitive factors (the WISC-III only measures 4; McGrew, 1994), 2) the WJ-R can be used for 54
month-olds and 1st-graders (whereas the Standford-Binet is missing subtests at 54 months and the Wechsler tests change from the WPPSI-R [54 months] to the WISC-III [1st grade]), 3) it generates interval level data, 4) the WJ-R has a shorter administration time, 5) the WJ-R focuses more on cognitive abilities as opposed to other tests that emphasize achievement scores (Woodcock, 1990), and 6) the norming procedure used for the WJ-R was exemplary (McGrew & Knopik, 1993; McGrew, Werder, & Woodcock, 1991).

There are four tests within the WJ-R COG. The first assesses the child’s long-term memory, measured by the child’s memory of names (1st grade only). In this test the child is shown pictures of space creatures and the name of each creature. Then nine pictures of space creatures are shown to see if the child can select the original space creature shown (Cronbach’s alpha for Memory for Names at ages 4 – 7 years ranged from .88 to .92). The second test measures short-term memory. In this test a tape-recording (or sometimes the examiner) states simple words, phrases, and sentences, and the assessment taps the child’s ability to recall the stated words (54 months and 1st grade). Cronbach’s alpha ranged from .86 to .94 for children 4-7 years of age. The third test measures auditory processing: the participant hears a tape-recorded word with one or more phonemes missing, and the child has to decipher the real word (54 months and 1st grade). Cronbach’s alpha for Incomplete Words ranged from .89 to .92. Finally, a comprehensive knowledge test, which measures vocabulary, is administered and has a Cronbach’s alpha of .70 to .82. On this test, the child is shown familiar and unfamiliar pictures and asked to name those pictures (54 months and 1st grade). Test-retest reliability for WJ-R COG ranged from .63 to .78. The WJ-R COG has exceptional
predictive validity across age groups, predicting reading achievement (McGrew, 1993), writing achievement (McGrew & Knopik, 1993), and mathematics achievement (McGrew & Hessler, 1995).

The WJ-R ACH measures three aspects of achievement: 1) Letter-Word Identification (54 months and 1st grade), 2) Word-Attack (1st grade) where the students show their abilities to identify and pronounce words, and 3) Applied Problems (54 months and 1st grade) where the student is asked to analyze and solve basic math problems. The Letter-Word Identification section is made up of two subsections. The first five items involve symbolic learning, in that a pictographic representation of a word is shown and the participant must match that with an actual picture of the object. The second subsection measures the participant’s reading identification skills by identifying isolated letters and words. In Word Attack, participants verbalize made-up words by sounding out those words phonetically. Finally, Applied Problems are presented to the participant. In this section the participants are provided relatively simple mathematics problems and are asked to solve the problems. Using the split-half method, Cronbach’s alpha ranged from .94 to .98 for the Skills Cluster. Test-retest reliability ranged from .80 to .87.
CHAPTER 3

RESULTS

Does Fathers’ Parenting Influence His Child’s Cognitive Development and Academic Achievement?

Preliminary Analyses

Table 1 presents descriptive statistics and correlations among the variables studied. As expected, paternal sensitivity was strongly correlated with paternal stimulation, and maternal sensitivity was strongly correlated with maternal stimulation. Paternal sensitivity and stimulation were positively and significantly related to all measures of children’s academic achievement and cognitive development at both 54 months (time 1) and when their child was in first grade (time 2). Similarly, maternal sensitivity and stimulation were also positively and significantly related to children’s cognitive development and academic achievement at both time points. Also, there were positive and significant correlations between paternal and maternal sensitivity and stimulation. In other words, when one parent was sensitive, so was the other, and when one parent was stimulating, the other was as well. Also, when one parent was high in sensitivity, the other was high in stimulation. Finally, the intercorrelations among the measures of cognitive development and academic achievement were positive and significant, supporting the planned construction of the latent variables.
Overview of Structural Equation Modeling Analyses

To examine the longitudinal relations between fathers’ parenting and children’s cognitive development/academic achievement across the transition to elementary school, structural equation modeling (SEM) was conducted using AMOS 7.0 (Arbuckle, 2006). SEM involves running a series of simultaneous regressions to test the correspondence between theoretical models and the data. Missing data were used to their fullest extent by employing the full information maximum likelihood procedure in AMOS (Marcoulides & Schumacker, 1996). To measure the model fit, I used the root mean square error of approximation (RMSEA), Normed Fit Index (NFI), Comparative fit index (CFI), and $\chi^2 / df$ ratio, as well as the traditional chi-square test. The chi-square test has been shown to become more sensitive as sample size increases, such that the chi-square tests detects small discrepancies between the observed and null models (Bentler & Bonett, 1980). Therefore other measures of model fit were also used that are less sensitive to sample size. RMSEA < .08 is said to indicate an acceptable fit and RMSEA < .05 is said to indicate a close fit (Browne & Cudeck, 1993). The $\chi^2 / df$ ratio was also examined, with the appropriate fit being between 1 and 3 (Arbuckle & Wothke, 1999). The Comparative Fit Index (CFI; Bentler, 1990) and the Normed Fit Index (NFI; Bentler & Bonett, 1980) were used, and good fit for these two indices are when values are higher then 0.95. First, I tested measurement models for parenting and child cognitive development and academic achievement. Subsequently, I tested the hypothesized structural models.

Tests of Measurement Models

29
First, I tested the planned measurement model for mothers’ and fathers’ parenting. In this model, fathers’ sensitivity and stimulation at 54 months were used to form a latent variable representing fathers’ parenting. Mothers’ sensitivity and stimulation were also used to create a latent variable for mothers’ parenting. Fathers’ and mothers’ parenting were allowed to correlate in this model. This model was an excellent fit for the data. Specifically, $\chi^2 (1) = .08 (p = .77)$ and because there was only one degree of freedom, $\chi^2/df = .08$. NFI and CFI were 1.0 and RMSEA = 0.00, which all indicated an extremely close fitting model. Also, the factor loadings were all statistically significant, and ranged from .76 to .94.

The second measurement model tested was that for child cognitive development and academic achievement at first grade, using the Woodcock-Johnson Cognition (WJ-Cog) and Woodcock-Johnson-Achievement (WJ-ACH) scales. Specifically, to form the latent variable for WJ-ACH, the children’s applied problems and letter-word identification scores were used. The picture vocabulary, memory for sentences, and incomplete words tests were used to form the latent variable WJ-Cog. The tests that make up the latent variables were used because there were data on those tests at both time points. The tests on achievement and cognition that were not administered at both time points were not used in this study. The latent variables representing children’s cognitive development and academic achievement were allowed to correlate. The fit of this measurement model was adequate. The $\chi^2 (6) = 24.10 (p < .001)$. Although the $\chi^2/df$ ratio = 6.02, the NFI and the CFI = .998 and RMSEA = .08, which indicates an acceptable fit. The factor loadings were all statistically significant and ranged from .64 to .82.
Fathers’ Parenting and Children’s Academic Achievement and Cognitive Development

(Figure 1)

Next, I proceeded to test the fit of my hypothesized structural model. The chi-square was 60.60 ($p < .001$), suggesting that the model was not a perfect fit. However, because chi-square tests might not be the best measure of model fit (see Bentler & Bonett, 1980), other model fit measures were used. In fact, RMSEA = 0.037, indicating a particularly close fitting model. The $\chi^2/df$ ratio was 1.955, also suggesting that the model was an appropriate fit. Moreover, CFI was .999 and NFI was .998, suggesting that the model fit was strong. Also, this model explained 31% of the variance for the child’s cognitive development and 24% of the variance for the child’s academic achievement at first grade.

The model shows that both parents specifically and independently contribute to their child’s academic achievement and cognitive development. I found that even after controlling for mothers’ parenting, maternal education, and paternal education, fathers’ parenting has significant and independent effects on his child’s cognitive development ($\beta = .17, p < .01$) and was approaching significance with respect to independent effects on the child’s academic achievement ($\beta = .09, p < .057$). Mothers’ parenting also significantly predicted child academic achievement ($\beta = .27, p < .01$), and significantly predicted child cognitive development ($\beta = .30, p < .01$).

Parental education was also important in the model predicting children’s academic achievement and cognitive development. Paternal education and maternal education were strongly correlated, while maternal education was moderately correlated with mothers’ parenting and modestly correlated with fathers’ parenting. Similarly,
paternal education was moderately correlated with fathers’ and mothers’ parenting. Maternal education also significantly predicted child academic achievement ($\beta = .17, p < .01$) and child cognitive development ($\beta = .26, p < .01$). Paternal education did significantly predict child academic achievement ($\beta = .12, p < .05$), but did not significantly predict child cognitive development.

I also tested models that controlled for family income. However, after adding in parental education, the effects of income were not significant. This indicated that education was more important than income, as the effect of education was still significant after adding in income. Thus, to make a more parsimonious model, I excluded family income from the model.

*Fathers’ Parenting and Child Cognitive Development and Academic Achievement:*

*Does Child Gender Moderate?*

Multigroup analysis was then performed in Amos (Arbuckle, 2006) to test whether child gender moderated results in the model. Multigroup analysis compares a series of models in which paths are constrained across groups (in this case, for girls and boys) to models in which paths are allowed to differ freely across groups. Using RMSEA, the most constrained model was .032, which was within a 90 percent confidence interval for RMSEA for the unconstrained model (which ranged from .022 to .042). Therefore, constraining paths in the structural model to be equal for boys and girls did not appear to worsen the fit of the model. Thus, there were no moderating effects of the child’s gender on the relations between fathers’ and mothers’ parenting and children’s cognitive development and academic achievement.

*Predicting Change in Child Cognitive Development and Academic Achievement*
The second structural model I tested included model 1, but added in the WJ-Cog and WJ-ACH scales as measured when the children were 54 months old. After adding in the WJ-Cog and WJ-ACH at time 1 (54 months), all effects of fathers’ and mothers’ parenting were no longer significant. However, these results may not be accurate, as this model produced inadmissible solutions, which may be due to the extreme stability in the WJ-Cog and WJ-ACH scales. These results highlight the inherent difficulty in studying change over time using measures that are designed to be highly stable like the Woodcock-Johnson tests.
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**Academic Achievement 54 months**

| 5. WJ-Applied    | .193** | .240** | .316** | .331** |    |    |    |    |    |    |    |    |    |    |
| Problems         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 6. WJ-Letter-    | .143** | .201** | .219** | .240** | .515** |    |    |    |    |    |    |    |    |    |
| Word Identification |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

**Continued**

Table 1. Intercorrelations between parenting quality at 54 months and children’s cognitive development and academic achievement at 54 months and at first grade.
Table 1 continued

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*p<.05, **p < .01.
Figure 1. Model testing longitudinal relations between fathers’ parenting at 54 months and child cognitive development and academic achievement at first grade.
CHAPTER 4

DISCUSSION

Fathers Do Contribute to Their Child’s Development

This study provided evidence that fathers make important contributions to their young children’s cognitive development and academic achievement, even when taking into account mothers’ parenting and family socio-economic status (SES). Therefore, parents and policy makers should be aware of the roles that fathers may play in fostering children’s success in these domains.

Major Findings

Using a two-wave longitudinal design, I found that fathers’ parenting during father-child play at 54 months had independent effects on children’s cognitive development and academic achievement at first grade, which held true even after controlling for mothers’ parenting. In other words, fathers’ parenting seems to help create a competitive advantage for the child, above and beyond mothers’ parenting. Over the past few decades, many studies have not controlled for maternal involvement (Lamb, 2004), however research that has controlled for mothers’ parenting has still found significant effects of fathers’ parenting as well (Flouri & Buchanan, 2004; McBride et al., 2005). Since, historically, mothers’ parenting has not been controlled, it is important to do so in the current study to help show and emphasize the importance of the fathers’ contributions.
With respect to socio-economic status (SES), fathers’ parenting still has a significant effect on children’s outcomes. First, income and parental education (both mothers’ and fathers’ education) were added to the model as a control for SES. However, after running the SEM model, parental education outweighed parental income. In other words, after adding in parental education, income only minimally added to the overall variance explained by the model and did not increase or decrease the significance of fathers’ parenting in predicting the child outcomes. Therefore, to create a more parsimonious model, only parental education was left in the model to measure SES. Past research on fathers’ parenting also finds effects of fathers, even after controlling for SES (McBride et al., 2005). Sarkadi, Kristiansson, Oberklaid, and Bremberg (2008) conducted a literature review and found that 16 out of 18 studies that controlled for SES found positive effects for father involvement (with one study finding no effects and one study finding negative effects). Thus, fathers’ contributions to their children’s lives consist of more than just provision of economic resources.

Past research has focused on child gender and if that moderates parenting. Some researchers have found that fathers are more involved in sons’ lives then in girls’ lives (Katzev, Warner, & Acoek, 1994; Harris & Morgan, 1991; Lamb, 2000; Lundberg, McLanahan, & Rose, 2007). However, other research found that there are not gendered differences with respect to fathers’ parenting (Flouri & Buchanan, 2004; Flouri, Buchanan, & Bream, 2002). Therefore, because of this ongoing debate, it was important to examine child gender. The current research did not find moderating effects for boys or girls when looking at fathers’ parenting and when looking at mothers’ parenting. In other words, there were no gender differences on how either parents parented.
These findings provide evidence that fathers do matter. Fathers may help to increase children's abilities to learn and to think. By doing this, the child becomes more competitive and therefore will be more likely to succeed in life and continue to pass on his or her genes. Consistent with Attachment theory (Sroufe & Waters, 1977) and Evolutionary theory (Paquette, 2004), fathers may have a desire to encourage their child to explore their environment through play activities, and in doing so, the father encourages the child to think for themselves, leading to cognitive advances. For example, Easterbrooks and Goldberg (1984) concluded that fathers were involved in play activities with their child and that there was a positive association between father involvement and children's problem solving abilities (cognitive development). In fact, fathers who play with their children have children who have better communication and negotiation skills, are better able to control their emotions, have more advanced social, language, and cognitive abilities, have fewer behavioral and psychological issues, and are more popular with peers compared to fathers who do not play with their children (Carson, Burks, & Parke, 1993; see Geary, 2000; Geary, 2007; see Paquette et al., 2003; Roggman et al., 2004).

Limitations of this Research

However, this research is not without its limitations. First, although the data used are from a national dataset, these data are not nationally representative and therefore my results may not apply to all families. Specifically, these results may not apply to minorities, since nearly 90% of the participants were white. They may also not apply to divorced families, non-biological fathers, or father-absent households. Second, the measurement does not allow distinctions to be made between different types of
secondary caregivers. In other words, there is no way to test if the effects are due to the father or to a secondary caregiver more generally. For example, this dataset does not have enough gay/lesbian families to determine if the biological father contributes uniquely to the child’s development or if it is simply a secondary caregiver who contributes. Third, the measurements were taken during a 15 minute session; therefore, I was relying on this 15 minute play session to be reliable and indicative of the true nature of the father-child relationship. Other measurement tools, such as time diaries or father-completed questionnaires on how they spend their time with their children may have helped to provide a more holistic depiction of the father-child relationship. However, since the father-child play session was able to predict children’s cognitive development and academic achievement two and a half years later, the play session may be particularly valid. Fourth, I do not have particularly specific information regarding what happened during these play sessions. It would be helpful to discriminate various types of play: rough-and-tumble versus imaginary versus social toy play. This would be helpful as different theories (Grossman et al., 2002; Paquette, 2004) and different empirical research (Paquette et al., 2003; Roggman et al., 2004; Shannon et al., 2002) has suggested that different types of play may elicit different father-child relationships. This study did not account for the different types of play and therefore I do not know if fathers played differently with their children than mothers did. Fifth, and similarly, is play more important than other aspects of fathers’ parenting? Because play was the only aspect of fathers’ parenting that was measured, we do not know which aspects of fathering are the most relevant in influencing a child’s cognitive development and academic achievement. Future studies will want to include measurements of multiple
aspects of fathers’ parenting in order to determine which aspects are the most influential for child outcomes. Lastly, after running the most rigorous test (controlling for WJ-Cog and WJ-ACH at 54 months), parenting (of both mothers and fathers) failed to predict later cognitive development and academic achievement. This underscores the fact that the present study cannot provide conclusive evidences regarding causality – it could be true, for example, that more cognitively developed children elicit more sensitive and stimulating parenting from their fathers and mothers. Future research using measures of cognition and achievement that are more sensitive to change may be better able to disentangle the directions of effects.

Strengths of this Research

The current study and the NICHD-SECC dataset do have several important strengths. First, it may the only public national dataset that includes observational data on parent-child relationships. These observational data allowed me to measure the quality of the father-child relationship, the importance of which has been emphasized in recent research (Brown et al., 2007). Second, it has a relatively large sample, allowing me to use stronger statistical tests (like SEM) and to examine, perhaps small, but significant findings that one might not be able to detect with a smaller sample size. Third, the NICHD-SECC dataset has collected longitudinal data from birth through high school, allowing researchers to examine effects from birth through adolescence. Specifically, I was able to examine children across a two and a half year time period to see if fathers were contributing to their child’s outcomes. Moreover, this two and a half year period spanned children’s entry into formal schooling, whereas a lot of research linking fathers’ parenting and children’s cognitive development stops when the children
are still in preschool. Fourth, the current study was able to control for mothers’
parenting, as well as for SES. These controls helped me to show that fathers do indeed
have significant and independent effects on children’s outcomes.

Future Father Research

Future father research should focus on precisely how and why fathers contribute
to children’s development. Specifically, research should focus on the unique
contributions of fathers via theory and empirical research. Paquette (2004) argues that
the role of fathers’ play is crucial to understanding and promoting child development.
He argues that play, and specifically rough and tumble play (RTP), is central to the
father-child relationship and is essential for the child’s arousal and stimulation. Another
unique way fathers may contribute to child outcomes is through language. Rowe,
Crocker, and Pan (2004) demonstrated that fathers ask more wh-questions to children
and ask children to elaborate on their thoughts more than mothers do, causing children’s
language development to grow (see also Lamb, 2004). Future research should compare
heterosexual and homosexual (specifically lesbian couples) parents to determine if
fathers do uniquely contribute to the child’s development or if it is simply having a
secondary caregiver who contributes. Moreover, research should measure not only if the
father (or other secondary caregiver) is contributing to the child’s overall success, but
also measure how they contribute—is that contribution, on average, unique to males?

Next, future father research should view fathering from a “pie-chart”
perspective. That is, researchers need to find out which dimensions of fathers’ parenting
most affect child outcomes and to what extent. For example, is a father playing with his
child more important than helping the child with homework? Is one aspect of play better
then another aspect of play in the father-child relationship? Is simply being available and present in the child’s life more important than making sure the child is well dressed and well fed? Fathers’ time may be limited and future father research should explore how fathers should spend time with their child to most effectively and efficiently help their child acquire a competitive advantage.

Another direction for future father research is to show policy makers the important contributions fathers make towards their child’s lives. Evolutionary theory stresses that the more able a woman is to invest in her offspring, the less the man will invest (Cashdan, 1993). However, as more women start to work full-time, fathers will become more involved in their child’s lives (Nord et al., 1997), and since over 50 percent of all mothers work full time (Belkin, 2006), it is critical to understand the contributions fathers make with respect to child outcomes.

Lastly, and similarly, along with policy decisions, American culture needs to understand the important contributions fathers make towards their children. Paquette (2004) says that male parental investment may vary due to the environment and culture from which one comes from. For example, when parents divorce, the courts typically place the children in the hands of the mother, suggesting to the father that he is less important, and therefore he often withdraws from the child’s life (Grych, 2001). Georgiou (1999) argues that the more a parent thinks his/her involvement is important, the more involved that parent will be. Because culture plays such a critical part in understanding how fathers contribute to their child’s development, it is crucial to embed culture into evolutionary theory before determining how and why fathers participate and contribute to their child’s development (Tamis-LeMonda, 2004). Specifically, fathers
from Western cultures spend less time with their children than do mothers due to the economic and social structures inherent within the culture; therefore, fathers are more likely to play with their child, as it is an easy way to engage the child’s interest (Hewlett, 2003). Therefore, because of the cultural differences, rough and tumble play may not be universal; it may be more beneficial to children in an individualist society, and may not apply as much to other societies, like collectivist societies (Paquette, 2004; Tamis-LeMonda, 2004).

Fathers’ parenting has been an increasingly studied topic over the last decade, with increasing focus placed on the quality of the father-child relationship. This research adds to the literature on the benefits for children of involved fathering, as it has provided evidence that fathers, though their sensitive and stimulating parenting during father-child play, make an important and independent contribution to their child’s cognitive development and academic achievement. This research has implications on an individual, family, and community level. Fathers, mothers, and policy makers, especially those involved in education, should keep in mind the importance of fathers and their contributions to their child’s cognitive development and academic achievement. If, on a national level, we highlight and support fathers, fathers will be encouraged to stay involved in their child’s lives, which will lead to better child outcomes. John Bowlby, as quote by Bretherton (1992), said, “If a community values its children it must cherish their parents.” Therefore, if we want fathers to be great parents, we must encourage them.
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