Does Dad Matter? : The Role of Biological, Residential Father Involvement in Predicting Changes in Pre-adolescent Academic, Behavioral, and Social Development

Lydia F. Killos
Alexandria, Virginia

B.A. Emory University, 1994
M.A., University of Virginia, 2004

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Department of Psychology

University of Virginia
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Robert C. Pianta

Joseph P. Allen

Paul Kingston

Nancy S. Weinfield

Melvin N. Wilson

Abstract

Father involvement is often considered ancillary to maternal behaviors when predicting child outcomes. Although it is well documented that children with two parents living at home fare better than children of single parents in predictions of academic and social success, fathering behaviors are frequently overlooked when examining variance in children's achievement. The current study examined the associations between father involvement and child academic, behavioral, and social success in the pre-adolescent years of third through sixth grade.

It was hypothesized that increased levels of positive father involvement, measured by both the quantity of time fathers spend with their children and by the quality of fathers' interactions with their children would predict improved child outcomes at third and fifth grades. Meaning, children of fathers with more positive and increased involvement would perform better on achievement tests of mathematics and reading, would be less likely to engage in internalizing and externalizing behavior problems, would receive higher social skills scores, would receive higher marks from their classroom teachers regarding a positive relationship with the child at third and fifth grades, and would receive higher friendship quality reports from a peer at fourth and sixth grades. Further, it was hypothesized that father involvement behaviors would remain significant in models controlling for parallel measures of maternal involvement behaviors at third and fifth grades.

The data generally support these hypotheses, however quantity and quality of father involvement is not a significant predictor of child outcomes in each case. For example, positive father involvement behaviors do not significantly predict

improvements in child academic achievement at either third or fifth grades, when controlling for children's prior achievement scores. However, father involvement is more consistently associated with child social outcomes, particularly with teacher and peer reports of a positive relationship with the study child at fifth and sixth grades, respectively. Although most of the associations with child outcomes are not strong, the significance of many father involvement variables in predicting child outcomes remains, even in models which include maternal involvement behaviors. Gender differences in the ways in which father involvement behaviors predicted child outcomes were evident. The potential contributions of this study, as well as implications for future research, are discussed.

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Introduction

The tendency for children raised in families without fathers to fare less well than children raised by both biological parents is well documented. Children of single mothers are at risk for poor academic and school performance (Lamb, 1996; Verschueren & Marcoen, 1999; McLanahan, 1985; Hetherington, Camara, & Featherman, 1983), as well as psychological maladjustment (Lamb, 1996), and difficulty establishing and maintaining intimate relationships (Kazura, 2000; Lamb, 1996). Single parent households may provide diminished parental supervision and reduced social capital in the form of intellectual or financial resources (McLanahan, 1997; Coley & Chase-Landsdale, 1999). Given these results, it is not surprising that fathers play a significant role in the lives of their children, a role that may be considered particularly relevant as children enter elementary school settings (Sandler, 2001; Kazura, 2000). Children of two-parent households demonstrate better emotional regulation, relate more successfully to peers, are more likely to establish good relationships with teachers and other adults (Verschueren & Marcoen, 1999) and are less likely to be absent from school (Kurdek & Sinclair, 1988), thereby developing the sort of socially competent behavior that best predicts academic progress and positive social development in the elementary school years (Pianta & Cox, 1999).

In the context of this pattern of findings regarding father presence and absence, the primary goal of this study is to examine determinants and pathways of fathers' involvement with children and families in predicting children's academic, social, and behavioral outcomes. More specifically, the study takes into account measures of both quality and quantity of fathering interactions, based upon the amount of time fathers

spend together with their children and families, and fathers' behaviors when involved in a number of parenting activities, to predict variance in children's academic, behavioral, and social outcomes in third through sixth grades.

Given the social, emotional and academic benefit of being raised in a two-parent household, the apparent role of fathers in relation to child outcomes and family functioning is particularly important in understanding variation in children's academic outcomes (Lamb, 1996; Verschueren & Marcoen, 1999; McLanahan, 1985; Hetherington, Camara, & Featherman, 1983). It is therefore surprising that the role of father involvement in children's school success has only made its way onto empirical research and public policy agendas in the past three decades. In some arenas fathers' involvement is considered a voluntary and negotiable asset, ancillary to mothers' primary role as the director of family life (Fleming & Tobin, 2005). Yet there are several reasons why fathers' involvement may not be a trivial factor in the development of school-age outcomes; reasons specifically related to fathers' role in children's development during infancy and early childhood, fathers' role in providing resources to their families, and evidence indicating that the lack of father involvement is a considerable risk factor. The proposed study considers father involvement to be an asset to the child and family, and examines variation in the measured levels of father involvement with his child across the child's third through sixth-grade academic years as a predictor of gains in achievement, social success, and positive behavioral development, while controlling for parallel measures of maternal involvement.

The Influence of Parenting Style on Children's School Outcomes

Numerous research studies point to positive cognitive outcomes, such as school achievement, for children raised with strong, nurturing father relationships (Grief, Hrabowski, & Maton, 1998; Kazura, 2000; Kindlon, 2001; Rohner & Veneziano, 2001; Verschueren & Marcoen, 1999; Yogman, Kindlon, & Earls, 1995). Parenting styles and support for child independence and autonomy reliably predict both children's perceptions of how their parents relate to them and children's academic outcomes. Authoritative parenting styles are responsible for increased academic-year final grades even when effects of family structure, child gender and family conflict are considered (Kudek & Sinclair, 1988). Authoritative fathers, expressing high levels of warmth and involvement in childcare decisions (Baumrind, 1991), are more likely to be not only highly sensitive in child interactions but also more involved with their children in ways that are associated with positive academic outcomes. Research suggests that children's perceived closeness to fathers significantly predicts academic motivation and diminishes reports of behavior problems (Flouri & Buchanan, 2002; Rohner & Veneziano, 2001), perhaps in part because paternal acceptance plays a significant role in the development of children's positive self-concept and personal esteem (Culp, Schadle, Robinson, & Culp, 2000). Positive self-concept and self-esteem are two factors associated with children's ability to develop and negotiate positive relationships with their classroom peers and teachers (Pianta & Cox, 1999).

Parenting styles, such as a highly engaged paternal caretaker versus a disengaged or disciplinarian parenting style (Jain, Belsky, and Crnic, 1996), are highly correlated with

the quality of father involvement, and father ability to engage with his child (Hudson, Elk, & Fleck, 2001; Sanderson & Thompson, 2002), therefore, parenting style may be significantly associated with a child's school behavior. Grolnick, Ryan, and Deci, (1991) considered the correlation between parenting styles and a child's ability to function in school by measuring parent support for child autonomy versus control of the child's behavior; essentially the degree to which parents encourage their child to initiate and make his or her own choices rather than applying pressure to influence the child's decisions. Children of parents high in autonomy support rated significantly lower in school adjustment problems than did children of parents who were highly controlling. Additionally, researchers found that children of parents high in autonomy-support were rated higher in perceived competence (or belief in their ability to complete instrumental actions for academic success), higher in preference for challenging work, and lower in class anxiety.

Children of parents who actively involve themselves in their child's schooling are more likely to achieve academic success. Grolnick, Benjet, Kurowski, & Apostoleris (1997) defined parent involvement as the dedication of resources by the parent to the child within a given domain; referring to behavioral, cognitive-intellectual, and personal involvement. Results indicated that the children of mothers high in behavioral and cognitive involvement felt more competent in school and more in control of school outcomes. The difference between parental involvement in behavioral outcomes and behavioral directiveness, which includes the application of pressure to direct a child's behavior, is distinct. In this case researchers did not focus specifically on the association of fathering behaviors with a child's academic outcomes aside from reporting that

fathers who are more involved in their families may be more involved in children's schooling.

The present study extends the question of the relevance of both paternal and maternal parenting style in children's academic, behavioral, and social development. Maternal and paternal parenting styles, observations of parent sensitivity, and parent beliefs about raising children enter into analyses. The analytic design of this study examines multiple indicators of paternal involvement in statistical models including both paternal and maternal characteristics. The association of maternal characteristics with child outcomes is examined and ultimately controlled. Controlling for maternal characteristics allows for the evaluation of the unique effects of paternal involvement on child outcomes at third grade and over time.

Conceptualizing Fathering Along Multiple Dimensions

Fathers do seem to matter in terms of their children's school outcomes (Flouri & Buchanan, 2002; Rohner & Veneziano, 2001; Culp et al., 2000) and there are many ways to conceptualize and measure fathers' influence in the lives of their families and children. Father involvement can be measured not only by particular fathering behaviors or parenting events, but also by the frequency with which children encounter these behaviors (Bradley, Corwyn, McAdoo, & Coll, 2001).

This study adds to extant fathering literature in a distinct way; previous research has measured father involvement based on specific fathering behaviors, such as time father spends playing outside with the child or sharing a meal (Caldwell& Bradley, 1984) or based upon measures of paternal sensitivity (NICHD Early Child Care Network, 2004)

and parenting style (Jain, Belsky, and Crnic, 1996; Hudson, Elk, & Fleck, 2001; Sanderson & Thompson, 2002;Grolnick, Ryan, and Deci, 1991). Fathers are seldom the focus of empirical research related to children's outcomes, therefore fathers' behaviors are not typically evaluated as independent predictors of children's outcomes, while holding maternal behaviors constant. For example, in a review of 72 fathering studies by Marsiglio et al. (2000), only eight studies controlled for the quality of maternal behaviors. However, five of the eight studies including maternal behaviors showed significant effects of fathering while accounting for maternal-child interactions (Parke, Dennis, Flyr, Morris, Killian, McDowell, & Wild, 2004).

The present study considers a range of behaviors fathers engage in when interacting with their children, and behaviors fathers engage in to create the possibility for interaction. For example, the study considers: time father spends with the child, as well as time spent at home versus in the workplace, father sensitivity in interactions with the child, father discipline strategies, and father report of feelings about his relationship with the child. Failure to consider multiple aspects of fathering when examining child outcomes may create erroneous conceptualizations of fathering as a set of limited behaviors (such as playing outside with the child) rather than recognizing the breadth of fathering as a wide range of behaviors and emotions (Pleck, 1997).

Previous research has conceptualized father involvement in different ways, often defining father involvement as a series of behaviors, such as the amount of time fathers spend engaging in outdoor play with the child (Caldwell & Bradley, 1984; Cabrera et al., 2004). Studies that focus on the amount of time fathers spend involved with their children often highlight quantity (or frequency) of fathers' interactions over the quality of

the interaction. When studies address the quality of fathering interaction, father sensitivity becomes an important measure, because sensitivity is associated not only with the way fathers are likely to react to their children when they are together, but also with the way fathers conceptualize their role as a parent and view their relationship with the child (Hudson, Elk, & Fleck, 2001; Sanderson & Thompson, 2002). The following section reviews conceptualizations of quantity and quality of father involvement in previous research, including determinants and measurements of the quantity of time fathers spend with their children and families, as well as the ways father sensitivity, or quality of father-child interactions have been evaluated.

Conceptualizations of Father Involvement in Previous Research

Behavioral-ecologists and psychologists have posited several models to conceptualize father involvement. Lamb, Pleck, Charnov, and Levine (1987) suggested that paternal involvement consists of three factors: engagement, availability, and responsibility. *Engagement* refers to father's direct interaction with his child in the form of care-taking, shared leisure time, or play. *Availability* refers to a father's potential access for interaction, whether or not that interaction is actually taking place; for example reading a book while the child plays nearby. *Responsibility* refers to a father's role in the child's welfare and care, which may or may not involve direct contact with the child, such as a father scheduling a child's medical appointment or paying for child placement in a particular daycare or school.

Other father involvement models focus not only on the behavioral domain typically noted in fathering research, but also address less traditional conceptualizations

of father involvement such as the affective domain. The affective domain of fathering includes displays of emotion and affection such as hugging or kissing the child, and expression of feelings (Palkovitz, 1997). Palkovitz (1997) has argued that restricting the definition of father involvement only to the behavioral domain severely limits the true spectrum of fathering behaviors and narrows its conceptualization. For example, the behavioral domain may ignore processes of fathering that require emotional, affective, and mental involvement and cannot be easily observed or quantified, such as father's worry or concern over his child's behavior problem in school, or father's enthusiasm over the child's success on a sports' team or with a club project. The paternal role may vary across a child's lifespan, with behavioral and emotional domains taking on various degrees of relevance to child outcomes at a particular time depending upon a child's course of development, family social ecology and life circumstances.

In the present study, aspects of the affective domain of fathering are operationalized and measured in several ways, under the rubric of fathering quality. For example, examining levels of fathers' sensitivity during interactions with the study children is one specific way of measuring the affective domain. Fathers' self-report measure of total positive relationship with the study children is examined to assess fathers' feelings about their relationships with their children, a direct measure of affect. Father traditional versus progressive beliefs about raising children, and measures of father Harsh, Firm, and Lax Control parenting styles may provide more information regarding emotion-regulatory aspects of the father-child relationship. Specifically, fathers teach children about a range of intensity of affect during playful, instructional, and directive parenting interactions with their children (Parke et al., 2004). These

parenting quality measures are examined in the present study, together with quantity measures of: amount of time father spends with the child each week, hours father spends at work each week, and as well as time engaged in specific activities with the child (outdoor play) and family activities including the child (sharing a meal together.) Quantity measures indicate the amount of time per week that children are exposed to their fathers and the types of behaviors fathers engage in when interacting with their children (H.O.M.E. involvement measures.)

Although most research studies indicate that children benefit from a relationship with their father, the benefits may vary according to individual father behaviors such as sensitivity (NICHD Early Child Care Research Network, 2004; NICHD Early Child Care Research Network, 2005). Fathers' expression of sensitivity with their children is associated with the quality of father involvement; fathers who are more sensitive report greater satisfaction with children's behaviors, with paternal responsibilities for child care, (Hudson, Elk, & Fleck, 2001; Sanderson & Thompson, 2002), and are observed to have a higher quality of engagement with the child (NICHD Early Child Care Research Network, 2004.)

Analysis of the current study children, assessed at first grade, indicated that fathers who behaved more sensitively in their interactions with their children (when sensitivity is measured as supportive presence, respect for child autonomy and lack of observed hostility toward the child) had children scoring significantly lower on measures of externalizing and internalizing behaviors, engaging in fewer episodes of conflict with their classroom teachers, and receiving higher social skills scores (NICHD Early Child Care Research Network, 2004). In this study, father sensitivity predicted relative child

academic outcomes beyond predicted outcomes based on maternal sensitivity; therefore bolstering assertions that when fathers are sensitive and supportive their behavior predicts child outcomes in ways which are measurably distinct from predictions based upon maternal roles (Marsiglio, Amato, Day, & Lamb, 2000; Grossman et al., 2002; NICHD Early Child Care Research Network, 2004). In the present study, father sensitivity during observed interactions with the child is included as a predictor of child academic, behavioral, and social outcomes, while controlling for maternal sensitivity during child interactions, and is then tested as a mediator of the association between father involvement behaviors and child outcomes since supportive and sensitive fathering behaviors may mediate the associations between, for example, the amount of time father spends with the child, and child outcome variables.

Determinants of Father Involvement

Since the time researchers began to conceptualize and study fathering, several models of the determinants of father involvement and father behaviors have been proposed (Pleck & Stueve, 2001). Although results have varied, largely due to differing conceptualizations of father involvement, most models have considered the role of four major components as causal to fathers' involvement: *father characteristics, mother characteristics, co-parental relationships,* and *contextual factors* (Lamb & Oppenheim, 1989; Parke, 1996; Belsky, 1996).

Father Characteristics

Specific fathering characteristics shown to significantly predict the level of involvement fathers are willing or able to develop with their families are: (a) motivation,

(b) skills and confidence, (c) understanding of family relationships, (d) economic stability, and (e) timing of entry into the parental role (Lamb & Oppenheim, 1989; Parke, 1996; Belsky, 1996). *Motivation* indicates the extent to which fathers choose to be involved with their families, based upon attitudes regarding traditional masculinity, and beliefs about the association between family involvement and masculinity (Parke, 1996). For instance, a father who is highly attached to a traditionally masculine self-image may be less inclined towards typically feminine behavior such as cuddling or kissing his child, or tasks most often relegated to mothers such as shopping for the child's food or clothing.

Lamb and Oppenheim (1989) define a father's *skills and confidence* as his perceived ability to read his child's signals, to know how to care for the child's wants and needs, and understand how to respond appropriately to realistic expectations. Father's sense of self-efficacy in the parenting role is defined by his own belief in his ability to perform effectively as a parent. Fathers who report feeling more self-assured and confident in the parenting role also report significantly greater satisfaction with their child and with fathering responsibilities (Hudson, Elk, & Fleck, 2001)

Fathers' understanding of the importance of building positive *family relationships* may encourage fathers to spend more time with their children, thereby benefiting both the child and the mother. The amount of time fathers spend together with their children is assessed in this study. Additionally, paternal reports of depressive symptoms are included in models of paternal involvement as a covariate, which may be associated with the quality of interaction, and potential social benefits to the child, when fathers spend time with their children and families.

Coleman (1988) refers to family relations that benefit the child as parental "social capital." Examples of social capital include social networks (providing support and reward), access to sources of information, and established social norms. Coley and Chase-Lansdale (1999) found that a father's social capital characteristics were best defined by his education and employment status (or *economic stability*); high levels of social capital significantly reduced the odds that a father would remove himself from active parenting after having been highly involved during the mother's pregnancy and the child's infancy. In the present study, family economic status is assessed during the study child's third grade data collection. A strong predictor of father involvement with his family and child is previous father involvement (Roberts, Block, & Block, 1984), however father's age at the *time of initiation into the parenting role* is often inversely related to high levels of father involvement (Pleck, 1997). Paternal age at the time of his child's birth is not assessed in the present study.

Mother Characteristics

Regarding maternal characteristics influencing father involvement, fathers are more likely to be involved when mothers have achieved greater educational status and when they are relatively older at the time of the child's birth (Pleck, 1997). Maternal education is related to both maternal involvement and to father's involvement with the child (Amato, 1994; Cabrera et al., 2000). When mothers are sensitive in their interactions with both the child and the child's father, fathers are more likely to be involved (Lamb & Oppenheim, 1989; Parke, 1996). Mothers who view themselves as critical or judgmental of the quality of his child care found that the child's father was

more likely to distance himself from child involvement (Hudson, Elk, & Fleck, 2001; Lamb & Oppenheim, 1989; Coley & Chase-Lansdale, 1999). In the present study, maternal education and maternal age at the time of the study child's birth are included in models of father involvement, as covariates with levels of father involvement. Maternal sensitivity, and other measures of maternal involvement, parallel to measures of quality and quantity of father involvement are also included in models of father involvement as covariates, in order to assess the relative influence of father involvement on child outcomes while accounting for the variance in child outcomes explained by maternal factors.

Co-parental Relationships

Considerable evidence suggests that inter-parental conflict disrupts parenting (Parke, 1996) and significantly predicts patterns of paternal involvement (Braungart-Rieker & Garwood, 1999; Coley & Chase-Lansdale, 1999). Specifically, the impact of marital conflict is more likely to affect father's relationship with the child than to affect maternal roles (Coiro & Emery, 1998). The parents' relationship may create a structure of expectations for father involvement in child care and up-bringing which are not necessarily genetically or culturally implicit for fathers (as is sometimes considered to be the case for mothers (Flouri, 2004)), but which develop through shared understanding and expectation of child-rearing and parental roles cultivated during the course of the parents' relationship (Lamb, 1996). Fathers' and mothers' report of feelings of love and support in the co-parental relationship at the study children's third and fifth grade data collection periods are included in the present study as covariates in father involvement models. Additionally, maternal and parental self-reports of depressive symptoms are included as

covariates in study models. Reports of depression are highly correlated with couples' experience of their primary relationship (Gottman, 1993; Gottman & Levenson, 1992). Paternal and maternal reports of depressive symptoms may be highly correlated with parents' dissatisfaction in the partnership.

Contextual Factors

One aspect of family life that must be included in parenting models predicting child outcomes is family poverty status. The negative association of poverty with child outcomes and family well-being is well documented (Caldwell & Bradley, 1984; Bradley, Corywn, McAdoo, & Coll, 2001), yet may be mitigated somewhat by father's presence in the home, thereby eliminating the compounding risk factor of father absence (Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000). Bradley et al. (2001) found that poor children are substantially less likely to have meaningful contact with their fathers than are non-poor children, with the effects of poverty on child outcomes mediated, at least in part, through less positive parenting. Economic pressures have been shown to disrupt positive parenting practices by increasing parent depressive symptoms and creating barriers to a supportive relationship between the parents. Distancing between parents often results in increased marital conflict and further disruption in skillful parenting practice (Belsky, 1984; Simmons, Lorenz, Wu, & Conger, 1993). Diminished quality in the parent-child relationship was associated with an increase in child internalizing and externalizing behavior problems (Conger, Wallace, Sun, Simmons, & McLoyd, 2002). Additionally, chronically poor families consistently provide a lower quality of child-rearing environment; children in economically poor families performed lower on tasks of cognition and exhibited more behavior problems than children of non-

poor families (NICHD Early Child Care Network, 2003). Somewhat ironically, needs of the family for economic support and barriers imposed by the workplace rank among the most important reasons given by fathers for low levels of parental involvement (Lamb & Oppenheim, 1989).

Family poverty, or low socio-economic status may predict not only the amount of time fathers spend with their children, but also paternal parenting style, which is associated with fathering characteristics as well as family stress (Sanderson & Thompson, 2002) and in turn may contribute to predictions of child academic outcomes. Family economic pressure is associated with a decrease over time in early adolescents' sense of skill mastery and control, which is then associated with increased internalizing behavior problems for boys and girls over time (Conger, Conger, Matthews, & Elder, 1999).

The index of family poverty, as assessed in the SECCYD data, measures a poverty threshold for each household. A household poverty threshold is determined by the year income is earned, total number of household members, and total number of children living in the home full-time, therefore addressing both family poverty status and family size. Family poverty status is considered in the present study as a demographic predictor of the mean level of father involvement during the study child's third grade school year and over time.

The intention of the present study is to build upon previous conceptualizations of father involvement to create a more comprehensive picture of what fathers do for their children and families, and how fathering behaviors may enhance children's school outcomes. For the purposes of this study, the term "father" is limited to the study child's biological father. In the Study of Early Child Care and Youth Development

(SECCYD) dataset following children from third through sixth grade more than 84% of the fathers sampled over that time are identified as the child's biological father. This study focuses specifically on the behaviors of biological fathers in relation to their children and families.

Study Hypotheses

The present study extends extant literature in three primary ways. First, it examines a rich composite of fathering that includes multiple aspects of father behaviors including both quantity of time with the child, quality of father-child interactions, and father report of emotional aspects of his relationship with the child. Secondly, the study considers the association between father-child involvement and child emotional, behavioral and academic outcomes while controlling for maternal characteristics and involvement behaviors during the study child's third through sixth grade school years, thereby recognizing the unique influence of father involvement in a child's development and well-being. Finally, the study examines various pathways by which fathers retain high levels of involvement, or begin to decrease levels of involvement with their children over time, considering specific variables such as child gender, and family socio-economic status in relation to father involvement in middle childhood.

HYPOTHESES: The five study hypotheses correspond to the proposed study aims described above.

I. Descriptive:

A. Fathers' involvement will be lower in families identified as economically poor and in families where mothers have low educational status (i.e. are not high school graduates).

B. Fathers' involvement will vary over time based upon child gender. Fathers of male study-child will be more likely to have higher levels of involvement at third grade, and to increase involvement over time, relative to fathers with a female study-child.

II. Prediction:

A. Fathers who are more involved with their children and families during the children's third grade and fifth grade school years, will have children who, i) perform better on tests of academic achievement for Reading and for Mathematics, after adjusting for academic scores achieved during the children's prior grade assessments in these subject areas, ii) express fewer internalizing and externalizing behavior problems, as reported by the child's classroom teacher, during the children's third and fifth grade years, after adjusting for children's scores for behavior problems reported during their first grade school year, iii) receive more positive social skills reports from teachers after adjusting for prior social skills scores, iv) receive more positive reports from their teachers regarding the relationship between teacher and child, after adjusting for the previous school

year's report of relationship, and v) receive reports from a peer indicating a higher quality of friendship in their peer relationships at fourth and sixth grades.

B. Father involvement behaviors are not ancillary to maternal involvement behaviors. Father involvement influences child outcomes over and above the influence of maternal behaviors on child outcomes at third and fifth grades. Father involvement variables will predict child outcomes in linear regression models, even as the models control for parallel measures of maternal involvement behaviors.

C. Father involvement behaviors will be differentially associated with child outcomes at third and fifth grades, based upon child gender.

D. Fathers who are more sensitive in interactions with their children will have children performing more successfully on tests of academic achievement, expressing fewer internalizing and externalizing behavior problems as rated by their classroom teachers, scoring higher in teacher ratings of social skills, and developing more positive relationships with their classroom teachers and with their peers. The influence of father sensitivity will mediate the association between a father involvement predictor variable and child outcomes even as the statistical model controls for parallel measures of maternal behaviors and maternal sensitivity during interaction with the study child.

Research Design and Methods

Overall Design

Study hypotheses will be examined using data collected from the National Institute of Child Health and Development (NICHD) Study of Early Child Care. Data has been collected annually from the time of the study child's birth through the study child's sixth grade academic school year, however not all measures were collected at each time point.

Participants

Participants in the NICHD Study of Early Child Care and Youth Development (SECCYD) were recruited through hospital visits to mothers shortly after the birth of a child in 1991, from ten U.S cities located in or near: Little Rock, AR; Orange County, CA; Lawrence, KS; Wellesley, MA; Pittsburgh, PA; Philadelphia, PA; Charlottesville, VA; Seattle, WA; Hickory, NC; and Madison, WI. An initial pool of 8,986 eligible mothers were contacted for participation, 1,364 completed the 1-month home visit and became study participants.

At the study child's third and fifth grade school years, approximately 560 biological fathers and families remained in the SECCYD dataset. Families were lost due to attrition over time, between the children's birth and fifth grade school year. In order to be included in this study, fathers must have had most quality and quantity measures for both third and fifth grade study children's assessment. Fathers with third grade information, who were no longer involved in the study at fifth grade, were excluded from the present study because the study compares third grade with fifth grade child outcomes.

Most quantity and quality information was available for 569 fathers at both third and fifth grades. Seven fathers were removed from the study because they were non-residential or non-biological fathers, leaving the father population in this study with 562 fathers. Characteristics of the fathers and families included in this study are outlined in Table 1.

Table 1

Demographic Variables

Predictor Variables		Grade 3	Grade 5
Fathers' Characteristics			
Race	Asian 1.4% Black 5.0% White 91.8% Other 1.8%		
Ethnicity	Hispanic 2.9%		
Years of Education (at study child's birth)			
-HS Degree or Below	17.7%		
-Some College/ No Degree	29.1%		
-College Degree	28.9%		
-Graduate Work & Beyond	24.3%		
Percent Unemployed		4.1%	5.3%
-Hrs/ Wk Work Outside Home		46.6 (14.8)	45.2 (14.9)
Mothers' Characteristics			
Age (at study child's birth)	30.1 (5.0) R = 18-46		
Race	Asian 2.3% Black 5.0% White 91.3% Other 1.4%		
Ethnicity	Hispanic 4.6%		
Years of Education (at study child's birth)			

-HS Degree or Below	15.7%		
-Some College/ No Degree	30.1%		
-College Degree	30.6%		
-Graduate Work & Beyond	20.6%		
Percent Working		74.5%	75.4%
-Hrs/ Wk Work Outside Home		46.6 (14.8)	45.2 (14.9)
Marital Status			
-Married		97.9%	94.7%
-Partnered/ Living Together		1.8%	1.5%
Contextual Factors			
Family Income		90, 565.69 (67,185.38)	98,506.69 (72,340.90)
Families Living in Poverty		12.3 %	11.4%
Number Living in Home:			
-Adults		2.05 (.27)	2.01 (.31)
-Children		2.45 (.87)	2.47 (.92)
Child Characteristics			
Sex :			
-Female	49.5%		
-Male	50.5%		
Race	Asian 1.4%		
	Black 4.6%		
	White 90.5%		
	Other 3.6 %		
Ethnicity	Hispanic 6.0%		

Procedure

During researcher visits to the fathers' homes, fathers completed questionnaires concerning their personality, attitudes and beliefs about parenting, beliefs about their relationship with their child, and involvement in specific family and care-giving activities. Mothers were interviewed and completed similar questionnaires to the ones fathers completed during separate home visits. Additionally, mothers were interviewed

by phone every 3 months regarding the amount of time they and father spend with the child, their employment hours and the father's employment hours.

The home and family environment was assessed when children were in their third and fifth-grade academic years. Children's cognitive and language development was assessed in their first and third grade academic years using the Woodcock Johnson Assessment of Child Reading Skills and Applied Problems scores. Complete descriptions of the data collection procedures can be found in the Manuals of Operation for the NICHD Study of Early Child Care, available at http://public.rti.org/secc.

Attrition

During Third Grade assessments, father sensitivity data is available for approximately 610 fathers. Fifth Grade father sensitivity data is available for 595 fathers. The present study intends to analyze fathering data for biological fathers with near complete data information. Therefore, the number of fathers included in the proposed analysis will be no greater than 562. Analysis of missing data for the sample of fathers with complete sensitivity data indicated that data were missing at random. When data points were missing for the 562 fathers, data was imputed using a multiple imputation data format. This format gathers information from all other data points in the sample to predict the value for a missing data point; similar to multiple regression analyses, available in SPSS statistical computer packages. A sample of 562 fathers offers more than 99% power to detect medium effects with regression (Cohen, 1988). Even in cases where the sample is split to examine effects across gender, ethnicity, family socio-

economic status and maternal characteristics, power will be more than 85% for medium effect sizes.

Measures

Table 2 provides a visual summary of the key constructs and measures for this study. A copy of all measures can be found in Appendix A.

Table 2

Key Constructs and Measures

	Child Grade at Time Measured	**Person Reporting**
Fathering Quantity		
Amount of Time Father Spends with Child (min/ week)	3 & 5	Mother Phone Interview
H.O.M.E	3 & 5	Mother or Father
Fathering Quality		
Father Sensitivity during Task	3 & 5	Trained Observer
Father Parenting Style	3	Father
Father Depression	3, 5, 6	Father
Father Relationship with the Child	3, 4, 5,6	Father
Father Beliefs about Raising Children	4	Father
Child Outcomes		
Behavior Problems	2,3, 4, 5, 6	Child's Classroom Teacher
Relationship with Classroom Teacher	2,3, 4, 5, 6	Child's Classroom Teacher
Social Skills	2,3,4,5,6	Child's Classroom Teacher
Friendship Quality	4 & 6	Study Child's Peer
Woodcock Johnson Achievement Tests of Reading and Mathematics	3 & 5	Child Performance on standardized test of academic achievement

Fathering Quantity

Time Father Spends with the Child

Data regarding the number of minutes per week the child spends at home with the father were collected from up to three parent interviews. The study child's time spent in after-school arrangements were summed across arrangements and days to create a variable indicating the number of minutes per week the child is at home or elsewhere with his or her father. The Parent Reported After-School Arrangements- Third Grade is a modification of the parent report of care arrangements used in the Study of After-School care by Vandell and Pierce (1998). During the third grade "time-use" phone interview, parents were asked to report their child's typical after-school arrangements from the time of school dismissal until 6:00 PM for each weekday in a typical week. These reports were most frequently obtained from the study child's mother, but could be obtained from the father or another adult in the home if the mother was not available. Assessment of the amount of time the child spends with his or her mother and father was derived from this interview.

Quality of the Home Environment (HOME)

Three variables, measuring father's level of involvement in the home, were assessed using the middle childhood HOME at Third Grade and the Early Adolescent HOME at Fifth Grade (Caldwell & Bradley, 1984). Both the Middle Childhood and Early Adolescent HOME Inventories (See Appendix A) have approximately 60 items, broken into 7 subscales. Items relevant to father involvement during the study child's third and fifth grade school years are identical for both middle childhood and early adolescence. The HOME was administered using a combination of direct observation and semi-

structured interview with the parent. For purposes of this analysis, father involvement will be measured as a summary score of parent responses to the following items: a) Father (or father substitute) regularly engages in outdoor recreation with child, b) Child sees and spends some time with father or father figure 4 days a week, c) Child eats at least 1 meal per day, on most days with mother and father (or mother and father figures) (One parent families rate an automatic NO.) Each item was scored either 1, indicating that the event or activity does occur in the child's home life, or 0, indicating the event or situation is not present in the child's home life. The three items used to create the father involvement scale in this analysis have moderate internal reliability for the middle childhood HOME (3 items, Cronbach's alpha = 0.68) and moderate internal reliability for the early adolescent HOME (Cronbach's alpha= 0.69).

Fathering Quality

Father Sensitivity

Father Sensitivity and was measured during the study child's third and fifth grade years during structured interaction tasks (See Appendix A). At the third grade time point, data was collected from 613 fathers. At third grade the father-child interaction was comprised of two tasks, a discussion task and a shared problem-solving task. At fifth grade measurement, data was collected from 593 fathers, regarding an age-appropriate discussion task and a shared problem-solving activity. Videotapes of the study children and their fathers during the structured interaction were coded by trained observers. The rating scales used to code the videotaped interactions ranged from 1= "Very Low" to 7 =

"Very High" on five parent ratings, four child ratings, and one dyadic rating within each of the two tasks for both the third and fifth grade measurements.

Father Sensitivity represents a composite of supportive presence + respect for autonomy + reflected hostility for cases with complete data for overall ratings on the structured interaction tasks. At third grade data collection Father Sensitivity has a range from 6 to 21, with higher scores indicating more support, autonomy, and less hostility in interacting with the study child. At fifth grade data collection Father Sensitivity has a range of 7 to 21. At both measurements the possible range of values was 3 to 21. Father Sensitivity has moderate internal reliability at third grade (3 items, Cronbach's alpha = 0.78) and moderate internal reliability at fifth grade (3 items, Cronbach's alpha = 0.82).

Father Self-Reported Parenting Style

Fathers' parenting styles were assessed during the study child's third grade school year. Fathers were asked to complete a questionnaire designed to assess parental discipline strategies. The "Raising Children" questionnaire (Greenberger & Goldberg, 1989) is a 30-item questionnaire that asks respondents to describe their feelings about raising children. Respondents were asked to circle one of four responses best describing their feelings, with responses ranging from 1= "Definitely No" to 4= "Definitely Yes." The same measure was given to mothers and to fathers during the study child's third grade year. Data was collected from 638 fathers of third-grade children. A principal components factor analysis was conducted using Varimax rotation, to retain three factors to describe parental discipline strategies: harsh, firm, and lax.

Harsh Control solution is computed as a summary score of nine items (items 3, 6, 10 (reflected), 12, 13, 22, 24, 25, and 27) from the "Raising Children" questionnaire. The possible range of scores is 9 to 36, with higher scores indicating a harsher degree of parental control. The Harsh Control common solution has moderate internal reliability (9 items, Cronbach's alpha = .73). Firm/ Responsive Control solution is computed as a summary score of six items (items 2, 4, 5, 20, 23, and 26) from the "Raising Children" questionnaire. The possible range of scores is 6 to 24, with higher values indicating firmer, more responsive parental control. The Firm/ Responsive Control solution has modest internal reliability (6 items; Cronbach's alpha = .68). Lax Control solution is computed as the summary score of 9 items (items 7, 8 (reflected), 9, 14, 16, 19, 21, 28, and 30) from the "Raising Children" questionnaire. Possible scores range from 9 to 36, with higher values denoting a more lax degree of parental control. The Lax Control solution has moderate internal reliability (9 items; Cronbach's alpha = .72) The full "Raising Children" questionnaire is included in Appendix A.

Father Report of Positive Relationship with Child

During the child's third grade academic year, 638 Fathers responded to the questionnaire titled "My Child's Relationship with Me" (Appendix A). Father Overall Positive Relationship with the Child was measured during the child's third, fourth, fifth, and sixth grade academic years. Total Positive Relationship scores represent the sum of items measuring father/ child closeness and the reflected scores representing father/child conflict. In this way, the Overall Positive Relationship score represents both conflict and closeness in the father/ child relationship. The possible range of scores is 15 to 75, with

higher scores indicating more closeness between the father and the study child. Scores at third grade ranged from 30 to 75. The items used to create this variable had modest internal reliability at third grade (15 items, Cronbach's alpha = .81). During the study child's fourth grade year, 615 fathers completed the questionnaire. Scores ranged from 34 to 75. The items used to create this variable were the same items used to create the third grade variable and had moderate internal reliability (15 items, Cronbach's alpha = .84). At the fifth grade time point, identical items were added and coded for the 631 fathers completing the "My Child's Relationship with Me" questionnaire. Scores ranged from 26 to 75. The items had moderate internal reliability (15 items, Cronbach's alpha = .83). At the sixth grade time point, data was collected for 595 Fathers. Scores for this measure ranged from 26 to 75, with higher scores indicating a more positive total relationship. The items used to create this variable had high internal reliability (15 items, Cronbach's alpha = .87).

Beliefs about Raising Children

During the study child's fourth grade school year, fathers were asked to complete a questionnaire designed to assess their attitudes and beliefs about raising young children. The scale provides an estimate of the fathers' attitudes toward child rearing discipline, whether strict or conservative (traditional) or progressive (modern). The self-administered questionnaire includes 30 statements regarding rearing and educating children. Fathers were asked to circle one of five responses to indicate how they feel about raising children. Item scores ranged from 1 = "Strongly disagree" to 5 = "Strongly agree." More than 630 fathers responded to the "Beliefs about Raising Children" (See Appendix A) questionnaire at Fourth Grade. The score was computed as the sum of

items 1 through 30 on the questionnaire, with items 6, 11, 13, 15, 20, 23, 27, and 29 reflected. Possible scores ranged from 30 to 150, with higher values indicating more traditional beliefs about raising children. The "Beliefs about Raising Children" score has high internal reliability (30 items, Cronbach's alpha = .88).

Father Depression

During the study child's third, fifth, and sixth grade school years, fathers were asked to complete the "My Feelings I" questionnaire to measure parental depression. The "My Feelings I" questionnaire (Appendix A) was developed from the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), a short self-report scale designed to measure depressive symptoms in the general population. The "My Feelings I" questionnaire contains 20 statements that describe how people sometimes feel about themselves. Fathers were asked to circle one of four responses that best describe the way they felt during the past week. Response categories coded as: 0= "Rarely" to 3 = "Most of the time." Responses were re-coded from the original range of 1 to 4 in order to match the standard scoring for the CES-D which ranged from 0 to 3. Items 3, 11, 14, and 16 were reflected prior to creating the composite variable for father depression. Father Depression Score is computed as the sum of re-coded (range 0-3) responses to items 1 to 20, with items 3, 11, 14, and 16 reflected in order to create a score with higher values denoting higher depressive symptoms. Scores of 16 and above are considered a clinically significant indication of depression. The Father Depression Score has high internal reliability at the third grade measurement (20 items, Cronbach's alpha = .88), at the fifth grade measurement (20 items, Cronbach's alpha = .87), and at the sixth grade measurement (20 items, Cronbach's alpha = .89).

Child Outcomes

Child Achievement Scores: Mathematics and Reading

First grade achievement was assessed independently for reading preparation and mathematics skill using the Woodcock Johnson assessments of Letter-Word Identification and Applied Problem Solving. The first five Letter-Word Identification items involve symbolic learning, or the ability to match a pictographic representation of a work with an actual picture of the object. The remaining items measure the subject's reading identification skills by identifying isolated letters or words. In this test it is not necessary for the participant to know the meaning of any word he or she correctly identifies. The items become more difficult as they assess subject knowledge of words that appear with decreasing frequency in written English. Letter-Word Standard scores range from 51-154, with values over 100 indicating the individual raw score was above the mean score of similar students with whom the instrument was standardized. Raw items in the Letter-Word assessment have high internal reliability (Cronbach's alpha = .92).

Applied Problems measures the participant's skill in analyzing and solving practical problems in mathematics. The participant must understand the appropriate procedure to be followed and must perform relatively simple calculations in order to solve the problems correctly. Applied Problems Standard scores range in value from 46-163, with values over 100 indicating the individual raw score above the mean of similar

students with whom the test instrument was standardized. Raw items in the Applied Problems assessment have moderate internal reliability (Cronbach's alpha = .83).

Teacher Report of Child Behavior Problems: Internalizing and Externalizing

During the study child's third, fourth, fifth and sixth grade years child's classroom teachers were asked to complete a questionnaire based on the Child Behavior Checklist (CBCL) scales. Teachers completed a list of 122 items that included a broad range of children's possible behavioral and emotional problems. For each item the teacher was asked to determine how well the item describes the study child, currently, or within the previous two months. Responses were recorded as: 0= "Not True (as far as you know)," 1= Somewhat, or Sometimes True, and 2 = "Very True" or "Often True." For the purposes of the present analyses, two scales were selected from the CBCL to define child behavior problems: internalizing and externalizing problems scores. *Internalizing* t-scores consist of information from the syndrome scales designated as Withdrawn, Somatic Complaints, and Anxious/ Depressed. The possible range of scores is from 31 to 100, with higher scores indicating a child's greater affinity to act withdrawn, have somatic complaints, and appear to be anxious or depressed. *Externalizing* t-scores consist of information from the syndrome scales designated as Delinquent and Aggressive Behavior. The possible range of scores is from 39 to 100, with higher scores indicating a greater affinity to display delinquent and aggressive behaviors. Teacher reports of child Internalizing and Externalizing behavior scores will be considered in the proposed analysis. Internalizing behavior scores have high internal reliability (35 items,

Cronbach's alpha= .87), as do Externalizing behavior scores (34 items, Cronbach's alpha = .95). (See Appendix A for Child Behavior Problem questionnaire).

Teacher Report of Child Social Skills

During the study children's second, third, fourth, and fifth grade school years, classroom teachers were asked to complete the Social Skills Rating System (SSRS). The social skills portion of this measure includes 30 items that document the perceived frequency of target behaviors that influence the individual student's development of social competence and adaptive functioning. Teachers were asked to rate "How Often" each of the 30 items occur for the individual child, 0 = Never, 1= Sometimes, and 2 = Very Often. The social skills standard scores have a possible range of 50 to 130. Social Skills Total Standard Score has high internal reliability at third and fifth grades (30 items, Cronbach's alpha = .94). Teacher questionnaires are identical for each academic year assessed in this study.

Student-Teacher Relationship

During the study child's third through sixth grade school years, the child's classroom teacher was asked to complete a questionnaire designed to assess the teacher's perceptions of their relationship with the study child (See Appendix A). The self-administered questionnaire includes fifteen statements that describe student-teacher relationships. The teacher was asked to circle one of five responses that best describes their relationship with the study child, ranging from 1= "Definitely does not apply" to 5= "Definitely applies." Teacher Total Positive Relationship with Child is computed as the sum of all 15 items, with items 2, 4, 8, 10, 11, 12, 13, and 14 reflected, in order for higher scores to indicate a more positive total relationship between the teacher and child.

Possible scores range from 15 to 75. Teacher Total Positive Relationship with Child has high internal reliability at third grade (15 items, Cronbach's alpha= .89) and at fourth, fifth, and sixth grades (15 items, Cronbach's alpha= .88). Teacher questionnaires are identical for each academic year the student-teacher relationship is measured.

Friendship Quality

At fourth and sixth grades, friends of the study children were asked to complete a questionnaire designed to assess the Friend's perceptions of the friendship with the study child (See Appendix I) Friends were asked to rate how true 21 statements were regarding their friendship on a 5 point scale: 1= "Not at all true", 3 = "Somewhat true," 5 = "Really true." Friendship Quality Total Score is computed as the average of Friend's response to items 2 through 20, with items 3, 12, 15, and 20 (Conflict and Betrayal items) reflected. Possible scores range from 1 to 5, with higher values indicating more positive friendship behaviors between the two friends, as reported by the study child's friend. The Friendship Quality Total Score (Friend) has high internal reliability (20 items, Cronbach's alpha = .88) at fourth grade, and high internal reliability at sixth grade (28 items, Cronbach's alpha = .92). At sixth grade the first 21 items of the Friendship Quality questionnaire are identical to the fourth grade questionnaire. The final eight items are new at Sixth Grade and were chosen to be more suitable for use with adolescents.

Child and Family Characteristics

Child gender, ethnicity and birth order were recorded during the 1-month interview. Partner status (resident husband or partner vs. no resident partner) was obtained by maternal interview during telephone calls or in-person interviews at first and third grades. At the third-grade assessment most of the fathers sampled (88.5%) are the

biological father of the study child. Eleven percent of the fathers in the present sample identified themselves as an ethnic minority (5% African-American, 1.4% Asian-American, 2.9% Hispanic, 1.8% Other) and 12.3% of the present sample were identified as economically poor during the study child's third grade year (See Table 1). Female maternal partners are not included in this study.

Maternal education in years was obtained by maternal interview at 1 month. Mothers were asked about the number of children in the household during each interview through the study child's sixth grade school year. Children included in the proposed analysis were most likely to be first-born children in their families (41.8%). Over 40% of children sampled were second-born, and the remaining children (17.6%) were third - through seventh-born children in the family. Most of the children sampled were identified by their parents as Caucasian (90.5%), however there is significant African-American representation (4.6%) as well as representation from Asian-American (1.4%) and Hispanic children (6.0%) in the current analysis.

Maternal Sensitivity. The parent-child interaction at third grade was comprised of two tasks, a discussion task and a shared problem-solving activity; mothers and fathers participated in the tasks separately with their child. Videotapes were made of the study children and their mothers during the structured interaction, and coded by trained observers. The rating scale used to code the videotaped interaction ranged from "1= Very Low" to "7 = Very High." A composite score for Maternal Sensitivity was created based upon a summary score for parent supportive presence + respect for autonomy + hostility (reversed) for cases with complete data in the discussion and problem solving tasks. The possible range of values is 3 to 21, with higher scores representing greater

parent sensitivity when interacting with the study child. The items used to create this score have moderate internal reliability (3 items, Cronbach's alpha = .80).

Income Groups

Family income was calculated from mothers' reports at each data collection point, and included mother's earnings, earnings of her resident husband/ partner, and all other sources of household income, including public assistance. An income-to-needs ratio was calculated for each family at the third and fifth grade time periods based upon the year family income was earned. First, a family poverty threshold was calculated by determining total family income, and the total number of household members, including the number of children living in the home full-time. A poverty threshold was determined for that year based upon United States Census Bureau, Current Population Survey statistics. Family income-to-needs ratio was calculated by dividing the total family income by the household poverty threshold. Poverty was analyzed as a dichotomous variable, families were either considered fiscally poor at the study child's third grade and fifth grade years, or they were not. A family was defined as poor if the median income-to-needs ratio was 2.0 or less during that period.

Results

Descriptive Statistics

Correlations among family contextual factors, father involvement variables and mother involvement variables at study child grades three and five are listed in Appendix B and Appendix C, respectively. Correlations between father and mother involvement variables and family contextual factors are low to moderate for variables measured at third grade (Appendix B) and at fifth grade (Appendix C.) However, few family contextual factors, father involvement, and maternal involvement correlations are relatively strong, and therefore noteworthy. Regarding family contextual factors, father report of depression is strongly negatively correlated with father feelings of love and support in his partnership with mother at grade 3 ($r = -.51$, $p<.01$) and at grade 5 ($r = -.53$, $p<.01$). Father depression is negatively correlated with one variable representing quality of father involvement, father report of a positive relationship with the study child at third grade ($r = -.29$, $p< .01$) and at fifth grade ($r - .37$, $p<.01$). Regarding father and mother family contextual variables, father report of love and support is significantly correlated with maternal report of love and support in the partnership at third grade ($r = .54$, $p<.01$) and at fifth grade ($r = .51$, $p<.01$). For mothers, maternal report of partnership love and support is negatively associated with maternal depressive symptoms at the third grade measurement ($r = -.41$, $p<.01$) and at the fifth grade measurement ($r = -.44$, $p<.01$).

Child Outcome Measures

Appendix D provides descriptive information for child outcomes at grades one, three, and five for Woodcock Johnson Math and Reading Scores, at grades two through

six for Teacher Report of child's behavior problems, social skills, and positive relationship with the study child, and at grades four and six for child peer friendship quality.

Correlations for child outcomes at third grade are listed in Table 3. The highest correlations are between child math and reading scores at third grade ($r = .61$, $p < .01$) and between teacher report of a positive relationship with the study child and teacher report of child social skills ($r = .64$, $p < .01$). Teacher report of child social skills is negatively associated with teacher report of child externalizing behaviors ($r = -.54$, $p < .01$).

Correlations for child outcomes at fifth grade are listed in Table 4. At the fifth grade measurement, the strongest associations are between child reading and math scores ($r = .56$, $p < .01$) and between teacher report of child social skills and teacher report of child externalizing behaviors ($r = -.56$, $p < .01$).

Inter-correlations between child outcomes at grades three and five are listed in Table 5. Correlations are high for child math scores ($r = .74$, $p < .01$) and for reading scores ($r = .85$, $p < .01$), but are low to moderate for other child outcome measures, meaning that child outcomes of internalizing and externalizing behavior problems, teacher reports of positive relationship, child social skills, and peer friendship reports (between grades four and six) are not highly stable over the measured time period.

Table 3

Inter-correlations of Child Outcomes at Grade 3

	1.	2.	3.	4.	5.	6.	7.
1. G3 Math							
2. G3 Reading	.61 **						
3. G3 Internalizing	.01	-.05					
4. G3 Externalizing	-.09 *	-.11 **	.25 **				
5. G3 Social Skills	.21 **	.19 **	-.35 **	-.54 **			
6. G3 Teacher Rel.	.12 **	.08	-.29 **	-.48 **	.64 **		
7. G4 Friend Qual.	.05	.08	-.09 *	-.11 **	.17 **	.12 **	

**p<.01, *p <.05

Table 4

Interr-correlations of Child Outcomes at Grade 5

	1.	2.	3.	4.	5.	6.	7.
1. G5 Math							
2. G5 Reading	.56 **						
3. G5 Internalizing	-.09 *	-.02					
4. G5 Externalizing	-.13 **	-.09 *	.33 **				
5. G5 Social Skills	.25 **	.25 **	-.45 **	-.56 **			
6. G5 Teacher Rel.	.08 *	.05	-.14 **	-.29 **	.33 **		
7. G6 Friend Qual.	.06	.04	-.05	-.15 **	.11 **	.18 **	

**p<.01, *p<.05

Table 5

Correlations of Child Outcome Variables between Grades 3 and 5

Child Outcome Variable Measured	Correlations Gr. 3 & 5
WJ Mathematics Score	.74 **
WJ Reading Score	.85 **
Internalizing Behavior Problems (Teacher Report)	.19 **
Externalizing Behavior Problems (Teacher Report)	.49 **
Child Social Skills (Teacher Report)	.37 **
Teacher Positive Relationship (Teacher Report)	.42 **
Peer Friendship Quality (Grades 4 and 6, Peer Report)	.32 **

** $p<.01$

Family Contextual Factors

Means, standard deviations, and ranges for family contextual factor predictor variables (e.g. family poverty, maternal age at study child's birth, maternal education, father depression, and mother and father love and support in their relationship) are listed in Appendix E for 562 mothers and fathers. When parent data was missing, scores were imputed using a multiple regression imputation format. Table 7 lists the correlations among family contextual variables at study children's third grade school year. Correlations between family contextual factors during the study child's third grade year are low to moderate for most variables. Father love and support in his relationship is strongly negatively associated with father report of depression ($r = -.51$, $p<.01$) and

strongly positively associated with maternal report of love and support in her relationship with father ($r = .51$, $p<.01$).

A similar pattern of low correlations emerges in family contextual variables measured during the study child's fifth grade school year (Table 8). Most correlations are low to moderate. However, similar to third grade correlations, father report of love and support in his relationship with the child's mother is strongly negatively associated with father report of depression ($r = -.53$, $p<.01$) and is positively associated with maternal report of love and support in her marital relationship ($r = .54$, $p<.01$). Table 9 lists the correlations between third and fifth grade family contextual factors. Father report of love and support in his relationship with the child's mother demonstrates the strongest stability of the repeated measure family contextual factors measures at third and fifth grade ($r = .78$, $p<.01$). Mother report of love and support in her relationship with the study child's father is also highly stable between third and fifth grades, ($r = .69$, $p<.01$). Finally, father report of depressive symptoms is highly stable between third and fifth grades ($r = .67$, $p<.01$). Family poverty, maternal age at study child's birth, and maternal education are measured at a single time point, which is entered into each third and fifth grade model, therefore stability analyses are not discussed for those variables.

Table 7

Inter-correlations of Family Contextual Variables at Grade 3

	1.	2.	3.	4.	5.	6.
1. Poverty (G3)						
2. Mom's Age (SC Birth)	-.19 **					
3. Low Ed. Mom (G3)	.20 **	-.21 **				
4. Father Depression	.15 **	-.04	.07			
5. Mom Love/ Support Rel.	-.11 **	-.03	-.02	-.32 **		
6. Father Love/ Support Rel.	.02	-.12 **	-.01	-.51 **	.51 **	

**p<.01, *p <.05

Table 8

Inter-correlations of Family Contextual Variables at Grade 5

	1.	2.	3.	4.	5.	6.
1. Poverty (G3)						
2. Mom's Age (SC Birth)	-.19 **					
3. Low Ed. Mom (G3)	.20 **	-.20				
4. Father Depression	.04	-.06	.04			
5. Mom Love/ Support Rel.	-.04	-.07	.04	-.29 **		
6. Father Love/ Support Rel.	.00	-.08	.03	-.53 **	.54 **	

**p<.01, *p <.05

Table 9

Correlations of Family Contextual Variables between Grades 3 and 5

Family Contextual Variable Measured	Correlations Gr. 3 & 5
Father Depression	.67 **
Mother Love/ Support Relationship	.69 **
Father Love/ Support Relationship	.78 **

** p<.01

Maternal Involvement Variables

Means, standard deviations, and ranges for maternal involvement covariates are listed in Appendix F. Correlations between these variables for grade three and for grade five are listed in Table 10 (third grade) and Table 11 (fifth grade). For mothers in the sample, the strongest correlations at third grade are the negative associations between a) the number of hours mothers work and the amount of time they spend with their children, and b) between mothers reported beliefs about raising children and their expression of Harsh Control parenting. Similarly, at fifth grade the amount of time mothers report spending with their children is most strongly negatively associated with the amount of time mothers report working outside the home. Associations between traditional beliefs about raising children and harsh parenting are equivalent to third grade correlations since both variables are measured only once, at fourth and third grades, respectively.

Correlations between measures of maternal involvement variables at grades three and five are listed in Table 12. Correlations of maternal involvement variables between grades three and five are strong for most repeated measures variables. However, the

correlations between maternal sensitivity at grade three and five is only moderate ($r = .44$, $p<.01$), meaning that maternal sensitivity ratings are not highly stable between third and fifth grades.

Table 10

*Inter-correlations of Maternal Involvement Variables at **Third Grade***

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Min/ Wk with SC									
2. Hrs/ Wk @ Work	-.58 **								
3. Mom Sensitivity	.02	.01							
4. Mom Harsh	-.00	.02	-.28 **						
5. Mom Firm	.03	-.06	.12 **	.00					
6. Mom Lax	-.13 **	.14 **	-.01	-.17 **	-.12 **				
7. Total Pos. Rel SC	-.05	.07	.23 **	-.02	.28 **	-.03			
8. Beliefs @ Raise	-.01	.02	-.36 **	.58 **	-.09 *	.03	-.07		
9. Mom Depression	-.01	.03	-.10 *	.01	-.06	.16 **	-.23 **	.14 **	

** p<.01, * p<.05

Table 11

*Inter-correlations of Maternal Involvement Variables at **Fifth Grade***

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Min/ Wk with SC									
2. Hrs/ Wk @ Work	-.59 **								
3. Mom Sensitivity	.07	-.09 *							
4. Mom Harsh (G.3)	-.01	.07	-.25 **						
5. Mom Firm (G.3)	.05	-.04	.15 **	.00					
6. Mom Lax (G.3)	-.13 **	.14 **	-.11 **	-.17 **	-.12 **				
7. Total Pos. Rel SC	.01	.05	.23 **	-.01	.23 **	-.04			
8. Beliefs @ Raise	.00	.08 *	-.31 **	.58 **	-.09 *	.03	-.10 *		
9. Mom Depression	-.02	-.04	-.11 **	-.00	-.05	.09 *	-.30 **	.07	

** p<.01, * p<.05

Table 12

Correlations of Maternal Involvement Variables between Grades 3 and 5

Maternal Involvement Variable Measured	Correlations Gr. 3 & 5
Mother Min/Week with SC	.63 **
Mother Hours/ Week At Work	.70 **
Mother Sensitivity	.44 **
Total Positive Relationship	.70 **
Mother Depression	.59 **

** $p<.01$

Father Involvement Variables

Means, standard deviations, and ranges for father involvement predictor variables for 562 fathers are listed in Table 13. Table 14 lists the correlations between father involvement variables at the study child's third grade year. Correlations are low to moderate for father involvement variables at third grade. However, the correlation between father beliefs about raising children and father Harsh Control parenting is relatively strong ($r = .55$, $p<.01$).

Correlations between father involvement variables at fifth grade are listed in Table 15. Once again, correlations are low to moderate for fifth grade measurement of father involvement variables. Table 16 lists correlations of father involvement variables between third and fifth grade. Analysis of these correlations indicates that stability of father involvement variables is moderate to high for repeated measures variables of total positive relationship with the study child, minutes per week father spends with the child,

and number of hours per week father works. Correlations between third and fifth grade father H.O.M.E scores, and Sensitivity scores are moderate to low, ($r = .38$, $p<.01$, and $r = .42$, $p<.01$, respectively.)

Table 13

Means, Standard Deviations, and Ranges of Imputed Father Involvement Predictor Variables at Grades Three and Five: Whole Sample

Variable	N	Mean	SD	Range
Father Min/Week with SC				
Grade 3	562	89.79	214.60	0 – 1100
Grade 5	562	92.05	207.39	0 – 1225
Father Hours/ Week At Work				
Grade 3	562	46.59	0.76	0 – 110
Grade 5	562	45.08	14.53	0 – 96
Father H.O.M.E.				
Grade 3	562	2.37	0.76	0 – 3
Grade 5	562	2.36	0.82	0 – 3
Father Sensitivity				
Grade 3	562	17.35	2.25	6 – 21
Grade 5	562	17.18	2.07	7 – 21
Father Harsh Control				
Grade 3	562	24.61	3.75	13 – 36
Father Firm Control				
Grade 3	562	20.53	2.08	10 – 24
Father Lax Control				
Grade 3	562	15.35	3.35	9 – 26
Total Positive Relationship				
Grade 3	562	62.78	7.21	35 – 75
Grade 5	562	60.95	7.29	32 – 75
Father Beliefs Raising Children				
Grade 4	562	75.10	14.97	31 – 123

Table 14

Correlations of Father Involvement Variables at Third Grade: Whole Sample

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Min/ Wk with SC									
2. Hrs/ Wk @ Work	-.31 **								
3. G3 HOME	.01	-.07							
4. Fa Sensitivity	-.06	.01	.11 **						
5. Father Harsh	.05	.02	-.05	-.23 **					
6. Father Firm	-.07	.06	-.03	.12 **	.04				
7. Father Lax	.12 **	-.11 *	-.13 **	-.14 **	-.19 **	-.19**			
8. Tot. Pos Rel. SC	-.06	.03	.04	.19 **	.02	.33 **	-.18 **		
9. Beliefs @ Raise	.10 *	-.09 *	-.11 **	-.26 **	.55 **	-.13 **	.03	-.05	

** p<.01, * p<.05

Table 15

Correlations of Father Involvement Variables at Fifth Grade: Whole Sample

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Min/ Wk with SC									
2. Hrs/ Wk @ Work	-.28 **								
3. G3 HOME	-.01	-.05							
4. Fa Sensitivity	-.11 *	-.03	.11 **						
5. Father Harsh	.07	.08	-.05	-.23 **					
6. Father Firm	-.04	-.02	-.04	.03	.04				
7. Father Lax	.11 *	-.06	-.02	-.06	-.19 **	-.19 **			
8. Tot. Pos Rel. SC	-.08	.08	.02	.12 **	.01	.32 **	-.20 **		
9. Beliefs @ Raise	.15 **	-.05	-.15 **	-.26 **	.55 **	-.13 **	.03	-.08	

** p<.01, * p<.05

Table 16

Correlations of Father Involvement Variables between Grades 3 and 5

Father Involvement Variable Measured	Correlations Gr. 3 & 5
Father Depression	.67 **
Father Min/Week with SC	.60 **
Father Hours/ Week At Work	.58 **
Father H.O.M.E.	.38 **
Father Sensitivity	.42 **
Total Positive Relationship with Study Child	.73 **

** p<.01

Stability Analysis

Correlations between third and fifth grade assessments of father involvement variables were analyzed to assess stability between father involvement at third and fifth grade. The study was designed with the intention of using third grade father involvement measurement to predict fifth grade child outcomes, only if high stability existed between father involvement at children's third and fifth grade school years; meaning, that each measured father involvement variable remained highly correlated between third and fifth grade measurements. Analysis of Table 16 provides information regarding the correlations between father involvement variables at both grades, for repeated measures of: Father Depression, Minutes per Week with Study Child, Hours per Week Father Works, H.O.M.E. score, Father Sensitivity, and Father Total Positive Relationship with

Child. Most repeated measures father involvement variables are highly correlated between grades three and five (correlations above .60). However correlations among the number of Hours per Week Father Works, father H.O.M.E scores, and father Sensitivity were not sufficient to assume high stability in those measurements between third and fifth grades (correlations at or below .58). Therefore, father involvement variables measured at third grade are not sufficiently similar to father involvement variables measured at fifth grade, or these three father involvement variables are predicted to be relatively different at third and fifth grade measurements. In cases of repeated measures of fathering variables, third grade measures will be used to predict child outcomes at third grade and fifth grade measurement of father involvement variables will be used to predict fifth grade child outcomes. For example, father sensitivity measured at third grade will be used in models predicting third grade child outcomes and father sensitivity measured at fifth grade will predict fifth grade child outcomes.

Ethnic Variance

Appendix G lists father involvement variable means, standard deviations, and ranges for children who are identified as "non-white" or are considered representatives of an ethnic minority. Only 51 children in the sample were identified as "non-white," 27 boys and 24 girls. Mean differences between father involvement of "white" and "non-white" children do exist in the current sample. For example, mean levels of father sensitivity are significantly lower for fathers of non-white children at both third and fifth grades ($p<.001$ at third grade, and $p<.05$ at fifth grade.) Fathers' H.O.M.E. scores are

also significantly lower for non-white children than for white children, (mean = 2.15, $p<.05$ non-white children at third grade, and mean= 2.07,$p<.01$ non-white children at fifth grade.) At the fifth grade measurement, fathers of non-white children are likely to spend an average of one more hour per week with their children than are fathers of white children (mean = 154.12 min/ week, non-white children, $p<.05$). Finally, fathers of non-white children are significantly more likely to endorse Harsh Control parenting (mean= 26.63, $p<.001$) at the third grade measurement, and similarly, are more likely to endorse traditional (directive) beliefs about raising children (mean = 84.58, $p<.001$) at the study children's fourth grade measurement.

The SECCYD dataset is largely a Caucasian sample, with more than 91% of the third grade sample children identified as "White, Non-Hispanic." However, once children of non-biological, or non-residential fathers were removed from analyses, the number of children representing ethnic minorities diminished further. There are insufficient numbers of children representing ethnic minorities in the current sample to use ethnicity as a moderator for father involvement variables when predicting child outcomes. Subsequent analyses will not specifically address child ethnicity. Results of these analyses should be interpreted as applicable to a sample of mostly white, non-Hispanic, non-poor children, living in residence with their biological fathers.

Phase I: Descriptive Hypotheses

Hypothesis I.A: Fathers' involvement with their children will be lower in families identified as economically poor and in families where mothers have low educational status.

Correlations between family poverty at grade 3 and father behaviors with his child are relatively low at third (Appendix B) and fifth (Appendix C) grades. Modest correlations exist between family poverty status at grade 3 and father report of Harsh Control parenting ($r = .16$, $p<.01$, grade 3 and grade 5), and between poverty status and father report of traditional beliefs about raising his child ($r = .21$, $p<.01$, grade 3 and grade 5).

Appendix H lists father involvement means, standard deviations, and ranges for children of families living in poverty, identified during the third grade measurement. Fathers identified in the economically poor group have a mean sensitivity score at both third and fifth grades that is significantly lower than the mean for non-poor fathers, (third grade mean = 16.53, $p<.05$ and fifth grade mean= 16.63, $p<.05$). Economically poor fathers are also significantly more likely to endorse Harsh Control parenting and similarly, are more likely to endorse traditional or directive parenting practices. Finally, at fifth grade measurement, economically poor fathers are significantly less likely than non-poor fathers to spend time with their children during the week.

Only 64 children in the sample were from families identified as "working poor" or as "living in poverty" during the children's third grade measurement. Because the sample selected for this study includes only children of biological, residential fathers, the

number of children from families living in poverty diminished. There are not sufficient numbers of low socio-economic status families in the current sample to make predictions of children's outcomes that distinguish children of families living in poverty from children of families with greater financial resources. Therefore, subsequent analyses will not address differences in family socio-economic status as a moderator for father involvement variables in predicting child outcomes. However, family poverty status will be included as a covariate in models predicting child outcomes to control for the influence of poverty status when considering the associations of father involvement variables with child outcomes.

Correlations between maternal low education status and father involvement are very low at grades 3 (Appendix B) and five (Appendix C). Only seventeen mothers in the present sample were identified as holding a low education status (i.e. below a high school degree). Maternal education is a covariate included in father involvement models to control for the influence of low maternal education when predicting child outcomes. Although initial correlations suggest that variation in father involvement is not strongly associated with low maternal educational attainment, tests of mean differences (ANOVA) indicate that children of low education mothers have fathers with significant mean differences in the number of minutes per week they spend with their study children at fifth grade, their report of a positive relationship with study children, and fathers' report of harsh parenting control and traditional beliefs about raising children. Variable means,

ranges, and standard deviations of father involvement variables for fathers partnered with mothers of low education status are listed in Appendix H.

In summary, father involvement quality is significantly lower in families identified as economically poor and in families with low education status mothers. In both types of families, fathers are significantly more likely to endorse Harsh Control parenting strategies with their children at third grade measurement. Harsh Control parenting is considered to be negatively associated with a higher quality of father-child interaction. Fathers of children in economically poor families receive lower Sensitivity scores when interacting with their children at both third and fifth grade. Higher father sensitivity scores are considered to be positively associated with higher quality in the father-child relationship. Fathers of families with low education mothers are significantly more likely to report traditional (directive) beliefs about raising children, and to report less positive relationships with their children than fathers of families with higher maternal educational status.

The opportunity for father involvement (fathering quantity) is also significantly reduced in economically poor and low educational attainment families at fifth grade measurement. Fathers of poor and low education families spend significantly less time with their children during the week, than fathers who are not represented in these two groups.

Hypothesis I.B: Fathers' involvement will vary over time based upon child gender. Fathers of male study children will be more likely to have higher levels of involvement at third grade, and to increase involvement over time, relative to fathers of female study children.

In order to test this hypothesis, changes in father involvement over time based upon child gender were analyzed using two-way repeated measures ANOVA tests. Analyses progressed by considering first whether father involvement variables change over time, next whether father involvement means significantly differ by gender, and finally whether the time by gender interaction is significant for measured father involvement variables. Father involvement variable means, standard deviations, and correlations are run separately for boys and girls at third and fifth grades. Finally, correlations among father involvement variables (stability analyses) were analyzed separately for boys and girls.

Repeated measures analysis of variance (ANOVA) was conducted to determine whether mean levels of father involvement differ between the study child's third and fifth grade school years based upon child gender. Father involvement variables of: Minutes per week with child, Hours per Week father works, H.O.M.E. involvement, Sensitivity, and Total Positive Relationship with the Child were tested for mean differences, first over time (between child grades three and five), then by gender, and finally the interaction term of Time by Gender. Because father report of depression, at study child third and fifth grades, is included in father involvement models as a covariate, Father Depression

was also tested for significant mean differences, over time, by gender, and the interaction term of Time by Gender.

Father involvement variables of: Hours Father Works per Week, and Father Report of a Positive Relationship with the study child do significantly change over time. Fathers work an average of 46.59 hours per week at the third grade measurement, and significantly decrease ($p<.01$) their hours at work to an average of about 45 hours per week at the fifth grade measurement (Table 13). Father report of a positive relationship with the study child also significantly decreases over time ($p<.001$) from an average score of 62.78 at third grade to an average of 60.95 at fifth grade (Table 13).

Regarding differences by gender, fathers report a significantly more positive relationship with female children at third grade than fathers report with male children at that time ($x = 63.44$ for girls, $x = 62.13$ for boys, $p <.05$). Additionally, fathers Sensitivity scores are significantly higher for girls than for boys at the third grade time period ($x = 17.65$ for girls, $x = 17.06$ for boys, $p <.01$).

When we consider the interaction term of time by gender, most measured father involvement variables do not change at significantly different rates over time based upon child gender (Table 17). Although father report of a positive relationship with the study child does change significantly over time, the rate of change over time for boys versus girls is not significant ($p =.05$). However, the rate of change in father sensitivity scores does change over time differently depending upon the study child's gender.

Table 17

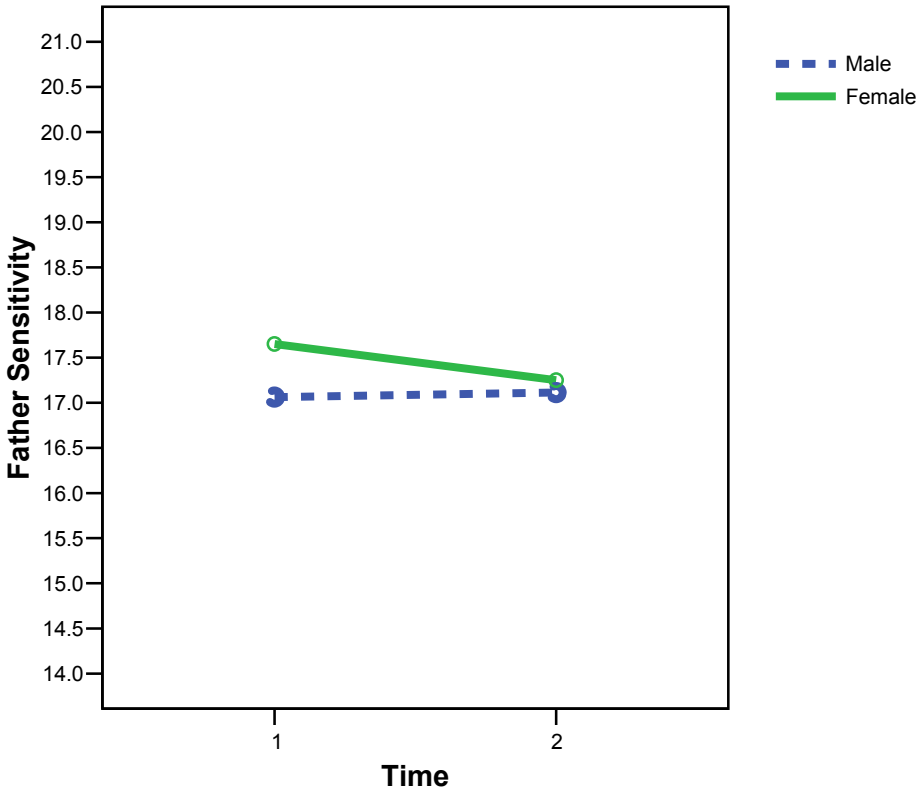
Repeated Measures Analysis of Variance in Father Variables for Boys and Girls

Variable	Type III SS	F	Sig.
Minutes/ Week with Child			
Time	1535.39	.09	.77
Time X Child Gender	5765.15	.32	.57
Hours/ Week Father Works			
Time	638.34	7.09	.01
Time X Child Gender	12.30	.14	.71
Father H.O.M.E. Involvement			
Time	.03	.08	.78
Time X Child Gender	216.77	.00	.95
Father Sensitivity			
Time	8.67	3.20	.07
Time X Child Gender	14.72	5.27	.02
Father Total Positive Rel.			
Time	944.30	66.11	.00
Time X Child Gender	53.62	3.75	.05
Father Depression			
Time	4.39	.23	.63
Time X Child Gender	.07	.00	.95

Analysis of Figure 1 indicates that father sensitivity scores decline significantly between third and fifth grade measurements for girls (decreasing by an average of .40 points, Table 18) but increase slightly for boys between third and fifth grades (increasing by an average of .05 points, Table 18).

Figure 1

Interaction of Father Sensitivity with Time (Differences between Grade 3 and 5) for Boys and Girls



Means, standard deviations, and ranges of the measured father involvement variables for 286 boys in the sample, and 276 girls in the sample are listed separately in Table 18.

Father Sensitivity, a major father involvement construct in the present study, appears to operate differently over time based upon child gender. Therefore, analyses of child outcomes were conducted separately by gender, rather than entering many gender-based interaction terms which would make interpretation more difficult.

Table 18

Means, Standard Deviations, and Ranges of Imputed Father Involvement Predictor Variables at Grades Three and Five: Boys and Girls

	BOYS				GIRLS			
Variable	**N**	**Mean**	**SD**	**Range**	**N**	**Mean**	**SD**	**Range**
Fa Min/Wk w/ C								
Grade 3	286	90.31	210.69	0-1100	276	89.26	218.96	0 – 1080
Grade 5	286	88.12	189.72	0-1200	276	96.12	224.52	0 - 1225
Fa Hrs/Wk Work								
Grade 3	286	47.13	13.86	0-110	276	46.03	15.68	0-100
Grade 5	286	45.41	14.59	1-96	276	44.73	14.48	0-80
Fa H.O.M.E.								
Grade 3	286	2.41	.76	0-3	276	2.33	.76	0-3
Grade 5	286	2.41	.81	0-3	276	2.32	.83	0-3
Fa Sensitivity								
Grade 3	286	17.06	2.35	6-21	276	17.65	2.10	8 – 21
Grade 5	286	17.11	2.12	7-21	276	17.25	2.02	9 - 21
Fa Harsh								
Grade 3	286	24.59	3.68	13-36	276	24.63	3.82	15 - 34
Fa Firm								
Grade 3	286	20.42	2.21	10-24	276	20.64	1.92	15 - 24
Fa Lax								
Grade 3	286	15.27	3.43	9-26	276	15.43	3.27	9 – 24
Fa Pos. Rel.								
Grade 3	286	62.13	7.36	35-75	276	63.44	7.01	37 – 75
Grade 5	286	60.74	7.19	36-75	276	61.17	7.40	32 – 75
Fa Beliefs Raise								
Grade 4	286	75.49	15.50	36-113	276	74.70	14.21	31 - 123

Table 19 lists correlations of father involvement variables for boys at the third grade measurement. Most correlations of father involvement variables are low to

moderate for third grade boys. The strongest correlation exists between father report of Harsh Control parenting practice and father report of traditional beliefs about raising children ($r = .58$, $p<.01$)

Correlations among father involvement variables for third grade girls are listed in Table 20. Most father involvement variables are only low to moderately correlated for third grade girls. Similar to third grade boys, girls with fathers who report harsh parenting practice are more likely to have fathers who report of traditional beliefs about raising children ($r = .53$, $p<.01$).

Correlations among father involvement variables for fifth grade boys and girls are listed in Table 21 (boys) and Table 22 (girls). Correlations are low to moderate for the measured variables for fifth grade boys. Correlations are low to moderate for fifth grade girls' father involvement variables measured.

Stability analyses for father involvement variables measured at third and fifth grades are listed separately for boys and for girls in Table 23. Stability among father involvement variables is relatively high for boys for most repeated measures. However, stability for father Sensitivity and for H.O.M.E scores is only moderate. A similar stability pattern emerges for girls' father involvement variables between third and fifth grades. While most variables are highly stable, sensitivity and H.O.M.E scores are more moderate.

Table 19

Correlations of Father Involvement Variables at Third Grade: BOYS

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Min/ Wk with SC									
2. Hrs/ Wk @ Work	-.30 **								
3. G3 HOME	.02	.01							
4. Fa Sensitivity	-.01	.00	.05						
5. Father Harsh	.07	-.01	-.04	-.27 **					
6. Father Firm	-.10	.05	-.05	.15 *	-.00				
7. Father Lax	.04	-.05	-.20 **	-.12	-.29 **	-.27**			
8. Tot. Pos Rel. SC	-.13 *	.03	.06	.24 **	-.03	.33 **	-.21 **		
9. Beliefs @ Raise	.12 *	-.12 *	-.11	-.23 **	.58 **	-.17 **	-.04	-.09	

** p<.01, * p<.05

Table 20

Correlations of Father Involvement Variables at Third Grade: GIRLS

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Min/ Wk with SC									
2. Hrs/ Wk @ Work	-.32 **								
3. G3 HOME	.00	-.14							
4. Fa Sensitivity	-.12	.02	.20 **						
5. Father Harsh	.03	.06	-.06	-.20 **					
6. Father Firm	-.04	.07	-.01	.06	.08				
7. Father Lax	.19 **	-.15 *	-.04	-.17	-.08	-.09			
8. Tot. Pos Rel. SC	.02	.03	.03	.10	.07	.33 **	-.15 *		
9. Beliefs @ Raise	.08	-.07	-.11	-.29 **	.53 **	-.08	.12	.00	

** p<.01, * p<.05

Table 21

Correlations of Father Involvement Variables at Fifth Grade: BOYS

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Min/ Wk with SC									
2. Hrs/ Wk @ Work	-.26 **								
3. G3 HOME	-.11	-.04							
4. Fa Sensitivity	-.10	-.02	.05						
5. Father Harsh	.10	.06	-.07	-.28 **					
6. Father Firm	-.08	-.01	.01	.09	-.00				
7. Father Lax	.04	-.02	-.00	.04	-.29 **	-.27 **			
8. Tot. Pos Rel. SC	-.15 *	.12 *	.04	.21 **	-.00	.32 **	-.27 **		
9. Beliefs @ Raise	.13 *	-.07	-.21 **	-.28 **	.58 **	-.17 **	-.04	-.12 *	

** p<.01, * p<.05

Table 22 *Correlations of Father Involvement Variables at Fifth Grade: GIRLS*

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Min/ Wk with SC									
2. Hrs/ Wk @ Work	-.29 **								
3. G3 HOME	.07	-.06							
4. Fa Sensitivity	-.12 *	-.04	.18 **						
5. Father Harsh	.05	.11	-.03	-.19 **					
6. Father Firm	-.01	-.03	-.09	-.05	.08				
7. Father Lax	.17 **	-.11	-.04	-.17 **	-.08	-.09			
8. Tot. Pos Rel. SC	-.02	.04	.01	.03	.02	.33 **	-.13 *		
9. Beliefs @ Raise	.16 **	-.02	-.09	-.23 **	.53 **	-.08	.12	-.04	

** p<.01, * p<.05

Table 23

Correlations of Father Involvement Variables between Grades 3 and 5: Boys and Girls

	BOYS	**GIRLS**
Child Outcome Variable Measured	**Correlations Gr. 3 & 5**	**Correlations Gr. 3 & 5**
Father Min/Week with SC	.53 **	.66 **
Father Hours/ Week At Work	.52 **	.64 **
Father H.O.M.E.	.35 **	.42 **
Father Sensitivity	.43 **	.41 **
Total Positive Relationship with Study Child	.72 **	.74 **

** p<.01

Although similar correlation and variable stability patterns emerge between boys and girls at third and fifth grades, prediction analyses will progress first with boys and girls together, and next with boys and girls separated into two distinct groups. In this way, we are able to ascertain whether or not father involvement variables predict similar patterns of child outcomes for boys and for girls at both third and fifth grades. Additionally, we are able to look at the variance in boys and girls' behaviors explained by measured father involvement variables independently, and when controlling for measures of maternal involvement.

Phase II: Data Reduction and Stability Analyses

An exploratory factor analysis (EFA) was run to examine the best possible fit of fathering variables into latent factor structures. The intention of EFA was to create latent variables, which serve to reduce the total number of analyses by creating statistically and conceptually related units of predictor variables, thereby allowing for the examination of multiple constructs while minimizing the total number of parameters explored (McArdle & Prescott, 1992). Results of an EFA with father involvement variables measured at third grade, and Confirmatory Factor Analysis (CFA) at fifth grade, indicated that latent factor structures would not sufficiently describe variables of father involvement in the sample.

EFA results indicated that four latent factors best describe father involvement at third grade: **Factor 1, Strict Fathering**: Harsh Parenting, Low Sensitivity, and Traditional Beliefs about Raising Children, **Factor 2, Involved Fathering:** High Total Positive Relationship with the Child, Low Depression, Firm Parenting Control, and low score for Lax Parenting, **Factor 3, Availability**: Hours Father Works, and a low score for Minutes per Week Father is with Study Child, and the fourth factor a singlet, **Factor 4, H.O.M.E.:** Father H.O.M.E. score. However, Cronbach's Alpha levels for each of the three identified multiple factors (Factors 1, 2, and 3) were un-acceptably low (α = .25 to .46) for the creation of factor-based composites. Additionally, a singlet or couplet (a factor represented by only one or two manifest variables) is not considered stable when creating factor composites.

Confirmatory Factor Analysis (CFA) of father involvement variables at the study child's fifth grade school year was run to test the fit of the factors created by the third

grade EFA in describing father involvement variables at the fifth grade measurement. CFA of fifth grade father involvement variables indicated that three latent factors best describe father involvement at the fifth grade time point. Father involvement latent factor structures at fifth grade are identical to the first three factors defined by EFA at the study child's third grade year. However, the fourth factor, H.O.M.E. score, is un-interpretable at the study child's fifth grade year. Once again, at the fifth grade time point, Cronbach's Alpha statistics for manifest father involvement variables were insufficient to create factor structures describing latent fathering constructs (α = .23 to .50). Therefore, father involvement variables were entered individually into subsequent father involvement variables at both the third and fifth grades.

Stability Analyses: Boys versus Girls

Stability analyses of father involvement variables for the full sample (Table 16) and for the sample of boys versus girls (Table 23) indicate that most father involvement variables are highly stable over time. However, the fathering quantity measures of H.O.M.E. scores and of father Sensitivity ratings are less stable over time ($r = .38$, $p<.01$, H.O.M.E, and $r= .42$, $p<.01$, Sensitivity, Table 16). Stability statistics indicate that fathering may be even less consistent over time when the sample is broken down by child gender (Table 23). Therefore, in subsequent analyses father involvement variables will be entered into regression models separately. Third grade father involvement variables will be used to predict child outcomes at third grade, and fifth grade father involvement variables will be used to predict child outcomes at fifth grade. In cases of a single

measurement of a father involvement variable (for example Harsh Control parenting) the single measurement will be used to predict third and fifth grade outcomes.

Phase III: Prediction Analyses

Hypothesis II.A: Fathers who are more involved with their children and families during the children's third and fifth grade school years will have children who, i) perform better on tests of academic achievement for Mathematics and Reading, after adjusting for academic scores achieved during the children's prior grade achievement scores in these subject areas, ii) express fewer internalizing and externalizing behavior problems, as reported by the children's classroom teacher, during children's third grade year and fifth grade years, after adjusting for children's scores for behavior problems reported during their first grade school year, iii) receive more positive social skills scores from teachers, after adjusting for prior social skills scores, iv) receive more positive reports from their teachers regarding the relationship between teacher and child, after adjusting for the previous school year's report of relationship, and v) receive reports from a peer indicating a higher quality of friendship in their peer relationships at fourth and sixth grades.

Hypothesis II.B: Father involvement behaviors are not ancillary to maternal involvement behaviors. Father involvement influences child outcomes over and above the influence of maternal behaviors on child outcomes at third and fifth grades. Father involvement variables will predict child outcomes in hierarchical linear regression models, even as the models control for parallel measures of maternal involvement behaviors.

In the following tables (Tables 24-27) each child outcome measure (math, reading, internalizing, externalizing, social skills, teacher total positive relationship, and peer friendship quality) at both third and fifth grades is predicted by two distinct models. In the first model, only father involvement variables are entered into hierarchical linear models to predict the child outcome of interest. In the second model listed for each child outcome at third and fifth grades, father involvement and mother involvement behaviors are included in the same model, to predict the associations between father involvement and child outcome while controlling for maternal involvement behaviors.

Data for these analyses were entered into hierarchical linear regression models in the following way: first, family contextual factors (family poverty, maternal age and education, mother and father relationship closeness, and father depression) were entered. Next, because the analyses predict relative change in children's outcomes from the previous assessment to the present grade assessment, children's prior scores for the outcome measure of interest were entered. For example, in the math outcome model, grade 1 mathematics achievement scores were entered in the second step, to predict change between children's first and third grade math achievement associated with father involvement variables. Because these analyses are not run using Hierarchical Linear Modeling (HLM) we are looking at change on average, rather than individual change scores. Finally, in models including only father involvement variables as predictors of child outcomes, measures of father involvement quantity and quality were entered to predict change in the child outcome measure of interest while controlling for previous

scores in the outcome measure and for family contextual factors. In the second model for each child outcome at each grade measurement, maternal involvement variables are also included in the model.

Third Grade Mathematics Achievement

Table 24 provides information regarding the associations between father involvement variables and child math outcomes at the third grade measurement. When father involvement variables predict child math outcomes, analysis of Table 24 indicates that father involvement variables assessed in this study are not significantly associated with child math outcomes at the third grade measurement. Family contextual factors of family poverty ($\beta = -.07$, $p<.05$) and maternal age at the study child's birth ($\beta = .07$, $p<.05$) are significantly associated with child outcomes, as is the child's first grade math score ($\beta = .67$, $p<.001$). The father involvement model described in Table 24 explains 47% of the variance in child math outcomes at third grade, with measured father involvement variables significantly predicting none of the variance in child math scores.

When maternal variables are added to the model predicting third grade math outcomes, the model is relatively unchanged. Family contextual factors of family poverty and maternal age significantly predict child math outcomes at third grade, along with the strong association between study child's previous math achievement score (first grade Woodcock Johnson math achievement). As anticipated from the previous model, father involvement behaviors do not significantly predict child third grade math outcomes

in a model controlling for maternal involvement behaviors. Neither do maternal involvement behaviors.

Table 24 *Predicting **3rd Grade Math, Reading, Internalizing and Externalizing Behaviors** from Parent Involvement at 3rd Grade*

	MATH		***READING***		***INTERNALIZING***		***EXTERNALIZING***	
Variable	***β***	***β***	***β***	***β***	***β***	***β***	***β***	***β***
(Constant)	33.57	25.55	50.40	50.13	39.16	34.28	28.69	36.84
G3. Family Poverty	-.07 *	-.08*	-.02	-.01	.03	.01	.07	.06
Maternal Age (SC Birth)	.07 *	.08*	.08 **	.07*	.01	.02	.01	.01
Low Education Mom	-.01	-.01	.01	.01	.04	.03	.08 *	.07
Mother Rel. Closeness	.04	-.04	.03	-.01	.03	.01	.04	.02
Father Rel. Closeness	.00	.08	.03	.06	.04	.06	.04	.03
Father Depression	-.03	.04	-.04	-.03	.10	-.05	-.02	-.04
Prev. Grade Measurem't	.67 ***	.66***	.75 ***	.76***	.19 ***	.19***	.48***	.46***
Fa—Harsh Contr'l (G.3)	-.01	-.04	-.04	-.01	.02	.00	.12 **	.11*
Fa – Firm Control (G.3)	-.03	-.01	-.02	-.02	.05	.05	.01	.02
Fa—Lax Control (G.3)	.02	.01	-.05	-.04	.08	.10*	.01	.04
Fa—Beliefs Raise (G.4)	.06	.05	-.11 **	-.10**	-.02	-.00	-.03	-.02
Fa—Sensitivity	-.01	-.01	-.00	-.01	-.01	-.01	-.08 *	-.06
Fa—T.Pos. Rel. w/ SC	.05	.04	-.04	.04	.04	-.01	-.09 *	-.06
Fa—H.O.M.E.	.04	.05	-.01	-.01	-.12**	-.11*	.05	.05
Fa-- Min/Week S.C.	.01	.03	-.03	-.04	.02	.03	.01	-.01
Fa—Hrs/ Wk All Jobs	.02	.02	-.02	-.02	-.06	-.07	-.11 **	-.12**
Mo—Harsh Cntrl (G.3)		.06		-.05		.08		.03
Mo—Firm Control (G.3)		-.03		.02		.03		-.00
Mo—Lax Control (G.3)		.02		-.02		.01		-.04
Mo—Beliefs Raise (G4)		.01		-.04		-.02		-.03
Mo—Sensitivity		.04		.03		.06		-.05
Mo—T.Pos.Rel. w/ SC		-.00		-.03		-.14**		-.10*
Mo—Min/ Week SC		.04		-.01		.02		-.02
Mo—Hours/ Wk Work		-.02		.03		.02		.00
Mo—Depression		-.03		-.01		-.05		-.05
MODEL ADJ R^2	**.47**	**.47**	**.63**	**.63**	**.05**	**.05**	**.31**	**.32**

*** p<.001, **p<.01, *p<.05

Third Grade Reading Achievement

Third grade child reading achievement outcomes (Table 24) are positively associated with maternal age at the study child's birth ($\beta = .08$, $p < .01$) and are strongly positively associated with first grade reading assessments ($\beta = .75$, $p < .000$). Fathers' high scores on the Beliefs about Raising Children questionnaire, indicating traditional parenting beliefs, predict a decrease in children's third grade reading achievement ($\beta = -.11$, $p < .01$). This model explains 63% of the variance in children's third grade reading achievement scores. Positive parenting aspects of the father involvement variables measured in this study do not significantly improve predictions of child third grade reading achievement.

When maternal involvement variables are included in the model (Table 24), the negative association between fathers' endorsement of traditional parenting behaviors and third grade reading outcomes remains significant, thus, fathers' endorsement of traditional fathering behaviors is negatively associated with child reading outcomes at third grade, over and above the associations of maternal involvement at third grade.

Third Grade Internalizing Behavior Problems

Analysis of Table 24 indicates that in models predicting child internalizing behavior problems at third grade from father involvement at third grade, father H.O.M.E. scores are associated with decreased child internalizing behaviors ($\beta = -.12$, $p < .01$). Other measured father involvement variables are not significantly associated with child internalizing at third grade. Teacher report of children's internalizing behaviors at second grade (previous measurement) is the strongest predictor of child internalizing

behaviors at third grade (β = .19, p<.001). Only 5% of the variance in third grade children's internalizing behavior is explained in the model represented in Table 24.

When maternal involvement variables are added to the statistical model, to account for maternal behavior when predicting child internalizing behaviors, father H.O.M.E. scores maintain a negative association with internalizing behaviors (β = -.11, p<.05). In this model, father Lax Control parenting is positively associated with child internalizing behaviors (β = .10, p<.05). These father involvement variables predict child internalizing behaviors beyond expected predictions based upon maternal involvement behaviors. Maternal report of a total positive relationship with the study child is negatively associated with child internalizing behavior problems at third grade, and second grade teacher report of internalizing behavior problems remains the strongest predictor of third grade internalizing behavior problems.

Third Grade Externalizing Behavior Problems

Father involvement variables have a significant association with teacher report of child externalizing behaviors at the third grade measurement (Table 24). Father report of Harsh Control parenting is positively associated with child externalizing behaviors (β = .12, p<.01). Father who are rated as more sensitive in their child interactions (β = -.08, p<.05), and fathers who report of a more positive relationship with their study children (β = -.09, p<.05) are less likely to have children expressing externalizing behavior problems. The number of hours per week fathers work are also negatively associated with

externalizing behaviors during the children's third grade measurement ($\beta = -.11$, $p<.01$). The family contextual factor of maternal low education is associated with children's externalizing behaviors ($\beta = .08$, $p<.05$). However, the strongest predictor of child externalizing behaviors at third grade is teacher report of child externalizing behaviors at second grade ($\beta = .48$, $p<.001$). Thirty-one percent of the variance in third grade children's externalizing behaviors is explained in this model.

When parallel measures of maternal involvement are included in the model predicting child externalizing behaviors, father sensitivity and father total positive relationship with the child are no longer significant. Father Harsh Control parenting remains a significant predictor of externalizing behavior problems ($\beta = .11$, $p<.05$). The number of hours father works is negatively associated with child externalizing ($\beta = -.12$, $p<.01$). When maternal variables are included in the model, maternal low education status is no longer a significant predictor of externalizing behaviors, however maternal report of a positive relationship with the study child is significantly negatively associated with externalizing behavior problems. Second grade teacher report of externalizing behaviors remains the strongest predictor of third grade externalizing behavior in the model including both parents' involvement behaviors.

Third Grade Social Skills

Analysis of Table 25 indicates that fathers' report of positive relationships with their study children are associated with teachers' reports of children's social skills ($\beta = .10$, $p<.05$) during third grade. Other father involvement variables measured at third

grade do not significantly predict children's social skills outcomes. Teacher report of social skills during the children's second grade year is the best predictor of third grade social skills ($\beta = .37$, $p<.001$). At third grade, 19% of the variance in teacher report of children's social skills is explained in the model listed in Table 25.

When maternal involvement at third grade is added to the model, fathers' report of a positive relationship with the children is no longer a significant predictor, however maternal report of a positive relationship does significantly predict child social skills at third grade. Interestingly, maternal report of love and support in her partnership with the child's father is negatively associated with child social skills at third grade. The strongest association with third grade social skills is second grade social skills ($\beta = .36$, $p<.001$), in the model listed in Table 25 which includes involvement behaviors of both parents.

Table 25 *Predicting* ***3rd Gr. Social Skills, Teacher Relationship, and Peer Friendship*** *from Parent Involvement at 3rd Grade*

	SOCIAL SKILLS		***TEACHER POS.***		***PEER FRIEND(G4)***	
Variable	***β***	***β***	***β***	***β***	***β***	***β***
(Constant)	46.91	38.91	24.45	17.76	2.99	2.93
G3. Family Poverty	-.00	.01	-.04	-.04	-.07	-.08
Maternal Age (SC Birth)	-.01	-.01	-.05	-.04	-.03	-.02
Low Education Mom	-.05	-.03	-.16 ***	-.14 **	-.03	-.04
Mother Rel. Closeness	.06	-.11 *	.03	-.04	.05	.08
Father Rel. Closeness	-.05	.06	-.09	.02	.07	.08
Father Depression	.02	.02	-.04	.04	.01	-.02
Prev. Grade Measurem't	.37 ***	.36 ***	.28 ***	.26 ***	--	--
Fa—Harsh Contr'l (G.3)	-.04	-.08	.03	-.02	.03	.02
Fa – Firm Control (G.3)	-.00	.00	.02	.03	.01	.03
Fa—Lax Control (G.3)	.02	-.02	.02	.00	.08	.11 *
Fa—Beliefs Raise (G.4)	-.03	-.05	-.05	-.05	.01	.02
Fa—Sensitivity	.08	.07	.08	.07	.04	.02
Fa—T.Pos. Rel. w/ SC	.10 *	.04	.19 ***	.14 **	.05	-.01
Fa—H.O.M.E.	.05	.05	.05	.05	.03	.02
Fa-- Min/Week S.C.	.02	-.00	.03	.00	.06	.07
Fa—Hrs/ Wk All Jobs	.05	.06	.05	.05	.03	.03
Mo—Harsh Cntrl (G.3)		.03		.14 *		.03
Mo—Firm Control (G.3)		.01		-.04		-.05
Mo—Lax Control (G.3)		.05		.04		-.08
Mo—Belief Raise (G4)		.06		-.08		-.01
Mo—Sensitivity		.02		.06		.07
Mo—T.Pos.Rel. w/ SC		.12 *		.11 *		.06
Mo—Min/ Week SC		.02		-.02		-.01
Mo—Hours/ Wk Work		.05		.01		-.05
Mo—Depression		-.07		.02		.11 *
MODEL ADJ R^2	**.19**	**.19**	**.18**	**.18**	**.00**	**.02**

***p<.001, **p<.01, *p<.05

Third Grade Teacher Report of Positive Relationship with Study Child

Analysis of Table 25 indicates that in models predicting third grade teacher report of a positive relationship with the study child from father involvement, teacher relationship is positively associated with father report of a positive relationship with the study child at third grade ($\beta = .19$, $p<.001$). Father positive relationship is the only significant fathering predictor measured. Maternal low education is negatively associated with teacher positive relationship ($\beta = -.16$, $p<.001$). The strongest predictor of third grade teacher positive relationship is the second grade teacher report of relationship with the study child ($\beta = .28$, $p<.001$). Father involvement, family contextual, and previous grade measurement variables explain 18% of the variance in third grade teacher report of a positive relationship with the study child.

When maternal involvement variables are added to the model predicting third grade teacher report of the study child relationship (Table 25), father report of a positive relationship with the study child remains significantly associated with teacher report of the relationship ($\beta = .14$, $p<.05$), as does maternal low education, and second grade teacher relationship report ($\beta = .26$, $p<.001$). However, when maternal involvement is included in the model, maternal Harsh Control parenting is (perhaps surprisingly) positively associated with teacher positive report of study child relationship ($\beta = .14$, $p<.05$), as is maternal report of a positive relationship with the study child.

Fourth Grade Peer Report of Friendship Quality with Study Child

Peer report of friendship quality at fourth grade (Table 25) is not significantly associated with fathering variables measured here, or with measured family contextual

variables. None of the variance in fourth grade peer friendship quality is explained by this model ($R^2 = .00$).

When maternal involvement is added to the model, predicting fourth grade peer friendship quality from third grade parent involvement, 2% of the variance in fourth grade peer friendship quality is explained. It is interesting to note that the less associative parenting behaviors of Lax Control fathering ($\beta = .11$, $p<.05$) and maternal depressive symptoms ($\beta = .11$, $p<.05$) predict a higher quality of peer friendship, as reported by the study child's selected peer.

Table 26 *Predicting* ***5th Grade Math, Reading, Internalizing and Externalizing Behaviors*** *from Parent Involvement at 5th Grade*

	MATH		***READING***		***INTERNALIZING***		***EXTERNALIZING***	
Variable	***β***	***β***	***β***	***β***	***β***	***β***	***β***	***β***
(Constant)	41.12	43.45	33.83	41.83	35.33	27.12	36.27	38.99
G3. Family Poverty	-.01	.01	-.02	-.00	.05	-.01	.08*	.06
Maternal Age (SC Birth)	-.03	-.04	.01	-.01	-.05	-.04	-.01	-.02
Low Education Mom	-.05	-.04	.00	.00	-.02	-.03	.07	.06
Mother Rel. Closeness	.02	.01	.03	.02	-.02	-.04	-.08	.02
Father Rel. Closeness	-.04	-.05	-.05	-.06	.02	.05	-.12*	-.09
Father Depression	-.05	-.05	.00	.00	.10	.10	-.08	-.06
Prev. Grade Measurem't	.72 ***	.72 ***	.84 ***	.83 ***	.25 ***	.25 ***	.50 ***	.49 ***
Fa—Harsh Contr'l (G.3)	-.04	-.01	-.05	-.02	-.05	-.08	.03	.02
Fa – Firm Control (G.3)	-.05	-.06	-.02	-.04	.03	-.04	-.07	-.08 *
Fa—Lax Control (G.3)	-.09 **	-.07 *	-.03	-.00	.01	-.00	-.05	-.03
Fa—Beliefs Raise (G.4)	-.03	-.01	-.04	-.03	.03	.01	-.01	-.05
Fa—Sensitivity	.06	.04	-.03	-.03	-.03	-.04	-.06	-.05
Fa—T.Pos. Rel. w/ SC	.05	.06	-.04	-.02	.05	.07	-.01	.03
Fa—H.O.M.E.	-.05	-.05	-.06 *	-.06 *	.03	.03	.00	.00
Fa-- Min/Week S.C.	-.02	-.02	-.01	-.03	.07	.16 **	.01	.04
Fa—Hrs/ Wk All Jobs	-.03	-.04	-.00	-.03	-.01	-.01	-.04	-.03
Mo—Harsh Cntrl (G.3)		-.05		-.07 *		-.01		-.07
Mo—Firm Control (G.3)		.03		.05 *		.08		.07
Mo—Lax Control (G.3)		-.03		-.07 **		.02		-.06
Mo—Beliefs Raise (G4)		-.04		-.03		.13 *		.16 **
Mo—Sensitivity		.03		-.01		-.02		-.03
Mo—T.Pos.Rel. w/ SC		-.03		-.01		-.03		-.07
Mo—Min/ Week SC		.00		-.07 *		.11		.06
Mo—Hours/ Wk Work		.01		-.02		-.13 *		.00
Mo—Depression		-.04		-.03		.01		-.07
MODEL ADJ R^2	**.56**	**.56**	**.73**	**.74**	**.06**	**.10**	**.31**	**.33**

***p<.001, **p<.01, *p<.05

Fifth Grade Mathematics Achievement

Analysis of Table 26 indicates the association of father involvement variables with child math outcomes at fifth grade. When predicting fifth grade math achievement, while controlling for third grade scores, father Lax Control parenting is associated with decreased math achievement ($\beta = -.09$, $p<.01$). At the fifth grade measurement, third grade math scores are strongly associated with fifth grade math achievement outcomes ($\beta = .72$, $p<.001$). Fifty-six percent of the variance in fifth grade math scores is explained in this model.

When parallel measures of maternal involvement are included in the model, no additional variance in fifth grade math scores is explained. In other words, maternal involvement variables measured do not significantly predict fifth grade math achievement in this sample. Father Lax Control parenting maintains its association with diminished math scores ($\beta = -.07$, $p<.05$). The association of third grade math scores ($\beta = .72$, $p<.001$) with math achievement at fifth grade remains strong.

Fifth Grade Reading Achievement

Analysis of Table 26 indicates that third grade reading achievement is strongly associated with fifth grade reading outcomes ($\beta = .84$, $p<.001$). Fathers who score higher on the three-point H.O.M.E. father involvement scale are likely to have children scoring slightly lower in reading achievement ($\beta = -.06$, $p<.05$). Although this negative association between a positive father involvement variable and negative child reading scores at fifth grade is quite surprising, it may be explained in part by the fact that the involvement H.O.M.E. scale is a three-point measure, and it's negative association with

children's reading scores is (though significant) very small. Therefore, for each additional point the fathers score on the H.O.M.E. involvement scale, children's reading assessments at fifth grade are predicted to decline very little. Additionally, it should be noted that these results are correlational (rather than causal) in nature. Children who score lower in reading achievement may be drawn to spend more time outside playing with fathers (a H.O.M.E. involvement measure) rather than engaging in activities (e.g. studying or reading) that would promote improvements in reading achievement. Father involvement predictors of fifth grade reading achievement explain 73% of the variance in child reading outcomes when third grade reading achievement is included in the model.

When parallel measures of maternal involvement enter into the model predicting fifth grade reading achievement, the association between father H.O.M.E. scores and slightly decreased child reading scores remains ($\beta = -.06$, $p<.05$). Additionally, maternal Harsh Control parenting and maternal Lax Control parenting are negatively associated with fifth grade child reading achievement scores. Maternal Firm Control parenting is positively associated with improved fifth grade reading scores.

Fifth Grade Internalizing Behavior Problems

At the fifth grade assessment, none of the father involvement variables measured are significantly associated with teacher report of child internalizing behavior problems (Table 26). Teacher report of child internalizing behavior problems during the previous year (Grade 4) is the strongest predictor of child internalizing behaviors at fifth grade (β

= .25, p<.001). Only 6% of the variance in fifth grade internalizing behavior is explained in the model based upon father involvement behaviors.

When parallel measures of maternal involvement are added to the model, father involvement variables do not significantly predict fifth grade internalizing, but maternal involvement variables of Beliefs about Raising Children and the number of hours mothers work outside the home per week are significantly associated with fifth grade child internalizing behaviors. Mothers who report more traditional beliefs about raising children at the fourth grade measurement are more likely to have children with increased internalizing behavior problems. Mothers who report spending more time working outside the home each week are more likely to have children receiving fewer reports of internalizing behavior problems. Grade 4 report of internalizing behaviors remains the strongest predictor of fifth grade internalizing, in the model listed in Table 26.

Fifth Grade Externalizing Behavior Problems

During the study child's fifth grade school year, the family contextual factor of father report of love and support in his relationship with the child's mother is negatively associated with child externalizing behaviors (β = - .12, p<.05). The family contextual factor of family poverty is positively associated with teacher report of child externalizing behaviors at fifth grade (β = .08, p<.05). Teacher report of child externalizing behaviors at fourth grade is the strongest predictor of fifth grade externalizing (β = .50, p<.001), in

the model predicting externalizing from father involvement variables (Table 26). This model explains 31% of the variance in fifth grade child externalizing behaviors.

When parallel measures of maternal involvement behavior at fifth grade are included in the model, family contextual factors of father report of love and support in his relationship with the child's mother, and family poverty no longer significantly predict child externalizing at fifth grade. Maternal report (at fourth grade) of traditional beliefs about raising children is positively associated with fifth grade externalizing behaviors. Fourth grade measurement of externalizing behaviors maintains a strong association with fifth grade externalizing in the model listed in Table 26.

Fifth Grade Social Skills

Analysis of Table 27 indicates that the measured father involvement variables do not significantly predict teacher report of child social skills at fifth grade. Teacher report of fifth grade child social skills is strongly associated with the child's fourth grade social skills report ($\beta = .40$, $p<.001$), and is negatively associated with maternal low educational attainment ($\beta = -.08$, $p<.05$). At fifth grade, 22% of the variance in teacher report of child social skills is explained by family contextual factors, fourth grade social skills, and father involvement variables listed in Table 27.

When parallel measures of maternal involvement are included in the model predicting fifth grade child social skills, father involvement variables do not significantly predict child social skills, and the association between family poverty and decreased

Table 27 *Predicting* ***5th Gr. Social Skills, Teacher Relationship, and Peer Friendship*** *from Parent Involvement at 5th Grade*

	SOCIAL SKILLS		***TEACHER POS. RELATIONSHIP***		***PEER FRIENDSHIP QUALITY (G.6)***	
Variable	***β***	***β***	***β***	***β***	***β***	***β***
(Constant)	56.42	71.14	31.39	29.21	2.93	2.24
G3. Family Poverty	-.07	-.03	-.09 *	-.06	-.04	-.08
Maternal Age (SC Birth)	-.01	-.02	-.00	.00	.01	.02
Low Education Mom	-.08 *	-.07	-.08	-.07	-.06	-.06
Mother Rel. Closeness	.02	..05	-.07	-.03	-.07	-.09
Father Rel. Closeness	.04	.01	.12 *	.10	.02	.06
Father Depression	.00	-.01	.07	.06	.06	.12 *
Prev. Grade Measurem't	.40 ***	.39***	.33 ***	.32***	.32***	.32 ***
Fa—Harsh Contr'l (G.3)	-.08	-.07	-.02	-.01	-.02	-.03
Fa – Firm Control (G.3)	.02	.03	-.01	-.01	-.12 *	-.14 **
Fa—Lax Control (G.3)	.01	.04	.02	.02	.01	-.01
Fa—Beliefs Raise (G.4)	-.03	.01	-.07	-.03	-.02	-.02
Fa—Sensitivity	.05	.04	.11 **	.10 *	.02	.01
Fa—T.Pos. Rel. w/ SC	.05	.02	.07	.05	.11 *	.10 *
Fa—H.O.M.E.	-.02	-.03	-.01	-.01	.11 *	.11 **
Fa-- Min/Week S.C.	-.03	-.07	-.01	-.07	-.02	.03
Fa—Hrs/ Wk All Jobs	.00	-.00	.05	.04	.07	.06
Mo—Harsh Cntrl (G.3)		.03		.08		.04
Mo—Firm Control (G.3)		-.09		-.05		.14 **
Mo—Lax Control (G.3)		-.07		.02		-.01
Mo—Belief Raise (G4)		-.17 **		-.15 **		-.02
Mo—Sensitivity		.00		.07		-.05
Mo—T.Pos.Rel. w/ SC		.08		.05		.02
Mo—Min/ Week SC		-.08		-.05		.10
Mo—Hours/ Wk Work		.03		.10 *		-.02
Mo—Depression		.05		.06		.09
MODEL ADJ R^2	**.22**	**.25**	**.19**	**.22**	**.13**	**.15**

***p<.001, **p<.01, *p<.05

teacher report of child social skills is no longer significant. Maternal endorsement of traditional beliefs about raising children is associated with a decreased social skills score. The association between fourth grade social skills and teacher report at fifth grade remains strong ($\beta = .39$, $p<.001$), in the model described in Table 27.

Fifth Grade Teacher Report of Positive Relationship with Study Child

According to Table 27, father sensitivity is a significant predictor of fifth grade teacher report of a positive relationship with the study child ($\beta = .11$, $p<.01$). The family contextual factor of father report of love and support in his relationship with the child's mother is also significantly associated with a positive teacher-child relationship ($\beta = .12$, $p<.05$). Other significant predictors include family poverty ($\beta = -.09$, $p<.05$) and the strong association between fourth and fifth grade teacher report of a positive relationship with the study child ($\beta = .33$, $p<.001$). Nineteen percent of the variance in teacher report of a positive relationship with the study child at fifth grade is explained in this model (Table 27).

When parallel measures of maternal involvement are included in the model, the association between father sensitivity and fifth grade teacher report of a positive relationship with the study child remains significant and positive, ($\beta = .10$, $p<.05$). Neither father report of love and support in his relationship with the child's mother nor family poverty is a significant predictor when maternal involvement variables are included in the model (Table 27). Traditional maternal beliefs about raising children are

negatively associated with teacher report of a positive child relationship. The number of hours mothers report working outside the home is positively associated with positive teacher relationship reports ($\beta = .10$, $p<.05$). Fourth grade teacher relationship remains the strongest predictor of fifth grade teacher positive relationship reports ($\beta = .32$, $p<.001$), in the model listed in Table 27, which explains 22% of the variance in fifth grade teacher report of a positive relationship with the study child.

Sixth Grade Peer Report of Friendship Quality with the Study Child

Analysis of Table 27 indicates that peer friendship quality at sixth grade is negatively associated with father report of Firm Control parenting at third grade ($\beta = -.12$,$p<.05$), and is positively associated with father report of a positive relationship with his child ($\beta = .11$, $p<.05$), and with father H.O.M.E. scores at fifth grade ($\beta = .11$, $p<.05$). Sixth grade peer report of friendship quality with the study child is most strongly associated with fourth grade peer report of friendship quality ($\beta = .32$, $p<.001$), in the model listed in Table 27. The model including father involvement behaviors and prior friendship quality significantly explains 13% of the variance in peer report of child friendship quality at sixth grade.

When parallel measures of maternal involvement are included in the model predicting sixth grade peer friendship quality, father reports of a positive relationship with the study child ($\beta = .10$, $p<.05$), father H.O.M.E involvement score ($\beta = .11$, $p<.01$), and father report of Firm Control parenting ($\beta = -.14$, $p<.01$) remain significant

predictors. However, when maternal involvement predictors are included in the model, father report of depressive symptoms at fifth grade becomes a significant predictor of fifth grade peer friendship quality ($\beta = .12$, $p<.05$). While father Firm Control parenting is negatively associated with peer friendship quality, maternal Firm Control parenting is positively associated with increased friendship quality scores in peer friendships ($\beta = .14$, $p<.01$).

Summary of Results

In summary, we see that father involvement behaviors are associated with some, but not all, child outcomes at third and fifth grade (Hypothesis II.A). Specifically, increased father positive involvement behaviors are not associated with improved academic achievement for children at third or fifth grade. Although father involvement behaviors do not significantly predict child outcomes in the anticipated ways (i.e. increased positive quantity and quality of father involvement does not consistently predict more positive child outcomes) we do see that fathers' involvement behaviors are significantly associated with child outcomes, and those associations remain significant when models control for parallel measures of maternal behavior (Hypothesis II.B).

When examining patterns of father involvement behaviors as predictors of child outcomes, father parenting control style has the most consistent association with children's outcomes at grades three and five. Father parenting control style was measured (at the children's third grade assessment only) as Harsh, Firm, or Lax. These parenting styles are not highly correlated, as illustrated in Tables 14 and 15, therefore

fathers scoring high on Harsh Control parenting, for example, would not necessarily be predicted to receive a low score on the Firm Control parenting measure.

At third grade, the indicator of negative fathering quality, father Harsh Control parenting (Grolnick et al., 1997), significantly predicts increased child externalizing behavior problems in both models, when only father involvement is entered in the model, and when controlling for maternal involvement behaviors. By the study children's fifth grade assessment, however, fathers' Harsh Control parenting is no longer a significant predictor of children's outcomes. Father Lax Control, considered an indicator of negative fathering quality (Grolnick, Ryan, & Deci, 1991), is associated with the negative child outcome of an increase in teacher reports of internalizing behavior problems at third grade. However, somewhat surprisingly, father Lax Control parenting is also associated with peer reports of higher friendship quality at third grade, a positive child outcome, in models controlling for maternal involvement behaviors. Although Firm Control fathering, marked by such diplomatic parenting behaviors as giving the children a chance to explain their side before punishing, and making rules which take children's individual needs into consideration, is considered a positive fathering quality predictive of improved child outcomes (Baumrind, 1991), in this study father Firm Control does not consistently predict positive child outcomes at third or fifth grades. Father Firm Control parenting is not significantly associated with any measured child outcomes at third grade. At fifth grade, Firm Control fathering predicts the positive outcome of a decrease in teacher

report of externalizing behavior problems, but also predicts the negative outcome of peer report of a decrease in friendship quality.

Fathers who score high on the Beliefs about Raising Children questionnaire are more likely to endorse traditional beliefs about child-rearing, marked by high scores on such items as "The most important thing to teach children is absolute obedience to parents" and low scores on such items as "It's all right for a child to disagree with his/her parents." Fathers who report more traditional beliefs about raising children are predicted to have third graders who receive lower reading achievement scores, both in father only models, and when controlling for maternal involvement behaviors. Traditional father beliefs about raising children do not significantly predict other child outcomes at third or fifth grades.

Positive fathering quantity measure of H.O.M.E. involvement scores significantly predict the positive outcome of decreased report of children's internalizing behavior problems at third grade. At fifth grade, higher father H.O.M.E. involvement scores predict higher peer friendship quality, but also predict a surprising decrease in children's reading scores. There is a possibility that Type I error is in effect, and father H.O.M.E. involvement scores (though considered significant) are not a reliable predictor of child outcomes. Father H.O.M.E. involvement scores are based upon a three-point measure, with only moderate reliability at the fifth grade measurement (Cronbach's alpha = .69). Another positive measure of fathering, fathers' total positive relationship with study children, is associated with only positive children's outcomes at third and fifth grades:

higher social skills scores in the father-only model, and increased teacher report of a positive teacher-child relationship at third grade when controlling for maternal behaviors, and improved peer friendship quality at fifth grade when controlling for maternal behaviors. Here, it is particularly important to note that data are correlational, not causal, in nature. We are not able to say that increased positive father relationships predict improved child social outcomes, rather we can only note that they are associated. Father-child relationships are bi-directional in nature, with the child's behavior and personality characteristics eliciting different types of reactions from the adults around them (Parke et al., 2004) including both fathers and teachers.

Other father involvement behaviors, father sensitivity ratings, father report of depressive symptoms, and father report of love and support in his relationship with the study child's mother also predict child outcomes at fifth grade. However, there are not consistent patterns emerging from any of these father involvement and family contextual factor predictors. Although father involvement behaviors do predict child outcomes, and the significance of fathering predictions remains when models control for parallel measures of maternal behaviors, for most measured father involvement quantity and quality measures a clear pattern of prediction does not emerge for the full sample of study children.

Hypothesis II.C: *Father involvement behaviors will be differentially associated with child outcomes at third and fifth grades, based upon child gender.*

Data for boys and girls at third and fifth grades was separated into groups based upon child gender. Father involvement variables were then entered into models to predict outcomes for boys and girls separately at third and fifth grades. Finally, father involvement variables were entered into models along with parallel measures of maternal involvement models to examine the ways in which father involvement predicts outcomes for boys, and separately for girls, while controlling for maternal involvement behaviors. Appendices M and N list outcomes for third grade and fifth grade boys and girls as predicted by first father involvement and family contextual factors, and next both father and mother involvement and family contextual factors.

Although variance in father involvement over time for boys versus girls has already been tested (Hypothesis I.B.), and we have seen that for most repeated measures of father involvement gender specific interactions are not significant, we do note that father sensitivity ratings change at a different rate over time depending upon child gender. In the present analysis, we are able to ascertain whether specific father involvement variables differentially predict outcomes for boys and for girls in separate models. Models were separated by gender to avoid complexity in interpretation of multiple interaction terms when considering a large number of father involvement behaviors.

When father involvement behaviors are entered into models controlling for maternal involvement behaviors separately for boys and girls, unique patterns of fathering associations with boys and girls outcomes emerge. We begin to see that positive and negative quantity and quality of father involvement variables do predict outcomes differently for boys and girls. Although father involvement variables do not more frequently significantly predict outcomes for boys versus girls, positive quantity and quality involvement measures more frequently predict positive behavioral and social outcomes for boys, and negative quality measures more frequently predict negative academic and behavioral outcomes for girls. The models discussed in this section include third and fifth grade outcomes for boys and girls when both father and mother involvement behaviors are accounted for in the model. An overview of significant father involvement variables and family contextual factors related to fathers, predicting child outcomes at third and fifth grades when controlling for maternal involvement variables, for boys and girls separately, is listed in Table 28. Appendices I and J describe the full models for boys and girls at third (Appendix I) and fifth (Appendix J) grades.

Table 28

Overview of Third and Fifth Grade Significant Outcomes for Boys and Girls Predicted by Father Involvement Variables when Controlling for Maternal Involvement

	Grade 3		Grade 5	
Child Outcome	**BOYS**	**GIRLS**	**BOYS**	**GIRLS**
Math	H.O.M.E. β = .11 *	-----	H.O.M.E. β = -.11 *	Fa Traditional Beliefs β = -.11 *
Reading	-----	Fa Total Pos Rel. β = .10 *	-----	Fa Traditional Beliefs β = -.08 * Min/ Wk with Dad β = -.08 * Fa Depression β = - .08 *
Internalizing	H.O.M.E. β = -.20 **	Fa Traditional Beliefs β = .16 *	Min/ Wk with Dad β = .15 *	Fa Depression β = .17 *
Externalizing	Fa Sensitive β = -.14 * H.O.M.E. β = .14 * Hrs Fa Works β = -.11*	Fa Harsh β = .20 ** Hrs Fa Works β = -.13*	Fa Love Rel. β = -.22*	-----
Social Skills	Fa Sensitive β = .16 * H.O.M.E. β = .12 *	Hrs Fa Works β = .12 *	-----	-----
Positive Teacher Relationship	-----	-----	Fa Sensitive β = .14* Fa Love Rel. β = .20*	-----
Peer Friendship	-----	-----	H.O.M.E β = .12* Fa Firm β = -.24***	Fa Depression β = .16*

Third Grade Mathematics Achievement: Boys and Girls

When third grade father and mother involvement behaviors are used to predict third grade math achievement outcomes for boys, father H.O.M.E. scores significantly predict boys' achievement ($\beta = .11$, $p<.05$). Other father and mother involvement behaviors do not significantly predict boys math achievement at third grade, however the family contextual factor of family poverty is negatively associated with boys math achievement ($\beta = -.12$, $p<.01$). Fifty percent of the variance in boys' third grade math achievement is explained in this model (Appendix I)

Third grade girls' math achievement is not significantly associated with any of the measured parenting variables. Maternal age at the girls' birth is positively associated with higher third grade math scores ($\beta = .11$, $p<.05$), meaning that mothers who were older when their study children were born are more likely to have girls scoring higher in third grade math achievement tests. This model explains 44% of the variance in third grade girls' math achievement (Appendix I).

Third Grade Reading Achievement: Boys and Girls

When father and mother involvement variables are entered into the model predicting boys' third grade reading achievement, none of the measured father involvement variables significantly predict boys' achievement outcomes. Maternal sensitivity significantly predicts improved reading achievement scores for boys ($\beta = .11$, $p<.05$), and first grade reading scores are strongly associated with third grade boys'

achievement (β = .71, p<.001). This model explains 58% of the variance in third grade boys' reading achievement (Appendix I).

Third grade girls' reading achievement is significantly positively associated with father report of a positive relationship with his female study child (β = .10, p<.05). It is interesting to note that maternal report of a positive relationship with the female study child is negatively associated with girls' reading achievement scores at third grade (β = -.10, p<.05). Maternal age at girls' birth is associated with improved reading achievement scores (β = .09, p<.05). First grade reading scores are most strongly associated with third grade reading achievement for girls (β = .80, p<.001), in this model (Appendix I) which explains 69% of the variance in third grade girls reading achievement.

Third Grade Internalizing Behavior Problems: Boys and Girls

When father and mother involvement behaviors at third grade are included in the model predicting third grade boys' internalizing behaviors (Appendix I), father H.O.M.E. involvement scores are negatively associated with boys' internalizing behaviors (β = -.20, p<.01), meaning higher scores for fathers' time playing outside with boys, or sharing family meals together during the week predicts fewer teacher reports of internalizing behavior problems for third grade boys. Oddly, maternal sensitivity at third grade is positively associated with boys' internalizing behaviors (β = .14, p<.05). When

controlling for second grade teacher reports of boys' internalizing behaviors, this model explains only 7% of the variance in third grade boys' internalizing behaviors.

Father endorsement of traditional beliefs about raising children (measured at fourth grade) is significantly associated with increased teacher report of third grade girls' internalizing behaviors ($\beta = .16$, $p<.05$). No other third grade father or mother involvement behaviors significantly predict girls' internalizing at third grade. When controlling for second grade reports of girls internalizing, the model explains only 8% of the variance in teacher report of third grade girls internalizing behaviors.

Third Grade Externalizing Behavior Problems: Boys and Girls

When father and mother involvement behaviors are entered into the model predicting third grade boys' externalizing behaviors, fathers' sensitivity scores ($\beta = -.14$, $p<.05$), and the number of hours fathers work per week ($\beta =-.11$, $p<.05$) are negatively associated with boys' externalizing behaviors. Fathers' H.O.M.E. scores are positively associated with teacher report of boys' externalizing behaviors. While including second grade boys' externalizing behaviors, this model explains 33% of the variance in third grade boys' externalizing behavior problems.

Third grade girls' externalizing behaviors are significantly associated with father report of Harsh Control parenting ($\beta = .20$, $p<.01$). Fathers who endorse harsh parenting control are predicted to have girls with higher externalizing behavior problems scores at third grade. The number of hours per week fathers work is negatively associated with

girls' externalizing behaviors (β = -.13, p<.05). Maternal low educational attainment is positively associated with girls (but not boys) externalizing behaviors, and interestingly, maternal Lax Control parenting is negatively associated with girls' externalizing at third grade (β = -.18, p<.01). While including second grade teacher report of girls' externalizing behaviors, this model explains 35% of the variance in teacher reports of third grade girls' externalizing behavior problems (Appendix I).

Third Grade Social Skills: Boys and Girls

When father and mother involvement behaviors are included in the model predicting third grade boys' social skills, father sensitivity (β = .16 p<.05), and father H.O.M.E scores are positively associated with higher social skills scores as reported by teachers at third grade. None of the measured maternal involvement behaviors significantly predict boys' social skills at third grade. This model explains 19% of the variance in third grade boys' social skills.

Fathers' reports of the number of hours per week at work is associated with third grade girls' social skills (β = .12, p<.05), as is maternal report of a total positive relationship with the study child (β = .17, p<.05). These parenting effects are significant even while controlling for second grade girls' social skills. The model explains 19% of the variance in third grade teacher reports of girls' social skills.

Third Grade Teacher Report of a Positive Relationship with Study Child: Boys and Girls

None of the measured father or mother involvement behaviors at third grade significantly predicts third grade teachers' reports of positive relationships with third grade boys. Third grade boys' relationship with teachers are best predicted by second grade teachers' reports of a positive relationship ($\beta = .28$, $p<.001$). This model (Appendix I) explains 12% of the variance in third grade boys' teachers' reports of a positive relationship with male study children.

Teachers' reports of positive relationships with third grade girls are not significantly associated with father involvement behaviors at third grade, but are associated with several maternal involvement behaviors (Appendix I). Although maternal Harsh Control parenting and maternal traditional Beliefs about Raising Children are highly correlated for all children at third grade ($r = .58$, $p<.01$), maternal Harsh Control parenting is positively associated with more positive teacher-child relationships for girls ($\beta = .29$, $p<.01$), while maternal endorsement of traditional beliefs about raising children is negatively associated with girls' teacher relationships at third grade ($\beta = -.17$, $p<.01$). Maternal Lax Control parenting ($\beta = .16$, $p<.05$) and maternal report of a positive relationship with female study children ($\beta = .15$, $p<.05$) are also associated with more positive teacher-child relationships for third grade girls. This model explains 23% of the variance in third grade teachers' reports of a positive relationship with girls.

Fourth Grade Peer Reports of Friendship Quality: Boys and Girls

None of the measured father and mother involvement behaviors at third grade significantly predicts fourth grade boys' peers' ratings of friendship quality. This model explains none of the variance in boys' peer friendship quality.

For girls, none of the measured father involvement variables explain fourth grade peer friendship quality. Maternal report of a total positive relationship with female study children does significantly predict a more positive rating of friendship quality from fourth grade girls' peers ($\beta = .19$, $p<.05$). This model explains only 2% of the variance in fourth grade girls' peer reports of friendship quality with the study child.

Fifth Grade Mathematics Achievement: Boys and Girls

When father and mother involvement behaviors at fifth grade are entered into the model predicting fifth grade boys' math achievement (Appendix J) only father H.O.M.E. scores significantly predict boys' math achievement scores ($\beta = -.11$, $p<.01$), and the association is negative. Maternal Lax Control parenting is negatively associated with boys' math scores at third grade ($\beta = -.11$, $p<.05$). Fifth grade math achievement is most strongly associated with fifth grade boys' achievement ($\beta = .76$, $p<.001$), in this model that explains 60% of the variance in fifth grade boys' math achievement scores.

Fifth grade girls' math achievement is negatively associated with father endorsement of traditional parenting beliefs (as measured at fourth grade) ($\beta = .-.11$, $p<.05$) and with mother endorsement of traditional parenting beliefs (measured at fourth grade) ($\beta = -.13$, $p<.05$). No other parent involvement variables significantly predict

girls' fifth grade math achievement. Third grade math scores significantly predict girls' math achievement at fifth grade ($\beta = .67$ $p<.001$), in the girls' model, that explains 54% of the variance in fifth grade girls' math achievement (Appendix J).

Fifth Grade Reading Achievement

When father and mother involvement behaviors are included in a model predicting fifth grade boys' reading achievement, none of the measured father involvement behaviors significantly predict boys' reading achievement. Maternal Harsh Control parenting is significantly associated with decreased reading achievement scores for fifth grade boys ($\beta = -.11$, $p<.01$). This model (Appendix J) explains 71% of the variance in third grade boys reading achievement, with most of the variance accounted for by boys' second grade reading achievement ($\beta = .83$, $p<.001$).

For girls, fifth grade father involvement behaviors do significantly predict fifth grade reading achievement scores. Fathers' endorsement of traditional beliefs about raising children (measured at fourth grade) is negatively associated with girls' reading scores at fifth grade ($\beta = -.08$, $p<.05$). Additionally, the number of minutes per week girls spend with their fathers is negatively associated with reading scores ($\beta = -.08$, $p<.05$). Finally, father depression is positively associated with fifth grade girls' reading ($\beta = .09$, $p<.05$). Maternal Lax Control parenting at third grade is negatively associated with fifth grade girls' reading outcomes ($\beta = -.09$, $p<.05$). The model explains 77% of

fifth grade girls reading achievement outcomes, with most of the variance explained by girls' reading scores at third grade ($\beta = .83$, $p<.001$).

Fifth Grade Internalizing Behavior Problems: Boys and Girls

In the model predicting fifth grade boys' internalizing behaviors from fifth grade father and mother involvement behaviors, only the number of minutes per week fathers report spending with the male study child significantly predict teacher report of boys' internalizing at fifth grade (Appendix J). Father who report spending more time with their fifth grade boys are more likely to have boys with internalizing behavior problems ($\beta = .15$, $p<.05$), as reported by their classroom teachers. The number of hours per week that mothers report working outside the home is negatively associated with boys' internalizing behaviors ($\beta = -.17$, $p<.05$). The model controls for fourth grade teacher reports of boys' internalizing behavior problems ($\beta = .18$, $p<.01$), and explains 13% of the variance in teacher reports of fifth grade boys' internalizing behavior problems.

For girls, only father reports of depressive symptoms at fifth grade significantly predict teacher reports of fifth grade girls' internalizing ($\beta = .17$, $p<.05$), in the model that controls for fourth grade teacher reports of girls' internalizing behaviors ($\beta = .17$, $p<.01$). This model (Appendix J) explains only 2% of the variance in fifth grade girls' internalizing behavior problems.

Fifth Grade Externalizing Behavior Problems: Boys and Girls

When fifth grade father and mother involvement behaviors are entered into the model predicting fifth grade boys' externalizing behaviors, no specific father-son involvement behaviors are significantly associated with boys' externalizing at fifth grade. However, fathers' report of love and support in his relationship with the boys' mothers are strongly negatively associated with boys' externalizing behaviors ($\beta = -.22$, $p<.05$). Increased maternal sensitivity scores predict lower externalizing scores for boys ($\beta = -.16$, $p<.01$). On the other hand, maternal endorsement of traditional parenting beliefs is positively associated with boys' externalizing ($\beta = .16$, $p<.05$), as is maternal Firm Control parenting ($\beta = .13$, $p<.05$). This model explains 26% of the variance in fifth grade boys' teacher reports of externalizing behavior problems (Appendix J).

None of the measured father involvement variables significantly predict fifth grade girls' externalizing behaviors, in the model including father and mother involvement behaviors (Appendix J). Maternal endorsement of traditional beliefs about raising children is positively associated with girls' externalizing behaviors ($\beta = .15$, $p<.05$), and maternal depression is negatively associated with fifth grade girls' externalizing ($\beta = -.16$, $p<.05$). Fourth grade teacher report of girls' externalizing behaviors best predicts fifth grade girls' externalizing ($\beta = .48$, $p<.001$). The model explains 31% of the variance in fifth grade girls' teacher reports of externalizing behaviors.

Fifth Grade Social Skills: Boys and Girls

Fifth grade boys' social skills are not associated with any of the measured father involvement behaviors at fifth grade, in the model predicting boys' social skills from involvement behaviors of both parents (Appendix J). Maternal Firm Control parenting is negatively associated with boys' social skills ($\beta = -.11$, $p<.05$), as is maternal endorsement of traditional Beliefs about Raising Children ($\beta = -.14$, $p<.05$). These maternal behaviors are significant while controlling for fourth grade teacher report of boys' social skills ($\beta = .39$, $p<.001$), and explain 25% of the variance in teacher report of boys' social skills at fifth grade.

Similarly, for girls none of the measured father involvement behaviors at fifth grade significantly predict fifth grade girls' social skills, in the model predicting girls' social skills from both father and mother involvement behaviors (Appendix J). Only maternal endorsement of traditional Beliefs about Raising Children is significantly negatively associated with girls' fifth grade social skills ($\beta = -.23$, $p<.001$). Maternal traditional beliefs are significant while controlling for fourth grade teacher report of girls' social skills ($\beta = .42$, $p<.001$), and explain 23% of the variance in teacher report of girls' social skills at fifth grade.

Fifth Grade Teacher Report of a Positive Relationship with Study Child: Boys and Girls

Father Sensitivity is positively associated with fifth grade boys' teacher reports of a positive relationship with the male study child ($\beta = .14$, $p<.05$), in the model predicting

boys' teachers' reports of a positive relationship with the male study child at fifth grade. Additionally, fathers' reports of love and support in his relationship with the boys' mothers are positively associated with positive teacher-student relationships for fifth grade boys ($\beta = .20$, $p<.01$). These fathering effects remain significant predictors, while controlling for fourth grade teachers' reports of positive relationship with male study children ($\beta = .30$, $p<.001$). This model explains 23% of the variance in fifth grade teachers' reports of a positive relationship with the male study child.

None of the measured father or mother involvement behaviors significantly predict fifth grade girls' teachers' reports of a positive relationship with the female study child. Only fourth grade teacher reports of a positive relationship significantly predicts fifth grade girls' teachers' positive relationships ($\beta = .30$ $p<.001$). This model significantly predicts 14% of the variance in fifth grade teachers' reports of a positive relationship with the female study child.

Sixth Grade Peer Friendship Quality: Boys and Girls

When father involvement and mother involvement behaviors are entered into the model predicting fifth grade boys' peers' reports of friendship quality with the male study child, father H.O.M.E involvement scores predict positive friendship quality ($\beta = .12$, $p<.05$). Father Firm Control parenting is negatively associated with quality of peer friendship ($\beta = -.24$, $p<.001$). By contrast, maternal Firm Control parenting is positively associated with boys' peer friendship quality ($\beta = .15$, $p<.05$), and maternal Sensitivity is

negatively associated with boys' peer friendship quality ($\beta = -.14$, $p<.05$). The model controls for fourth grade peer report of friendship quality, and explains 15% of the variance in sixth grade boys' peer report of friendship quality with the male study child.

Father report of depressive symptoms at fifth grade predicts a higher friendship quality between sixth grade girls and their selected peer raters ($\beta = .16$, $p<.05$). Maternal Firm Control parenting ($\beta = .13$, $p<.05$) and Maternal Lax Control parenting ($\beta = .13$, $p<.05$) both equally predict more positive reports from fifth grade girls' peer regarding the quality of their friendships (Appendix J).

Summary

In summary, we see that father involvement variables do predict outcomes differently for boys and for girls. When boys and girls are separated into two groups to examine the ways in which father involvement behaviors predict outcomes for boys and girls while controlling for maternal behaviors, clear distinctions between boys and girls emerge. Boys tend to perform slightly better in math achievement at third grade, are less likely to engage in internalizing behavior problems, score higher in social skills, and receive higher peer quality scores at sixth grade, when fathers report higher H.O.M.E. scores, marked by frequency of outdoor recreation, time together during the week, and shared meals. Additionally, for boys, father observed sensitivity ratings were significantly associated with positive social outcomes at both third and fifth grades. For example, father sensitivity is negatively associated with boys' externalizing behaviors and

positively associated with boys' social skills scores at third grade, as well as positively associated with teachers' reports of a positive relationship with male study children at fifth grade. Finally, fathers' report of love and support in his partnership with boys' mothers is positively associated with social outcomes for boys at fifth grade; high father love and support scores predict negative externalizing behavior scores and positive teacher relationship scores.

Although we see a picture of positive father involvement behaviors predicting successful school outcomes for boys, a different picture emerges when we examine outcomes for girls. Father H.O.M.E. and sensitivity scores are not significantly associated with outcomes for girls, in models accounting for parallel measures of maternal involvement behavior, at either third or fifth grade. In fact, almost none of the measured father involvement variables which were positively associated with high quantity and quality fathering behaviors significantly predict improvements in girls' academic, social, or behavioral outcomes at third or fifth grades. Instead, for girls, father behaviors that were considered to be associated with low quality of fathering are negatively associated with girls' outcomes at third and fifth grades.

For example, at third grade, father traditional beliefs about raising children is associated with teacher reports of girls' increased internalizing behaviors, and father Harsh Control parenting predicts higher reports of girls' externalizing behaviors. Alternatively, at third grade father reports of a positive relationship with female study children are positively associated with girls' improved reading scores, and increased

hours fathers report working outside the home predicts positive teacher reports of girls' social skills. Although father hours working outside the home is considered an indication of low fathering quantity, or time with the study children, fathers' working behaviors are associated with positive outcomes for girls at third grade in this case (and with the positive outcome of decreased externalizing behaviors for boys at third grade), perhaps in part because father economic support of the family is a positive contribution to family functioning (Coleman, 1988; Coley & Chase-Landsdale, 1999).

At fifth grade, fathers' positive involvement behavior does not appear to be positively associated with academic, behavioral, or social achievement for girls, in models controlling for maternal behavior. Instead, fathers' endorsement of traditional beliefs about raising children (considered negatively associated with fathering quality, Grolnick et al, 1997) predicts decreased math and reading scores for fifth grade girls. Likewise, when fathers spend more time each week with fifth grade daughters, daughters are predicted to have decreased reading scores. Oddly, when fathers report greater depressive symptoms, fifth grade girls' reading scores improve slightly, however with increased father depression girls are more likely to exhibit internalizing behavior problems at fifth grade.

Although father involvement behaviors are predictive of children's outcomes for both boys and girls, and are equally likely to predict outcomes for children of both genders, positive father involvement behaviors tend to predict positive outcomes for boys at both third and fifth grades more consistently than positive involvement behaviors

predict positive outcomes for girls. On the other hand, for girls, father involvement behaviors that are considered more negative (i.e. Harsh Control parenting and father depression) are more predictive of negative academic and behavioral outcomes for girls. It is interesting to note, however, that for girls at fifth grade, father depressive symptoms are also associated with improved reading achievement scores and with improved peer reports of friendship quality. Not all father involvement variables of quantity and quality of child interactions predicted child outcomes in the anticipated way.

Hypothesis II. D: The association of a composite measure of father involvement with child outcomes will be mediated by father sensitivity. Fathers who are more sensitive in interactions with their children will have children performing more successfully on tests of academic achievement, expressing fewer internalizing and externalizing behavior problems as rated by their classroom teachers, scoring higher in teacher ratings of social skills, and developing more positive relationships with their classroom teachers and with their peers. Fathers' sensitivity during the children's third grade year will mediate children's outcomes during third and fifth grades. The influence of father sensitivity will mediate child outcomes differently for boys and for girls, but will be significantly associated with child outcomes even as the statistical model controls for parallel measures of maternal behaviors and maternal sensitivity during interaction with the study child.

Examination of correlations between third grade measurement of father sensitivity and other father involvement variables at third grade (Appendix B) and correlations between fifth grade measurement of father sensitivity and other father involvement variables at fifth grade (Appendix C) indicate that correlations between father sensitivity and other father involvement variables are low at both third and fifth grades. According to Baron and Kenny (1986), tests of mediation require that the independent variables (in this case, father involvement variables, be correlated with the mediator (father sensitivity). Because these correlations were consistently very low (and for measures of fathering quantity were always non-significant) in the present sample, it was concluded that conditions for mediation were not present. However, conditions for testing father sensitivity as a moderator of other father involvement variables when predicting child outcomes were present, since correlations between father involvement variables and child outcomes are present, as we have tested in previous regression analyses.

Eight father involvement variables were entered, one at a time, into General Linear Models (GLM) as an interaction term with father Sensitivity, to test for a moderating effect of father sensitivity scores on predictions of children's outcomes based upon father involvement. Father involvement variables included: Father Total Positive Relationship with Study Child, Father Beliefs about Raising Children, Harsh Parenting Control, Firm Parenting Control, Lax Parenting Control, Minutes per Week Father Spends with Study Child, Father H.O.M.E. score, and Number of Hours per Week Father Works. Third grade assessments of father involvement variables were used to predict

child outcomes at third grade, and fifth grade assessments of father involvement, when measured in a repeated assessment, were used to predict fifth grade child outcomes. Regression models controlled for parallel measures of maternal involvement at third grade, and at fifth grade. Models were run separately for boys and for girls at third and fifth grades in order to test whether father Sensitivity moderates father involvement variables differently for boys and for girls.

A total of 224 interactions were run in separate regression models (i.e. 56 sensitivity interactions for third grade girls, 56 for third grade boys, 56 for fifth grade girls, and so on) to predict math, reading, internalizing, externalizing, social skills, teacher relationship, and peer friendship outcomes for boys and for girls. Across grades three and five, only 7% of the interactions run for boys were significant, or a total of eight out of 112 possible interactions. For girls, across grades three and five, only 6%, or seven interactions, out of a possible 112, were significant. Therefore, it can be reasonably concluded that observations of father sensitivity do not significantly moderate the association of father involvement with girls' or boys' math, reading, internalizing, externalizing, social skills, or teacher and peer reports of a positive relationship for the third and fifth grade boys and girls included in this study. Based upon results of the aforementioned interactions, we are able to refute the study hypothesis that observations of fathers' sensitivity moderate predictions of children's outcomes.

Discussion

This study examined the associations between biological, residential fathers' involvement behaviors at third and fifth grades and change in children's academic, behavioral, and social outcomes during their third and fifth grade school years. The primary goal of the study was to analyze fathers' behaviors across multiple dimensions, in order to examine the associations between fathering behaviors and change in children's outcomes, while controlling for parallel measures of maternal behaviors and controlling for teachers' evaluations of children's behavior in previous assessments. In this way, we are able to predict changes in children's outcomes based on multiple concepts of fathering, while accounting for variance in maternal involvement behaviors with their pre-adolescent children.

Although other studies have addressed fathering as a predictor of child academic and social outcomes, most have failed to evaluate measures of both the quantity and the quality of fathering behaviors, while controlling for parallel measures of maternal involvement, in order to independently predict child outcomes from various pathways of father involvement behaviors (Marsiglio et al., 2000). Additionally, previous studies of fathering behaviors have focused on the specific and iatrogenic effects of fathers' absence in the lives of their children and families, rather than assessing the full spectrum of fathering behaviors that take place when fathers remain involved with their children (Cabrera et al., 2004). The present study focuses specifically on the positive influence

biological, residential fathers' presence and involvement behaviors may have on children's academic achievement and behaviors.

The study began with examination of the sample. As suggested in prior research, it was expected that in the present study quantity and quality of father involvement would be lower in economically poor families (Bradley et al, 2001; Sanderson & Thompson, 2002) and in families where mothers achieved low educational status (i.e. were not high school graduates) (Pleck,1997). Corroborating with previous research, the present study found significant differences between economically poor fathers and fathers of families with greater economic resources indicating that fathering quality may be lower in economically poor families (i.e. fathers who are economically poor score significantly lower in sensitivity ratings during child interactions, and are more likely to endorse Harsh Control and traditional or directive parenting practices). Fathers' availability, or amount of time spent with children per week, a quantity measure, was also significantly lower for economically poor fathers at the study children's fifth grade measurement, a finding supporting research by Lamb and Oppenheim (1989).

However, in the present sample there were not sufficient numbers of economically poor families to adequately address predictions of children's outcomes based upon economic status. Only 64 families in the sample were identified as economically poor. The decision to limit the study sample to biological, residential fathers may have created difficulty in retaining a large number of the families identified

as “working poor” or economically poor, since economically poor families are most often headed by a single mother (McLanahan, 1997; Coley & Chase-Landsdale, 1999).

A similar problem emerged when testing the second piece of this hypothesis, that father involvement would be lower in families with lower maternal educational status, as supported in research by Cabrera et al. (2000), and Amato (1994). In the present study, fathers’ quantity of involvement in families with low-education mothers was significantly lower at the study children’s fifth grade year; fathers associated with low-education mothers were less likely to spend time after school with their children. Additionally, the quality of fathering when fathers in the present study were associated with low-education mothers was diminished; fathers associated with low-education mothers were more likely to endorse Harsh Control parenting, and traditional (directive) beliefs about raising their children. Finally, in the present study, fathers associated with low education mothers were less likely to report feelings of a positive relationship with their children.

However, once again, the number of mothers achieving low educational status in the present study’s restricted sample of biological, residential fathers was inadequate for the prediction of various child outcomes at third and fifth grades. Only 17 of the 562 mothers sampled had not graduated from high school. The sample of mothers included in this analysis tended to be highly educated, with more than 30% graduating from college, and more than 20% receiving an advanced graduate degree. Therefore, no specific conclusions regarding the moderation of maternal low education status on father involvement behaviors, as predictors of child outcomes, were able to be drawn.

However, maternal educational status did remain in third and fifth grade child outcome models as a covariate with father involvement behaviors, in order to test for significance of maternal education status with children's academic, behavioral, and social outcomes.

Father Involvement by Gender

Secondly, it was hypothesized that variance in father involvement could be predicted in part based upon child gender. This notion is supported in other fathering research, which generally finds that fathers spend more time with sons than with daughters, although this gender difference is most frequently noted for older children and has not been documented for pre-school children (Fuligni & Brooks-Gunn, 2004). Because the present study examines father involvement with older children and pre-adolescents, the hypothesis extended prior research and tested further separation in father involvement from girls as they mature from third to fifth grade. Specifically, the hypothesis suggested that fathers would be more involved with sons than with daughters at the third grade measurement, and that father involvement would continue to increase with sons, but would level or begin to decrease with daughters as children approached the fifth and sixth grade measurement. This hypothesis is somewhat inconsistent with father involvement studies suggesting that, for all children, father involvement declines as children get older, but father involvement with children relative to mother's involvement increases over time (Fuligni & Brooks-Gunn, 2004), however, father involvement is so rarely tested by gender for older children (Cabrera et al., 2004) the hypothesis was developed from research based upon Pleck's (1997) review of paternal

involvement studies conducted in the 1980s and 1990s which indicated that fathers spend more time with pre-adolescent sons than with daughters. This hypothesis was not supported by the data at third and fifth grades. Father involvement variables measuring quantity, time spent with the child each week, and father H.O.M.E. scores, were not significantly different over time, and did not change at different rates based upon child gender. Similarly, while the quantity measure of fathers' number of hours per week at work did significantly decrease over time for fathers of all children, the decrease did not change at a different rate over time for boys versus girls.

On the other hand, father involvement variables measuring quality, father sensitivity and father report of a total positive relationship with the study child were significantly different based upon child gender. Father sensitivity did not change significantly over time, however fathers of female study children were likely to score higher in sensitivity ratings than fathers of male study children at the third grade time measurement (see Figure 1). Although father sensitivity scores appear to drop dramatically for females and to increase slightly for males between third and fifth grades, mean sensitivity scores for fathers of female study children remain higher at the fifth grade measurement. Finally, fathers' report of a total positive relationship with study children does decrease significantly over time for all children, however the rate of change did not vary significantly for boys versus girls.

Father Involvement Predicting Child Outcomes

The associations between father involvement behaviors and children's academic, social, and behavioral outcomes, though significant, seem fairly small. When father involvement variables are the entered into statistical models predicting child outcomes, we see that high quantity and quality of father involvement at third grade is associated with positive behavioral and social outcomes for children. For example, increased father H.O.M.E. scores predict a decrease in child internalizing behavior, and increased father sensitivity ratings and father report of a positive relationship with the study child predict a decrease in child externalizing behavior problems. Finally, father report of a more positive relationship with the study child is associated with improved teacher reports of child social skills and a more positive relationship with the child. On the other hand, this last outcome may have more to do with the characteristics of the study child. For example, a child who is more engaged and interested in interacting with the adults in his or her life may receive higher relationship scores from both father and classroom teacher (Parke et al., 2004). However, an alternative argument may be that because the sample consists of biological, residential fathers, father involvement behaviors have shaped children's social and emotional development over time, and children adopt or inherit personality characteristics of fathers who are more socially adroit (Harris & Ryan., 2004).

Although positive father involvement was not a significant predictor of child academic achievement at third grade, when father involvement quality was compromised, as defined by father involvement behavior that was directive or potentially controlling of child behaviors, child reading scores were predicted to decrease. At the third grade

measurement, this was the only significant prediction of a decrease in children's school achievement based upon father involvement, in models that did not control for parallel measures of maternal behavior.

By the fifth grade measurement, father involvement behaviors are even less predictive of child outcomes. Direct father-child involvement does not significantly predict child math, reading, internalizing, externalizing or social skills reports. However, it is interesting to note that higher scores in the family contextual factor covariate of father report of love and support in his relationship with the child's mother is significantly associated with a decrease in child externalizing behaviors, and with an increase in teacher report of a positive relationship with the study child. This finding is supported by previous research streams which suggest that paternal involvement is related to satisfaction in the co-parental relationship (Braungart-Rieker & Garwood, 1999), and predicts particularly positive outcome for the children of fathers who live in-residence (Pleck & Masciadrelli, 2004). It is possible that at the fifth grade measurement, children are seeing pro-social, positive interactions between their parents and are translating those positive inter-personal behaviors to interactions with teachers and peers (Parke et al., 2004). Supporting evidence from the present study may include the finding that fathers' sensitivity in interactions with their children is positively associated with teachers' reports of positive relationship with study children. Additionally, higher scores in fathers' H.O.M.E. involvement and positive relationship with the study children predict improvements in peer report of friendship quality with study children.

Somewhat surprisingly, father reports of Firm Control parenting at the third grade measurement are negatively associated with peer reports of friendship quality at sixth grade. This finding is surprising because Firm Control parenting, marked by high parent involvement, high warmth, and high control (Baumrind, 1991) is considered predictive of the most positive child outcomes (Kurdek & Sinclair, 1988). However, because this parenting variable is not a repeated measures score (i.e. it is measured only at the child's third grade year) predictions may be questionable due to father assessment error in his parenting style or unmeasured changes in parenting style over time as the child matures from third to fifth grade.

In summary, the first part of this study, that father involvement predicts children's academic, social, and behavioral outcomes supports previous research in results suggesting that fathers' positive involvement behaviors and fathers' positive feelings about relationship with mothers predict positive behavioral outcomes for children. Additionally, father involvement behaviors associated with less positive, more directive parenting predict negative outcomes for children. The present study more uniquely adds to current literature on father involvement by examining child outcomes when controlling for maternal involvement behaviors.

Father and Mother Involvement Behaviors Predicting Child Outcomes

When maternal involvement variables are added to models predicting child outcomes, some but not all father involvement behaviors remain positive predictors of children's behavioral and social outcomes. For example, at the third grade

measurement, father H.O.M.E. scores are negatively associated with child internalizing behavior, but are no longer associated with child externalizing behaviors when maternal involvement behaviors are added to the model. Additionally, third grade father report of a total positive relationship with the study child loses its association with teacher report of child social skills, giving way to the power of positive maternal report of relationship with the study child in predicting third grade social skills. Previous research has rarely controlled for maternal involvement behaviors when examining the associations between father involvement and children's outcomes. However, in the limited number of studies that have controlled for maternal involvement, more often than not father involvement behaviors have remained significant predictors of children's outcomes, particularly children's social outcomes and peer relationships (Parke et al., 2004).

The present study finds, interestingly, when maternal variables are added to the model, father Lax Control parenting is positively associated with peer reports of higher friendship quality at fourth grade. It is possible that children who are missing a certain quality in their relationship with their fathers seek a higher quality in their peer friendships. However this finding has not been supported in other research, and should be interpreted with caution.

When maternal involvement behaviors are added to models predicting fifth grade child outcomes, it seems that father parenting control and involvement behaviors are more strongly associated with negative child outcomes for math, reading, and internalizing behaviors. For example, father Lax Control parenting is associated with a

slight decrease in fifth grade math scores. This finding may be an extension of previous research which suggests that for younger children, more involved parenting predicts academic success (Grolnick et al., 1997). Father Firm Control parenting at third grade is negatively associated with child externalizing behaviors at fifth grade, a positive behavioral outcome for children, and one consistently supported in other research (Grolnick, Ryan, & Deci, 1991; Kurdek & Sinclair, 1988).

However, one surprising finding in the present study is that father Firm Control is negatively associated with peer reports of friendship quality at sixth grade even as maternal involvement behaviors are included in the model. This finding is particularly surprising because Firm Control parents are typically found to have children with more positive self-concept and self-esteem (Culp et al., 2000) and children who engage in fewer behavior problems (Flouri & Buchanan, 2002; Rohner & Veneziano, 2001), qualities which, at least in younger school children, are associated with more positive peer friendships. Although in the present study, Firm Control fathering is negatively associated with children's peer friendships at sixth grade, father H.O.M.E scores and father report of a positive relationship with the study child remain positive predictors of higher peer friendship quality, and classroom teacher report of a positive relationship with the child, a finding more consistent with previous research.

In summary, we see that positive father involvement behaviors do predict child pro-social and behavioral outcomes. These associations between the quality and quantity of father involvement behaviors and child outcomes remain extant even when maternal

involvement behaviors are included in the model. Maternal involvement behaviors do not supersede father involvement behaviors at either third or fifth grades. We might predict that father involvement behaviors continue to impact children's social and behavioral outcomes into their adolescent years, particularly since father behaviors are associated with the quality of pre-adolescent peer friendships, and with pre-adolescent pro-social skills.

Predicting Child Outcomes by Gender

Father involvement behaviors do matter for children at third and fifth grades, and in many cases fathers' behaviors predict patterns of children's outcomes differently for boys and for girls, in models controlling for maternal involvement behaviors. Positive father involvement behaviors are associated with positive achievement outcomes for boys, particularly H.O.M.E scores and father sensitivity. For girls, a different picture emerges. Fathers' who "do no harm" (i.e. are not harsh in their controlling behavior, or more traditional and directive in their beliefs about raising children) are more likely to have girls who are predicted to be more successful in school at third and fifth grades. For example, fathers who score lower on Harsh Control parenting and who are less likely to endorse directive parenting styles have girls who are predicted to do better academically and socially than their female peers with more controlling or directive fathers. It appears that for fathers of third and fifth grade girls, knowing how <u>not</u> to parent may be as important as understanding positive parenting skills. Although previous research does support the notion that positive father involvement behaviors predict positive behavioral

and social outcomes for children (Flouri & Buchanan, 2002; Rohner & Veneziano, 2001; Culp et al., 2000, Kurdek & Sinclair, 1988) and that harsh or controlling fathering behaviors predict negative outcomes for children (Sanderson & Thompson, 2002; Hudson, Elk, & Fleck, 2001, Grolnick, Ryan & Deci, 1991) there is not a large research base indicating that father involvement behaviors predict child outcomes differently for boys and for girls. This may be an addition of the present study to current father involvement literature, however findings unsubstantiated by additional research must be interpreted with caution.

Interpreting models of child outcomes at third and fifth grades, based upon both parents' involvement behaviors, is tricky for several reasons. First of all, measurement of father and mother involvement behaviors is often based on parent self-report measures, rather than third-party observation. Fathers and mothers may be more likely to respond to questionnaires in ways that they deem socially appropriate rather than reflecting on actual parenting behavior. Additionally, fathers and mothers may be more likely to remember recent parenting events than the range of parenting behaviors that took place in the course of the measurement period. Finally, several parenting measures were collected at the third grade measurement period but were not repeated at fifth grade measurement. It may be presumptuous to assume that parenting behaviors evident at the third grade measurement would continue to be associated with child outcomes at fifth grade in the same ways those parenting behaviors were associated with child outcomes at

third grade. For example, Harsh Control parenting may mean something different to children's outcomes at third grade than it means to outcomes at fifth grade.

Father Sensitivity as a Moderator for Father Involvement Behaviors

Father sensitivity was rated at both third and fifth grades by a third party observer in a laboratory setting. The present study hypothesized that father involvement behaviors would be mediated by fathers' observed sensitivity, as evaluated by a third party. When conditions were not sufficient for mediation (Baron & Kenny, 1986), a moderating effect of father sensitivity was tested. However, in the present study, fathers' sensitivity ratings were not consistently significant moderators for father involvement behavior when predicting child outcomes for boys and for girls at third and fifth grades. This finding was particularly surprising in light of previous analyses using the same SECCYD data sample, which have repeatedly indicated that father sensitivity predicts first grade children's behavioral and social outcomes (NICHD Early Child Care Research Network, 2005, 2004). In the present analyses, we see that father involvement behaviors are not significantly moderated by father sensitivity, and that the involvement behaviors measured are independent predictors of children's outcomes (i.e. they do not reliably load onto latent factors or constructs of fathering behaviors.) This effect may be extant in the present study analyses because father sensitivity ratings were moderating father involvement associations with children's outcomes separately for boys and for girls. However, only one main effect of father sensitivity remains significant for the full sample

of children when controlling for maternal behaviors; father sensitivity predicts teacher reports of a positive relationship with study children at fifth grade, a finding supported by previous research conducted with the SECCYD dataset (NICHD Early Child Care Network, 2004). When boys and girls are broken into groups by gender, however, father sensitivity is only predictive of positive outcomes for boys at fifth grade. Positive associations of father sensitivity are not significant predictors of positive outcomes for girls. Once again, this research finding is exclusive to the present study, and has not been substantiated by other research.

Limitations

There are several limitations to the data that should be noted. First and foremost, although fathering behaviors are gaining more attention in social-science research, data regarding the quantity and quality of fathering behaviors are difficult to find. Few studies address fathering behaviors at all, and of the studies that do address fathering, conceptualizations of positive quantity and quality of fathering behaviors take a broad scope. There are relatively few studies that focus specifically on fathers and fathering behaviors, and still fewer that design father behavior and involvement questionnaires based upon the work of previous research (Cabrera et al., 2004; Parke, 2004). Although father involvement behaviors do make a difference in predicting children's outcomes, research design and methodologies are not rapidly forthcoming to create consist, valid and reliable tools for measuring father involvement behaviors. When

examining the present study, measurement tools may be a limitation in evaluating father involvement. Although self-report is thought to be a reliable mechanism for obtaining information on parenting behaviors, fathers may have exhibited a slight social desirability bias in reporting their feelings of a positive relationship with the study child and in beliefs about raising children. The potential for this problem was mitigated in part by using third-party observations of father sensitivity to determine the ways in which fathers behave during child interactions.

Secondly, there are significant restrictions in generalizing this study's finding to groups outside of the current sample. The sample of 562 biological, residential fathers is primarily a Caucasian sample (more than 91% Caucasian), is made up of families who are relatively well-off financially (median household income more than $90, 500), and who are well educated (nearly 30% of fathers and more than 30% of mothers sampled have achieved a college degree). Therefore, generalizations regarding the associations between father involvement behaviors and child outcomes resulting from this study should not be made for children and families with fewer economic or educational advantages. This may be a particularly significant limitation because the associations between father involvement behaviors and child outcomes are expected to be most pronounced for children from less advantaged families, suggesting that more at-risk children would benefit most from greater father involvement (Kazura, 2000; Verschueren & Marcoen, 1999; Lamb, 1996; McLanahan, 1985; Heatherington, Camara & Featherman, 1983). However, despite its sample limitations, the present study does

provide a measure of "baseline" father involvement information for fathers who are considered in previous research to be most likely to engage actively with their children, biological, residential fathers (Pleck & Masciadrelli, 2004).

Thirdly, regression analyses do not allow for the delineation of uniquely shaped trajectories over time for boys and girls in the way that growth curve analysis would allow. However, because child outcome measurements are rated by different classroom teachers over time, and because repeated measures are not consistently collected over time (i.e. some measurements are collected only once, others are collected each measurement period) growth curve analyses were not the best choice for examining the hypotheses presented in this study. It is difficult to say with certainty how boys' and girls' trajectories for academic, behavioral, and social development are related to father involvement without having additional data points for boys and girls into middle school and high school.

Finally, it is important to note that even in the context of a longitudinal design, the data presented in this study are correlational in nature. Although simple change analyses and regression analyses highlight the ways in which fathers and their pre-adolescent children change over time, direct causal mechanisms between father involvement behaviors and children's academic, behavioral, and social outcomes cannot be established.

Conclusions and Future Directions

Despite its limitations, this study advances current research on the associations between fathers' involvement behaviors and change in pre-adolescent children's outcomes. Fathers and fathering behaviors have been long overlooked in many research studies of children's development. The results of this study encourage further examination into the ways in which positive fathering behaviors may predict pro-social child and pre-adolescent behaviors, and the ways in which less positive fathering behaviors may be predictive of decline in children's pro-social and positive behavioral outcomes.

Although the associations between father involvement and children's outcomes appears to be small, it is important to note that we are evaluating change in children's outcomes between second and third grade, and between fourth and fifth grade (in most cases) based upon quantity and quality of fathering. By controlling for the previous grade's academic, social, and behavioral reports, we are able to ascertain that fathers' involvement behaviors do, in fact, predict relatively large differences in children's school outcomes at the upcoming grade evaluation. Although the effects appear small, they are in fact predicting differences in children's behavior over time, which may make a significant difference when evaluating children who are considered "at-risk".

Biological, residential fathers and fathering behaviors do matter, and they matter not only in conjunction with maternal behaviors, but also when controlling for mothers' involvement. Examination of the present study indicates that involvement behaviors of biological, residential fathers are most strongly associated with children's, particularly

boys', positive social outcomes. This study allowed for a relatively limited scope of the term "father." Future fathering research may broaden the focus to include involvement behaviors of non-residential, or step-fathers when predicting child and pre-adolescent outcomes. It would be interesting to note the various pathways through which father involvement behaviors are associated with child outcomes, particularly when comparing residential, biological fathers to non-residential or step-fathers. This comparison could offer additional insights into the relationship between parenting behaviors and the academic, behavioral, and social success of children and pre-adolescents.

In conclusion, the results of this study demonstrate the importance of considering fathers' role in the family and in children's lives when examining change in children's school outcomes. While father involvement behaviors don't paint a complete picture of family life, they do provide important information regarding more subtle family contexts. Father involvement behaviors are predictive of the change in social and behavioral outcomes of third and fifth grade children, and should not be overlooked, particularly in problematic patterns of child behaviors that may necessitate intervention.

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Appendix A: Paper & Pencil Measures

MIDDLE CHILDHOOD HOME

Child ID _____ Date _____ RA ID _____
MM/DD/YYYY

Place a zero (0) for no scores and a one (1) for yes scores alongside each item.

I. RESPONSIVITY		16. ***(O)** Parent introduces Visitor to child.	
1. Family has fairly regular & predictable daily schedule for child (meals, day care, bedtime, TV, homework, etc.)		17. ***(O)** Parent does not violate rules of common courtesy during visit.	
2. Parent sometimes yields to child's fears or rituals (allows night light, accompanies child to new experiences, etc.)		**III. ACCEPTANCE**	
3. Child has been praised at least twice during past week for doing something.		18. Parent has not lost temper with child more than once during previous week.	
4. Child is encouraged to read on his own.		19. Parent reports no more than one instance of physical punishment occurred during past month.	
5. ***(O)** Parent encourages child to contribute to the conversation during visit.		20. Child can express negative feelings toward parents without harsh reprisals.	
6. ***(O)** Parent shows some positive emotional responses to praise of child by Visitor.		21. Parent has not cried or been visibly upset in child's presence more than once during past week.	
7. ***(O)** Parent responds to child's questions during visit.		22. Child has special place in which to keep own possessions.	
8. ***(O)** Parent uses complete sentence structure and some long words in conversing.		23. ***(O)** Parent talks to child during visit (beyond correction and introduction)	
9. ***(O)** When speaking of or to child, parent's voice conveys positive feelings.		24. ***(O)** Parent uses some term of endearment or some diminutive for child's name when talking about child at least twice during visit.	
10. ***(O)** Parent initiates verbal interchanges with Visitor, asks questions, makes spontaneous comments		25. ***(O)** Parent does not express overt annoyance with or hostility toward child.	
II. ENCOURAGEMENT OF MATURITY		**IV. LEARNING MATERIALS**	
11. Family requires child to carry out certain selfcare routines, e.g. makes bed, cleans room, cleans up after spills, bathes self.		26. Child has free access to tape player or radio.	
12. Family requires child to keep living and play area reasonably clean and straight.		27. Child has free access to musical instrument (piano, drum, ukulele, or guitar, etc.)	
13. Child puts own outdoor clothing, dirty clothes, nightclothes in special place.		28. Child has free access to at least ten appropriate books.	
14. Parent sets limits for child and generally enforces them (curfew, homework before TV, or other regulations that fit family pattern).		29. Parent buys and reads a newspaper daily.	
15. Parent is consistent in applying family rules.		30. Child has free access to desk or other suitable place for reading or studying.	

*(O) Score from observation only.

Middle Childhood Form 10/14/99 University of AR at LR Caldwell/Bradley

31. Family has a dictionary and encourages child to use it.		46. Parent discusses TV programs with child.	
32. Child has visited a friend by him/herself in the past week.		47. Parent helps child to achieve motor skills – ride a two-wheel bicycle, roller skate, ice skate, play ball, etc.	
33. *(O) House has at least two pictures or other type of artwork on the walls.		48. Father (or father substitute) regularly engages in outdoor recreation with child.	
V. ENRICHMENT		49. Child sees and spends some time with father or father figure 4 days a week.	
34. Family has a TV and it is used judiciously, not left on continuously. (No TV requires an automatic NO – Any scheduling scores YES)		50. Child eats at least 1 meal per day, on most days, with mother and father (or mother and father figures). (One parent families rate an automatic NO)	
35. Family encourages child to develop or sustain hobbies.		51. Child has remained with this primary family group for ALL his life aside from 2-3 week vacations, illnesses of mother, visits of grandmother, etc.	
36. Child is regularly included in family's recreational hobby.		**VII. PHYSICAL ENVIRONMENT**	
37. Family provides lessons or organizational membership to support child's talents (especially Y membership, gymnastic lesson, Art Center, etc.)		52. Child's room has a picture or wall decoration appealing to children.	
38. Child has ready access to at least two pieces of playground equipment in the immediate vicinity.		53. *(O) The interior of the house/apartment is not dark or perceptually monotonous.	
39. Child has access to a library card, and family arranges for child to go to library once a month.		54. *(O) In terms of available floor space, the rooms are not overcrowded with furniture.	
40. Family member has taken child, or arranged for child to go to a scientific, historical or art museum within the past year.		55. *(O) All visible rooms of the house are reasonably clean and minimally cluttered.	
41. Family member has taken child, or arranged for child to take a trip on a plane, train, or bus within the past year.		56. *(O) There is at least 100 square feet of living space per person in the house.	
VI. FAMILY COMPANIONSHIP		57. *(O) House is not overly noisy – TV, shouts of children, radio, etc.	
42. Family visits or receives visits from relatives or friends at least once every other week.		58. *(O) Building has no potentially dangerous structural or health defects (e.g., plaster coming down from ceiling, stairway with boards missing,	
43. Child has accompanied parent on a family business venture 3-4 times within the past year; e.g., to garage, clothing shop, appliance repair		59. *(O) Child's outside play environment appears safe and free of hazards. (No outside play area requires an automatic NO)	
44. Family member has taken child, or arranged for child to attend some type of live musical or theatre performance.			
45. Family member has taken child, or arranged for child to go on a trip of more than 50 miles from his home. (50 miles radial distance, not total distance)			

Third Grade Father/Child Interaction Task
Coding Form

CHILD ID # _____ TAPE # _____

CODER # _____

1 = Very Low
2 = Low
3 = Moderately Low
4 = Moderate
5 = Moderately High
6 = High
7 = Very High
9 = Uncodeable/missing

TASK # 1

Father Ratings

1. Supportive Presence	1	2	3	4	5	6	7	9
2. Respect for Child Autonomy	1	2	3	4	5	6	7	9
3. Stimulation of Cognitive Development	1	2	3	4	5	6	7	9
4. Quality of Assistance	Was not coded for Task 1							
5. Father Hostility	1	2	3	4	5	6	7	9

Child Ratings

6. Agency	1	2	3	4	5	6	7	9
7. Negativity	1	2	3	4	5	6	7	9
8. Persistence	1	2	3	4	5	6	7	9
9. Affection to Father	1	2	3	4	5	6	7	9

Dyadic Rating

10. Felt Security	1	2	3	4	5	6	7	9

TASK # 2

Father Ratings

1. Supportive Presence	1	2	3	4	5	6	7	9
2. Respect for Child Autonomy	1	2	3	4	5	6	7	9
3. Stimulation of Cognitive Development	1	2	3	4	5	6	7	9
4. Quality of Assistance	1	2	3	4	5	6	7	9

5. Father Hostility	1	2	3	4	5	6	7	9

Child Ratings

6. Agency	1	2	3	4	5	6	7	9
7. Negativity	1	2	3	4	5	6	7	9
8. Persistence	1	2	3	4	5	6	7	9
9. Affection to Father	1	2	3	4	5	6	7	9

Dyadic Rating

10. Felt Security	1	2	3	4	5	6	7	9

OVERALL RATINGS

Father Ratings

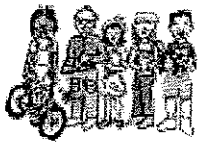
1. Supportive Presence	1	2	3	4	5	6	7	9
2. Respect for Child Autonomy	1	2	3	4	5	6	7	9
3. Stimulation of Cognitive Development	1	2	3	4	5	6	7	9
4. Quality of Assistance	1	2	3	4	5	6	7	9
5. Father Hostility	1	2	3	4	5	6	7	9

Child Ratings

6. Agency	1	2	3	4	5	6	7	9
7. Negativity	1	2	3	4	5	6	7	9
8. Persistence	1	2	3	4	5	6	7	9
9. Affection to Father	1	2	3	4	5	6	7	9

Dyadic Rating

10. Felt Security	1	2	3	4	5	6	7	9



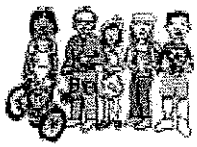
RAISING CHILDREN

This set of questions is about raising children. For each one, circle the answer which shows how you feel about it.

	Definitely No	Mostly No	Mostly Yes	Definitely Yes
1. Do you select chores for your child that your child will be able to do without much difficulty?	1	2	3	4
2. Do you say something positive to your child when he or she does something you like?	1	2	3	4
3. Do you make sure your child obeys you the first time you say something?	1	2	3	4
4. Do you give your child a chance to explain your child's side before punishing him/her?	1	2	3	4
5. Do you make rules which take your child's individual needs into consideration?	1	2	3	4
6. Do you make sure you are strict with your child when it comes to punishment?	1	2	3	4
7. Do you let your child decide what your child's daily schedule will be?	1	2	3	4
8. Do you check the ratings before allowing your child to rent or see a movie?	1	2	3	4
9. Do you let your child eat whatever your child feels like eating?	1	2	3	4
10. Do you allow your child to express any angry feeling your child has toward you freely?	1	2	3	4
11. Do you avoid giving your child chores to do?	1	2	3	4
12. Do you think that a good spanking is sometimes needed to make your child understand?	1	2	3	4
13. Do you think that respect for authority is one of the most important things you can teach your child ?	1	2	3	4
14. Do you let your child go to bed whenever your child feels like it?	1	2	3	4

These questions are about raising children. For each one, please circle the answer that best describes how you feel.

	Definitely No	Mostly No	Mostly Yes	Definitely Yes
15. Do you expect your child to do a good many of the chores in the household every day?	1	2	3	4
16. Do you avoid having rules that your child must follow?	1	2	3	4
17. Do you think spoiling your child would be the worst thing you could do as a parent?	1	2	3	4
18. Do you want your child to question rules that seem unfair?	1	2	3	4
19. Do you let your child watch whatever TV shows your child wants to watch?	1	2	3	4
20. Do you show that you understand your child's feelings when you punish your child for misbehaving?	1	2	3	4
21. Do you drop a rule if your child objects to it?	1	2	3	4
22. Do you expect your child to be quiet and respectful when adults are around?	1	2	3	4
23. Do you explain the reasons for the rules you make?	1	2	3	4
24. Do you spank your child when your child has done something really wrong?	1	2	3	4
25. Do you expect your child to obey you without any questions asked?	1	2	3	4
26. Do you think one of the most important things you can teach your child is respect for the rights of others?	1	2	3	4
27. Do you make sure your child shows you respect?	1	2	3	4
28. Do you think your child will grow up just fine if you usually let your child have his/her way?	1	2	3	4
29. Do you try to help your child control their anger when there are arguments?	1	2	3	4
30. Do you allow your child to see any movie your child wants to see?	1	2	3	4



MY FEELINGS I

These statements describe how people sometimes feel about themselves. Please answer all questions. THERE ARE NO RIGHT OR WRONG ANSWERS. Give your honest opinions and feelings. Please circle the answer that comes closest to describing how often you have felt this way <u>during the past week</u>.

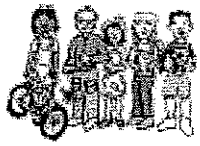
1 = Rarely or none of the time (less than once a week)

2 = Some or a little of the time (1-2 days a week)

3 = Occasionally or a moderate amount of time (3-4 days a week)

4 = Most or all of the time (5-7 days a week)

	Rarely	Some	Occasionally	Most
1. I was bothered by things that usually don't bother me.	1	2	3	4
2. I felt that everything I did was an effort.	1	2	3	4
3. I felt I was just as good as other people.	1	2	3	4
4. I had trouble keeping my mind on what I was doing.	1	2	3	4
5. I felt sad.	1	2	3	4
6. I felt fearful	1	2	3	4
7. I felt lonely.	1	2	3	4
8. I had crying spells.	1	2	3	4
9. I talked less than usual.	1	2	3	4
10. My sleep was restless.	1	2	3	4
11. I enjoyed life.	1	2	3	4
12. I felt that I could not shake off the blues even with the help of my family/friends.	1	2	3	4
13. I thought my life had been a failure.	1	2	3	4
14. I was happy.	1	2	3	4
15. I could not get "going".	1	2	3	4
16. I felt hopeful about the future.	1	2	3	4
17. People were unfriendly to me.	1	2	3	4
18. I did not feel like eating; my appetite was poor.	1	2	3	4
19. I felt depressed.	1	2	3	4
20. I felt that people dislike me.	1	2	3	4

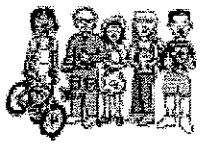


CHILD-PARENT RELATIONSHIP SCALE: SHORT FORM

Please reflect on the degree to which each of the following statements currently applies to your relationship with your child. Using the scale below, circle the appropriate number for each item.

	Definitely Does Not Apply	Not Really	Neutral, Not Sure	Applies Sometimes	Definitely Applies
1. I share an affectionate, warm relationship with my child.	1	2	3	4	5
2. My child and I always seem to be struggling with each other.	1	2	3	4	5
3. If upset, my child will seek comfort from me.	1	2	3	4	5
4. My child is uncomfortable with physical affection or touch from me.	1	2	3	4	5
5. My child values his/her relationship with me.	1	2	3	4	5
6. When I praise my child, my child beams with pride.	1	2	3	4	5
7. My child spontaneously shares personal information	1	2	3	4	5
8. My child easily becomes angry at me.	1	2	3	4	5
9. It is easy to be in tune with what my child is feeling.	1	2	3	4	5

	Definitely Does Not Apply	Not Really	Neutral, Not Sure	Applies Sometimes	Definitely Applies
10. My child remains angry or is resistant after being disciplined.	1	2	3	4	5
11. Dealing with my child drains my energy.	1	2	3	4	5
12. When my child wakes up in a bad mood, I know we're in for a long and difficult day.	1	2	3	4	5
13. My child's feelings toward me can be unpredictable or can change suddenly.	1	2	3	4	5
14. My child is sneaky or manipulative with me.	1	2	3	4	5
15. My child openly shares his/her feelings and experiences with me.	1	2	3	4	5



IDEAS ABOUT RAISING CHILDREN

Here are some statements people have made about rearing and educating children. For each one, please circle the answer that best indicates how you feel.

	Strongly Disagree	Mildly Disagree	Not Sure	Mildly Agree	Strongly Agree
1. Since parents lack special training in education, they should not question the teacher's teaching methods.	1	2	3	4	5
2. Children should be treated the same regardless of differences among them.	1	2	3	4	5
3. Children should always obey the teacher	1	2	3	4	5
4. Preparing for the future is more important for a child than enjoying today.	1	2	3	4	5
5. Children will not do the right thing unless they must	1	2	3	4	5
6. Children should be allowed to disagree with their parents if they feel their own ideas are better.	1	2	3	4	5
7. Children should be kept busy with work and study at home and at school.	1	2	3	4	5
8. The major goal of education is to put basic information into the minds of the children.	1	2	3	4	5
9. In order to be fair, a teacher must treat all children alike.	1	2	3	4	5
10. The most important thing to teach children is absolute obedience to whoever is in authority.	1	2	3	4	5
11. Children learn best by doing things themselves rather than listening to others.	1	2	3	4	5

	Strongly Disagree	Mildly Disagree	Not Sure	Mildly Agree	Strongly Agree
12. Children must be carefully trained early in life or their natural impulses will make them unmanageable.	1	2	3	4	5
13. Children have a right to their own point of view and should be allowed to express it.	1	2	3	4	5
14. Children's learning results mainly from being presented basic information again and again.	1	2	3	4	5
15. Children like to teach other children.	1	2	3	4	5
16. The most important thing to teach children is absolute obedience to parents.	1	2	3	4	5
17. The school has the main responsibility for a child's education.	1	2	3	4	5
18. Children generally do not do what they should unless someone sees to it.	1	2	3	4	5
19. Parents should teach their children that they should be doing something useful at all times.	1	2	3	4	5
20. It's all right for a child to disagree with his/her parents.	1	2	3	4	5
21. Children should always obey their parents.	1	2	3	4	5
22. Teachers need not be concerned with what goes on in a child's home.	1	2	3	4	5
23. Parents should go along with the game when their child is pretending something.	1	2	3	4	5
24. Parents should teach their children to have unquestioning loyalty to them.	1	2	3	4	5

	Strongly Disagree	Mildly Disagree	Not Sure	Mildly Agree	Strongly Agree
25. Teachers should discipline all the children the same	1	2	3	4	5
26. Children should not question the authority of their parents.	1	2	3	4	5
27. What parents teach their child at home is very important to his/her school success.	1	2	3	4	5
28. Children will be bad unless they are taught what is right.	1	2	3	4	5
29. A child's ideas should be seriously considered in making family decisions.	1	2	3	4	5
30. A teacher has no right to seek information about a child's home background.	1	2	3	4	5

—for office use only—
IDENTIFICATION #

CHILD BEHAVIOR CHECKLIST - TEACHER'S REPORT FORM

PUPIL'S AGE	PUPIL'S SEX ☐ Boy ☐ Girl	ETHNIC GROUP OR RACE	PUPIL'S NAME
GRADE	THIS FORM FILLED OUT BY ☐ Teacher (name) _____		
DATE	☐ Counselor (name) _____		SCHOOL
	☐ Other (specify) _____ name:		

PARENTS' TYPE OF WORK (Please be specific—for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)

FATHER'S TYPE OF WORK _____ MOTHER'S TYPE OF WORK _____

I. How long have you known this pupil?

II. How well do you know him/her? ☐ Very Well ☐ Moderately Well ☐ Not Well

III. How much time does he/she spend in your class per week?

IV. What kind of class is it? (Please be specific, e.g., regular 5th grade, 7th grade math, etc.)

V. Has he/she ever been referred for special class placement, services, or tutoring?

☐ No ☐ Don't Know ☐ Yes—what kind and when?

VI. Has he/she ever repeated a grade?

☐ No ☐ Don't Know ☐ Yes—grade and reason

VII. Current school performance—list academic subjects and check appropriate column:

Academic subject	1. Far below grade	2. Somewhat below grade	3. At grade level	4. Somewhat above grade	5. Far above grade
1. _____	☐	☐	☐	☐	☐
2. _____	☐	☐	☐	☐	☐
3. _____	☐	☐	☐	☐	☐
4. _____	☐	☐	☐	☐	☐
5. _____	☐	☐	☐	☐	☐
6. _____	☐	☐	☐	☐	☐

Thomas M. Achenbach, Ph.D.
Center for Children, Youth, & Families
University of Vermont
1 South Prospect St.
Burlington, VT 05401

9/85 Edition

VIII. Compared to typical pupils of the same age:	1. Much less	2. Somewhat less	3. Slightly less	4. About average	5. Slightly more	6. Somewhat more	7. Much more
1. How hard is he/she working?	☐	☐	☐	☐	☐	☐	☐
2. How appropriately is he/she behaving?	☐	☐	☐	☐	☐	☐	☐
3. How much is he/she learning?	☐	☐	☐	☐	☐	☐	☐
4. How happy is he/she?	☐	☐	☐	☐	☐	☐	☐

IX. Most recent achievement test scores (If available):

Name of test	Subject	Date	Percentile or grade level obtained

X. IQ, readiness, or aptitude tests (If available):

Name of test	Date	IQ or equivalent scores

XI. Please feel free to write any comments about this pupil's work, behavior, or potential, using extra pages if necessary

Below is a list of items that describe pupils. For each item that describes the pupil **now or within the past 2 months**, please circle the **2** if the item is **very true** or **often true** of the pupil. Circle the **1** if the item is **somewhat** or **sometimes true** of the pupil. If the item is **not true** of the pupil, circle the **0**. Please answer all items as well as you can, even if some do not seem to apply to this pupil.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 1. Acts too young for his/her age
0 1 2 2. Hums or makes other odd noises in class
0 1 2 3. Argues a lot
0 1 2 4. Fails to finish things he/she starts
0 1 2 5. Behaves like opposite sex
0 1 2 6. Defiant, talks back to staff
0 1 2 7. Bragging, boasting
0 1 2 8. Can't concentrate, can't pay attention for long
0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe):_____
_____
0 1 2 10. Can't sit still, restless, or hyperactive
0 1 2 11. Clings to adults or too dependent
0 1 2 12. Complains of loneliness
0 1 2 13. Confused or seems to be in a fog
0 1 2 14. Cries a lot
0 1 2 15. Fidgets
0 1 2 16. Cruelty, bullying, or meanness to others
0 1 2 17. Daydreams or gets lost in his/her thoughts
0 1 2 18. Deliberately harms self or attempts suicide
0 1 2 19. Demands a lot of attention
0 1 2 20. Destroys his/her own things
0 1 2 21. Destroys property belonging to others
0 1 2 22. Difficulty following directions
0 1 2 23. Disobedient at school
0 1 2 24. Disturbs other pupils
0 1 2 25. Doesn't get along with other pupils
0 1 2 26. Doesn't seem to feel guilty after misbehaving
0 1 2 27. Easily jealous
0 1 2 28. Eats or drinks things that are not food (describe): _____
_____
0 1 2 29. Fears certain animals, situations, or places other than school (describe): _____
_____
0 1 2 30. Fears going to school
0 1 2 31. Fears he/she might think or do something bad
0 1 2 32. Feels he/she has to be perfect
0 1 2 33. Feels or complains that no one loves him/her
0 1 2 34. Feels others are out to get him/her
0 1 2 35. Feels worthless or inferior
0 1 2 36. Gets hurt a lot, accident-prone
0 1 2 37. Gets in many fights
0 1 2 38. Gets teased a lot
0 1 2 39. Hangs around with others who get in trouble
0 1 2 40. Hears things that aren't there (describe):
_____
0 1 2 41. Impulsive or acts without thinking
0 1 2 42. Likes to be alone
0 1 2 43. Lying or cheating
0 1 2 44. Bites fingernails
0 1 2 45. Nervous, high-strung, or tense
0 1 2 46. Nervous movements or twitching (describe):
_____
0 1 2 47. Overconforms to rules
0 1 2 48. Not liked by other pupils
0 1 2 49. Has difficulty learning
0 1 2 50. Too fearful or anxious
0 1 2 51. Feels dizzy
0 1 2 52. Feels too guilty
0 1 2 53. Talks out of turn
0 1 2 54. Overtired
0 1 2 55. Overweight
56. Physical problems without known medical cause:
0 1 2 a. Aches or pains
0 1 2 b. Headaches
0 1 2 c. Nausea, feels sick
0 1 2 d. Problems with eyes (describe): _____
_____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches or cramps
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe): _____
_____

Please see other side

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

0 1 2 57. Physically attacks people
0 1 2 58. Picks nose, skin, or other parts of body (describe): _____
_____
0 1 2 59. Sleeps in class
0 1 2 60. Apathetic or unmotivated
0 1 2 61. Poor school work
0 1 2 62. Poorly coordinated or clumsy
0 1 2 63. Prefers being with older children
0 1 2 64. Prefers being with younger children
0 1 2 65. Refuses to talk
0 1 2 66. Repeats certain acts over and over; compulsions (describe): _____
_____
0 1 2 67. Disrupts class discipline
0 1 2 68. Screams a lot
0 1 2 69. Secretive, keeps things to self
0 1 2 70. Sees things that aren't there (describe):
_____
_____
0 1 2 71. Self-conscious or easily embarrassed
0 1 2 72. Messy work
0 1 2 73. Behaves irresponsibly (describe): _____
_____
0 1 2 74. Showing off or clowning
0 1 2 75. Shy or timid
0 1 2 76. Explosive and unpredictable behavior
0 1 2 77. Demands must be met immediately, easily frustrated
0 1 2 78. Inattentive, easily distracted
0 1 2 79. Speech problem (describe): _____
_____
0 1 2 80. Stares blankly
0 1 2 81. Feels hurt when criticized
0 1 2 82. Steals
0 1 2 83. Stores up things he/she doesn't need (describe):
_____
_____
0 1 2 84. Strange behavior (describe): _____
_____
0 1 2 85. Strange ideas (describe): _____
_____
0 1 2 86. Stubborn, sullen, or irritable
0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot
0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language
0 1 2 91. Talks about killing self
0 1 2 92. Underachieving, not working up to potential
0 1 2 93. Talks too much
0 1 2 94. Teases a lot
0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Seems preoccupied with sex
0 1 2 97. Threatens people
0 1 2 98. Tardy to school or class
0 1 2 99. Too concerned with neatness or cleanliness
0 1 2 100. Fails to carry out assigned tasks
0 1 2 101. Truancy or unexplained absence
0 1 2 102. Underactive, slow moving, or lacks energy
0 1 2 103. Unhappy, sad, or depressed
0 1 2 104. Unusually loud
0 1 2 105. Uses alcohol or drugs (describe): _____
_____
0 1 2 106. Overly anxious to please
0 1 2 107. Dislikes school
0 1 2 108. Is afraid of making mistakes
0 1 2 109. Whining
0 1 2 110. Unclean personal appearance
0 1 2 111. Withdrawn, doesn't get involved with others
0 1 2 112. Worrying

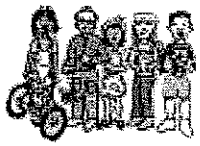
113. Please write in any problems the pupil has that were not listed above:

0 1 2 _____
0 1 2 _____
0 1 2 _____

PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS

Social Skills Rating System (SSRS) – Teacher Reported
(Approximation of Variables from Copyright Protected Form)

1) Controls temper in conflict situation with peers
2) Introduces him/her self to new people without being told
3) Appropriately questions rules that may be unfair
4) Compromises in conflict situations by changing…
5) Responds appropriately to peer pressure
6) Says nice things about him/ her self when appropriate
7) Invites others to join in activities
8) Uses free time in an acceptable way
9) Finishes class assignments within the time limit
10) Makes friends easily
11) Responds appropriately to teasing by peers
12) Controls temper in conflict situations with adults
13) Receives criticism well
14) Initiates conversations with peers
15) Uses time appropriately while waiting for help
16) Produces correct school work
17) Tells when he/ she thinks he/ she was treated unfairly
18) Accepts peer ideas for group activities
19) Gives compliments to peers
20) Follows teacher directions
21) Puts work materials/ school property away
22) Cooperates with peers without prompting
23) Volunteers help to peers with classroom tasks
24) Joins ongoing activities/ group without being told
25) Responds appropriately when pushed/ hit by other child
26) Ignores peer distractions when doing classwork
27) Keeps desk clean/ neat without being reminded
28) Attends to teacher instructions
29) Makes transition from one activity to another
30) Gets along with people who are different
31) Compared with other children, overall academic performance
32) In reading, how does this child compare with others?
33) In math , how does this child compare with others?
34) Grade-level expectations, study child's skills in reading
35) Grade-level expectations, study child's skills in math
36) Study child's overall motivations to succeed academically
37) Study child's parental encouragement to succeed academically
38) Compared with others, study child's intellectual functioning
39) Compared with others, study child's overall classroom behavior.



STUDENT-TEACHER RELATIONSHIP SCALE: SHORT FORM

Please reflect on the degree to which each of the following statements currently applies to your relationship with this student. Using the scale below, circle the appropriate number for each item.

	Definitely Does Not Apply	Not Really	Neutral, Not Sure	Applies Sometimes	Definitely Applies
1. I share an affectionate, warm relationship with this child.	1	2	3	4	5
2. This child and I always seem to be struggling with each other.	1	2	3	4	5
3. If upset, this child will seek comfort from me.	1	2	3	4	5
4. This child is uncomfortable with physical affection or touch from me.	1	2	3	4	5
5. This child values his/her relationship with me.	1	2	3	4	5
6. When I praise this child, he/she beams with pride.	1	2	3	4	5
7. This child spontaneously shares information about himself/herself.	1	2	3	4	5
8. This child easily becomes angry at me.	1	2	3	4	5
9. It is easy to be in tune with what this child is feeling.	1	2	3	4	5
10. This child remains angry or is resistant after being disciplined.	1	2	3	4	5
11. Dealing with this child drains my energy.	1	2	3	4	5
12. When this child wakes up in a bad mood, I know we're in for a long and difficult day.	1	2	3	4	5
13. This child's feelings toward me can be unpredictable or can change suddenly.	1	2	3	4	5
14. This child is sneaky or manipulative with me.	1	2	3	4	5
15. This child openly shares his/her feelings and experiences with me.	1	2	3	4	5

Date _____ RA ID _____ Friend ID _____

Study Child ID _____

FRIENDSHIP QUALITY QUESTIONNAIRE—FRIEND

Now I want to talk about your friendship with FRIEND.

Do you and FRIEND go to the same school? Yes No

If Yes: ***Are you and FRIEND in the same class?*** Yes No

OK, now I'm going to read some statements. When you hear each one, I want you to think about your friendship with FRIEND. Then I want you to tell me how true you think the statement is. But first, let me show you how you're going to answer. (Place response card set in front of child, opened to the first card.)

This card shows the answers you can use to tell me how true the sentences are for you and FRIEND: Not At All True, A Little True, Somewhat True, Mostly True, and Really True (point to the corresponding box as you say each response choice). ***When I say each statement, you can tell me your answer by either pointing to it on the card or saying it out loud.***

This isn't a test, so there are no right or wrong answers. I just want to know what you think about your friendship with FRIEND. Your answers are private—I won't tell anyone what you tell me. PROCEED TO QUESTIONNAIRE ITEMS ON PAGE 2.

AFTER COMPLETING QUESTIONNAIRE ITEMS:

22. Flip to the second response card. ***How is your friendship with FRIEND going? Is it going...*** (point to corresponding boxes on card)
    - **1** ***great***
    - **2** ***good***
    - **3** ***not so good***
    - **4** ***or bad?***

23. Flip to the third response card. ***Is FRIEND your...*** (point)
    - **1** ***best friend***
    - **2** ***a close friend but not your best friend***
    - **3** ***just a friend***
    - **4** ***or someone you don't really know very well?***

24. Flip to the fourth response card. ***How long have you and FRIEND been friends?*** (point)
    - **1** ***6 months or less***
    - **2** ***over 6 months but less than 12 months***
    - **3** ***12 months or more but less than 24 months***
    - **4** ***24 months (2 years) or more***

	Not at all true	A little true	Somewhat true	Mostly true	Really true
1. _____ and I live really close to each other.	1	2	3	4	5
2. _____ and I always sit together at lunch. *If _____ was in my school/class, we would always sit together at lunch.*	1	2	3	4	5
3. _____ and I get mad at each other a lot.	1	2	3	4	5
4. _____ tells me I'm good at things.	1	2	3	4	5
5. If other kids were talking behind my back, _____ would always stick up for me.	1	2	3	4	5
6. _____ and I make each other feel important and special.	1	2	3	4	5
7. _____ and I always pick each other as partners. *If _____ was in my class, we would always pick each other as partners.*	1	2	3	4	5
8. _____ tells me I'm pretty smart.	1	2	3	4	5
9. _____ and I are always telling each other about our problems.	1	2	3	4	5
10. _____ makes me feel good about my ideas.	1	2	3	4	5
11. When I'm mad about something that happened to me, I can always talk to _____ about it.	1	2	3	4	5
12. _____ and I argue a lot.	1	2	3	4	5
13. When I'm having trouble figuring something out, I usually ask _____ for help and advice.	1	2	3	4	5
14. _____ and I always make up easily when we have a fight.	1	2	3	4	5
15. _____ and I fight.	1	2	3	4	5
16. _____ and I loan each other things all the time.	1	2	3	4	5
17. _____ often helps me with things so I can get done quicker.	1	2	3	4	5
18. _____ and I always get over our arguments really quickly.	1	2	3	4	5
19. _____ and I always count on each other for ideas on how to get things done.	1	2	3	4	5
20. _____ doesn't listen to me.	1	2	3	4	5
21. _____ and I tell each other private things a lot.	1	2	3	4	5

Just a couple more questions, CHILD. Go back to Page 1.

Appendix B: Correlations among All Grade 3 Variables

Correlations Among Father Involvement, Mother Involvement, and Family Contextual Factor Variables at Grade 3

	1.	2.	3.	4.	5.	6.
1. G 3 Poor						
2. Mom's Age	-.19**					
3. Low Education Mom	.20**	-.21**				
4. Father Depression	.15**	-.04	.07			
5. Mom Love Rel.	-.11**	-.03	-.02	-.32**		
6. Father Love Rel.	.02	-.12**	-.01	-.51**	.51**	
7. Fa Min/ Week w/ SC	.04	-.04	.06	.08	-.07	-.07
8. Hours/ Wk Fa Works	-.18**	.07	-.06	-.06	-.00	-.02
9. G3 Fa HOME	-.06	.02	-.02	-.12**	.18**	.14**
10. Father Sensitivity	-.13**	.09*	-.01	-.14**	.12**	.10*
11. Father Harsh Control	.16**	-.27**	.11*	-.01	.01	.10*
12. Father Firm Control	.01	.06	.01	-.18**	.04	.15**
13. Father Lax Control	.03	.06	.05	.15**	-.13**	-.16**
14. Fa Total Pos Rel	-.05	.05	-.11*	-.29**	.17**	.30**
15. Fa Beliefs @ Raise	.21**	-.23**	.13**	.14**	-.00	.04
16. Mo Min/ Week w/ SC	.08*	-.02	.02	-.00	.06	.01
17. Hours/ Wk Mom Works	-.14**	-.01	-.05	.02	-.07	-.05
18. Mother Depression	.19**	-.10*	.09*	.24**	-.41**	-.19**
19. Mother Sensitivity	-.19**	.10*	-.09*	-.09*	.16**	.12**
20. Mother Harsh Control	.22**	-.29**	.13**	-.01	.05	.09*
21. Mother Firm Control	.02	.03	.00	-.11*	.18**	.08*
22. Mother Lax Control	.03	.01	-.01	.16**	-.13**	-.08
23. Mother Total Pos Rel.	-.13**	.08	-.13**	-.09*	.30**	.12**
24. Mo Beliefs @ Raise	.26**	-.21**	.19*	.09*	-.05	-.04

	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. G 3 Poor									
2. Mom's Age									
3. Low Education Mom									
4. Father Depression									
5. Mom Love Rel.									
6. Father Love Rel.									
7. Fa Min/ Week w/ SC									
8. Hours/ Wk Fa Works	-.31**								
9. G3 Fa HOME	.01	-.07							
10. Father Sensitivity	-.06	.01	.11**						
11. Father Harsh Control	.05	.02	-.05	-.23**					
12. Father Firm Control	-.07	.06	-.03	.12**	.04				
13. Father Lax Control	.12**	-.11*	-.13**	-.14**	-.19**	-.19**			
14. Fa Total Pos Rel	-.06	.03	.04	.19**	.02	.33**	-.18**		
15. Fa Beliefs @ Raise	.10*	-.09*	-.11**	-.26**	.55**	-.13**	.03	-.05	
16. Mo Min/ Week w/ SC	-.49**	.18**	-.02	.01	-.05	.03	-.01	.01	-.06
17. Hours/ Wk Mom Works	.31**	-.10*	-.04	-.06	.07	.01	.07	.01	.11**
18. Mother Depression	.09*	-.08	-.10*	-.10*	-.00	.03	.09*	-.06	.07
19. Mother Sensitivity	.03	.03	.12**	.34**	-.14**	.09*	-.08*	.20**	-.18**
20. Mother Harsh Control	.04	-.03	-.08	-.18**	.54**	-.06	-.07	.02	.38**
21. Mother Firm Control	-.01	-.01	-.03	.10*	-.05	.18**	.00	.07	-.10
22. Mother Lax Control	.17**	-.10*	-.06	-.08*	-.12**	-.05	.38**	-.06	.03
23. Mother Total Pos Rel.	.04	-.02	.10*	.14**	.04	.07	.02	.43**	.02
24. Mo Beliefs @ Raise	.04	-.13**	-.07	-.19**	.39**	-.10*	.05	-.06	.47**

	16.	17.	18.	19.	20.	21.	22.	23.	24.
1. G 3 Poor									
2. Mom's Age									
3. Low Education Mom									
4. Father Depression									
5. Mom Love Rel.									
6. Father Love Rel.									
7. Fa Min/ Week w/ SC									
8. Hours/ Wk Fa Works									
9. G3 Fa HOME									
10. Father Sensitivity									
11. Father Harsh Control									
12. Father Firm Control									
13. Father Lax Control									
14. Fa Total Pos Rel									
15. Fa Beliefs @ Raise									
16. Mo Min/ Week w/ SC									
17. Hours/ Wk Mom Works	-.58**								
18. Mother Depression	-.01	.03							
19. Mother Sensitivity	.02	.01	-.10*						
20. Mother Harsh Control	-.00	.02	.01	-.28**					
21. Mother Firm Control	.03	-.06	-.06	.12**	.00				
22. Mother Lax Control	-.13**	.14**	.16**	-.01	-.17**	-.12**			
23. Mother Total Pos Rel.	-.05	.07	-.23**	.23**	-.02	.28**	-.03		
24. Mo Beliefs @ Raise	-.01	.02	.14**	-.36**	.58**	-.09*	.03	-.07	1.0

Appendix C: Correlations among All Grade 5 Variables

Correlations Among Father Involvement, Mother Involvement, and Family Contextual Variables at Grade 5

	1.	2.	3.	4.	5.	6.
1. G 3 Poor						
2. Mom's Age	-.19 **					
3. Low Education Mom	.20 **	-.21 **				
4. Father Depression	.04	-.06	.04			
5. Mom Love Rel.	-.04	-.07	.04	-.29 **		
6. Father Love Rel.	.00	-.08	.03	-.53 **	.54 **	
7. Fa Min/ Week w/ SC	.11 *	-.01	.12 **	.13 **	-.10 *	-.05
8. Hours/ Wk Fa Works	-.05	-.01	-.12 **	-.20 **	.08	.06
9. G5 Fa HOME	-.06	.02	-.01	-.17 **	.15 **	.09 *
10. Father Sensitivity	-.10 *	.05	-.05	-.06	.07	.04
11. Father Harsh Control	.16 **	-.27 **	.11 *	-.02	.00	.06
12. Father Firm Control	.01	.06	.01	-.12 **	.01	.09 *
13. Father Lax Control	.03	.06	.05	.17 **	-.10 *	-.13 **
14. Fa Total Pos Rel	-.01	.03	-.07	-.37 **	.19 **	.34 **
15. Fa Beliefs @ Raise	.21 **	-.23 **	.13 *	.11 **	.01	.04
16. Mo Min/ Week w/ SC	.06	-.05	-.05	-.03	.11 *	.00
17. Hours/ Wk Mom Works	-.10 *	.02	-.00	.00	-.04	-.00
18. Mother Depression	.23 **	-.10 *	.08	.17 **	-.44 **	-.19 **
19. Mother Sensitivity	-.15 **	.12 **	-.07	-.10 *	.05	.03
20. Mother Harsh Control	.22 **	-.29 **	.13 **	-.05	.07	.06
21. Mother Firm Control	.02	.03	.00	-.06	.14 **	.04
22. Mother Lax Control	.03	.01	-.01	.13 **	-.08	-.03
23. Mother Total Pos Rel.	-.09 *	.02	-.06	-.18 **	.29 **	.16 **
24. Mo Beliefs @ Raise	.26 **	-.21 **	.19 **	.03	.02	-.06

	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. G 3 Poor									
2. Mom's Age									
3. Low Education Mom									
4. Father Depression									
5. Mom Love Rel.									
6. Father Love Rel.									
7. Fa Min/ Week w/ SC									
8. Hours/ Wk Fa Works	-.28 **								
9. G5 Fa HOME	-.01	-.05							
10. Father Sensitivity	-.11 *	-.03	.11 **						
11. Father Harsh Control	.07	.08	-.05	-.23 **					
12. Father Firm Control	-.04	-.02	-.04	.03	.04				
13. Father Lax Control	.11 *	-.06	-.02	-.06	-.19 **	-.19 **			
14. Fa Total Pos Rel	-.08	.08	.02	.12 **	.01	.32 **	-.20 **		
15. Fa Beliefs @ Raise	.15 **	-.05	-.15 **	-.26 **	.55 **	-.13 **	.03	-.08	
16. Mo Min/ Week w/ SC	-.50 **	.15 **	.10 *	.12 **	.00	.03	-.05	.04	-.07
17. Hours/ Wk Mom Works	.28 **	-.08	-.03	-.08	.04	-.01	.09 *	-.01	.11 *
18. Mother Depression	.08	-.02	-.11 **	-.06	.01	.01	.05	-.10 *	.02
19. Mother Sensitivity	-.06	.04	.03	.32 **	-.22 **	.03	-.13 **	.15 **	-.30 **
20. Mother Harsh Control	.07	.03	-.08	-.19 **	.54 **	-.06	-.07	-.00	.38 **
21. Mother Firm Control	-.03	.01	-.01	.09 *	-.05	.18 **	.00	.08	-.10 *
22. Mother Lax Control	.14 **	-.03	-.0	-.06	-.12 **	-.05	.38 **	-.05	.03
23. Mother Total Pos Rel.	-.04	.08	.04	.14 **	.04	.13 **	-.01	.48 **	-.02
24. Mo Beliefs @ Raise	.10 *	-.04	-.11 *	-.22 **	.39 **	-.10 *	.05	-.07	.47 **

	16.	17.	18.	19.	20.	21.	22.	23.	24.
1. G 3 Poor									
2. Mom's Age									
3. Low Education Mom									
4. Father Depression									
5. Mom Love Rel.									
6. Father Love Rel.									
7. Fa Min/ Week w/ SC									
8. Hours/ Wk Fa Works									
9. G5 Fa HOME									
10. Father Sensitivity									
11. Father Harsh Control									
12. Father Firm Control									
13. Father Lax Control									
14. Fa Total Pos Rel									
15. Fa Beliefs @ Raise									
16. Mo Min/ Week w/ SC									
17. Hours/ Wk Mom Works	-.59 **								
18. Mother Depression	-.02	-.04							
19. Mother Sensitivity	.07	-.09 *	-.11 **						
20. Mother Harsh Control	-.01	.07	-.00	-.25 **					
21. Mother Firm Control	.05	-.04	-.05	.15 **	.00				
22. Mother Lax Control	-.13 **	.14 **	.09 *	-.11 **	-.17 **	-.12 **			
23. Mother Total Pos Rel.	.01	.05	-.30 **	.23 **	-.01	.23 **	-.04		
24. Mo Beliefs @ Raise	.00	.08 *	.08	-.31 **	.58 **	-.09 *	.03	-.10 *	

Appendix D: Child Outcome Variables

Means, Standard Deviations, and Ranges of Imputed Study Child Outcomes: All Grades

Variable	N	Mean	SD	Range
Woodcock Johnson Math				
Grade 1	562	113.91	15.63	73 -163
Grade 3	562	119.38	14.42	72 -151
Grade 5	562	114.04	14.86	39 -173
Woodcock Johnson Reading				
Grade 1	562	113.86	15.22	51 -154
Grade 3	562	113.57	12.25	74 -143
Grade 5	562	110.55	12.56	70 -152
Teacher Report Internalizing				
Grade 2	562	47.45	8.53	36 -73
Grade 3	562	50.17	8.63	36 -73
Grade 4	562	50.09	8.46	36 -79
Grade 5	562	49.52	8.64	36 -87
Grade 6	562	49.03	8.03	36 -78
Teacher Report Externalizing				
Grade 2	562	48.69	7.58	39 -84
Grade 3	562	49.34	8.18	39 -84
Grade 4	562	48.82	7.66	38 -75
Grade 5	562	49.19	7.84	39 -85
Grade 6	562	48.14	7.21	39 -77
Teacher Report Social Skills				
Grade 2	562	107.87	12.97	61 -130
Grade 3	562	104.84	12.76	61 -130
Grade 4	562	105.06	12.15	73 -130
Grade 5	562	105.67	105.67	66 -130
Grade 6	562	105.93	12.11	70 -130
Teacher Report Pos. Relation				
Grade 2	562	66.40	6.55	38 -75
Grade 3	562	64.73	8.00	29 -75
Grade 4	562	64.86	7.28	28 -75
Grade 5	562	63.86	7.47	31 -75
Grade 6	562	62.10	8.21	27 -75
Child Peer Friendship Quality				
Grade 4	562	4.04	0.54	2.15 -5.00
Grade 6	562	4.23	0.51	1.39 -5.00

Appendix E: Descriptive Information for Family Predictor Variables at Grades 3 and 5

Means, Standard Deviations, and Ranges of Imputed Family Contextual Factor Predictor Variables at Grades Three and Five

Variable	N	Mean	SD	Range
Family Poverty				0 = no
Grade 3	562	.11	.32	1 = yes
Maternal Age				
At Study Child's Birth	562	30.13	4.87	18 - 46
Low Education Mom				0= no
Study Child Month One	562	.03	.17	1= yes
Father Depression				
Grade 3	562	7.86	7.55	0 – 44
Grade 5	562	7.73	7.29	0 – 47
Mother Love/ Support Relationship				
Grade 3	562	3.86	.90	1-5
Grade 5	562	3.85	.97	1-5
Father Love/ Support Relationship				
Grade 3	562	3.93	.90	1-5
Grade 5	562	3.92	.88	1-5

Appendix F: Descriptive Information for Maternal Involvement Covariates at Grades 3 and 5

Means, Standard Deviations, and Ranges of Imputed Maternal Involvement Predictor Variables at Grades Three and Five

Variable	N	Mean	SD	Range
Mother Min/Week with SC				
Grade 3	562	611.11	69.65	0 – 1500
Grade 5	562	575.91	314.52	0 – 1215
Mother Hours/ Week At Work				
Grade 3	562	24.51	18.68	0 – 88
Grade 5	562	26.01	18.42	0 – 80
Mother Sensitivity				
Grade 3	562	16.83	2.16	4 – 21
Grade 5	562	16.98	2.10	10– 21
Mother Harsh Control				
Grade 3	562	24.03	3.65	12 – 35
Mother Firm Control				
Grade 3	562	20.86	1.91	16 – 24
Mother Lax Control				
Grade 3	562	14.54	3.09	9 – 24
Total Positive Relationship				
Grade 3	562	63.65	7.27	37 – 75
Grade 5	562	62.60	7.48	40 – 75
Mother Beliefs Raising Child				
Grade 4	562	69.65	15.49	33 – 116
Mother Depression				
Grade 3	562	7.64	7.85	0-43
Grade 5	562	7.75	8.07	0-48

Appendix G: Ethnic Variance

Means, Standard Deviations, and Ranges of Imputed Father Involvement Predictor Variables at Grades Three and Five: Non-White Children

		NON-WHITE SAMPLE		
Variable	**N**	**Mean**	**SD**	**Range**
Fa Min/Week With Child				
Grade 3	**51**	131.33	288.45	0-975
Grade 5	**51**	154.12	331.46	0-1200
Fa Hrs/Wk Work				
Grade 3	**51**	40.53	14.34	0-70
Grade 5	**51**	43.15	14.24	0-78
Fa H.O.M.E.				
Grade 3	**51**	2.15	.76	0-3
Grade 5	**51**	2.07	.84	0-3
Fa Sensitivity				
Grade 3	**51**	16.20	2.54	10-20
Grade 5	**51**	16.60	2.13	10-20
Fa Harsh				
Grade 3	**51**	26.63	4.15	16-35
Fa Firm				
Grade 3	**51**	20.53	2.87	10-24
Fa Lax				
Grade 3	**51**	15.94	3.60	9- 23
Fa Pos. Rel.				
Grade 3	**51**	62.69	7.42	47 – 75
Grade 5	**51**	61.09	7.04	38 - 74
Fa Beliefs Raise				
Grade 4	**51**	84.58	18.89	38-123

Appendix H: Family Poverty and Low Education Mothers

Means, Standard Deviations, and Ranges of Imputed Father Involvement Predictor Variables at Grades Three and Five: Children of Families in Poverty and Non-White Children

	FAMILY POVERTY				LOW-EDUCATION MOTHERS			
Variable	**N**	**Mean**	**SD**	**Range**	**N**	**Mean**	**SD**	**Range**
Fa Min/Wk w/ C								
Grade 3	**64**	113.02	252.83	0-975	**17**	165.00	346.51	0-1020
Grade 5	**64**	153.05	309.80	0- 1200	**17**	231.39	347.13	0-975
Fa Hrs/Wk Work								
Grade 3	**64**	39.14	20.88	0-99	**17**	41.59	26.59	0-110
Grade 5	**64**	42.92	17.84	0-80	**17**	34.95	20.01	0-72
Fa H.O.M.E.								
Grade 3	**64**	2.24	.79	0-3	**17**	2.29	.85	1-3
Grade 5	**64**	2.23	.85	0-3	**17**	2.30	.68	1-3
Fa Sensitivity								
Grade 3	**64**	16.53	2.45	10-21	**17**	17.24	1.86	15-20
Grade 5	**64**	16.63	1.96	11-21	**17**	16.61	1.89	12-19
Fa Harsh								
Grade 3	**64**	26.26	3.54	15-34	**17**	26.88	3.59	22-36
Fa Firm								
Grade 3	**64**	20.61	1.90	17-24	**17**	20.65	1.62	18-24
Fa Lax								
Grade 3	**64**	15.67	3.90	9-23	**17**	16.35	3.30	11-21
Fa Pos. Rel.								
Grade 3	**64**	61.83	6.93	40-75	**17**	58.35	7.05	43-67
Grade 5	**64**	60.82	5.64	46-71	**17**	58.15	5.31	51-69
Fa Beliefs Raise								
Grade 4	**64**	83.74	17.23	45-123	**17**	86.04	15.42	59- 112

Appendix I: Third Grade Outcomes for Boys and Girls Predicted by Father Involvement and when Controlling for Maternal Involvement

Appendix I : Prediction of ***Third Grade*** ***Math and Reading*** *Outcomes from Father Involvement and when Controlling for Mother Involvement at Third Grade*

Variable	***BOYS MATH*** β	***BOYS MATH*** β	***GIRLS MATH*** β	***GIRLS MATH*** β	***BOYS READ*** β	***BOYS READ*** β	***GIRLS READ*** β	***GIRLS READ*** β
(Constant)	18.25	1.11	52.21	60.89	60.63	61.42	31.62	29.19
G3. Family Poverty	-.09 *	-.12 **	-.02	-.01	-.01	.00	-.03	-.01
Maternal Age (at SC Birth)	.04	.06	.10 *	.11 *	.05	.04	.09 **	.09 *
Low Education Mom	.01	-.00	-.04	-.04	.00	-.00	.02	.01
Mother Rel. Closeness	.10	.10	-.02	-.05	.02	.01	-.01	-.01
Father Rel. Closeness	.01	.01	-.01	.01	-.01	-.01	.06	.05
Father Depression	.03	.02	-.10	-.09	-.06	-.07	-.01	.01
G1. WJ Math/ Score	.68 ***	.68 ***	.66 ***	.65 ***	---	---	---	---
G1. WJ Broad Reading Score	---	---	---	---	.73 ***	.72 ***	.79 ***	.80 ***
Father—Harsh Control (G.3)	-.01	-.02	-.01	-.02	-.06	-.01	-.03	-.03
Father – Firm Control (G.3)	-.05	-.06	.01	.02	-.02	-.04	.01	-.01
Father—Lax Control (G.3)	.04	.02	-.03	-.03	-.04	-.04	-.05	-.04
Father—Beliefs Raise Chld (G.4)	.06	.06	.06	-.03	-.10 *	-.10	-.09 *	-.07
Father—Sensitivity	.03	.02	-.06	-.06	-.01	-.04	.02	.03
Father—T.Pos. Rel. w/ SC	.07	.09	-.00	-.03	.03	.02	.05	.10 *
Father—H.O.M.E.	.10 *	.11 *	-.01	-.01	.02	.01	-.06	-.04
Father-- Min/Week S.C.	.01	.04	.03	.03	-.06	-.07	.00	-.01
Father—Hrs/ Wk Work all Jobs	.02	.01	.02	.01	-.01	-.01	-.03	-.03
Mother—Harsh Control (G.3)		.07		.05		-.09		.06
Mother—Firm Control (G.3)		.00		-.06		.00		.04
Mother—Lax Control (G.3)		.06		.00		-.04		.03
Mother—Beliefs Raise (G4)		.03		-.04		-.01		-.10
Mother—Sensitivity		.09		-.02		.11 *		-.03
Mother—T.Pos.Rel. w/ SC		-.06		.07		.02		-.10 *
Mother—Min/ Week SC		.07		-.01		-.01		.01
Mother—Hours/ Wk Work Jobs		-.03		-.02		-.01		.06
Mother—Depression		.02		-.03		.06		-.05
MODEL ADJ R^2	**.50**	**.50**	**.45**	**.44**	**.57**	**.58**	**.69**	**.69**

*** p<.001, ** p< .01, * p< .05

Appendix I: Prediction of ***Third Grade*** ***Internalizing and Externalizing*** *Outcomes from Father Involvement and when Controlling for Mother Involvement at Third Grade*

Variable	***BOYS INTERN.*** β	***BOYS INTERN.*** β	***GIRLS INTERN.*** β	***GIRLS INTERN.*** β	***BOYS EXTERN.*** β	***BOYS EXTERN.*** β	***GIRLS EXTERN.*** β	***GIRLS EXTERN.*** β
(Constant)	70.83		13.08	12.74	33.14		24.27	38.58
G3. Family Poverty	-.03	-.05	.11	.09	.06	.05	.06	.04
Maternal Age (SC Birth)	-.09	-.07	.10	.11	-.02	-.01	.03	.03
Low Education Mom	.05	.04	.03	.03	.00	.02	.13 *	.13 *
Mother Rel. Closeness	.03	.01	.04	.09	.02	.04	.07	.09
Father Rel. Closeness	.08	.08	-.02	-.04	-.11	-.13	.09	.09
Father Depression	-.02	-.02	-.11	-.10	-.08	-.07	.02	.07
G2. Internalizing Score	.18 **	.18 **	.22 ***	.23 ***	---	---	---	---
G2. Externalizing Score	---	---	---	---	.52 ***	.50 ***	.45 ***	.40 ***
Father—Harsh (G.3)	.00	.03	-.02	-.03	.03	.01	.19 **	.20 **
Father – Firm (G.3)	-.06	-.08	.13 *	.13	.04	.03	.01	.01
Father—Lax (G.3)	.00	.01	.08	.10	.06	.03	-.03	.04
Fa—Beliefs Raise (G.4)	-.17 *	-.15	.17 *	.16 *	.00	.05	-.03	-.07
Father—Sensitivity	-.08	-.10	.07	.10	-.16 **	-.14 *	.01	.01
Father—T.Pos. Rel. w/ SC	-.07	-.03	-.01	.06	-.05	-.02	-.14 *	-.07
Father—H.O.M.E.	-.20 **	-.20 **	-.05	-.04	.13 *	.14 *	-.03	-.02
Father-- Min/Week S.C.	.05	.11	-.01	-.05	-.08	-.11	.05	.02
Father—Hrs/ Wk All Jobs	-.02	-.03	-.09	-.08	-.10	-.11 *	-.14 *	-.13 *
Mother—Harsh (G.3)		.00		.07		.09		-.09
Mother—Firm (G.3)		.04		.01		.05		-.02
Mother—Lax (G.3)		.02		.01		.09		-.18 **
Mo—Beliefs Raise (G4)		-.00		-.01		-.11		.12
Mother—Sensitivity		.14 *		-.04		-.08		-.04
Mo—T.Pos.Rel. w/ SC		-.14		-.15		-.08		-.12
Mother—Min/ Week SC		.14		-.08		-.05		-.07
Mo—Hrs/ Wk All Jobs		.02		.03		-.04		.05
Mother—Depression		-.06		.02		-.07		-.04
MODEL ADJ R^2	**.06**	**.07**	**.08**	**.08**	**.33**	**.33**	**.33**	**.35**

*** p<.001, ** p< .01, * p< .05

*Appendix I : Prediction of Third Grade **Social Skills and Teacher Positive Relationship** from Father Involvement and when Controlling for Maternal Involvement Variables at Third Grade*

Variable	***BOYS S. Skills*** β	***BOYS S. Skills*** β	***GIRLS S. Skills*** β	***GIRLS S. Skills*** β	***BOYS Tch Pos*** β	***BOYS Tch Pos*** β	***GIRLS Tch Pos*** β	***GIRLS Tch Pos*** β
(Constant)	24.69	28.61	62.73	46.04	15.87	19.35	42.68	34.27
G3. Family Poverty	.02	.05	-.00	.02	.01	.03	-.07	-.05
Maternal Age (at SC Birth)	.03	.04	-.04	-.04	-.05	-.05	-.07	-.05
Low Education Mom	-.00	-.01	-.09	-.07	-.05	-.03	-.30 ***	-.30 ***
Mother Rel. Closeness	.09	.09	.03	-.06	.08	.08	-.01	-.07
Father Rel. Closeness	-.04	-.04	-.07	-.03	-.05	-.08	-.11	-.09
Father Depression	.07	.07	-.00	-.01	-.05	-.06	-.02	-.03
G2 Social Skills Score	.39 ***	.41 ***	.36 ***	.35 ***	---	---	---	---
G2. Teacher Pos. Relationship Score	---	---	---	---	.27 ***	.28 ***	.22 ***	.19 **
Father—Harsh Control (G.3)	-.01	-.06	-.03	-.06	.02	-.03	.04	-.06
Father – Firm Control (G.3)	.06	.08	-.05	-.06	.07	.11	-.06	-.05
Father—Lax Control (G.3)	.07	.08	-.00	-.06	.05	.06	.01	-.05
Father—Beliefs Raise Chld (G.4)	.00	-.01	-.07	-.07	-.03	.00	-.07	-.07
Father—Sensitivity	.15 *	.16 *	.01	.00	.09	.08	.02	.02
Father—T.Pos. Rel. w/ SC	.06	.06	.14 *	.05	.18 **	.13	.20 **	.11
Father—H.O.M.E.	.12 *	.12 *	.02	.00	.08	.07	.07	.05
Father-- Min/Week S.C.	-.02	-.02	.03	.04	.05	.01	.04	.07
Father—Hrs/ Wk Work all Jobs	-.05	-.03	.13	.12 *	.04	.04	.09	.07
Mother—Harsh Control (G.3)		.06		.03		.10		.29 **
Mother—Firm Control (G.3)		-.09		.08		-.11		-.01
Mother—Lax Control (G.3)		-.04		.12		-.05		.16 *
Mother—Beliefs Raise (G4)		.05		-.02		-.10		-.17 *
Mother—Sensitivity		.01		.01		.04		.02
Mother—T.Pos.Rel. w/ SC		-.01		.17 *		.10		.15 *
Mother—Min/ Week SC		-.02		.06		-.02		.10
Mother—Hours/ Wk Work Jobs		.07		.04		-.02		.04
Mother—Depression		-.02		-.08		.03		-.02
MODEL ADJ R^2	**.20**	**.19**	**.17**	**.19**	**.13**	**.12**	**.20**	**.23**

***p<.001, **p<.01, *p<.05

Appendix I: Prediction of Third Grade Peer Friendship Quality from Father Involvement and when Controlling for Maternal Involvement at Third Grade

Variable	***BOYS PEER FQ*** β	***BOYS PEER FQ*** β	***GIRLS PEER FQ*** β	***GIRLS PEER FQ*** β
(Constant)	2.32	1.76	3.82	4.32
G3. Family Poverty	-.10	-.13	-.04	-.02
Maternal Age (at SC Birth)	-.02	.02	-.04	-.04
Low Education Mom	-.05	-.06	-.01	.00
Mother Rel. Closeness	.09	.11	.01	.00
Father Rel. Closeness	.05	.06	.12	.14
Father Depression	.00	.01	.02	-.01
Father—Harsh Control (G.3)	.03	.00	.02	.02
Father – Firm Control (G.3)	.03	.14	-.00	.03
Father—Lax Control (G.3)	.12	.14	.06	.09
Father—Beliefs Raise Chld (G.4)	.08	.08	-.06	-.06
Father—Sensitivity	.05	.05	-.02	-.06
Father—T.Pos. Rel. w/ SC	.03	.04	.04	-.07
Father—H.O.M.E.	.09	.11	-.01	-.04
Father-- Min/Week S.C.	.09	.11	.03	-.01
Father—Hrs/ Wk Work all Jobs	.08	.07	.01	.00
Mother—Harsh Control (G.3)		.11		-.06
Mother—Firm Control (G.3)		-.00		-.09
Mother—Lax Control (G.3)		-.03		-.13
Mother—Beliefs Raise (G4)		-.01		.02
Mother—Sensitivity		.02		.08
Mother—T.Pos.Rel. w/ SC		-.02		.19 *
Mother—Min/ Week SC		.06		-.14
Mother—Hours/ Wk Work Jobs		.00		-.11
Mother—Depression		.09		.06
MODEL ADJ R^2	**.01**	**.00**	**.04**	**.02**

***p<.001, **p<.01, *p<.05

Appendix J: Fifth Grade Outcomes for Boys and Girls Predicted by Father Involvement and when Controlling for Maternal Involvement

*Appendix J: Prediction of **Fifth Grade Math and Reading** Outcomes from Father Involvement and when Controlling for Mother Involvement at Fifth Grade*

Variable	***BOYS MATH*** β	***BOYS MATH*** β	***GIRLS MATH*** β	***GIRLS MATH*** β	***BOYS READ*** β	***BOYS READ*** β	***GIRLS READ*** β	***GIRLS READ*** β
(Constant)	26.37	35.01	56.78	55.63	35.51	46.80	29.77	
G3. Family Poverty	-.01	.01	-.01	.04	-.01	-.00	-.02	-.01
Maternal Age (at SC Birth)	-.03	-.05	-.00	-.02	-.03	-.05	.04	.03
Low Education Mom	-.04	-.04	-.05	-.06	-.01	-.00	.02	.01
Mother Rel. Closeness	.03	.02	.00	-.03	.04	.04	.02	.01
Father Rel. Closeness	-.00	.01	-.07	-.08	-.06	-.07	-.03	-.02
Father Depression	-.02	-.02	-.08	-.08	-.07	-.07	.07	.09 *
G3. WJ Math Score	.76 ***	.76 ***	.67 ***	.67 ***	---	---	---	---
G3. WJ Broad Reading Score	---	---	---	---	.84 ***	.83 ***	.84 ***	.83
Father—Harsh Control (G.3)	-.06	-.04	-.01	.01	-.05	.01	-.06	-.04
Father – Firm Control (G.3)	-.03	-.03	-.07	-.08	-.03	-.04	-.01	-.02
Father—Lax Control (G.3)	-.09 *	-.04	-.07	-.07	.01	.05	-.06	-.04
Father—Beliefs Raise Chld (G.4)	.06	.07	-.15 **	-.11 *	-.02	.00	-.07	-.08 *
Father—Sensitivity	.06	.05	.04	.03	-.02	-.03	-.04	-.03
Father—T.Pos. Rel. w/ SC	.08	.08	.02	.04	-.05	-.03	-.02	-.02
Father—H.O.M.E.	-.11	-.11 **	.03	.02	-.05	-.06	-.06	-.04
Father-- Min/Week S.C.	-.04	-.03	-.02	.01	.02	.03	-.02	-.08 *
Father—Hrs/ Wk Work all Jobs	-.03	-.03	-.03	-.04	-.03	-.03	.03	.02
Mother—Harsh Control (G.3)		-.06		.04		-.11 **		-.04
Mother—Firm Control (G.3)		-.01		.05		.04		.04
Mother—Lax Control (G.3)		-.11 *		.03		-.07		-.09 *
Mother—Beliefs Raise (G4)		.00		-.13 *		-.05		.02
Mother—Sensitivity		.02		.04		.01		-.02
Mother—T.Pos.Rel. w/ SC		-.00		-.06		-.04		.02
Mother—Min/ Week SC		-.02		.03		-.01		-.03
Mother—Hours/ Wk Work Jobs		.01		.00		-.03		-.03
Mother—Depression		-.02		-.08		-.01		-.04
MODEL ADJ R^2	**.60**	**.60**	**.53**	**.54**	**.70**	**.71**	**.76**	**.77**

*** p<.001, ** p< .01, * p< .05

*Appendix J: Prediction of **Fifth Grade** **Internalizing and Externalizing** Outcomes from Father Involvement and when Controlling for Mother Involvement at Fifth Grade*

	BOYS INTERN.	**BOYS INTERN.**	**GIRLS INTERN.**	**GIRLS INTERN.**	**BOYS EXTERN.**	**BOYS EXTERN.**	**GIRLS EXTERN.**	**GIRLS EXTERN.**
Variable	β	β	β	β	β	β	β	β
(Constant)	55.13	50.54	24.54	26.51	52.74	54.71	36.82	44.96
G3. Family Poverty	.02	-.08	.10	.09	.08	.05	.07	.06
Maternal Age (SC Birth)	-.13 *	-.11	-.01	-.01	-.05	-.05	-.05	-.06
Low Education Mom	-.05	-.08	-.00	.01	.07	.04	.07	.08
Mother Rel. Closeness	-.01	.03	-.03	-.12	.17 **	.13	-.05	-.09
Father Rel. Closeness	-.02	.02	.07	.12	-.27 ***	-.22 **	-.04	-.02
Father Depression	.10	.09	.16	.17 *	-.07	-.05	-.07	-.04
G2. Internalizing Score	.21 **	.18 **	.17 **	.17 **	---	---	---	---
G2. Externalizing Score	---	---	---	---	.41 ***	.40 ***	.51 ***	.48 ***
Father—Harsh (G.3)	-.16 *	-.14	.06	.04	-.05	-.08	.05	.06
Father – Firm (G.3)	-.01	-.04	.04	.03	-.12 *	-.14	-.05	-.06
Father—Lax (G.3)	-.00	-.04	-.01	-.01	-.05	-.07	-.05	-.05
Fa—Beliefs Raise (G.4)	.08	.01	-.05	-.08	.05	-.01	.01	-.06
Father—Sensitivity	-.14 *	-.12	.07	.05	-.08	-.05	-.04	-.03
Father—T.Pos. Rel. w/ SC	.11	.14	.05	.04	.03	.05	.01	.04
Father—H.O.M.E.	.04	.01	.05	.06	.05	.03	.01	.01
Father-- Min/Week S.C.	.06	.15 *	.03	.11	-.07	-.04	-.04	-.01
Father—Hrs/ Wk All Jobs	-.05	-.08	.02	.04	-.12 *	-.11	-.01	-.02
Mother—Harsh (G.3)		-.03		-.10		-.04		-.09
Mother—Firm (G.3)		.11		.04		.13 *		.01
Mother—Lax (G.3)		.09		-.05		-.02		-.06
Mo—Beliefs Raise (G4)		.14		.16		.16 *		.15 *
Mother—Sensitivity		-.10		-.02		-.16 **		-.04
Mo—T.Pos.Rel. w/ SC		-.08		.04		-.03		-.08
Mother—Min/ Week SC		.10		.13		-.02		.12
Mo—Hrs/ Wk All Jobs		-.17 *		-.05		-.08		.12
Mother—Depression		.14		-.11		-.02		-.13 *
MODEL ADJ R^2	**.05**	**.13**	**.01**	**.02**	**.23**	**.26**	**.30**	**.31**

*** p<.001, ** p< .01, * p< .05

*Appendix J : Prediction of Fifth Grade **Social Skills and Teacher Positive Relationship** from Father Involvement at when Controlling for Maternal Involvement Variables at Fifth Grade*

Variable	***BOYS S. Skills*** β	***BOYS S. Skills*** β	***GIRLS S. Skills*** β	***GIRLS S. Skills*** β	***BOYS Tch Pos*** β	***BOYS Tch Pos*** β	***GIRLS Tch Pos*** β	***GIRLS Tch Pos*** β
(Constant)	27.02	44.46	79.75	86.57	19.60	24.00	48.67	41.21
G3. Family Poverty	-.08	-.05	-.05	.00	-.08	-.05	-.12	-.10
Maternal Age (at SC Birth)	.07	.05	-.05	-.05	.02	.01	.00	-.00
Low Education Mom	-.08	-.06	-.08	-.09	-.11 *	-.10	-.05	-.06
Mother Rel. Closeness	-.05	-.03	.10	.13	-.11	-.07	-.02	.02
Father Rel. Closeness	.10	.08	-.02	-.03	.23 **	.20 **	-.00	-.02
Father Depression	.02	.01	.00	-.00	.06	.05	.04	.05
G4 Social Skills Score	.41 ***	.39 ***	.43 ***	.42 ***	---	---	---	---
G4. Teacher Pos. Relationship Score	---	---	---	---	.32 ***	.30 ***	.29 ***	.30 ***
Father—Harsh Control (G.3)	-.02	-.01	-.12	-.11	-.01	.00	-.02	-.02
Father – Firm Control (G.3)	.07	.09	-.04	-.02	.03	.05	-.08	-.07
Father—Lax Control (G.3)	.03	.09	-.02	-.00	.03	.07	-.00	-.05
Father—Beliefs Raise Chld (G.4)	.02	.07	-.07	-.03	-.04	.01	-.08	-.05
Father—Sensitivity	.10	.09	-.01	-.01	.16 **	.14 *	.03	.04
Father—T.Pos. Rel. w/ SC	.05	.04	.03	-.02	.05	.01	.08	.08
Father—H.O.M.E.	.01	.00	-.07	-.07	-.03	-.02	.03	.02
Father-- Min/Week S.C.	-.08	-.08	.04	-.04	.03	-.02	-.04	-.11
Father—Hrs/ Wk Work all Jobs	.04	.04	-.03	-.04	.09	.08	.01	-.01
Mother—Harsh Control (G.3)		.01		.11		-.06		.15
Mother—Firm Control (G.3)		-.11 *		-.07		-.13		.01
Mother—Lax Control (G.3)		-.12		-.02		-.06		.05
Mother—Beliefs Raise (G4)		-.14 *		-.23 **		-.12		-.16
Mother—Sensitivity		.03		.02		.09		.05
Mother—T.Pos.Rel. w/ SC		.04		.10		.10		-.05
Mother—Min/ Week SC		.00		-.17 *		-.06		-.07
Mother—Hours/ Wk Work Jobs		.06		-.01		.06		.14
Mother—Depression		-.00		.08		.06		.04
MODEL ADJ R^2	**.24**	**.25**	**.19**	**.23**	**.21**	**.23**	**.11**	**.14**

***p<.001, **p<.01, *p<.05

Appendix J: *Prediction of **Fifth Grade Peer Friendship Quality** from Father Involvement and when Controlling for Maternal Involvement at Fifth Grade*

	BOYS PEER FQ	***BOYS PEER FQ***	***GIRLS PEER FQ***	***GIRLS PEER FQ***
Variable	β	β	β	β
(Constant)	3.70	3.81	2.21	.63
G3. Family Poverty	-.02	-.03	-.08	-.13
Maternal Age (at SC Birth)	.01	.02	-.03	-.02
Low Education Mom	-.07	-.06	-.05	-.04
Mother Rel. Closeness	-.02	-.03	-.09	-.13
Father Rel. Closeness	-.06	-.07	.12	.15
Father Depression	-.04	-.04	.17 *	.16 *
G. 4 Peer Friendship Quality	.29 ***	.29 ***	.32 ***	.34 ***
Father—Harsh Control (G.3)	-.01	-.03	-.06	-.13
Father – Firm Control (G.3)	-.20	-.24 ***	-.02	-.03
Father—Lax Control (G.3)	.01	.03	.00	-.04
Father—Beliefs Raise Chld (G.4)	-.06	-.05	.04	.06
Father—Sensitivity	-.04	-.04	.09	.08
Father—T.Pos. Rel. w/ SC	.10	.11	.11	.08
Father—H.O.M.E.	.15 *	.12 *	.09	.10
Father-- Min/Week S.C.	.01	.04	-.04	.01
Father—Hrs/ Wk Work all Jobs	.09	.09	.06	.07
Mother—Harsh Control (G.3)		.01		.11
Mother—Firm Control (G.3)		.15 *		.13 *
Mother—Lax Control (G.3)		-.10		.13 *
Mother—Beliefs Raise (G4)		-.09		.06
Mother—Sensitivity		-.14 *		.05
Mother—T.Pos.Rel. w/ SC		.03		.05
Mother—Min/ Week SC		.09		.10
Mother—Hours/ Wk Work Jobs		.06		-.03
Mother—Depression		.03		.07
MODEL ADJ R^2	**.12**	**.15**	**.11**	**.13**

***p<.001, **p<.01, *p<.05