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Erin Kramer Holmes
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The Dissertation Committee for Erin Kramer Holmes
certifies that this is the approved version of the following dissertation:

Predictors of Observed Dyadic Father-Child Engagement

Committee:

Aletha Huston, Supervisor

Ted Huston, Co-Supervisor

Edward Anderson

Theodore Dix

Rob Palkovitz

Predictors of Observed Dyadic Father-Child Engagement

by

Erin Kramer Holmes, B.S.; M.S.

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Dedication

To Neal and Leila Kramer for always believing in me.

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Predictors of Observed Dyadic Father-Child Engagement

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Based on Hinde's (1979) perspective on parent-child relationships, this study operationalizes fathering as a dyadic process where both father and child actively contribute to the relationship over time. It further addresses the complexity of the father-child relationship as affected by a mix of factors occurring within the family system, and also by community, workplace, and cultural factors.

Using married resident fathers, their wives, and a target child (all participants in the Study of Early Child Care and Youth Development funded by the National Institute of Child Health and Human Development), the links between characteristics of the father (childrearing beliefs, discipline strategies, psychological distress, paternal responsibility for childrearing, and job concerns) and characteristics of the child (sex, birth order, temperament, language skills, social skills, and behavior problems) were examined in connection with the quality of observed dyadic father-child engagement when the child was in first grade. Controls for socio-demographic characteristics (parental education, child ethnicity, and non-maternal income) were included.

Fathers with less adult-centered childrearing beliefs, as well as those who were satisfied with their wives' work situation were more engaged in a positive father-child relationship. Children with better expressive and receptive language skills, and children whose fathers perceived them to have better social skills and higher total behavior problems were more likely to have a positive father-child relationship. Two significant interactions showed that the shared relationship was best understood in the context of the dyad and the family.

Maternal characteristics (depression, employment, and negative beliefs about maternal employment), the observed quality of dyadic mother-child engagement, and perceptions of marital intimacy were also tested as predictors. Maternal full-time employment was negatively associated with father-child dyadic engagement at first grade, while the quality of the mother-child relationship when the child was 54-months-old was positively related to positive father-child dyadic engagement. Wives'

perceptions of marital intimacy approached significance, but husbands' perceptions of marital intimacy did not significantly predict the quality of father-child dyadic engagement.

Father and child characteristics contributed the greatest amount of variance, followed by maternal employment and dyadic mother-child engagement. All results are discussed using a systemic relational perspective.

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INTRODUCTION

Fathering has been linked with children's cognitive ability, academic achievement, social competence, social maturity, self-esteem, and other skills that promote healthy development across the lifespan (Amato & Gilbreth, 1999; Cabrera, Tamis-LeMonda, & Bradley, 2000; Lamb, 1976, 1997; Marsiglio, Amato, Day, & Lamb, 2000; Parke, 2002). Empirical work has further illuminated antecedents of fathering establishing that a family systems approach leads to a greater understanding of men's involvement with their children (NICHD Early Child Care Research Network, 2000; Parke, 2002).

Despite advances in empirical work and theoretical conceptions of fathering, less is understood about the nature of the father-child *relationship*. For example, while scholars theorize that fathering is built upon the cumulative history of interactions between father and child, current research rarely operationalizes fathering in terms of such a dyadic relationship (Holmes, 2005). Instead scholars primarily focus on the father's personality, behaviors, or other characteristics as the measure of his fathering. Bell (1968) and others (Collins & Madsen, 2003; Kuczynski, 2003; Maccoby & Martin, 1983) have questioned this uni-directional approach to parenting research, noting that children invoke parenting behaviors, parents invite child behaviors, and each partner continually influences the other over time. A handful of researchers are beginning to explore the contributions children make to fathering (Flouri, 2004; McBride, Schoppe, & Rane, 2002), but again they are focusing primarily on the ways that individual child characteristics may be linked with individual characteristics of the father (Palkovitz,

Marks, Appleby, & Holmes, 2003). In this paper I define fathering as a *relationship* by including information about both the father and his child in a given set of interactions. Instead of disentangling one person's behaviors from the other, drawing upon behaviors from each in the same interaction should provide a better picture of the dynamic processes that occur between fathers and their children as they create a shared relationship.

Marsiglio et al. (2000) report that over half of the 72 studies on fathering they reviewed collected data from only one source. When the same interaction (or same reporter) is used to assess both the independent variable and the dependent variable, problems of shared method variance occur which can inflate the correlation between variables, causing one to over-estimate the true relationship between constructs. Marsiglio et al. further pointed to a need for longitudinal work and a continued systemic approach to expand current empirical explorations of fathering.

To remedy some of these current weaknesses, I tested a systemic model of the antecedents of father-child interaction that reflects a dyadic process of engagement between a father and his first grade child. The conceptual model is illustrated in Figure 1.

The following questions guide this research:

- (a) What socio-demographic characteristics predict positive father-child engagement?
- (b) What father and child characteristics predict positive father-child engagement?

- (c) How do these father and child characteristics interact to predict positive father-child engagement?
- (d) What maternal characteristics predict positive father-child engagement?
- (e) Does the nature of mother-child dyadic engagement predict positive father-child engagement?
- (f) Do reports of marital intimacy predict positive father-child engagement?

There are four primary strengths of this study. First, father involvement is operationalized as a dyadic process evident in observed father-child interaction. This connects Bell's (1968) seminal work on bi-directional parent-child effects with current work focused specifically on fathering. Second, this work incorporates present knowledge of the multiple predictors of father involvement into one broad systems model. Third, this project includes longitudinal data to account for processes that shape the growing father-child relationship over time. And fourth, a combination of paternal, maternal, and observer reports are used to minimize problems associated with shared method variance present in many fathering studies (Marsiglio, et al., 2000).

Systemic Antecedents of Father-Child Relationships

A systems approach provides a meaningful way to examine the factors that affect fathering as an interpersonal process. Such an approach addresses the roots of father involvement as reflecting a mix of factors that take place within the family system, but also draws attention to community, workplace, and cultural factors outside of the family

that may affect fathering (Belsky, 1984; Belsky & Volling, 1987; Cowan & Cowan, 1987; Day & Lamb, 2004; Doherty et al., 1998; Goldberg, Clarke-Stewart, Rice, & Dellis, 2002; Marsiglio et al., 2000; NICHD Early Child Care Research Network, 2000). Doherty et al. (1998) reviewed a large collection of work on fatherhood and, based on their review, created a systemic conceptual model of responsible fathering. Their model is depicted in Figure 2.

The primary elements of the model are father factors, child factors, mother factors, co-parental factors, and contextual factors. Based on general systems theory, Doherty and his colleagues argue that no one group of characteristics in isolation can adequately predict a father's behaviors, emotions, or commitments to his children. It is only through the interrelations of each of these factors that one can clearly understand the processes within the whole group. They further argue that fathers, more than mothers, are susceptible to pressures from contextual sources within and outside of the family. Though all components of the model (father characteristics, child characteristics, and mother characteristics) are represented by circles of equal size, based on their review of the literature, Doherty et al. (1998) conclude that fathering is particularly influenced by maternal characteristics and co-parenting practices. The model has been widely cited since its inception and has been the base of subsequent tests (Goldberg, et al., 2002; NICHD Early Child Care Research Network, 2000). It also serves as the base for the present study.

Though Doherty et al (1998) emphasize the mother's characteristics and the nature of the co-parental relationship as central predictors of fathering, a relational

perspective on fathering suggests that all family relationships and all individuals in the family will uniquely contribute to the father-child relationship (Lollis & Kuczynski, 1997). A relational perspective expands the systemic model by identifying two less-studied processes within the family system which influence the father-child relationship: a history of interactions within the family over time, and the contributions of both parent *and* child to the relationship (Hinde, 1979; Lollis & Kuczynski, 1997). Based on a relational approach, the current study accounts for the importance of time in relationships by drawing on earlier characteristics of the mother, the child, the mother-child relationship, and the parental marriage to predict the relationship measured at a later time. This study further accounts for the importance of both father and child as agents in creating the relationship by focusing on multiple relational skills present in both father and child. Tests for interactions between father and child characteristics allow one to see how each member of the dyad may affect the other to create the shared relationship.

Below I highlight the empirical work addressing all components of the model, also accentuating the contributions of the current study to the larger body of literature on fathering.

Socio-demographic Characteristics

Parental education levels have consistently been linked with parenting practices. The higher a father's education level, the more likely he is to spend time with his children (Pleck, 1997). Economic concerns have also been shown to affect fathering to a greater extent than mothering, possibly because fathers feel the role of provider to be more central to their fathering responsibilities than mothers do. Psychological distress due to

economic concerns is also associated with both negative parenting behaviors and difficulty in co-parenting (McLoyd, 1990).

Paternal Characteristics

Doherty et al. (1998) include individual characteristics of parents as direct and indirect predictors of fathering. In this study, I focus on four primary individual fathering characteristics: parenting beliefs, psychological distress, responsibility for care, and employment.

Parenting Beliefs

Men's attitudes about childrearing are correlated with fathering. For example, fathers' child-centered beliefs are associated with how much time they spend in play and instrumental care for their infants (Cowan & Cowan, 1988). Further, men who believe that fathering is valuable for child development are more likely to spend time with their children (Fagan & Barnett, 2003; Palkovitz, 1984) and to engage positively when observed in interactions with their infants (Palkovitz, 1984).

Psychological Distress

Belsky (1984) posited that parents' psychological resources would predict the extent to which parents were competent at childcare tasks. Despite interest in parental psychological well-being and considerable research devoted to correlating maternal depressive symptoms with multiple individual and dyadic mother-child outcomes (Cohn & Campbell, 1992; Field, 1992; Tronick, 1989; Zahn-Waxler, Iannotti, Cummings & Denham, 1990), less research has been done to correlate paternal psychological distress with dyadic father-child outcomes (Forbes, Cohn, Allen, & Lewinsohn, 2004).

Researchers have established that a father's general coping ability is correlated with positive fathering behaviors (Grossman, Pollack, & Golding, 1988) and low anxiety and depression predict a father's interaction with his infant (Cox et al., 1989; Levy-Shiff & Israelashvili, 1988). However, paternal depression is most commonly studied in the context of the transition to parenthood and the child's infant or toddler years, leaving little research which addresses the importance of paternal psychological well-being on dyadic father-child relationships with older children.

Responsibility for Childrearing

Father involvement has previously been operationalized as responsibility for the care of one's child. This includes such things as bathing children, feeding children, taking children to doctor's appointments, providing financial support, and committing to meet a child's needs. Increased responsibility for childrearing has been assumed to be a positive characteristic of fathering, however, correlations between responsibility for care and quality of care have been less studied (Palkovitz, 1997). Does increased responsibility for children's care lead to increased relational success in the dyad? Are there circumstances under which increased responsibility might be negatively related to positive father-child engagement?

Employment Characteristics

Paternal employment characteristics influence the amount of involvement fathers have with their children. Coltrane (1996) found that fathers who were employed for more hours were less involved in caregiving than fathers who worked fewer hours. Fathers with prestigious occupations which require greater time and emotional

investment also spend less time with their children than fathers whose occupations are less demanding (Grossman, et al., 1988; Hood, 1993).

Others have found, however, that fathers' work schedules are less related to fathering than other employment characteristics such as employment loss and economic distress. Both the loss of one's job and deep concerns about the economic status of one's family produce declines in men's psychological well-being and involved fathering (Elder, Nguyen, & Caspi, 1985; Elder, Conger, Foster, & Ardel, 1992). The more concern a father has for his family's economic future, the greater his psychological distress and the lower the quality of his interactions with his child.

Despite the knowledge that employment affects fathering, less is understood about the way employment affects fathers' ability to engage their children or watch their children's cues and respond appropriately.

Child Characteristics

Child Sex, Birth Order, and Temperament

Fathering and a large array of child outcomes have been linked for decades. Since Bell (1968) first argued that children also influence parents, child sex, child birth order, and child temperament have been studied as predictors of father involvement. For example, some research has shown fathers participate in childrearing tasks more with sons than with daughters (Barnett & Baruch, 1987; Goldscheider & Waite, 1991; Harris & Morgan, 1991; Lamb, 1977; NICHD Early Child Care Research Network, 2000; Radin, 1994; Volling & Belsky, 1991), but other research finds no significant sex differences in involvement (Marsiglio, 1991; Palkovitz, 1984) or find that fathers are

more sensitive with daughters than with sons (Kelley, Smith, & Green, 1998).

Interactions between child birth order and child sex further suggest that fathers are more likely to be involved with firstborn sons than with firstborn daughters in infancy (Hawkins & Belsky, 1989; Cox, et al., 1999).

Fathers spend more time interacting with difficult infants than they do with easy infants, but the increase in time spent, however, is not necessarily positive for the child. Grych and Clark (1999) found that greater time with more difficult infants generally predicted lower quality interactions. Sirignano and Lachman (1985) discovered that a father's feelings of control during the transition to parenthood decreased when his infant had a difficult temperament and increased when his infant had an easy temperament. The relationship between temperament and father feelings of control is important because during the transition to parenthood feelings of control have been positively associated with fathers' time caring for infants (Cowan & Cowan, 1988). Volling and Belsky (1991) observed less paternal affection and responsiveness toward 9-month-old infants with difficult temperaments. However, Jain, Belsky, and Crnic (1996) and Woodworth, Belsky, and Crnic (1996) did not find effects of infant positive versus negative emotionality on several aspects of fathering.

Child Language Skills and Social Skills

We know much less about how a child's social, behavioral, and language skills help or hinder interactions with a father in the context of a joint relationship. Researchers have previously used father involvement (defined as sensitive interactions and time spent with the child) as a predictor of child social skills and language skills (Easterbrooks &

Goldberg, 1984; MacDonald & Parke, 1986). The child's language and social skills, however, have rarely been studied as predictors of father involvement (McBride, et al., 2002). Theoretically a relational perspective suggests the importance of the child's changing developmental characteristics and abilities as predictors of the relationship, with an emphasis on both parent and child as agents (Collins & Madsen, 2003; Lollis & Kuczynski, 1997).

In a recent study, researchers accounted for one aspect of preschool social skills development—child sociability—and found that such sociability predicted a father's time with his child, his accessibility to the child, and his responsibility for the child's care (McBride, et al., 2002). Further, child sociability and sex interacted in this study such that fathers of highly sociable daughters were significantly more likely to be involved with them than fathers of daughters with low sociability. Fathers of sons, however, did not significantly differ in total father involvement on the basis of sons' sociability (McBride, et al., 2002).

Though language skills have not been explored as predictors of father involvement, research on the connection between emerging language skills and infant/toddler synchrony with mothers has laid some foundation for an exploration with fathers. For example, Schaffer and colleagues (1977) found that by the second year of life, conversational turn-taking between mother and child has been established. By the end of the second year, children's communication skills improve, including more mother-directed talk and more mother-directed gazing. This sophistication in child language and

social skills has the potential to enhance the parent-child relationship and deserves increased empirical attention.

Bronson (1974) also observed infants and mothers through the second year of life and found that mother-infant dyads increased in their efficiency of interaction. Infants learned to signal more clearly to mothers and were observed to be more insistent in maintaining contact with the mother until the mother gave the child what the child needed. At the same time, mothers were observed to increase their responsiveness over time, responding to more infant signals. Bronson concluded that the dyad established a process dependent on the child's increasing developmental skills with the mother, and as a consequence of the infant's increasing ability to sustain her mother's attention and express what was needed, the mother improved her own contact with the baby.

Maternal Characteristics

In their decade review, Marsiglio et al. (2000) noted that individual maternal characteristics outside of maternal beliefs about fathering and maternal employment are seldom included as variables of interest or as controls in fathering studies. According to Belsky's (1984) model of the processes of parenting and Doherty et al's (1998) model of responsible fathering, other maternal characteristics, such as psychological distress and negative beliefs about the influence of maternal employment on children's well-being may account for changes in fathering.

Maternal Depression

Maternal depression has been considered a risk for child emotional and cognitive development (Field, 1992; Zahn-Waxler, Iannotti, Cummings, & Denham, 1990).

Symptoms associated with maternal depression are likely to foster less sensitive and less engaged maternal care, along with more maternal negativity (Cummings & Davies, 1994; DeMulder & Radke-Yarrow, 1991). Lack of sensitive, responsive care along with increased negativity in interactions have been linked with worse infant regulation of negative affect, less child compliance, and less interest in exploring objects (Field, 1992; Tronick, 1989). If maternal depression is associated with decreased infant and child skills, it might also influence the father-child relationship.

Maternal Employment

Maternal employment characteristics, particularly the number of hours worked, have been associated with increases in the time fathers spend caring for their children (Coltrane, 1996; Grych and Clark, 1999; McBride, et al., 2002; NICHD Early Child Care Research Network, 2000; Pleck, 1997). Evidence regarding relations between maternal employment and the quality of fathers' behaviors is mixed. Clarke-Stewart, Gruber, and Fitzgerald (1994) reported that maternal employment was not related to the quality or style of paternal behavior, but was related to fathers' greater involvement in caregiving activities. Belsky (1999), however, found that fathers of firstborn sons provided less sensitive, affectionate, and involved care for their sons during home observations (from 15 through 33 months) when mothers' work hours led to boys being in non-parental care for more hours.

Finally, in their review of the fathering literature, Doherty et al. (1998) concluded that mothers' employment characteristics appear to be more strongly related to father involvement than father's own employment characteristics (Doherty et al., 1998). Is this

true only for time spent with children, or is this also true for a more qualitative joint relational outcome?

Mother-Child Relationship

Although the mother-child relationship is a well-documented correlate of child behaviors, research directly examining how the father-child relationship is affected by the mother-child relationship is sparse (Doherty et al., 1998; Marsiglio, et al., 2000).

Theoretically, however, the connection between the mother-child relationship and particular child skills and behaviors should also influence the father-child relationship.

Researchers have addressed the individual characteristics of fathers in the context of the family system, often including a dynamic comparison of mothers' and fathers' roles. An early example of such work came from Clarke-Stewart (1978) who suggested that the individual behavior of both mother and father differs depending on the family context. She found that mothers were more likely to initiate play with their children when they were alone with the child than when the father was present. Further, Clarke-Stewart (1980), Lamb (1987), and Power and Parke (1982) each found that individual parents within the family system take on distinct roles, with fathers tending to be more involved in social play with children, while mothers are more likely to take on a nurturing role, to engage in more conventional play, and to do more routine household work. Russell and Russell (1987) found that mothers and fathers each assume a similar supervisory role with their children, but mothers tend to take on the role much more than fathers do. In a subsequent study, Bhavnagri and Parke (1991) determined that both mothers and fathers are capable of assuming a supervisory role with their children, but fathers leave the task

to mothers. The effect of the family system on the way men play out individual fathering behaviors has been an important piece of the fathering puzzle.

Because fathers' and mothers' parenting styles may influence their children differently, it is important to consider the influence of the quality of mothers' interactions with their children on the father child relationship. Moreover the quality of mothers' interactions with children predicts specific child qualities such as language skills, behavior problems, or social skills which may enhance the quality of the dyadic interaction between father and child.

Marriage Relationship

Positive Marital Co-Parental Relationships and Father Involvement

A man's relationship with his children can be both positively and negatively related to his relationship with his wife. Marital satisfaction (measured at seven months prior to becoming a parent, six months after becoming a parent, and then 18 months post-partum) was positively correlated with fathers' subsequent time spent in caregiving activities, his satisfaction with parenting, and his stress resulting from parenting (Cowan & Cowan, 1987). Satisfaction with decision-making as a couple and sharing household tasks (considered variables independent of the marital satisfaction measure) were also significant predictors of fathers' involvement across time during the 25 months studied. Cowan and Cowan (1988) later reported strong positive marital relationships were correlated with fathers' identification with the paternal role and fathers' confidence in their childcare skills.

In a sample of 23 mothers and 16 fathers using a combination of survey and interview methods, Frank, Hole, Jacobson, Justkowski, and Huyck (1986) found that good spousal relationships were associated with fathers' positive attitudes and sense of control towards parenting. Finally, Feldman, Nash and Aschenbrenner (1983) confirmed that in their upper middle class, White sample, “the quality of the marital dyad, whether reported by husband or wife, is one of the most consistently powerful predictors of paternal involvement and satisfaction” in their model of antecedents of paternal involvement (p. 1635). In sum, these findings suggest that a close marriage provides a meaningful context for fathers’ increased positive affect toward parenting and childrearing.

Negative Marital Co-Parental Relationships and Father Involvement

All marriages are not high in satisfaction, nor are all marriages close or confiding. Fathers who did not feel emotionally supported by their partners during the transition to parenthood were much more likely to withdraw from their children, scoring significantly lower on participation in childcare tasks than fathers who reported feeling emotional support from their spouse (Berman & Pedersen, 1987). In a meta-analysis of marital conflict and divorce literature, Amato and Keith (1991) reported more negative outcomes for father-child relationships than for mother-child relationships during times of high marital conflict. Effect sizes of high marital conflict for negative father-child outcomes were also larger for fathers than for mothers, suggesting that conflict in marriage may be a stronger predictor of men's parental involvement than women's.

Conceptualizing Father Involvement

While systemic antecedents of father involvement have been widely accepted, conceptions and empirical definitions of father involvement have varied considerably (Day & Lamb, 2004; Palkovitz, 2002; Pleck, 1997). Social scientists continue to refine measures of father involvement, and continue to agree that father involvement is difficult to conceptualize (Day & Lamb, 2004; Marsiglio et al. 2000; Palkovitz, 1997; Palkovitz, 2002; Pleck, 1997). For example, there are many forms of fatherhood status (biological, adoptive, residential, non-residential, and social fathering) (Palkovitz, 2002). Further, father involvement, whatever the fathering status, has both qualitative and quantitative components.

Quantity and Quality

A quantitative conception of involvement has been used most consistently to measure men's participation in childrearing (Pleck, 1997). Fathering behaviors that have been explored include the overall quantity of time a father spends with his child (on weekdays and weekends) in social activities, achievement-oriented activities, father-child play, and caregiving tasks. Studied behaviors also include the amount of fathers' directive verbal behaviors, managerial tasks, and the cumulative financial support a father gives his child (Amato, 1994; Christiansen & Palkovitz, 2001; Finley & Schwartz, 2004; Flouri, Bream, & Buchanan, 2002; Lamb, Pleck, Charnov, & Levine, 1985; MacDonald & Parke, 1984; Pleck, 1997; Radin, 1994; Russell & Russell, 1987; Volling & Belsky, 1992; Yeung, Sandberg, Davis-Kean, & Hofferth, 2001).

To focus on qualitative factors, researchers concentrate their efforts on observational methods and self-report measures that include cognitive and psychological components of fathering. A qualitative conception of involvement focuses less on behavioral modes of interaction and more on qualitative features such as paternal warmth, sensitivity, support, cognitive stimulation, paternal psychological and cognitive factors (for example, self-esteem, masculinity, androgyny, depression, etc.), commitment to parenting and feelings of parental competence, internal conceptions of the fatherhood identity, responsibility, investment in the next generation, the quality of the attachment between father and child, and his role in decision-making regarding children's care (Cowan & Cowan, 1988; Dollahite & Hawkins, 1997; Finley & Schwartz, 2004; Goldberg, et al., 2002; Hawkins & Belsky, 1989; McBride, et al., 2002; Palkovitz, 1997; Rane & McBride, 2000; Snarey, 1993).

Consensus has been reached that both quantitative and qualitative components are important aspects of fathering; focusing on only one or the other makes for an unbalanced argument. To incorporate aspects of each, Lamb, Pleck, Charnov, & Levine (1985) developed a tri-partite conception of father involvement. Their ideas have guided discussions of fathering and shaped the development of father involvement measures to the present time (Day & Lamb, 2004; Doherty, et al., 1998; Pleck, 1997; Radin, 1990; 1994). Lamb, et al. (1985) include paternal engagement/interaction, availability, and responsibility for the child in their model of father involvement. Engagement is one-on-one directed time with the child. When a father is engaged with his child, he is actively playing with, teaching, or caring for his child. Availability is being accessible to one's

child. For example, a father is available when he is indirectly caring for his child by cooking dinner, cleaning the house where the child lives, or working somewhere in the house close to his child. Responsibility is dependability for the care of the child, separate from the other caregiving activities covered in engagement and availability. According to Lamb et al. (1985) responsibility, engagement, and availability are interrelated constructs, thus one cannot be involved with his child over a lifetime if he is only responsible, only engaged, or only available.

An examination of these definitions shows that current ideas about involvement center on discerning distinctions between quantity and quality in the father's individual characteristics, but have yet to consider the importance of a dyadic relational outcome as an important aspect of fathering.

Father Involvement as a Relationship

“Involved fathering across time is a commitment that reflects an ongoing set of decisions that have behavioral, cognitive, and affective components as well as developmental consequences for both fathers and their children across time and contexts” (Palkovitz, 2002, p. 121). Here Palkovitz emphasizes that father involvement is a dynamic relationship where fathers and children make decisions about how they will interact with one another. Their decisions have long-term impacts on father and child behaviors, father and child affect (within and outside the parent-child relationship), and each person's perception of the relationship they share.

Palkovitz goes on to emphasize that "though the father's primary relationship is in regard to one or more children, fathering is significantly affected by other relationships,

most notably to the children's mother, other family members, and other persons" (p. 121-122). Relationships, then, help define what it means to be a father. Though this relational perspective of fathering exists, father involvement has predominantly been operationalized as a complex set of individual characteristics of the father instead of as a relationship created by the mutual interaction of father and child. As a result, scientists do not yet understand what family processes, over time, lead to mutually satisfying *relationships* between father and child.

Relationships exist as a combination of multiple interchanges where each person acts and reacts to the advances of the other (Hinde, 1979; Huston & Robins, 1982). In an interdependent relationship, the benefits and costs of the relationship for each individual depend on both the individual actions of the other and the joint actions they undertake. Thus, the relationship between father and child is likely affected by individual paternal characteristics previously explored, but it is also likely to be the product of the child's feelings and behaviors in the context of that relational setting. Understanding the complexity of the relationship requires a broader notion of involvement that includes not only specific father attributes or perceptions of fathering behavior, but also includes the child as an active contributor to the act of fathering and incorporates the history of exchanges between both partners over time. Measuring fathering as part of a dynamic give-and-take relationship offers the opportunity to account for the effects of both actor and partner on each other.

Summary

With a family systems perspective to frame the study of father involvement, I use a relationships approach to conceptualize father-child interaction. A systems framework implies the importance of studying the interrelatedness of all parts of the family system, but current systems research on father involvement has emphasized family relationships as predictors of individual fathering characteristics, not the father-child relationship. Further, there has been a strong emphasis on the co-parental relationship as a predictor of individual fathering characteristics, with the mother-child relationship being more peripheral. The relationship between fathers and children deserves attention as outcomes of interest in their own right. Models of father involvement would be enhanced by establishing a relationships focus to the father-child relationship itself, not just to the relationships on the perimeter of fathering characteristics and fathering behaviors.

The parent-child relationship is unique because it extends across one's entire lifespan leading to a dynamic, intriguing, process of socialization for both parent and child. Combining a systems framework with a relational perspective further addresses the complex question of how, over time, parents and children continually influence *each other's* behavior, feelings, and thoughts in the context of other systemic influences (Collins & Madsen, 2003; Maccoby, 1992).

METHOD

The Present Study

The conceptual model is presented in Figure 1. In this study I define the father-child relationship as father-child dyadic engagement. The purpose of the study is to

understand the family systemic factors contributing to the quality of the father-child dyadic engagement.

Research Questions for the Present Study

Question 1: What socio-demographic characteristics predict dyadic father-child engagement?

Question 2: What father and child characteristics predict dyadic father-child engagement?

Question 3: How do these father and child characteristics moderate one another?

Question 4: What mother characteristics predict dyadic father-child engagement?

Question 5: Does the nature of the observed mother-child dyadic engagement predict dyadic father-child engagement?

Question 6: Do reports of marital intimacy predict dyadic father-child engagement?

Sample

Participants in the NICHD Study of Early Child Care and Youth Development (SECCYD) were recruited from 10 sites located in or near Little Rock, AR; Orange County, CA; Lawrence, KS; Boston, MA; Philadelphia, PA; Pittsburgh, PA; Charlottesville, VA; Morganton, NC; Seattle, WA; and Madison, WI. During selected 24-hour sampling periods in 1991, 8,986 women were visited in the hospital following their infant's birth. Of these, 5,416 met the eligibility criteria (mother speaks English, mother over 18 years of age, infant healthy, and no plans to move from the area in the coming

year) and agreed to be contacted after their return home from the hospital. A subset of this group was selected for the sample using a stratified random sampling plan that was designed to ensure that at least 10% of the recruited families had mothers who had not graduated from high school, at least 10% were headed by single mothers, and at least 10% had children who were ethnic minorities (i.e., non-white). When infants were 1 month old, 1,364 children (58% of those contacted) were enrolled in the study. The recruited families included 24% ethnic minority children, 11% mothers without a high school education, and 14% single mothers. Of the mothers enrolled, 53% were planning to work full time, 23% were planning to work part time, and 24% were not planning to be employed. The recruited families were similar to the eligible families in the hospitals on these demographic variables, except that mothers in the study were slightly more likely (4%) to report that they expected to be employed than nonparticipating mothers.

In order to study married resident fathers, I used a subset of the SECC sample. Thus, only those married couples in which both father and mother resided in the home from birth through the child's first grade year are included. Despite the use of this subset, the large scale of the study provides an opportunity to use almost 600 observations of mother-child and father-child interaction. Here I am able to build on earlier studies that lacked the large sample and independent measurement available in this study.

Data come from family home visits, self-report questionnaires, and laboratory and home observations. The sub-sample used here includes 586 families whose father completed the interaction task at first grade and was married to and living with their mother from birth through first grade. Only those children living with their biological

father from birth through first grade were included. The children were evenly divided between males and females and were primarily white, non-Hispanic (88%). This subset of families is significantly better educated and has higher incomes when compared to the whole sample. This is expected when one chooses a subset of stably married individuals and excludes single mothers and partnered mothers who are not married. (Partnered mothers were excluded because of their low numbers, $n = 33$, because some partnered mothers may not live with the child's father, and because earlier analyses have shown that these families differ from married couples in socio-demographic characteristics).

Measures

Complete copies of all measures used in this study are available on the NICHD Study of Early Child Care and Youth Development public-use website. The URL for the website is: <http://secc.rti.org>. Accompanying instrument documentation, copies of forms administered to individuals and families in the data collection process, and manuals used to detail data collection procedures are also available via the website.

Socio-Demographic Controls

Paternal and Maternal Education

Mothers reported their own education level and the father's education level during the one-month interview.

Average Non-Maternal Income

Responses over time from 6-54 months (6, 15, 24, 36 and 54 months) were used to calculate a non-maternal income score. The non-maternal income score reflects the average of all income provided by the father and external sources, but excludes income

provided by the mother. Because a fathers' role as income provider to the family may be a particularly salient predictor of his own behaviors in the relationship, the income he provided for his family over time seemed a better predictor than the income provided by both mother and father (Christiansen & Palkovitz, 2001). Further, because economic climate of the family can also be an important predictor of child and family well-being, external sources of funding were included to better reflect the overall income situation of the family. To help decrease problems with skewness and kurtosis, the natural log of non-maternal income was used in these analyses.

Child Race/Ethnicity

Mothers reported child race/ethnicity during the one-month interview. Dummy codes for ethnicity were used with White non-hispanic children as the reference group, and all other ethnicities dummy coded as one.

Independent Variables: Father Characteristics

Parental Attitudes/Beliefs: Childrearing Beliefs

At first grade, fathers' beliefs about child-rearing were measured using The Parental Modernity Scale of Child-rearing and Educational Beliefs (Shaefer & Edgerton, 1985). The 30 items of the questionnaire were scored on a five-point scale from 1 ("Strongly agree") to 5 ("Strongly disagree") yielding a total score and two subscale scores reflecting 1) beliefs favoring self-directed child behavior (child-centered) and 2) beliefs that child behavior should follow adult directives (adult-centered). The total score will be used in the current analyses. Higher total scores indicate adult-centered beliefs

(child behavior should follow adult directives) about raising children. Cronbach's alpha for the total score was .88.

Parental Attitudes/Beliefs: Authoritative Parenting

At first grade, father's discipline strategies were measured using a revision of the Raising Children Checklist (Greenberger & Goldberg, 1989; revised by Shumow, Vandell, & Posner, 1998). The scale was designed to assess harsh, firm, and lax parental discipline strategies, corresponding with authoritarian, authoritative, and permissive parenting style. All items on the questionnaire are scored on a 4-point scale from 1 = "Definitely No" to 4 = "Definitely yes." The firm control subscale was in the current analyses. Higher firm control scores denote firmer and more responsive parental control. Scores on this subscale range from 12 to 24 from a possible 6 to 24.

Psychological Distress: Depression, State Anxiety, and State Anger

At first grade, fathers' depression scores were measured using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a short self-report scale designed to measure depressive symptomatology in the general population. The questionnaire includes 20 statements that describe how people sometimes feel about themselves. Fathers were asked to circle one of four responses that best describe how they felt during the past week. 0 = "Rarely or none of the time" (less than once a week) to 3 = "Most or all of the time" (5-7 days a week). Missing item scores were imputed by proportional weighting (see Appendix A for description of criteria and procedures for proportional weighting). Father's scores ranged from 0 to 50

with higher scores representing higher depressive symptoms. Scores of 16 and above are considered clinically significant for depression. Cronbach's alpha = .86.

At first grade, fathers' state anxiety and anger were measured using Form Y of the State-Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). This questionnaire was designed to measure feelings of anger, annoyance, and negative affect. The state anger items are the state anger items from the State-Trait Anger Scale (Spielberger, Jacobs, Russell, & Crane, 1983). Missing scores were imputed using proportional weighting (see Appendix A). Cronbach's alpha for the state anxiety score was .86. Cronbach's alpha for the state anger score was .90.

Because all scores were correlated above .60, to decrease problems with multicollinearity in the regression analyses a composite reflecting overall psychological distress was created. Higher scores on the composite reflect higher levels of psychological distress.

Responsibility for Childrearing Activities

At first grade, fathers completed a questionnaire designed to measure the proportional frequency of involvement in child-related activities between the mother and the father across a wide variety of tasks. Respondents rated their involvement in 16 child-related activities such as giving the child a bath, taking the child to doctor's visits, supervising the child when friends were over, etc. Items were answered according to a five-point scale with 1 = "My partner's job," 3 = "My partner and I share the job equally," and 5 = "My job." The score was imputed by proportional weighting (see Appendix A). Scores range from 1.07 to 5.0. Higher values denote more involvement by

the father in parenting activities and less involvement by the mother. Cronbach's alpha for this scale was .84.

Employment Characteristics: Job Concerns

At first grade, fathers reported conditions on their job using the self-administered Job-Role Quality scale (Barnett & Marshall, 1991). Any father working eight hours or more a week completed the survey. The measure includes 12 statements related to job concerns and 16 related to job rewards. Respondents indicated whether each statement was true (coded 1) or false (coded 0) as it related to their current job situation. If the item was true, the respondent indicated how much of a concern or reward the item was for them using a scale from 1 = "Not at all a concern/reward" to 4 = "Of extreme concern/reward." If an item did not apply, the respondent circled 5 = "Not applicable." Response values of false or not applicable were recoded to 1 = "Not at all a concern or reward" prior to forming the composites. The total score was used in this study and was computed as the difference between job concerns and job rewards. Higher positive values denoted higher levels of job concerns. Missing items were imputed using proportional weighting. Total scores range from -3 to 2.38, with Cronbach's alpha for the total score was .82.

Employment Characteristics: Satisfaction with Mother's Work Situation

Fathers' satisfaction with mothers' work reflects mothers' responses to the question: "How satisfied is your husband/partner with your current work situation?" Mothers responded on a five-point Likert scale, 1 = "Very dissatisfied," 2 = "Somewhat

dissatisfied,” 3 = “Mixed feelings,” 4 = “Somewhat satisfied,” 5 = “Very satisfied.” This information was gathered during the 36 month standard interview.

Independent Variables: Child Characteristics

Sex

Mothers reported child sex at the one month interview. Two child sex categories were created: male (dummy coded as “1”) and female (dummy coded as “0”).

Birth Order

Child birth order was reported by the mothers at the one-month interview. Two birth order categories were created: firstborn (dummy coded as “1”) and not firstborn (dummy coded as “0”).

Temperament

At the 6-month home visit, mothers completed a modified Infant Temperament Questionnaire (Carey & McDevitt, 1978). Mothers gave their infants an overall temperament rating on a three-point scale, ranging from a score of 1 being “more difficult than average” to a score of 3 being “less difficult than average.” Higher scores reflect a “less difficult than average” temperament.

Language Skills

At 54 months, the Preschool Language Scale–3 (PLS-3) was administered to children to assess vocabulary, grammar, morphology, and language reasoning (Zimmerman, Steiner, & Pond, 1979). The test is comprised of two parts: (a) the auditory comprehension scale that measures what children “know” or understand, but may not

"say," and; (b) the expressive communication scale that assesses what children actually say or produce.

Items are scored "1" for each question if the pass criterion is met or if the child self-corrects a response. A score of "0" is given for each item if the pass criterion is not met or for partially correct or incomplete responses. Raw scores are computed for each subscale by subtracting the number of "0" scores after the "true" basal from the number of the last subscale task administered. The PLS-3 standard total scores have a mean of 100 and a standard deviation of 15. To decrease the number of predictors in the model, I used the total standard score, which is the sum of the auditory and expressive communication scales. The total possible range of scores is 50 to 150; the actual range in this sample is 50 to 137. Higher scores demonstrate a child's greater ability to show what she/he knows but does not say, as well as a greater ability for the child to communicate by saying what she/he understands.

Social Skills

At 54 months mothers and fathers reported on child social skills using the parent form of the Social Skills Rating System (Gresham & Elliot, 1990). Parents rated how often a social behavior occurs on a 3-point scale (0 = "Never," 1 = "Sometimes," 3 = "Very often"). Ratings were completed for four subscales: Cooperation, Assertion, Responsibility, and Self-Control. Cooperation includes behaviors such as helping household members, keeping one's room clean and neat, and using time appropriately. Assertion includes initiating behaviors, such as starting conversations with others, accepting friends' ideas during play, and reporting accidents to appropriate persons. Self-

Control includes behaviors that emerge in conflict situations, such as responding or speaking in an appropriate way, receiving criticisms well, and controlling one's temper. Responsibility includes behaviors that demonstrate ability to communicate with adults and regard for property or work. Total scores were used with higher scores representing better social skills. Cronbach's alpha = .86 for fathers' reports. Cronbach's alpha = .87 for mothers' reports. Separate parent reports were used as the two were not highly correlated ($r = .37, p < .001$).

Behavior Problems

The Child Behavior Check List (CBCL) was used to assess parents' perceptions of the child's total problem behaviors (Achenbach, 1991). Mothers and fathers rated a series of behaviors (100 items) on 3-point scales from 0 = "Not true of the child" to 2 = "Very true of the child." T-scores for the mothers' and fathers' reports of total behavior problems are used. The possible range of scores is from 31 to 100. The actual range for mothers at 54 months was 33 to 74. The actual range of fathers' reports at 54 months is 33 to 99. Higher scores represent the child's greater affinity to display disobedient and aggressive behaviors as well as social withdrawal, sadness, and internalizing behaviors. Since father scores and mother scores are not highly correlated, separate father scores and mother scores were retained ($r = .36, p < .001$).

Though teacher reports of both child social skills and child behavior problems were also collected, parental perceptions of the child were theoretically more valuable from a systems perspective. Within the family system, the interrelations of familial perceptions of other members are a critical to understanding the functioning of the whole

system. With particular emphasis on the father-child relationship observed in the home setting, fathers' own perceptions of their child seemed more central to understanding their behaviors with the child than an outside teacher's perspective of the child in the school context.

Independent Variables: Mother Characteristics

Depression

At 54 months mothers' depression scores were measured using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), as detailed in the earlier section on father characteristics. Mother's scores ranged from 0 to 50 with higher scores representing higher depressive symptomatology. Scores of 16 and above are considered clinically significant for depression. Cronbach's alpha was .91.

Employment Characteristics: Amount of Time Mother Works per Week

Mothers reported the total amount of hours they worked in a given week when their child was 54 months old. Initial analyses used this continuous variable, however, once a linear relationship between maternal employment and the father-child relationship was established, dummy codes were created to represent three mutually exclusive maternal employment groups: little employment (mothers reporting 0 to 9 hours of work each week), part-time employment (mothers reporting 10 to 32 hours of work each week), and full-time employment (mothers reporting 33 hours of work or more each week). The "little employment" group served as the reference group in the reported regression analyses.

Negative Beliefs About Maternal Employment

When the child was one-month-old, the mother completed the Beliefs about the Consequences of Maternal Employment for Children scale (Greenberger, Goldberg, Crawford, & Granger, 1988). The scale addresses the perceived costs and benefits to children of mothers' employment outside the home. These issues are central to mothers' attitudes about their own employment and the effects of maternal employment on children's development. The total score reflecting the difference between the costs of maternal employment and the benefits of maternal employment was used, with higher scores reflecting greater costs of maternal employment to children's development. Cronbach's alpha = .89 for the total score.

Independent Variables: Mother-Child Relationship

Mother-Child Dyadic Positive Engagement

When the child was 54 months old, mothers and children were observed in the laboratory. They were first asked to complete an etch-a-sketch maze where the mother and child each held one knob to assist each other through the maze. Second, they were asked to complete a wooden tower task where each was required to use irregularly shaped blocks in combinations of two, three, or four to reproduce the tower as many times as possible. Third, they were given six hand puppets to play as they would together at home. The tasks, which took 15-20 minutes, were designed to be too difficult for a 4 ½-year-old to accomplish alone (Egeland & Hiester, 1993). They were further designed to assess the child's emotional regulation skills in the dyad, such as the child's ability to inhibit inappropriate behavior and/or affect while attempting to accomplish challenging

tasks with the mother's assistance; assess features of the dyad, such as the mutuality of emotion in the dyad; and assess mother's interactional qualities in the dyad, such as her confidence in her ability to engage her child well and help her child follow-through with the task (see Appendix B for complete coding manual of observational interaction at 54 months).

Trained observers coded the videotapes using seven-point rating scales ranging from very low to very high for each of 13 items. All tapes were coded at a central location by coders who were unacquainted with the family's history. Inter-observer reliability estimates based on repeated measures ANOVA (Winer, 1971) range from .80 to .92.

To reduce the number of predictors in the model and to establish which items best captured the dyadic nature of the interaction, exploratory factor analyses (i.e. principal components extraction with varimax rotation) were conducted (see Table 1). After including all variables except hostility (because it was highly skewed and kurtotic) one primary factor emerged. This primary factor had an eigenvalue of 6.99, accounting for 64% of the variance shared among the factors. With one primary factor accounting for a great amount of variance, I created a simple average score based on those items with factor loadings of .50 or higher on the first factor. These were: child's experience of the session, the goal-directed partnership, affective mutuality, mother's confidence, mother's supportive presence, mother's respect for child autonomy, stimulation of cognitive development, and quality of mother's assistance. As this factor contained scores

representing the child's abilities, the mother's abilities, and aspects of the dyad, the composite score was labeled "mother-child dyadic positive engagement."

Independent Variables: Marital Intimacy

Marital Intimacy

At 54 months, fathers and mothers completed the six-item emotional intimacy subscale of the Personal Assessment of Intimacy in Relationships (PAIR) (Schaefer & Olson, 1981). Items on this subscale were answered on a 5-point scale, with responses ranging from 1 = "Strongly disagree" to 5 = "Strongly agree." Mean scores were computed to give a range from 1 to 5, with higher scores indicating a more positive assessment of the emotional intimacy and support in their marriage. Examples of items include: "My spouse/partner listens to me when I need someone to talk to;" "I often feel distant from my spouse/partner;" "My spouse/partner can really understand my hurts and joys." In this study, the emotional intimacy subscale showed high internal reliability (Cronbach's alpha= .86) and low levels of skewness and kurtosis.

Dependent Variable: Father-Child Relationship

Father-Child Dyadic Engagement

The father-child relationship was assessed during a home interaction when the child was in first grade. The activities included drawing a sailboat together using an Etch-A-Sketch with the father controlling one knob and the child controlling the other to produce the necessary diagonal lines on the sailboat, a geometric block activity where the father and child reproduced geometric designs intended to be too difficult for the first

grader to reproduce on her own, and a “Slap-Jack” card game. The tasks took 15-20 minutes.

The interactions were designed to assess child emotional regulation skills in the dyad such as the child’s ability to inhibit inappropriate affect while attempting to accomplish challenging tasks with the father’s help; assess features of the dyad such as shared affect and the goal-directed partnership; and assess father’s interactional qualities in the dyad such as his confidence in his ability to appropriately engage the child, his ability to promote child autonomy, the nature of his presence as a supportive figure ready to offer aid as he or the child might see fit. (See Appendix B for a complete copy of the coding manual used by the trained observers to assess the father-child interactions during first grade.)

Trained observers coded the videotapes using seven-point rating scales ranging from very low to very high for each of 13 items. All tapes were coded at a central location by coders who were unacquainted with the family’s history. Inter-observer reliability estimates based on repeated measures ANOVA (Winer, 1971) ranged from .71 to .88.

A simple average score of dyadic relationship quality was created based on exploratory factor analyses (i.e. principle components extraction with varimax rotation). Though I expected to find multiple indicators of the father-child relationship, after including all variables except hostility (due to high levels of skewness and kurtosis), one factor with an eigenvalue greater than or equal to 1.0 emerged. This factor had an

eigenvalue of 6.9, accounting for 63% of the variance shared among the factors (see Table 2 for complete list of items and communalities).

This factor was labeled *father-child dyadic positive engagement* and serves as the dependent variable in the present study. The factor includes the following items: child agency, child persistence, child experience of the session, child affection, reflected child negativity, goal directed partnership, affective mutuality, father supportive presence, respect for autonomy, confidence, and quality of assistance.

Analysis Plan

To remedy problems with missing values in the current sample and to estimate coefficients with the least amount of bias, multiple imputation of missing values using the EM Algorithm in SAS were employed. The first step of multiple imputation includes the creation of the imputation model. All terms in the analysis model were included in the imputation model (Schafer, 1997). Based on Rubin's suggestion (1987) the imputation model also included those variables related to the missing values to be estimated, thus data collection site, earlier maternal and child reports of the same variables used in the present model (for example earlier reports of maternal depression), and maternal and paternal age were included in the imputation model. Once the imputation model was created, ten new imputed data sets using random variation and the EM algorithm were generated in SAS. Increasing the number of imputations decreases the amount of uncertainty due to imputation, and based on Rubin's criteria, with 20% missing on the variable "job concerns," ten imputations creates the most efficient use of the EM algorithm.

Next regression models were fit to each imputed data set, and estimates were pooled, combining unstandardized co-efficients across all ten imputations. The pooled standard error and adjusted degrees of freedom take into account uncertainty due to sampling, missingness, and imputation, creating the best estimate of the effects based on the model. Descriptive statistics for the variables used in the sample both before and after imputation are displayed in Table 6. A comparison of results showed that there were no statistically significant differences between means and standard deviations among any of the variables as a result of imputation.

OLS regressions were used to test portions of the model individually; then sets of predictors were added in blocks to test the full model. Standard regression analyses determine the unique contribution of each of the predictor variables to the continuous dependent variable—father-child dyadic interaction—taking into account the interrelations between the predictors. All tests included controls for socio-demographic factors. The order of steps taken in the regression analyses is outlined below.

Model 1: Covariates

The first model tested includes the relation of socio-demographic variables (maternal education, paternal education, child ethnicity, and non-maternal income) to father-child dyadic positive engagement at first grade. Socio-demographic characteristics were retained in all subsequent analyses.

Model 2: Paternal Characteristics

To this first equation, four groupings of paternal characteristics were added: paternal parenting beliefs (childrearing beliefs and attitudes toward discipline),

psychological distress (depression, anger, and anxiety), responsibility for childrearing, and employment characteristics (job satisfaction, and satisfaction with mother's work situation). Because scores on the depression, anxiety, and anger scales were highly positively correlated ($r = .60$ or greater), reports were aggregated into a summary score, using standard scores for each component.

Model 3: Child Characteristics

The following child characteristics were then added: child sex, birth order, temperament, language skills, social skills, and total behavior problems. Based on previous findings that fathers are more engaged with their sons than with their daughters (Goldscheider & Waite, 1991; Harris & Morgan, 1991; Lamb, 1978; Parke, 1978; NICHD Early Child Care Research Network, 2000), I tested interactions between child sex and paternal responsibility for childrearing.

Based on findings that fathers are more involved with their firstborn children than their subsequent children (Cox et al., 1999; Hawkins & Belsky, 1989), further tests for interactions between sex and child birth order were conducted.

Because few other studies have examined the relation between fathering and child language skills, child social skills, or child behavior problems, but a relationship perspective suggests such an association, I also tested the interaction between these child characteristics and two paternal characteristics: paternal traditional childrearing beliefs and paternal responsibility for childrearing.

Model 4: Maternal Characteristics

Maternal characteristics were then added to the equation derived in Model 3. Based on previous literature (Clarke-Stewart, Gruber, & Fitzgerald, 1994; Grych & Clark, 1999) two groupings of maternal characteristics were included: psychological distress (depression) and employment characteristics (number of hours worked per week and negative beliefs about maternal employment).

Once descriptive analyses and previous regressions established a relationship between maternal employment and the father-child relationship, maternal characteristics were added to the full model.

Model 5: Mother-Child Relationship

Next, the mother-child dyadic positive engagement (one aggregate score of both mother and child experiences in the observations) was added to the equation from Model 4.

Though previous researchers have not included the mother-child dyadic relationship as a predictor of father involvement, the conceptual model suggests this is an important predictor. I then added it to the full equation including paternal, child, and maternal variables to determine whether the nature of the mother-child interaction predicts the father-child interaction after considering all other predictors.

Model 6: Marital Intimacy

In the next model, I tested the relationship between marital intimacy and the dyadic father-child relationship. To do this, I added husband and wife reports of marital intimacy to the equation derived in Model 5.

Finally, the marital intimacy reports were added to the equation including paternal, child, maternal, and mother-child relationship variables. Though wife and husband reports of marital intimacy are moderately correlated ($r = .42, p < .000$), each report of marital intimacy was used separately because mother reports of the marital relationship have been found to predict father's responsibility in childrearing activities while father reports did not; father reports of the marital relationship, however, have been found to predict father's sensitivity in interactions with his 36 month old infant, while mother reports did not predict father's sensitivity (NICHD Early Child Care Research Network, 2000).

Though all groups were tested alone with covariates before inclusion in the larger model, only the additive models are presented in Table 7. Intermediate models testing the relationship between covariates and individual groups are available from the author. All results reported use the multiply imputed data sets, thus all are the consequence of ten imputations and subsequent pooling to combine results across imputation (Rubin, 1987; Schafer, 1997). As a result of pooling, *median* reports of the F statistic and *median* reports of the Adjusted R^2 are listed.

Finally, based on McCartney and Rosenthal's (2000) assessment of the importance of accompanying statistical significance tests with effect sizes, the partial correlation (r_p) is provided as an effect size index. The partial correlation represents the linear association between the predictor and dyadic outcome after adjusting for shared variance with other predictors in the model. Effect sizes were calculated using the t-statistic from the pooled estimates across imputation models and the total degrees of

freedom for the full model (McCartney & Rosenthal, 2000). Effect sizes are discussed based on Cohen's (1988) criteria with a partial correlation of $.09 < |r_p| < .19$ representing a small or modest effect, a partial correlation ranging from $.20 < |r_p| < .39$ representing a moderate effect, and a partial correlation $|r_p| < .40$ representing a large effect.

RESULTS

Because all regression estimates were stable across models, the findings from the full model are the primary focus of this report (see Table 7 for results across models). All coefficients are unstandardized with accompanying standard errors.

Sociodemographic Covariates

Four primary covariates were included in all models as factors that might account for the quality of the father-child relationship: maternal education, paternal education, child ethnicity, and the natural log of non-maternal income. While the log of non-maternal income was a significant predictor of the father-child relationship in early models accounting for father and child characteristics, it dropped from significance when mother's characteristics were added to the model, probably because maternal full-time employment accounted for its' effects. Paternal education was significantly associated with the father-child relationship until other father characteristics were added to the model, probably because fathers' traditional childrearing beliefs accounted for its effects. Maternal education and child ethnicity were non-significant across all models. Sociodemographic characteristics accounted for five percent of the variance in the model.

Father and Child Characteristics

Fathers' traditional childrearing beliefs were consistently negatively related to the quality of the father-child relationship across all models, thus men who have more adult-centered beliefs tended to have lower positive engagement with their child. The addition of fathers' traditional childrearing beliefs accounted for the effect of fathers' education levels. Though it was a modest effect, the effect size estimate for fathers' traditional childrearing beliefs was the greatest of all effects in the full model.

The association between fathers' beliefs and dyadic engagement, however, was tempered by fathers' perception of children's social skills, such that fathers who were highly traditional in childrearing beliefs but who also perceived their 54-month-old child to be high in social skills were more likely to have a better relationship with the child (see Figure 3), while highly traditional fathers who perceived their child to be low in social skills were more likely to have low dyadic relationship quality ($b = .001$, $se = .000$, $p < .05$). Fathers with more child-centered beliefs appeared to have better relationships regardless of perceived child social skills. The effect of this interaction was also modest, but ranked among the largest effects tested in the full model.

Fathers' satisfaction with mothers' work and school situation was also positively associated with the quality of dyadic interaction between father and child. Again, this association was tempered by fathers' reported responsibility for childrearing tasks such that fathers with more responsibility for childrearing tasks and less satisfaction for mothers' work situation had lower observed dyadic relationship quality (see Figure 4), while fathers with lower responsibility and higher satisfaction for mothers' work situation

had a higher relationship outcome ($b = -.200$, $se = .094$, $p < .05$). No other father characteristics were significant predictors of the father-child relationship. Father characteristics accounted for an additional six percent of variance in Model 2.

Two child characteristics were significant predictors of the dyadic relationship. Both children's language skills ($b = .006$, $se = .002$, $p < .01$) and fathers' reports of children's total pre-school behavior problems were positively associated with the father-child relationship. Effect size estimates establish that each has a modest effect on the father-child dyadic engagement. Though a positive association between perceived behavior problems and the quality of the relationship may seem counterintuitive, the zero-order correlation between the two was also positive. Subsequent tests of components of total behavior problems (externalizing problems, internalizing problems) demonstrated that a significant positive association between child internalizing problems and the father-child relationship seemed to be driving the result ($b = .008$, $se = .005$, $p < .05$).

Child sex, birth order, temperament, maternal report of child social skills, and maternal report of behavior problems were all non-significant predictors. Though sex has been a predictor in other research using both quantitative and qualitative measures of father involvement (Goldscheider & Waite, 1991; Harris & Morgan, 1991; Lamb, 1978; NICHD Early Child Care Research Network, 2000; Parke, 1978), tests for proposed interactions between sex and birth order were also non-significant here. Further proposed tests for interactions between sex and language skills, sex and social skills, sex and

behavior problems, and sex and father's responsibility for childrearing were also non-significant. Child characteristics added another five percent of variance to Model 3.

Maternal Characteristics

In initial analyses a continuous measure of maternal employment was used. The continuous measure of maternal employment was significantly and negatively related to the father-child relational outcome ($b = -.006$, $se = .002$, $p < .01$). Supposing that the negative correlation between maternal employment and father-child dyadic engagement might be non-linear (e.g. driven by mothers who worked an excessive number of hours per week) I tested a quadratic relation. Results showed no such non-linear relation.

I subsequently created three mutually exclusive dummy coded variables: 1) part-time maternal employment (10-32 hours of employment per week), 2) full-time maternal employment (33 hours or more per week), with the reference group being little employment (9 hours or less per week). The continuous variables were replaced with these dummy codes. The analysis demonstrated that full-time maternal employment predicted lower levels of engagement in the father-child dyad ($b = -.237$, $se = .095$, $p < .05$), while part-time employment did not significantly predict father-child dyadic engagement.

Previous research findings suggest that full-time maternal employment increases the responsibility fathers have for childrearing activities (Clarke-Stewart, Gruber, & Fitzgerald, 1994) but have not established whether or not increased responsibility for children also predicts increased relational quality. Therefore, to further explore the negative relationship between full-time maternal employment at 54 months and the

subsequent father-child relationship at first grade, I conducted post-hoc interaction analyses between maternal full-time employment with father's responsibility for childrearing tasks, father's traditional childrearing beliefs, father's job concerns, and father's satisfaction with mother's work situation. None of the interactions were significant.

Though results for the full model include a positive association between maternal depression and the father-child relationship, this link exists only in the full model and appears to be a spurious result. The zero-order correlation between maternal depression and the father-child relationship is negative, small, and non-significant. The change in sign and increasing significance appears to be due to the associations between maternal depression, maternal education, non-maternal income, and maternal reports of marital intimacy. When these variables are dropped from the model, the coefficient for maternal depression approaches zero and is no longer significant. Finally, mothers' negative beliefs about maternal employment did not significantly predict the father-child relationship.

Mother-Child Relationship Quality

Earlier theoretical work suggested the importance of the quality of the mother-child relationship to the father-child relationship, with some suggesting that maternal characteristics and quality mother-child bonds would be more predictive of the father-child relationship than vice versa (Doherty et al., 1998). Though these were theoretically strong ideas, little empirical work has investigated the associations of each dyad to the other. Results of the current test demonstrated that mother-child dyadic quality observed

when the child was 54 months old was linked with the subsequent quality of the father-child dyadic relationship observed when the child was in first grade ($b = .118$, $se = .039$, $p < .01$). When a mother and her 54 month old child engaged positively the same child and his/her father were more likely to also have positive dyadic engagement by the child's first grade year. Though modest, mother-child dyadic engagement displayed the second highest effect on father-child dyadic engagement after taking into consideration the effects of all other predictors in the full model.

Marital Intimacy

Finally, both the husbands' reports of marital intimacy at 54 months, and the wives' reports of marital intimacy at 54 months were added to the full model. Though the co-parental relationship is often considered an important predictor of fathers' involvement with their children, husbands' reports of the marriage did not predict the dyadic outcome. Wives' reports approached significance ($b=.084$, $se=.048$, $p < .10$), but the effect size estimate was the smallest of all significant effects in the full model.

Post-hoc Tests by Maternal Employment Group

Given the positive relationship between fathers' satisfaction with maternal employment, and fathers' responsibility for childrearing, tempered by the consistently negative association between maternal full-time employment and the father-child relationship, I tested the full model within each of the employment groups to better understand the relationship between maternal employment (little employment, part-time employment, and full-time employment) and the other characteristics of the family system.

Descriptive Statistics

Table 8 lists all descriptive statistics for the three maternal employment groups (little employment, part-time employment, full-time employment, and the full sample). Families where mothers were employed full-time had substantially and significantly lower non-maternal incomes than families with mothers who were primarily at home. Fathers in families where mothers were employed full-time also reported greater responsibility for their children's care and mothers had more positive beliefs that maternal employment benefits children. Aside from these differences, no other statistically significant differences between the families by maternal employment group existed. The dyadic father-child engagement outcome variable did not differ significantly by maternal employment group.

Table 9 displays parameter estimates for the full model within each group, including statistically significant differences between parameter estimates by group.

In families with little maternal employment fathers with high levels of responsibility for childrearing had poorer relationships with their children ($b = -.352$, $se = .165$, $p < .01$). This was primarily true for fathers who were dissatisfied with the mother's work and school situation (see Figure 4). By contrast, for fathers in the part-time and full-time employment groups, those who took more responsibility for child care had better relationships with their children. The parameter estimate for responsibility in the "little employment" group was in the opposite direction and differed significantly from the parameter estimate in the part-time employment ($\Delta b = -.77$, $\Delta se = .27$, $p < .01$), and full-time maternal employment sample ($\Delta b = -.55$, $\Delta se = .24$, $p < .01$).

There were relatively few differences among coefficients for the other predictors. Fathers' reports of job concerns were positively associated with the father-child relationship when mothers worked few hours, but were negatively associated when mothers worked part-time ($\Delta b = .26, \Delta se = .12, p < .05$). In families with little maternal employment, maternal education was positively associated with the father-child relationship, but when mothers were employed full-time, lower levels of maternal education were associated with a better father-child relationship ($\Delta b = .10, \Delta se = .04, p < .05$). Children's social skills were related to positive father-child interaction in families with full-time employed mothers, but not in families with part-time employed mothers ($\Delta b = .03, \Delta se = .01, p < .05$). However, because so many statistical tests were performed between these groups, significant differences at only the $p < .05$ level should be treated with caution, particularly when the differences do not form a pattern or test any prior hypothesis. The probability of a Type I error increases with increasing numbers of statistical comparisons.

DISCUSSION

The results of this study of systemic predictors of father-child dyadic engagement confirmed previous theoretical discussion that fathering is best explained by a multiplicity of family and environmental factors (Doherty et al., 1998), but also went beyond these findings to test the relation of these systemic factors to a dyadic father-child outcome, emphasizing the value of conceptualizing the shared father-child relationship (Holmes, 2005). The strengths of this project include an unprecedented number of observations of the father-child dyad accompanied by longitudinal data and a

combination of observer and parental reports, capturing the process of relationship development between father and child and reducing shared method variance problems in the fathering literature (Marsiglio et al., 2000).

The characteristic of the father with the greatest effect on the father-child relationship was fathers' traditional beliefs about parenting. Fathers with a more adult-centered orientation to childrearing were less likely to engage in a positive dyadic interaction with their first grade child. This finding is consistent with Belsky's process model of parenting suggesting that parenting beliefs will have direct influences on parenting practices. It further expands upon previous research focused on father-infant interaction which demonstrated that a father with greater child-centered beliefs engages more positively with his infant (Palkovitz, 1984) and spends increased time playing with his baby and caring for the baby's needs (Cowan & Cowan, 1988).

What makes this finding even more interesting is the interaction between fathers' traditional childrearing beliefs and perceptions of their children's social skills. It would appear that the dyad functions as a unit, with each member participating in joint processes based not only on the father's initial ideas about how a child should be raised, but also on his perception of his child's ability to cooperate, assert his or her own needs, follow social rules, and show some responsibility for his or her own actions. Child sociability has previously been linked with fathers' increased time with children, accessibility, and reported responsibility for child care (McBride et al., 2002). The present study expands our understanding of children's contributions to parenting practices by not only supporting the claim that children influence fathers' individual

behaviors, but also by establishing that children's skills facilitate interaction in the dyad beyond fathers' own skills. This highlights the importance of examining children's social skills hand-in-hand with parents' skills to enhance our knowledge of family processes within the parent-child relationship.

Children's receptive and expressive language skills predicted increased positive interaction between father and child. Earlier research on mother-child dyads demonstrated that increased sophistication in infant language skills allowed children to express their own needs, and also afforded mothers more opportunity to respond effectively to children's needs (Bronson, 1974; Schaffer et al., 1977). The current study establishes that child language skills continue to predict joint interactions in the dyad as children age, and provides evidence that relations between language skills and parent-child interaction are not exclusive to mother-infant dyads.

Unexpectedly, a child's greater affinity to display social withdrawal, sadness, and internalizing behaviors (as perceived by the father) was positively related with the quality of engagement in the dyad. Perhaps fathers respond more sensitively to children who they think are prone to be withdrawn and display internalizing behaviors. It may well be that not only do children's positive social behaviors and language skills elicit positive engagement between father and child, but also children's increasing need for help in social interaction invites a father to respond more sensitively to children's cues, allowing children to feel more confident in the ability to work well with their father.

Together, both father and child characteristics contributed the greatest amount of variance to the model (Δ Median $R^2 = .11$), with each contributing about equally,

suggesting that work within the family system should continue to place central emphasis on exploring characteristics of both father *and* child as agents in developing a joint relationship.

Because mothers are sometimes viewed as gatekeepers to fathers' interactions with their children, maternal characteristics and attitudes about fathering have often been linked with fathering outcomes (Doherty et al., 1998). Further, because societal expectations of parenting are more clearly defined for mothers than they are for fathers, researchers have argued that mothers' expertise in parenting matters may provide fathers with the needed guidance to successfully navigate parenting. Despite the notion that mothering and fathering are linked, the relation between mother-child dyadic engagement and father-child dyadic engagement has not been widely explored. Results from these analyses demonstrate that positive mother-child dyadic relationships when the child was 4 ½-years-old predicted father-child dyadic relationships at first grade. There is a meaningful connection between mothering and fathering not only based on a mother's attitudes about fathering or her characteristics in the co-parental relationship, but also based on her own interaction with the child. This relation may be capturing a common climate of interaction among family members within the entire system. It may also be that fathers glean skills by observing mother-child interaction and modeling mothering behaviors with the child. Within a social learning framework, it might also be that a child learns how to engage a parent in a positive interaction in one instance and transfers similar skills to subsequent interactions. Observation and coding of micro-interactional processes along with other more qualitative research examining the processes within and

between parent-child dyads could elucidate the connection between mother-child and subsequent father-child dyadic positive engagement.

Contrary to many fathering studies, maternal full-time employment was negatively related to the father-child dyadic engagement. Part-time employment, however, was not significantly related to the father-child relationship. Maternal full-time employment may lead to decreased father-child relationships due to tension spillovers from work to family in the home. In families where mothers were employed full-time, Almeida, Wethington, and McDonald (2001) found that fathers were 79% more likely to experience tension spillover than in families in which mothers did not work full-time. In the same study, when mothers were employed full-time, and fathers also experienced another stressor, fathers were 2.10 times more likely to report tension spillover. Thus, it may be that mothers' full-time work, combined with accumulating strains for fathers, lead to tension for fathers, which then lead to decreased interactional quality in father-child dyads. In the context of a relational perspective on fathers and children, child stress due to fathers' or mothers' pressures, or due to maternal full-time employment may also set a more taxing tone in the family affecting engagement between fathers and their children.

In-depth post-hoc analyses by maternal employment group further illustrated that little employment, part-time employment, and full-time employment create different contexts for interaction within the family system. One striking contrast between groups was the difference in non-maternal income; fathers provide double the income for their families when mothers have low levels of employment than when mothers were

employed full-time. Though stresses associated with fathers' ability to provide well for his family were not measured in the current study, other research has demonstrated that economic stress due to fathers' low wage or job loss predicts decreased positive interactions between fathers and their children, sometimes increasing father withdrawal or father violent behaviors in the family (Elder et al., 1985; Elder et al., 1992). A fathers' economic stress associated with significantly lower earnings within the full-time maternal employment group may contribute to the negative relation between maternal full-time employment and father-child dyadic engagement.

There was also a distinct difference between the effects of fathers' responsibility for childrearing on the father-child dyad in different maternal employment groups. In the whole sample, an interaction between fathers' responsibility and satisfaction with mothers' employment situation emerged, suggesting that low responsibility for care paired with high satisfaction with mothers' employment led to better engagement in the father-child dyad, while high responsibility for care coupled with low satisfaction with wives' employment led to decreased positive outcomes for the dyad (see Figure 4).

When comparing the effects across employment groups for responsibility, satisfaction with the wife's employment situation, and the interaction, a different pattern emerged. For fathers whose wives primarily stay home with their children, increased responsibility for care was linked with decreased father-child engagement when a father was unsatisfied with his wife staying home. It may be that fathers who work full-time filling the primary breadwinner role depend on their wives to fill the role of primary caregiver. When fathers find themselves being called upon to fill both roles, they report

dissatisfaction with their wife's current role and consequently feel some burden at the prospect of filling both the breadwinner and caregiver roles. This overall mis-match between the initial expectation of filling the breadwinner role and the actual need to perform both roles may lead to general dissatisfaction, stress, or overload that would cause decreased engagement in the father-child dyad.

By contrast, when mothers were employed either part-time or full-time, fathers' increased responsibility for their children's care led to increased dyadic engagement. High levels of responsibility along with high satisfaction with wives' employment situation provided an excellent family context for increasingly positive father-child engagement.

Finally, the co-parental marriage has been the focus of much debate among fathering scholars. Research supports a link between co-parenting practices and fathering. For example, using a sample of the fathers from some of the sites in the NICHD study, and focusing on observations of fathers' sensitive behaviors toward their 3-year-old children, the Early Child Care Network discovered a significant relationship between fathers' reports of marital intimacy and sensitivity toward their 36-month-old children (NICHD Early Child Care Network, 2000). However, using married fathers from all ten sites and a more dyadic measure of father-child interaction, fathers' reports of earlier marital intimacy were not significantly related to father-child engagement when the child was in first grade. It may be that conflict in co-parenting and negativity in marriage are stronger predictors of fathering than global reports of marital quality (McBride & Rane, 1998). To understand the comparative importance of the co-parental

relationship versus other family systems predictors, further exploration of distinct aspects of co-parenting and marital processes may be useful.

Caution is also needed in inferring causal direction in these findings. While this study was longitudinal allowing tests of earlier child characteristics, maternal characteristics, observations of the mother-child dyad, and spousal reports of the marriage, some of the fathers' characteristics were not available prior to first grade; thus causal order cannot be fully established. Further, although the sample size of 586 stably married fathers and mothers with a target child allowed for enough power to test a complicated model, one should not generalize these findings beyond stably married families. It is very possible that changes in family structure, changes in the father's residential status, or his biological versus step-father status would change the relations resulting here.

In stably married families, father-child relationships are likely to remain stable over time. Roberts, Block, and Block (1984) found that earlier behavioral involvement with children predicts later involvement, suggesting that there is continuity in fathering behaviors. Because a control for an earlier father-child dyadic outcome is not included in the present study, we do not know if there is continuity in the shared relationship over time. Future research measuring the shared relationship across children's elementary school years and middle school years will need to examine this question of continuity of the processes in the dyad over time.

Despite these limitations, results suggest that fathering researchers should continue to study the shared father-child *relationship* instead of focusing only on

individual fathering behaviors, thoughts, or feelings. It has been assumed by parenting researchers across the years that the parent-child relationship is an influential socializing agent for children (Maccoby & Martin, 1983), yet the nature of the shared relationship between father and child has hardly been examined. How do fathers and children co-construct a relationship which allows children to learn what it means to be a successful relational partner? Do paternal and child perceptions of each other's interaction in the relationship (such as conscientiousness, responsiveness, jealousy, or fault-finding) mediate the association between the father-child relationship and the child's social outcomes? How does each one's reported love for the other, conflict with the other, or commitment for the other affect the continued development of children's relational skills?

With increasing findings that children are active agents in creating a mutual relationship with their parents, current socialization models should expand to ask how the dyadic father-child relationship predicts other aspects of children's development. One might further ask how changes in children's social network as they age continue to impact the father-child relationship.

A systems perspective on fathering provides researchers with information about all parts of the family that are necessary to create a more complete view of family interaction. The addition of a relational approach to the family system allows children to take a more central role in the construction of family systems processes, and emphasizes the need to study dyadic parent-child relationships as outcomes in their own right.

Table 1. Results from Factor Analysis of Observed Mother-Child Interaction At 54 Months

	Factor 1
Child Agency	.30
Reflected Child Negativity	.32
Child Persistence	.29
Child Experience of Session	.57
Mother Supportive Presence	.81
Mother Respect for Autonomy	.61
Mother Stimulation of Cognitive Development	.68
Mother Quality of Assistance	.75
Mother Confidence	.78
Goal-Directed Partnership (dyadic)	.57
Affective Mutuality (dyadic)	.67

Note. Principal Components Extraction with Varimax Rotation

Table 2. Results from Factor Analysis of Observed Father-Child Interaction At First Grade

	Factor 1
Child Agency	.71
Reflected Child Negativity	.44
Child Persistence	.56
Child Experience of Session	.80
Child Affection Toward Father	.71
Father Supportive Presence	.48
Respect for Autonomy	.43
Father Stimulation of Cognitive Development	.39
Father Quality of Assistance	.31
Father Confidence	.45
Goal-Directed Partnership (dyadic)	.67
Affective Mutuality (dyadic)	.71

Note. Principle Components Extraction with Varimax Rotation

Table 3. Correlations of Sociodemographic and Father Characteristics

	1	2	3	4	5	6	7	8	9	10
1. Maternal Education	--									
2. Paternal Education	.55***	--								
3. Ethnicity	-.07	-.06	--							
4. Non-Maternal Income	.26***	.34***	-.11**	--						
5. Traditional Beliefs	-.30***	-.41***	.14***	-.17***	--					
6. Authoritative Parenting	.10**	.09*	.03	.07	-.15***	--				
7. Psychological Distress	-.11**	-.11*	-.08	-.03	.15***	-.13**	--			
8. Responsibility for Childrearing	.04	-.06	.11*	-.22***	.01	.08***	.01	--		
9. Satisfaction w/Mother's Work	.04	.09*	-.09*	.10*	-.03	-.01	-.04	-.02	--	
10. Job Concerns	-.16***	-.16***	-.01	-.06	.07	-.10	.35***	.01	-.01	--

Notes. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4. Correlations of Child, Sociodemographic, and Father Characteristics

	11	12	13	14	15	16	17	18
1. Maternal Education	-.02	.06	.07	.30**	.10*	.13**	-.11**	.04
2. Paternal Education	.01	.01	.06	.31**	.14**	.15**	-.11*	-.15**
3. Ethnicity	.04	-.04	-.06	-.25**	-.13**	.08*	.03	-.03
4. Non-Maternal Income	.00	.04	-.03	.21**	.13**	.023	-.04	-.04
5. Traditional Beliefs	.04	-.04	.02	-.32**	-.06	-.12**	.06	.10*
6. Authoritative Parenting	-.02	.09*	.10*	.13**	.08	.27**	-.06	-.06
7. Psychological Distress	-.06	.00	-.02	-.07	-.13**	-.23**	.14**	.27**
8. Responsibility for Childrearing	.13***	.04	.04	-.08	.02	.05	.03	.04
9. Satisfaction w/Mother's Work	-.09*	.00	.01	.09*	.12**	.12**	-.13**	.07
10. Job Concerns	-.06	-.03	.04	-.08**	-.01	-.15**	.09*	.10*
11. Male	--	.00	.02	-.18**	-.09*	-.13**	-.04	.03
12. Firstborn		--	-.07	.07	.10*	.12**	.09*	.09*
13. Temperament			--	.02	.12**	.06	-.10*	-.09*
14. Language Skills				--	.21**	.21**	-.13**	-.13**
15. Social Skills (Mother)					--	.37**	-.33**	-.15**
16. Social Skills (Father)						--	-.20**	-.22**
17. Behavior Problems (Mother)							--	.36**
18. Behavior Problems (Father)								--

Notes. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5. Correlations of Mother Characteristics, Mother-Child Dyadic Engagement, Marital Intimacy, and Father-Child Dyadic Engagement with All Systems Predictors

	19	20	21	22	23	24	25	26
1. Maternal Education	-.16**	-.13**	-.01	.03	.18**	.07	.05	.12**
2. Paternal Education	-.22**	-.09*	.01	-.08*	.25**	.13**	.13**	.16**
3. Ethnicity	.12**	-.02	-.05	.06	-.11**	-.05	-.01	-.03
4. Non-Maternal Income	-.14**	-.02	.01	-.34**	.14**	.10*	.02	.18**
5. Traditional Beliefs	.11*	.04	-.05	.03	-.17**	-.10*	-.11**	-.27**
6. Authoritative Parenting	.00	.00	-.13**	.05	.02	.07	.21**	.12**
7. Psychological Distress	.13**	-.01	.10*	-.05	-.04	-.22**	-.39**	-.08
8. Responsibility for Childrearing	.02	-.19**	.00	.29**	-.01	.06	.01	-.03
9. Satisfaction w/Mother's Work	-.19**	-.02	-.08*	.01	.04	.11**	-.01	.12**
10. Job Concerns	.11*	.01	.13**	-.06*	-.08	-.09	-.17**	-.07
11. Male	.01	.05	.05	-.01	.01	.10*	.10*	-.06
12. Firstborn	-.01	-.08*	-.03	.03	-.06	.00	.03	.01
13. Temperament	-.09*	-.12**	-.04	.12	.15**	.01	.05	.04
14. Language Skills	-.12**	-.03	-.03	-.05	.27**	.01	.03	.24**
15. Social Skills (Mother)	-.25**	-.06	.07	-.05	.16**	.23**	.12**	.10*
16. Social Skills (Father)	-.15**	.00	-.08*	.06	.13**	.14**	.17**	.17**
17. Behavior Problems (Mother)	.25**	.00	-.06	-.02	-.17**	-.22**	-.06	-.07
18. Behavior Problems (Father)	.09*	-.09*	.06	-.01	-.06	-.04	-.19**	.02
19. Maternal Depression	--	.04	-.01	.00	-.11**	-.40***	-.11**	-.02
20. Negative Beliefs Maternal Employment		--	.10*	-.36***	.02	-.01	.03	.00
21. Maternal Part-Time Work			--	-.48***	.05	.06	-.03	.04
22. Maternal Full-Time Work				--	-.05	-.02	-.02	-.13**
23. Mother-Child Dyadic Engagement					--	.06	.04	.23**
24. Wife Marital Intimacy						--	.39***	.11**
25. Husband Marital Intimacy							--	.07
26. Father-Child Dyadic Engagement								--

Notes. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6. Means (Standard Deviations or Percentages) for Characteristics in Whole Sample Before and After Imputation

Variable	Before Imputation	Percent Missing	After Imputation (N = 586)
Socio-demographic Characteristics			
Mother's Education	15.20 (2.28)	0	15.20 (2.28)
Father's Education	15.31 (2.52)	0	15.31 (2.52)
Non-Maternal Income	\$49,326 (\$51,238)	0	\$49,326 (\$51,238)
Anglo, non-Hispanic	522 (89%)	0	522 (89%)
Father Characteristics			
Traditional Childrearing Beliefs	58.48 (13.46)	5	58.53 (13.50)
Authoritarian Beliefs	21.03 (1.94)	5	21.03 (1.95)
Satisfaction with Mother Work	4.21 (.99)	1	4.21 (.99)
Responsibility for Childrearing	2.50 (.37)	6	2.50 (.37)
Psychological Distress	12.49 (4.51)	6	12.48 (4.50)
Job Concerns	-1.42 (.98)	20	-1.43 (.99)
Child Characteristics			
Boys (%)	293 (50%)	0	293 (50%)
Firstborn (%)	253 (43%)	0	253 (43%)
Temperament	2.66 (0.53)	1	2.66 (0.53)
Language Skills	105.39 (17.47)	6	105.29 (17.55)
Mother Report Social Skills	50.98 (8.56)	1	51.00 (8.56)
Father Report Social Skills	49.94 (8.47)	9	49.94 (8.34)
Mother Report Total Behavior Problems	50.01 (9.17)	1	50.00 (9.17)
Father Report Total Behavior Problems	49.56 (9.29)	7	49.47 (9.19)
Mother Characteristics			
Maternal Depression	8.04 (6.91)	0	8.04 (6.91)
Negative Beliefs about Maternal Employment	-.76 (7.37)	0	-.76 (7.37)
Mother-Child Relationship			
Dyadic Composite	5.14 (0.95)	2	5.14 (.095)
Marriage Relationship			
Mother Report at 54 months	3.84 (.86)	1	3.84 (.86)
Father Report at 54 months	3.99 (.85)	7	3.94 (.85)
Father-Child Relationship (DV)			
Dyadic Composite	5.43 (.87)	0	5.43 (.87)

Note. There were no significant differences between means and standard deviations of the variables after imputation of missing values.

Table 7. Effects of Family Systems Predictors on Dyadic Father-Child Engagement
(*N* = 586)

	Model 1	Model 2	Model 3	Model 4	Model 5	Full Model	Zero-Order Correlation	r_p
Median F	6.89 (4, 585)	6.69 (11, 585)	5.54 (20, 585)	5.16 (24, 585)	3.92 (25, 585)	5.19 (27, 585)	--	--
Median R²	.05	.11	.16	.18	.19	.20	--	--
Δ Median R²	--	.06	.05	.02	.01	.01	--	--
Median Adjusted R²	.04	.10	.13	.15	.16	.16	--	--
Sociodemographic Covariates								
Maternal Education	.008 (.019)	-.002 (.018)	-.018 (.018)	-.013 (.018)	-.013 (.018)	-.012 (.018)	.12**	.027
Paternal Education	.036 (.017)*	.006 (.018)	-.001 (.018)	-.000 (.018)	-.006 (.018)	-.008 (.018)	.16**	.018
Child Ethnicity	-.021 (.114)	.048 (.114)	.107 (.116)	.088 (.116)	.100 (.115)	.109 (.116)	-.03	.039
Non-Maternal Income	.150 (.048)**	.126 (.048)**	.115 (.047)**	.074 (.050)	.069 (.050)	.064 (.050)	.18***	.053
Paternal Characteristics								
Traditional Beliefs	--	-.015 (.003)***	-.014 (.003)***	-.014 (.003)***	-.014 (.003)***	-.013 (.003)***	-.28***	.188
Authoritative Parenting	--	.030 (.019)	.015 (.019)	.014 (.019)	.017 (.019)	.015 (.019)	.11**	.033
Psychological Distress	--	-.003 (.009)	-.003 (.009)	-.004 (.009)	-.004 (.009)	-.001 (.010)	-.09	.005
Responsibility for Childrearing	--	-.012 (.097)	-.009 (.096)	.052 (.100)	.043 (.099)	.031 (.099)	-.04	.013
Satisfaction Mother's Work	--	.083 (.035)*	.067 (.035)*	.078 (.035)*	.080 (.035)*	.078 (.035)*	.12**	.093
Responsibility X Sat. w/Work	--	-.163 (.099)±	-.214 (.095)*	-.221 (.094)*	-.201 (.094)*	-.200 (.094)*		.087
Job Concerns	--	-.030 (.047)	-.036 (.047)	-.046 (.047)	-.041 (.046)	-.042 (.046)	-.07	.038

	Model 1	Model 2	Model 3	Model 4	Model 5	Full Model	Zero-Order Correlation	r_p
Child Characteristics								
Gender	--	--	-.009 (.071)	-.017 (.071)	-.024 (.070)	-.038 (.070)	-.05	.021
Birth Order	--	--	-.054 (.070)	-.049 (.070)	-.033 (.069)	-.031 (.069)	.01	.018
Temperament	--	--	.075 (.065)	.101 (.066)	.071 (.066)	.078 (.066)	.04	.048
Language Skills	--	--	.007 (.002)**	.007 (.002)**	.006 (.002)**	.006 (.002)**	.23***	.108
Social Skills (Mother)	--	--	.001 (.005)	.001 (.005)	-.000 (.005)	-.001 (.005)	.10**	.008
Social Skills (Father)	--	--	.010 (.005)*	.011 (.005)*	.010 (.005)*	.010 (.005)*	.18***	.085
Traditional Beliefs X Social Skills	--	--	.001 (.000)*	.001 (.000)*	.001 (.000)*	.001 (.000)*	.11	.101
Behavior Problems (Mother)	--	--	-.004 (.004)	-.005 (.004)	-.004 (.004)	-.003 (.004)	-.07*	.030
Behavior Problems (Father)	--	--	.011 (.004)*	.011 (.004)*	.010 (.004)*	.010 (.004)*	.03*	.094
Maternal Characteristics								
Depression	--	--	--	.008 (.005)	.008 (.005)	.012 (.006)*	-.02	.085
Negative Beliefs about Maternal Employment	--	--	--	-.002 (.005)	-.003 (.005)	-.003 (.005)	.001	.027
Part-Time Employment	--	--	--	.001 (.093)	-.008 (.092)	-.015 (.092)	.04	.007
Full-Time Employment	--	--	--	-.238 (.096)*	-.238 (.095)*	-.237 (.095)*	-.13***	.102
Mother-Child Relationship								
Dyadic Engagement	--	--	--	--	.117 (.039)**	.118 (.039)**	.23***	.126
Marital Intimacy								
Wife Report	--	--	--	--	--	.084 (.048) _±	.11**	.073
Husband Report	--	--	--	--	--	.009 (.052)	.07	.007

Notes. All estimates are unstandardized with accompanying standard errors in parentheses.

±*p* < .10; **p* < .05; ***p* < .01; ****p* < .001.

Table 8. Means (Standard Deviations or Percentages) for Characteristics by Maternal Employment Group

Variable	At-Home (n = 200)	Part-Time Work (n = 156)	Full-Time Work (n = 230)
Socio-demographic Characteristics			
Mother's Education	15.14 (2.15)	15.15 (2.27)	15.28 (2.40)
Father's Education	15.58 (2.41)	15.35 (2.66)	15.06 (2.49)
Non-Maternal Income	\$69,189 (\$72,758) ^a	\$47,913 (\$38,101)	\$33,283 (\$23,270) ^a
Anglo, non-Hispanic	179 (90%)	143 (92%) ^a	200 (87%) ^a
Father Characteristics			
Traditional Childrearing Beliefs	58.76 (12.62)	57.42 (14.27)	59.10 (13.68)
Authoritarian Beliefs	21.20 (1.96)	20.65 (1.99)	21.15 (.04)
Psychological Distress	12.21 (4.37)	13.19 (4.82)	12.22 (4.34)
Satisfaction with Mother's Work	4.30 (.94)	4.08 (1.04)	4.21 (.98)
Responsibility for Childrearing	2.34 (.36) ^a	2.50 (.35)	2.63 (.34) ^a
Job Concerns	-1.52 (.92)	-1.22 (1.06)	-1.50 (.97)
Child Characteristics			
Boys (%)	95 (48%)	85 (55%)	113 (49%)
Firstborn (%)	86 (43%)	64 (41%)	103 (45%)
Temperament	2.60 (.56)	2.62 (.54)	2.73 (.49)
Language Skills	107.05 (17.41)	104.55 (16.68)	104.26 (18.13)
Social Skills (Mother)	50.84 (8.41)	52.04 (8.40)	50.44 (8.75)
Social Skills (Father)	49.99 (8.55)	48.95 (8.69)	50.57 (7.83)
Behavior Problems (Mother)	51.01 (8.70)	49.00 (9.56)	49.79 (9.21)
Behavior Problems (Father)	48.83 (8.93)	50.43 (9.76)	49.37 (8.96)
Mother Characteristics			
Maternal Depression	8.15 (7.06)	7.88 (6.72)	8.04 (6.91)
Maternal Employment Beliefs	2.13 (6.82) ^a	.42 (7.01)	-4.08 (6.75) ^a
Mother-Child Relationship			
Dyadic Engagement	6.75 (1.22)	6.77 (1.13)	6.59 (1.22)
Marriage Relationship			
Wife Report	3.81 (.86)	3.93 (.83)	3.81 (.87)
Husband Report	4.00 (.87)	3.89 (.81)	3.93 (.85)
Father-Child Relationship			
Dyadic Engagement	5.55 (.78)	5.57 (.76)	5.29 (.89)

Note. Similar superscripts denote a statistical difference between groups at $p < .05$.

Table 9. Comparison of Effects of Family Systems Predictors on Dyadic Father-Child Engagement by Maternal Employment Group

	Little Employment (n = 200)	Part-Time Employment (n = 156)	Full-Time Employment (n = 230)
Median F	2.60	2.44	2.77
Median Adjusted R²	.17	.19	.16
Sociodemographic Covariates			
Maternal education	.029 (.030) ^a	.021 (.038)	-.069 (.030) ^a
Paternal education	.001 (.029)	-.070 (.040)	.015 (.031)
Child ethnicity	-.090 (.198)	.423 (.269)	.129 (.180)
Non-maternal income	-.064 (.108)	.118 (.124)	.136 (.071)
Paternal Characteristics			
Traditional beliefs	-.018 (.005)	-.008 (.006)	-.014 (.005)
Authoritative parenting	.012 (.031)	.039 (.040)	.023 (.032)
Psychological well-being	.005 (.015)	-.011 (.019)	.003 (.015)
Responsibility for childrearing	-.352 (.165) ^{ab}	.423 (.214) ^a	.200 (.176) ^b
Satisfaction w/mother's work	.067 (.066)	.090 (.077)	.047 (.063)
Responsibility x Satisfaction w/mother's work	-.271 (.147)	.158 (.264)	-.089 (.184)
Job concerns	.095 (.081) ^a	-.164 (.082) ^a	-.008 (.078)
Child Characteristics			
Male	-.008 (.118)	-.033 (.151)	-.078 (.117)
Firstborn	.027 (.115)	-.104 (.153)	-.089 (.116)
Temperament	.073 (.103)	.307 (.135)	-.065 (.122)
Language skills	.000 (.004)	.015 (.005)	.006 (.004)
Social Skills (Mother)	.006 (.007)	.013 (.011)	-.006 (.008)
Social Skills (Father)	.005 (.008)	-.006 (.011) ^a	.024 (.008) ^a
Traditional Beliefs X Social Skills	.001 (.001)	.001 (.001)	.001 (.001)
Behavior Problems (Mother)	.002 (.007)	-.011 (.009)	.003 (.008)
Behavior Problems (Father)	.006 (.007)	.011 (.009)	.007 (.008)
Maternal Characteristics			
Maternal Depression	.011 (.009)	.017 (.012)	.007 (.009)
Maternal Employment Beliefs	-.006 (.008)	-.011 (.011)	.001 (.009)
Mother-Child Relationship			
Dyadic Engagement	.103 (.062)	.052 (.088)	.204 (.066)
Marital Intimacy			
Wife Report	.096 (.078)	.013 (.109)	.102 (.077)
Husband Report	-.045 (.079)	.027 (.108)	.073 (.078)

Notes. Estimates are unstandardized with corresponding standard errors in parentheses. Little employment group employed 0-9 hours per week; part-time employment group employed 10-32 hours a week; full-time employment group employed 33 hours or more a week. Similar superscripts denote statistical differences between groups at the $p < .05$ level.

Figure 1. Antecedents of Father-Child Relationship Quality: A Conceptual Model

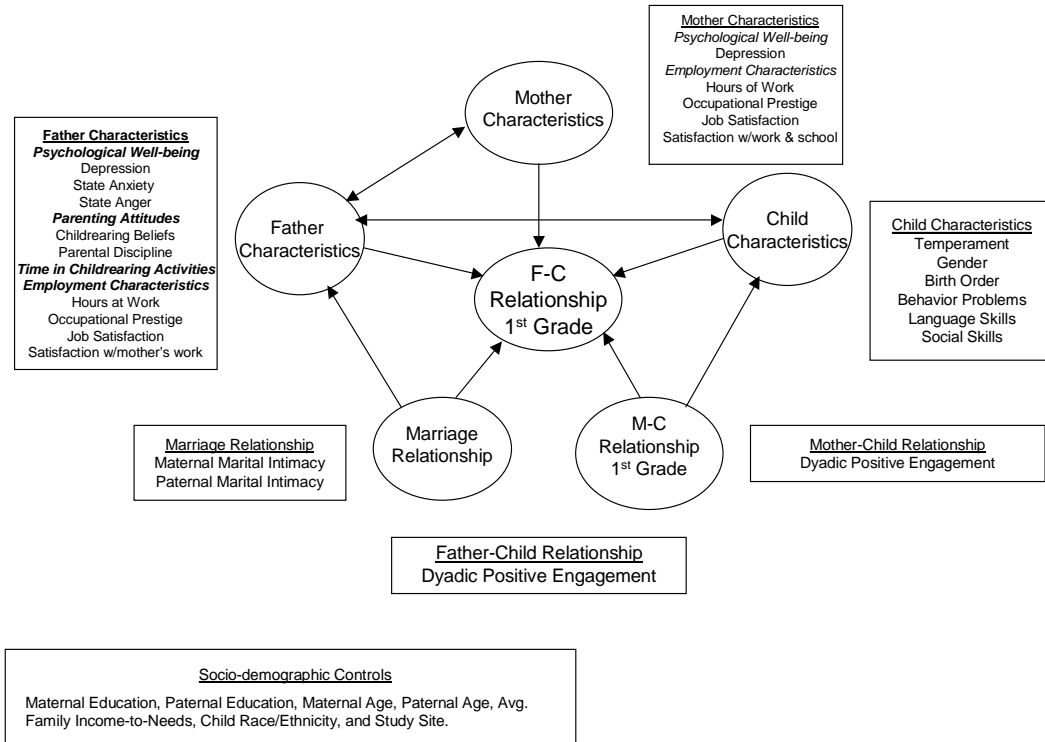
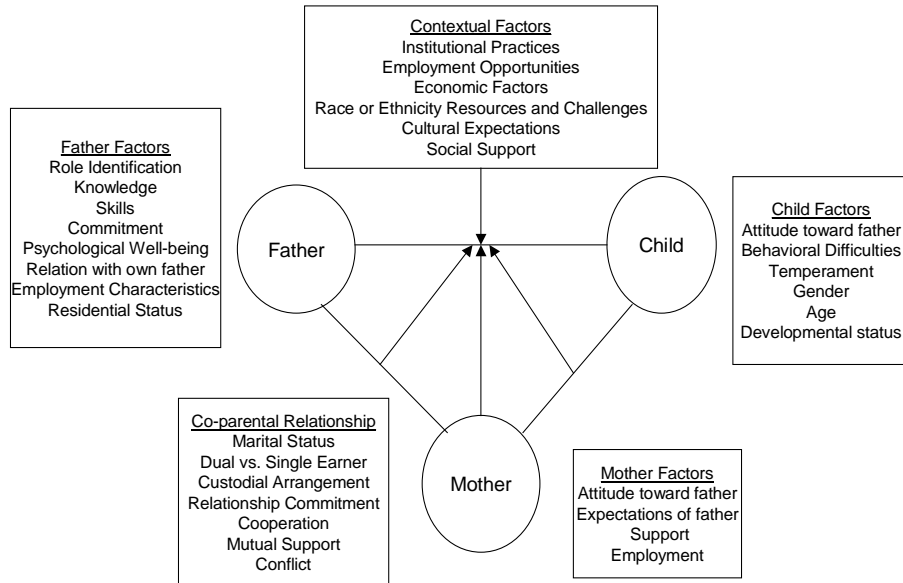


Figure 2. Influences on Responsible Fathering: A Conceptual Model



Source: Doherty, W. J., Kouneski, E. F., and Erickson, M. F. (1998). Responsible fathering: An overview and conceptual framework. *Journal of Marriage and the Family*, 60, 277-292.

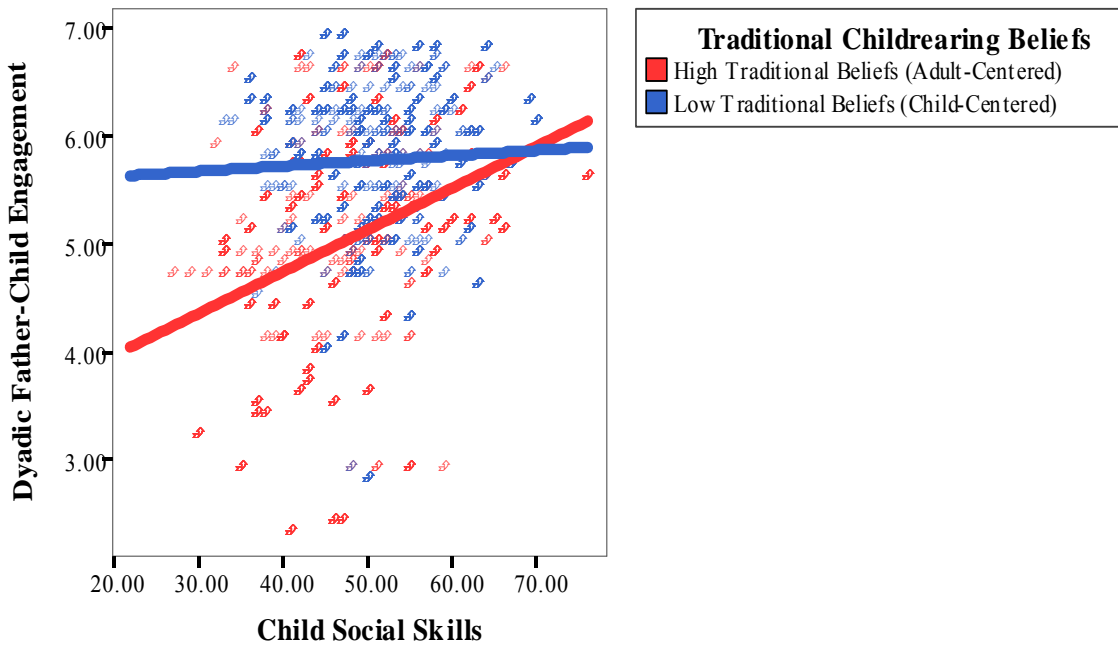


Figure 3. Interaction of children’s social skills and fathers’ traditional childrearing beliefs. The high traditional beliefs group are fathers who scored higher than one standard deviation above the mean on the parental beliefs scale. The low traditional beliefs group are fathers who scored lower than one standard deviation below the mean on the same scale.

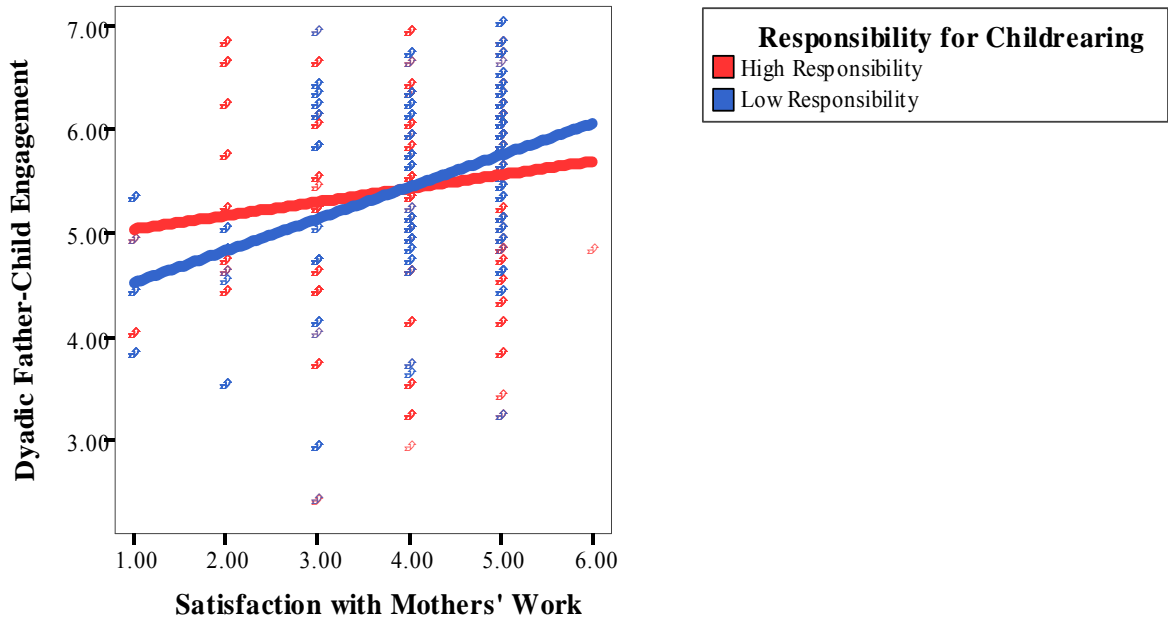


Figure 4. Interaction of fathers' satisfaction with mothers' work with fathers' responsibility for childrearing. The high responsibility group includes fathers who scored higher than one standard deviation above the mean on the responsibility scale. The low responsibility group includes fathers who scored lower than one standard deviation below the mean on the responsibility scale.

APPENDIX A

Criteria and Procedures for Proportional Weighting of

Internally Missing Items

When a subset of items is missing within an instrument (internally missing values), the internally missing values be imputed (or filled) by a system called proportional weighting under the following circumstances:

1. For the scale (or battery) in question, no more than 20% of the items in that scale are missing, and
2. The standardized Cronbach alpha (index of internal consistency) for that scale be greater than .75, and
3. The items are unit weighted (negative items reflected).

If OS is the obtained score, IS the imputed score, n the number of items in the scale, and m the number the subject actually answered, then:

$$IS = (n/m) * OS$$

Thus, if there were a 20-item scale and the subject answered 18 of the items, leaving 2 blank, the imputed score would be 20/18ths of the score obtained on the 18 items.

If the three conditions stated above are not fulfilled, values will not be imputed.

APPENDIX B

Description of the NICHD Study of Early Child Care Parent-Child Interaction Rating Scales: Early Childhood

Taken from a document authored by: Margaret Tresch Owen, Angela Vaughn, Bill Barfoot, and Anne Ware, The University of Texas at Dallas (1996). Full document available on the public-use website at <http://secc.rti.org/>, under the Phase II “Manuals” link.

Qualitative Parent, Child, and Dyadic Rating Scales

I. Parent Rating Scales*

1. Supportive Presence
2. Respect for Child’s Autonomy
3. Stimulation of Cognitive Development
4. Quality of Assistance
5. Hostility
6. Confidence

II. Child Rating Scales*

1. Agency
2. Negativity
3. Persistence
4. Experience of the Session

III. Dyadic Scales**

1. Goal-Directed Partnership
2. Affective Mutuality/Felt Security

Rating scales adapted from:

*Egeland, B. & Hiester, M. (1993). Teaching task rating scales. Institute of Child Development, University of Minnesota.

**Pianta, R.C. (1994). Rating scales for parent-child interaction in preschoolers, University of Virginia.

APPENDIX B (continued)

Descriptions of Qualitative Parent, Child, and Dyadic Rating Scales

Parent Scales

Supportive Presence:

A parent scoring high on this scale expresses positive regard and emotional support to the child. This may occur by acknowledging the child's accomplishments on the task or unrelated tasks the child is doing (e.g., building a house of blocks), encouraging the child with positive emotional regard (e.g., "You're really good at this." "You got another one right."), and various other ways of letting the child know that he/she has his/her support and confidence to do well in the setting. If the child is having difficulty on the task, the parent is reassuring and calm, providing an affectively positive "secure base" for the child, perhaps leaning closer to the child to give a physical sense of support. A parent scoring low on this scale fails to provide supportive cues, he/she might be passive, uninvolved, aloof, or otherwise unavailable to the child. Such a parent also might give observers the impression that he/she is more concerned about his/her own adequacy in the setting rather than concerned about the child's emotional needs. A potential difficulty in scoring this scale is the need to discount messages of parents that seemingly are supportive in verbal content but are contradicted by other aspects of the communication, e.g., the parent seems to be performing a supportive role for the camera and not really engaged in what the child is doing or feeling. Signs of such questionable support are improper timing of support, mismatch of verbal and bodily cues, and failure to have the child's attention in delivering the message. These types of supportive messages would not be weighted highly because such features suggest that supportive presence is not a well practiced aspect of their interaction outside the laboratory setting. Conversely, parent may seem more supportive than he/she appears in this situation because he/she has approached this task as a test of the child's achievement and has not used as much support as he/she otherwise might have. Yet, the qualitative features of his/her support would merit a high score.

1. Very Low. Parent completely fails to be supportive to the child, either being aloof and unavailable or being hostile toward the child when the child shows need of some support.
2. Low. Parent provides very little emotional support to the child. Whatever supportive presence really need it, or only after the child has become upset.
3. Moderately Low. Parent gives some support but it is sporadic and poorly timed to the child's needs. The consistency of this support is uneven so as to make the parent unreliable as a supportive presence.

APPENDIX B (continued)

4. Moderate. This parent does a respectable job of being available when his/her child needs support. He/she may lean closer as the child shows small signs of frustration and praise the child's efforts to show that he/she is available and supportive, but inconsistency in this style makes his/her support unreliable or unavailable at crucial times in the session.
5. Moderately High. Parent provides good support, reassurance and confidence in the child's ability, but he/she falters in this at times when the child especially could use more support. Or, parent is universally supportive but rarely gives evidence of modulation to the child's needs.
6. High. Parent establishes him/herself as supportive and encouraging toward the child and continues to provide support when the child needs it. If the child experiences more difficulty, his/her support increases in commensurate fashion. He/she has some lapses, however, in which the child's involvement with the play materials wavers for lack of support. Yet, he/she then attempts to return the child to a level of involvement that is more optimal.
7. Very High. Parent skillfully provides support throughout the session. He/she sets up the situation from the beginning as one in which he/she is confident of the child's efforts. He/she may redirect the child when appropriate in a way that does not reduce his/her support and confidence in the child's ability to modify his or her behavior. If the child is having difficulty, he/she finds ways to reward some sort of success by the child and encourage whatever solution the child can make. Parent not only is emotionally supportive but continuously reinforces the child's success.

Respect for Child's Autonomy:

This scale reflects the degree to which the parent acted in a way that recognized and respected the validity of the child's individuality, motives, and perspectives in the session. A parent scoring low on this scale would be very intrusive in his/her interventions with the child, exerting his/her expectations on the child in a way that makes the child a satellite or servant of the parent rather than a partner in a mutually negotiated relationship; or the parent might implicitly define his/her interactions in terms of a win-lose power struggle in which compliance by the child makes parent the winner and the child submissive. Parents may intrude either harshly or with affection; in either case, his/her actions do not acknowledge the child's intentions as real or valid and communicate that it is better and safer to depend on him/her for direction than to attempt individuality.

APPENDIX B (continued)

In contrast, a parent scoring high on this scale acknowledges the child's perspectives and desires as a valid part of the child's individual identity. A parent scoring very high does this explicitly by negotiating rules with the child, verbalizing his/her acknowledgement of the child's intentions, does not deny the child's right to those desires, and models his/her own identity and the validity of his/her own desires in the way he/she expects the child to respect his/her individuality, too. Note: Parent can get a low score just by denying the child's individuality strongly (e.g., interrupting the child, doing things before the child can on his/her own, etc.) even though it is not interrupting the child's behavior.

1. Very Low. Parent completely denies the child's individuality in the techniques he/she uses. Parent is very intrusive, physical and forceful in controlling the child.
2. Low. Parent strongly denies the child's individuality, but there are a few opportunities for the child to experience autonomy, whether by variation in parent's approach or simply by occasional absence of maternal controls over the child. Mostly, however, this parent's style denies the child's autonomy and parent is intrusive.
3. Moderately Low. Parent does not completely deny the child's individuality, but he/she effectively communicates that the child's intentions do not have validity compared to his/her own intentions for the child. He/she also intrudes strongly on the child's behavior, giving him/her little chance to do anything on his/her own.
4. Moderate. Parent shows moderate respect for child's autonomy. He/she is moderately intrusive. Although parent does not deny the child's separate identity, he/she does very little to support the validity of the child's individuality. He/she might communicate doubts to the child about the appropriateness of having his/her own intentions, or intrude abruptly on the child several times.
5. Moderately High. Parent does allow the child some autonomy of intentions, but he/she does not actively support and reinforce this perspective in the child. He/she may reflect the child's intentions and ideas by engaging the child, but he/she also exerts his/her will at times over the child in a way that shifts the child's perspective. This rating is also given when the parent, by lack of involvement, does not give the child an opportunity to experience autonomy
6. High. Parent respects child's autonomy. He/she is not intrusive over the child; instead, he/she acknowledges the child's intentions, communicates trust in the child's individuality, and allows a mutually negotiated interaction.

APPENDIX B (continued)

7. Very High. Parent very clearly interacts with the child in a way that acknowledges the validity of the child's perspective, encourages the child to acknowledge his/her intentions, and to negotiate the course of interactions in the session. This parent also models his/her individuality to the child in these negotiated interactions and may insist on the importance of his/her interventions being followed, but he/she does so while acknowledging the reality and validity of the child's differing perspective and never in an intrusive manner.

Stimulation of Cognitive Development:

This scale measures the degree to which the parent tries to foster his/her child's cognitive and mental development. A stimulating parent may take advantage of any activity to stimulate development. He/she will consistently instruct the child and/or engage in a variety of explicit activities with the intent to facilitate learning, development and achievement.

The focus of this scale is on the parent's effortful teaching that may ultimately enhance perceptual, cognitive, and linguistic development.

Behaviors characterizing stimulation include: (a) talking about and demonstrating aspects of the toys or physical world (such as using 'right' and 'left' to describe the knobs on the etch-a-sketch, (b) focusing the child's attention on the unique attributes and perceptual qualities of objects (i.e. their colors, how they move, what they can be used for); (c) suggesting more sophisticated play activities (e.g., "why don't you try..."); (d) verbally responding to and expanding on what the child says; and (e) encouraging the child to actively engage in play with the toys. Parents who simply focus or encourage should not be given the highest scores. Highly stimulating parents (a) help their children acquire or master new skills, (b) illustrate or teach concepts or principles, (c) ask questions that encourage problem solving, (d) encourage or reinforce sophisticated pretend play sequences, and so on.

If the topic or mode of stimulation is poorly matched to the child's developmental level or interest, then the parent's behavior is not seen as stimulating development, because it is unlikely to affect the child's cognitive development. For example, efforts to teach a 3-year-old to print his name, when he cannot yet hold a pencil and does not want to try, are not cognitively stimulating.

1. Very Low. Parent provides no cognitive stimulation. The parent makes no attempt to stimulate or teach the child anything. He/she either is totally uninvolved or fails to provide any information about the toys or situation. Or, any stimulation he/she provides is very poorly matched to the child's developmental level or interest.

APPENDIX B (continued)

2. Low. Parent occasionally provides weak stimulation.
3. Moderately Low. Parent provides some stimulation with some of the toys, but most of the interaction is not characterized by cognitive stimulation.
4. Moderate. Parent provides cognitive stimulation during much of the session, but overall he/she does not stimulate a higher level of mastery or sophistication in the child (i.e. features of stimulation required of the higher scorers).
5. Moderately High. Parent provides stimulation throughout the session, some of which stimulate a higher level of mastery or sophistication, but there are some periods in which it is infrequent and does not exhibit features of the higher scores.
6. High. Parent provides cognitive stimulation that clearly seeks to stimulate a higher level of mastery, understanding, or sophistication and does so during most of the session.
7. Very High. Parent provides cognitive stimulation that clearly seeks to stimulate a higher level of mastery, understanding, or sophistication and does so consistently throughout the session.

Quality of Assistance:

The important features of this rating are how well the parent structures the situations so that the child knows what the task objectives are and receives hints or corrections while solving the problems that are: (a) timely to his/her current focus, (b) paced at a rate that allows comprehension and use of each hint, (c) graded in logical steps that the child can understand, and (d) stated clearly without unnecessary digressions to unrelated phenomena or aspects of the task that might only confuse the child. The parent's approach suggests that he/she has some sort of a plan for how his/her instructions will help the child. Yet, he/she is also flexible in his/her approach and uses alternative strategies or rephrases suggestions when a particular cue is not working, and he/she coordinates his/her suggestions to the effort that the child is making to solve the task.

This scale will only be coded from observations of those tasks explicitly offering opportunity for the parent to instruct the child (such as the Etch-A-Sketch task, the geometric block activity, etc.). Parent efforts to help the child learn from free play (such as play with the puppets and animals) will be incorporated in rating the Cognitive Stimulation Scale.

APPENDIX B (continued)

1. Very Low. The parent's instructions are uniformly of poor quality. He/she either is totally uninvolved or fails to provide guidance so that the child understands what is required, and he/she gives clues that are of no help to the child's problem efforts and appear to embody no effective plan of teaching.
2. Low. Parent occasionally gives effective instruction. He/she may be able to structure the tasks so that the child understands what to do and gives a few helpful hints to the child, but these are minimal compared to the ineffectiveness of most of his/her attempts or lack of attempts.
3. Moderately Low. Parent adequately structures some portions of the tasks and provides good hints, but his/her assistance is inadequate for much of the session.
4. Moderate. Parent provides effective structure and instruction for the child to work on the tasks during much of the session, but overall his/her instruction is lacking in major ways at several points during the session.
5. Moderately High. Parent generally provides instruction that is sufficient and appropriate, but there are some periods in which it is inadequate in amount or quality. Alternatively, the parent may approach the tasks in a way that is very structured but requires the child to attend primarily to his/her directives and allows little opportunity for the child to engage the task directly (i.e., the parent therefore does not have to coordinate his/her teaching to the child's efforts).
6. High. Parent's instruction demonstrates most of the desirable features for this rating and in general the parent appears to provide good help throughout the session.
7. Very High. Parent demonstrates almost all the characteristics of effective instruction consistently throughout the session. The tasks are sufficiently structured so that the child understands the objectives and can attempt to solve the problems directly.

Parent Hostility (excluded from factor analyses because highly skewed):

This scale reflects the parent's expression of anger, discounting or rejecting of the child. A parent scoring high on this scale would clearly and overtly reject the child, blame him or her for mistakes, and otherwise make explicit the message that he/she does not support the child emotionally. A parent scoring low on this scale may be supportive or cold, but he/she does not blame or reject the child. A rejecting parent may also show some Supportive Presence (and the inconsistency of his/her behavior would be revealed by these two scores). Given the low frequency and the clinical relevance of rejecting one's child during a videotaped session, any events which are clearly hostile should be weighted strongly in this score.

APPENDIX B (continued)

1. Very Low. Parent shows no signs of rejection. He/she may or may not be supportive, but he/she does not try to put down the child or avoid the child in rejecting ways. Passive or emotionally uninvolved parents would be included in this scale point if the parent did not reject the child or communicate hostility toward the child.
2. Low. The parent conveys a little hostility once or twice. The messages are not overt but muted forms of hostility (e.g. pulling away, pulling something away from the child with a jerk, brief displays of exasperation, looking at the child coldly for a brief time, teasing with a negative content but with accompanying humor or warmth, parroting or mimicking the child). Or, the parent shows a diffuse level of discontent, discomfort, or boredom, but it is not directed at the child.
3. Moderately Low. Signs of hostility again are very fleeting, but they occurred on several occasions during the session, and at least one sign could be identified as clear and overt or an accumulating sense of unexpressed anger and avoidance toward the child was seen in the parent's behavior.
4. Moderate. Several instances of hostile or rejecting behaviors. Two or more of these events are reliably clear to observers, but expressions are brief and do not set the tone of parent's interactions immediately following the episodes.
5. Moderately High. Parent is overtly rejecting or hostile several times. Behaviors include overt and clearly communicated rejections of child and expressions of hostility or anger which appear intermittently through substantial periods of the session. This parent's behavior is more rejecting than not, either by the frequency of hostile behavior or by the potency by which rejection is communicated several times in the session.
6. High. This parent has frequent expressions of rejection and hostility directed toward the child. There is little or no effort to show warmth during substantial portions of the session, especially after parent becomes irritated with the child (i.e., parent may initially be warm and then rejects the child strongly). Parent is frankly and directly rejecting and hostile (e.g., telling the child he/she will leave him/her behind if he/she does not do the task, using negative performance feedback but little positive feedback, blaming the child for incompetence on the tasks, and overtly refusing to recognize the child's success, e.g., "You couldn't have done it without me showing you!"). Any warmth seems superficial related to the parent's distancing from the child. Rejection is used as a control technique against the child.

APPENDIX B (continued)

7. Very High. This parent shows characteristics of the previous scale point, but expressions of anger toward the child also are accompanied by strong, barely controlled emotions, suggesting the possibility of physical abuse and neglect of the child in some situations.

Parent's Confidence:

Parent's confidence reflects the degree to which the parent seems to believe that he/she can work successfully with the child in the situation and that the child will behave appropriately (whether this is more or less task oriented depends on parent's definition of the session as a social or achievement oriented activity).

At the low end, the parent may act depressed, passive, or be so tentative that he/she makes no demands on the child. His/her rate of interactions may be low or high, but he/she does so in a manner that (a) is tentative or appeasing (e.g., doing tasks for the child, overkill with strong reinforcement, and signs of relief that the task went successfully), (b) is power assertive and controlling so as to give the child no opportunities for deviation and problem behavior in the session, or (c) is designed to defuse potential problem situations for the moment by tactics that distract from the issue rather than dealing with it directly. A parent may use one of these strategies consistently in the session or switch among these ways of trying to avoid potential problems in interaction with the child.

In contrast, a confident parent seems unthreatened by the prospect of engaging his/her child in the activities of the session. He/she seems to believe that he/she is a good and effective parent with a good relationship with his/her child. Thus, he/she is not afraid that the child will embarrass him/her if he/she tries to engage him in interaction on the tasks. He/she may be self-conscious about being observed, but his/her confidence about being able to interact well with his/her child is high. Parent Confidence is rated independently of the amount of enthusiasm he/she may display.

1. Very Low. Parent is totally unconfident. All efforts of the parent in the session seem predicted on the assumption that his/her interactions with the child will be problematic. Thus, he/she may avoid interacting for the most part, try to appease the child by letting him do what he wants and may even in effect solve the tasks for the child so as not to make any performance demands on him. Alternatively, the parent may use power assertive techniques to control the child's behavior and try with these extreme measures to bring the child under his/her control.

APPENDIX B (continued)

2. Low. Parent is mostly unconfident. He/she may engage the child in a reasonably confident manner at times but quickly backs off when difficulties arise. Thus, if the child does not comply with a request, his/her next interaction is more tentative, appeasing, hostile, rejecting, or power assertive or inflexible. Such patterns characterize the session and give the impression of great hesitancy in being able to interact with the child successfully.
3. Moderately Low. Parent is uncertain in his/her interactions, but he/she does make significant attempts to execute interactions with the child without being unduly tentative, restricting, or appeasing. He/she is clearly cautious about how he/she engages the child, but he/she seems mostly to believe that he/she can get the child to interact in a reasonably appropriate way.
4. Moderate. Parent is basically confident that he/she can interact with the child in ways that will be satisfactory. Parent shows only occasional evidence of hesitancy or appeasement in making requests of the child to do activities. He/she may not be sure of his/her own skill in teaching the child, but he/she is not concerned about problems in interacting successfully with his/her child.
5. Moderately High. Parent seems confident that interactions with his/her child will proceed smoothly and that the quality of his/her relationship with the child will be judged as satisfactory. He/she seems to believe that he/she can work successfully with his/her child and that he/she can do a reasonably good job in this interaction, and he/she approaches his/her child in a straightforward manner without efforts to gloss over problems. Some uncertainty is seen in a few instances.
6. High. Parent is quite confident that his/her interactions with the child will proceed in an acceptable manner and that he/she need not take special precautions to ensure this. He/she seems relaxed about the quality of interaction between him/herself and the child and believes that any potential difficulty that would arise could be dispensed with by the skills he/she has as a parent. He/she seems to think that he/she is basically a good parent and trusts that this will be evident in his/her interactions with his/her child, although one or two brief moments of uncertainty are observed.
7. Very High. Parent exudes confidence about the quality of his/her interactions with the child, and he/she anticipates the opportunity to demonstrate this relationship in the interaction activities. He/she seems to have evaluated the relationship as being very good and he/she expects that events in the session will confirm that opinion. This is not a false or illusory bravado, however, as there is evidence in the session that this confidence reflects his/her experience of interaction with the child.

APPENDIX B (continued)

Child Scales

Child's Agency:

The child acts with vigor, confidence, and eagerness to do the tasks. Child takes an active interest in his/her activities, invests effort in them (although not necessarily very persistent), and appreciates successes. Agency includes a sense of coordination between affect and behavior. Child should appear well integrated in the sense of directing his/her energy into activities without conflicting motivations or repression of feelings and with confidence that everything is okay. Agency must be scored for goal-oriented behavior on the tasks (insofar as parent defines these as goals of the situation). Other goals or expressions of excitement may be in service of distracting the parent, winning approval, etc., and would not represent agency here.

1. Very Low. Child displays no agency. Child seems hesitant to engage problems or does so "mechanically" and with no evidence of being interested in or excited by his/her performance (although this child may nonetheless be distraught over failures). Child shows extreme lack of confidence in his/her behavior and is affectively restrained.
2. Low. Child generally does not display agency. Child does take some active interest in his/her activities, shows some enthusiasm and becomes engaged for brief periods, but is mostly restrained.
3. Moderately Low. Child shows some clear moments of agency and active, enthusiastic engagement in her/his activities but primarily she/he does not engage the situation in this way.
4. Moderate. Child shows a mixture of enthusiasm and restraint or superficiality of effort. This may occur because the child is very slow in "warming up" to the potential of the situation or because his/her enthusiasm waxes and wanes and he or she is not reliably invested in the activities.
5. Moderately High. The child displays agency for much of the session and is basically interested in and enthused about his/her activities. There is a sense of harmony between affect and behavior in the child's enthusiasm, but child also has periods in which this is not the case.
6. High. Child demonstrates agency, enthusiasm and coordinated affect and behavior for most of the session with only brief and minor periods in which this is not so. The child is quite eager and confident in approaching the activities and enjoys her/his accomplishments.

APPENDIX B (continued)

7. Very High. Child shows high agency and enthusiasm in activities throughout the session. Child approaches goals eagerly, and with some persistence when she/he encounters difficulties, and the inter-coordination of affect with behavior gives the child a notable sense of energy in all activities. Child seems to have great confidence that the situation will turn out well and that she/he can trust in her/himself and the support of her/his parent without fear that something "bad" will happen. Child clearly "jumps" on tasks with eagerness and wants to get involved.

Child Negativity:

Child negativity is the degree to which the child shows anger, dislike, or hostility toward the parent. At the high end, the child is repeatedly and overtly angry at the parent, e.g., forcefully rejecting his/her ideas, showing angry and resistant expression, pouting, or being unreasonably demanding or critical of him/her. For the lowest rating, there are neither overt nor covert signs of such anger. Expressions are essentially positive toward parent whether or not the child is compliant or much involved with him/her. Low ratings may include brief instances of frustration or rejections of parent's help. Failure to answer parents' questions without signs of deliberate ignoring is not to be considered negativity.

1. Very Low. Child shows no signs of negativism. She/he shows through consistently positive interactions toward the parent that s/he has a truly positive relationship toward him/her and feels no abiding anger toward him/her.
2. Low. Child shows no clear indications of negativism, but the tone of some interactions is less positive than one would desire in an ideal relationship toward the parent.
3. Moderately Low. Child is negativistic only briefly in any overt fashion, but these suggest some noticeable anger and resistance in the child's interactions with parent.
4. Moderate. Child shows clear negativism toward the parent on several occasions or one significant occasion, but these are rather isolated episodes.
5. Moderately High. Child is frequently negativistic or a few instances of strong or intense negativism, but these are not predominant in the interactions.
6. High. Child's anger is a predominant aspect of their interactions, but it is shown in more sporadic and generally subtler ways than in #7.
7. Very High. Child is repeatedly and overtly angry or resistant toward the parent. The degree of anger here seems so strong that the child cannot disguise it in subtler ways for long, but it repeatedly appears in her/his interactions with him/her.

APPENDIX B (continued)

Child Persistence:

This is a measure of the extent to which the child actually was involved with the toys in the session. At the low extreme, the child shows no involvement with any of the toys, refuses to become involved and either flees or spends his/her time in off-task activities, or is involved only to the extent that parent enforces his/her attention to his/her directions and responds to his/her questions about the task. At the high end, the child is actively engaged with the tasks and works persistently either directly on his/her own or through parent's mediating suggestions (regardless of how good the child or parent's skills really are). The child may be either sober or playful; persistence does not necessarily include enthusiasm. The child may be responsive or not to the parent's directions as long as s/he shows motivation toward engagement with the toys. Although the child's degree of attention to the toys may depend greatly on the parent's efforts to keep the child interested, the observer should consider this rating to reflect the child's involvement with the toys regardless of the degree to which parent was instrumental in creating the persistence.

1. Very Low. Child displays no involvement with the toys. S/he seems to want no part in this play activity.
2. Low. Child is engaged with the toys but always superficially and never with effort or concentration.
3. Moderately Low. Child plays with some persistence or concentration but s/he has no long periods of concentrated play.
4. Moderate. Child sustains some long periods of involvement with the toys, but clearly loses interest for some periods of time.
5. Moderately High. Child devotes relatively large periods of attention to the toys and plays with regularity. S/he gives sustained attention for periods of time with clear involvement. His/her persistence occasionally wanes.
6. High. Child persists in play activities across most of the session. S/he loses interest or concentration only briefly within an overall pattern of involvement with the toys.
7. Very High. Child is persistent virtually throughout the session.

Note: A child who plays much of the time because of constant efforts by the parent to return the child to play should not get a 6 or 7 score, even though the child was engaged with all the toys. An initial lack of attraction to one of the toys should not in itself preclude the rating of 6 or 7.

APPENDIX B (continued)

Child's Experience of the Session:

This scale reflects the degree to which the child's experience in the session probably resulted in feelings of success and competence on the tasks and confidence in having a good relationship with his/her parent. This scale reflects a variety of contributions in the child and parent's behavior which might contribute to the child's experience of the session. A child scoring low on this scale might have had many conflicts with his/her parent or might have been dominated or been rejected by the parent in ways that would affect the child's experience of success in the session. A child scoring high on this scale would have been able to work well with the parent and to do the tasks successfully with some sense of autonomy in problem-solving through appropriate paternal assistance in the session.

1. Very Low. Child had a very negative experience which probably contributed to lower expectations of his/her own competence, anger at self or parent, rejection by the parent, or intense resistance between parent and child. There was very little in the session to compensate for these negative events.
2. Low. Child mostly had a strongly negative experience but there were some ego enhancing features about which the child could feel successful and take comfort (e.g., child was enthusiastic about his/her own efforts despite other negative aspects of the session).
3. Moderately Low. The session was a moderately negative experience for the child, but there were some good aspects also. The negative components were pervasive but did not dominate the experience.
4. Moderate. The session was neither a success nor a failure experience for the child. The child probably got through the tasks sufficiently and without strongly aversive interactions with the parent. Yet, the child's feelings of competence were not raised by this experience.
5. Moderately High. The child seemed to get through the session with some success and to have basically positive interactions with his/her parent.
6. High. This child's experience was quite positive and enhancing of his/her feelings of competence with the tasks and in the quality of the relationship. Although there may have been minor aspects in which the child or parent's contributions may have been deficient in helping the child feel success, the overall quality of the session was high in terms of the child's experience of success and confidence in the relationship.

APPENDIX B (continued)

7. Very High. This child had a very positive experience of doing well on the tasks and having a good relationship with his/her parent. There were very positive interactions between the parent and child, and the child was able to do the tasks with enough help and enough autonomy to experience competence in doing the tasks. Although minor problems in the session might have occurred, the overall effect of the parent and child's interactions was very positive in terms of the child's experience of success and confidence in the relationship.

Dyadic Scales

Goal-Directed Partnership:

This scale measures the extent to which the dyad evolves and shares a common goal which has as an underlying purpose: the provision of self esteem enhancing experiences for child and a learning experience. It is critical that the rater acknowledge that the dyad's goal may not be the same as the rater's, yet still may reflect an adaptive response to the situation (e.g., the task as explained may be too hard for the child so the dyad shifts goals). Conversely, the rater must be aware that some dyads change the goal of the task to an easier one in order to avoid conflict or frustration, thus not challenging the child with a learning experience and adding nothing to the child's self esteem. Therefore one of the overriding tasks for the rater is to keep in mind if there is a goal present, and if the goal is adaptive. Essential to this scale is a sense that both members of the dyad are working together, are engaged, and their behavior is interdependent. At the high end of this scale the behavior of the dyad is organized throughout with lots of positive feedback loops. If the dyad shifts goals, the rater should note how distant the dyad's goal is from the original instructions (e.g., dyads who manipulate the blocks to build a house have switched to a less distal goal than those who name the colors in the rug but to a more distal goal than those who agree to do only the simple block arrangements). "Distal" goals are rated lower since they tend to serve avoidant or non-challenging purposes. At the low end of the scale we see disengagement or disparity in involvement.

This scale will be coded only from observations of those tasks that are explicitly goal oriented. Free play with the animals, puppets, or cards is not to be included.

APPENDIX B (continued)

1. Very Low. These dyads are maladaptive. There is noticeable confusion, child may appear to take control of the interaction or look distractible or passive. Parent may look very disinterested and passive even if child looks involved. There is often a one-sidedness to the interaction, stress makes organization fall apart and not return. Negative feedback loops are common (i.e. coercion), frequent task changes without resolution or feedback on previous ones. As goals change they become very distal to original, perhaps reduced to primitive manipulation. There may be a "you do yours, I'll do mine" type of disengagement. Child is not challenged; the parent allows the child or him/herself to change the task at the first sign of frustration. There is a sense of being lost, wandering or aimless in problem solving efforts, frequent goal or task changes, a sense of giving up. There is no sense of a partnership or working together.
2. Low. Considerable child or parent passivity. Child confusion or distractibility may be evident as the child's means of getting parent engaged or the result of his/her lack of engagement. Parent also appears more passive, or there is disengagement when parent and child start to work separately, or parent takes over. There is no apparent benefit to the child's self esteem. The overall pattern is one of disinterest in the task for one or both of the dyad.
3. Moderately Low. These dyads are much less adaptive than 4 or 5. There is a noticeable lack of calibration and absence of feedback loops, the child or parent often appears quite passive. The child may even begin to look distractible or confused or the child may hang in there while parent gets hostile, passive or disengaged. These dyads may start off goal directed then become more loosely organized as the interaction progresses. They will look noticeably poorer after a frustration experience. Fundamentally, there is little attention to this as a learning experience. Goals become more distal from original.
4. Moderate. These dyads may change goals frequently (3-4 times) either in response to child or not, they probably move onto a new task without resolution of the old one, in general they show a mix of goal-directedness and lack of it. They generally seem to muddle through with the child having a moderately positive or neutral experience. There will be extended moments of disorganization, lack of calibration or negative feedback loops, but underlying pattern is a genuine attempt to address the task. You are likely to see neutral or bland affect on the part of both child and parent with a sense that they are not really invested in the task, or become invested only at certain periods or with lots of encouragement by parent or dependency by the child.

APPENDIX B (continued)

5. Moderately High. Dyad is organized and engaged throughout with a few exceptions. These dyads have a tougher time re-organizing around a new goal but do so eventually. These dyads will struggle a little more with goal changing, may see it two times. Any change in goals remains close to original intent of task. Child appears challenged. If goals change there is resolution of old task. There is more of a mixture of engagement and passivity, you may see some disparity in involvement and parent needing to encourage the child more, or child may need to elicit parent's help.
6. High. Almost as organized as 7 but there may be a brief period of disengagement or a need on the part of the parent to convince the child to perform. There may be attempts to change the goal by the child. The degree of calibration and cooperation is nonetheless very high, but brief diversions make it lower than 7.
7. Very High. Parent calibrating his/her behavior to child, lots of reciprocal verbal or non-verbal communication, parent making encouraging statement, parent expecting the child to perform the task, child expecting assistance as needed from the parent, a stable goal that changes once at a maximum in response to child frustration or success, active problem solving behaviors and communication, some conflict or frustration is fine. The child is attentive to the parent and there is a high degree of cooperation and engagement. The child's self esteem is enhanced and there is a sense that the child believes she/he can count on the parent's assistance. Behavior is highly interdependent between the two for a solid partnership.

Affective Mutuality/Felt Security:

This scale assesses availability and mutuality of emotion between the child and parent and how secure the child feels with the parent. There is an emphasis on the child having a sense that the parent has his/her own best interests in mind. There is also an emphasis on verbal and non-verbal communication, what the parent and child communicate and how they do it. Open and free communication will be marked by emotion exchanged and a sense of personal involvement and engagement. The child appears free to express positive or negative emotions or feelings. Availability of affect is also marked by the parent's tone of voice communicating warmth and regard for the child. At the low end, closed communication or lack of mutuality will be reflected in interaction that is stifled or non-reciprocal. At the low end there may be a veneer of intimacy or mutuality covering an impoverished experience; emotional experience of the parent may be quite different from experience of the child. The rater must be alert to exchange of emotion and the subtle cues that reflect this. Essentially we are interested in behaviors which reflect intimacy in the dyad.

APPENDIX B (continued)

Dyads high on this scale almost always have a moment of shared emotion that is pleasurable. At the low end we see stifling of emotion, dampening behaviors which avoid or negate expression of emotion, or lots of conflict between the parent and the child. The rater will need to distinguish between affect that is muted because of parents' focus on task (but which still regards child's feelings) and that which has as its purpose to stifle expression.

1. Very Low. There are three possibilities: 1) the dyad appears disengaged or can only engage around positive experiences and there is an almost staged like quality to those; 2) there is underlying conflict or ambivalence apparent (parent may make it clear he or she would 'd rather be somewhere else); or 3) parent and child have very little coordinated emotion and appear emotionally disconnected with each other. Parent or child may express a positive emotion that is not coordinated with behavior and the other one responds. There may be underlying tension in the interaction. Parent may be threatened by any negative emotion. Dampening statements may not even be common since this dyad may essentially be disengaged around emotion. They may be highly engaged around the task or around performance but not emotion. There is very little attention to each other in terms of warmth or personal involvement. One may also see a parent giving derogatory glances at the child, directly or indirectly communicating displeasure with the child and/or his/her performance. There is often a veneer of intimacy or a staged-like interaction masking an impoverished experience for the parent and child.
2. Low. These dyads may seem cold or emotionless (like 1) but with some expressiveness and warmth at limited times or, they may be conflicted. Parents may be threatened by child's emotion and there are signs of disengagement or conflict when child needs the parent. Parent may show signs of being annoyed or upset with the child (angry look).
3. Moderately Low. There are no bouts of sustained emotion shared between the two, instead there is an increased emphasis on avoidance of emotion, negative emotion, and especially, non-mutual emotion. The parent may ignore or discourage the child's expression of emotion. The child's experience begins to take on an anxious quality, perhaps unsure that s/he can count on parent for assistance. The child rarely initiates bids for security or parent affect. There are also moments of warmth but these are fleeting and occur under minimal stress.

APPENDIX B (continued)

4. Moderate. These dyads show a mixture of warmth and more restrictive or tense behaviors. There may be moments of tension and disengagement. Parent may seem a bit threatened if the child expresses frustration or anger and there may be an effort to "accentuate the positive" despite the child's needs to have feelings expressed. Dampening messages may be given, usually in a covert manner. Despite bouts of tension, however, there is a sense the dyad also likes each other, but that they are struggling a bit to figure it out.
5. Moderately High. Brief periods of conflict or avoidance may be noted in an otherwise relaxed interaction, or parent and child may have one or two interchanges in which emotional experience differs (e.g. angry child, happy parent), but there is an attempt to reconcile experience.
6. High. Very similar to number 7 though a somewhat less active and overt exchange of emotions is noted. There may be a few 'dampening' behaviors when the child shows negative affect (parent looks away or diverts attention) or when parent focuses heavily on instruction, but generally the child feels understood. The dyad interacts in a relaxed fashion even if there is not a lot of eye contact, etc. There is an underlying warmth and appreciation between the two that is expressed even without lots of overt signs.
7. Very High. There is a sense that experiences (both positive and negative) are shared, that the parent shows a response to the child's emotion and vice versa. Smiling back and forth takes place. Eye contact occurs when the child or parent seeks it. There are personal exchanges such that the child uses "I" statements to talk about feelings. First person pronouns are used. There may also be physical proximity seeking behaviors, help seeking, or some reflection on the experience with the toys (e.g. "this is hard" or "this is silly"), that are responded to in a fashion that supports the mutuality observed in the dyad. There are almost no "dampening" behaviors by either partner, so that emotion and communication flows freely. There is at least one sustained bout of reciprocally communicated, positive emotion shared by the partners.

REFERENCES

- Achenbach, T. M. (1991). *Manual for the child behavior checklist/4-18 and Profile*. Burlington, VT: University of Vermont, Department of Psychiatry.
- Almeida, D. M., Wethington, E., & McDonald, D. A. (2001). Daily variation in paternal engagement and negative mood: Implications for emotionally supportive and conflictual interactions. *Journal of Marriage and Family, 63*, 417-429.
- Amato, P. R. (1994). Father-child relations, mother-child relations, and offspring psychological well being in early adulthood. *Journal of Marriage and the Family, 56*, 1031-1042.
- Amato, P. R., & Gilbreth, J. G. (1999). Nonresident fathers and children's well being: A meta-analysis. *Journal of Marriage and the Family, 61*, 557-573.
- Amato, P. R., & Keith, B. (1991). Parental divorce and the well-being of children: A meta-analysis. *Psychological Bulletin, 110*, 26-46.
- Barnett, R. C., & Baruch, G. K. (1987). Determinants of father participation in family work. *Journal of Marriage and the Family, 49*, 29-40.
- Barnett, R. C. & Marshall, N. L. (1991). The relationship between women's work and family roles and their subjective well-being and psychological distress. In M. Frankenhauser, U. Lundberg, & M. Chesney (Eds.), *Women, work and health: Stress and opportunities* (pp. 111-136). New York: Plenum.
- Bell, R. Q. (1968). A reinterpretation of the direction of effects in studies of socialization. *Psychological Review, 75*, 81-95.
- Belsky, J. (1984). The determinants of parenting: A process model. *Child Development, 55* (1), 83-96.
- Belsky, J. (1999). Quantity of nonmaternal care and boys' problem behavior/adjustment at ages 3 and 5: Exploring the mediating role of parenting. *Psychiatry: Interpersonal and Biological Processes, 62*, 1-20.
- Belsky, J., & Volling, B. L. (1987). Mothering, fathering, and marital interaction in the family triad during infancy: Exploring family system's processes. In P. W. Berman & F. A. Pedersen (Eds.) *Men's transitions to parenthood: Longitudinal studies of early family experience*, (pp. 37-63). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

- Berman, P. W., & Pedersen, F. A. (1987). Research on men's transitions to parenthood: An integrative discussion. In P. W. Berman & F. A. Pedersen (Eds.) *Men's transitions to parenthood: Longitudinal studies of early family experience*, (pp. 217-242). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Bhavnagri, N., & Parke, R. D. (1991). Parents as direct facilitators of children's peer relationships: Effects of age of child and sex of parent. *Journal of Social and Personal Relationships*, 8, 423-440.
- Bronson, W. C. (1974). Mother-toddler interaction: A perspective on studying the development of competence. *Merrill-Palmer Quarterly*, 20, 275-301.
- Cabrera, N. J., Tamis-LeMonda, C. S., & Bradley, R. H. (2000). Fatherhood in the twenty-first century. *Child Development*, 71 (1), 127-136.
- Carey, W. B., & McDevitt, S.C. (1978). Revision of the infant temperament questionnaire. *Pediatrics*, 61, 735-739.
- Christiansen, S. L., & Palkovitz, R. (2001). Why the "good provider" role still matters: Providing as a form of paternal involvement. *Journal of Family Issues*, 22, 84-106.
- Clarke-Stewart, K. A. (1978). And daddy makes three: The father's impact on mother and young child. *Child Development*, 49, 466-678.
- Clarke-Stewart, K. A. (1980). The father's contributions to children's cognitive and social development in early childhood. In F. Pedersen (Ed.), *The father-infant relationship*. New York: Praeger.
- Clarke-Stewart, K.A., Gruber, C. P., & Fitzgerald, L. M. (1994). *Children at home and in day care*. Hillsdale, NJ: Erlbaum.
- Cohn, J. F., & Campbell, S. B. (1992). Influence of maternal depression on infant affect regulation. In D. Cicchetti, & S. Toth (Eds). *Rochester Symposium on Developmental Psychopathology: Vol. 4. A developmental approach to affective disorders* (pp. 103-130). Rochester, NY: University of Rochester Press.
- Collins, W. A., & Madsen, S. D. (2003). Developmental change in parenting interactions. In L. Kuczynski (Ed.), *Handbook of dynamics in parent-child relations*, (pp. 49-66). Thousand Oaks, CA: Sage Publications.
- Coltrane, S. (1996). *Family man: Fatherhood, housework, and gender equity*. New York: Oxford.

- Cowan, C. P., & Cowan, P. A. (1987). Men's involvement in parenthood: Identifying the antecedents and understanding the barriers. Men's involvement in parenthood: Identifying the antecedents and understanding the barriers. In P.W. Berman & F. A. Pedersen (Eds.), *Men's transitions to parenthood: Longitudinal studies of early family experience* (pp. 145-171). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cowan, C. P., & Cowan, P. A. (1988). Who does what when partners become parents: Implications for men, women, and marriage. *Marriage and Family Review*, *12*, 105-131.
- Cox, M., Owen, M. Lewis, J., & Henderson, V. K. (1989). Marriage, adult adjustment, and early parenting. *Child Development*, *60*, 1015-1024.
- Cox, M., Paley, B., Payne, C. C., & Burchinal, P. (1999). The transition to parenthood: Marital conflict and withdrawal and parent-infant interaction. In M. Cox & J. Brooks-Gunn (Eds.) *Conflict and cohesion in families: Causes and consequences* (pp. 87-104). Mahwah, NJ: Lawrence Erlbaum
- Cummings, E. M., & Davies, P.T. (1994). Maternal depression and child development. *Journal of Child Psychology and Psychiatry*, *35*, 73-112.
- Day, R. D., & Lamb, M. E. (2004, Eds.). *Conceptualizing and measuring father involvement*. Mahwah, NJ: Lawrence Erlbaum Associates.
- DeMulder, E.K., & Radke-Yarrow, M. (1991). Attachment with affectively ill and well mothers: Concurrent behavioral correlates. *Development and Psychopathology*, *3*, 227-242.
- Doherty, W. J., Kouneski, E. F., & Erickson, M. F. (1998). Responsible fathering: An overview and conceptual framework. *Journal of Marriage and the Family*, *60*, 277-292.
- Easterbrooks, M. A., & Goldberg, W. A. (1984). Toddler development in the family: Impact of father involvement and parenting characteristics. *Child Development*, *55*, 740-752.
- Elder, G. H., Conger, R. D., Foster, E. M., & Ardel, M. (1992). Families under economic pressure. *Journal of Family Issues*, *13*, 5-37.
- Elder, G. H., Nguyen, T. V., & Caspi, A. (1985). Linking family hardship to children's lives. *Child Development*, *56*, 361-375.

- Egeland, B., & Hiester, M. (1993). Teaching task rating scales. Institute of Child Development, University of Minnesota.
- Fagan, J., & Barnett, M. (2003). The relationship between maternal gatekeeping, paternal competence, mothers' attitudes about the father role, and father involvement. *Journal of Family Issues, 24*, 1020-1043.
- Feldman, S. S., Nash, S. C., & Aschenbrenner, B. G. (1983). Antecedents of fathering. *Child Development, 54* (6), 1628-1636.
- Field, T. M. (1992). Infants of depressed mothers. *Development and Psychopathology, 4*, 49-66.
- Finley, G. E., & Schwartz, S. J. (2004). The father involvement and nurturing fathering scales: Retrospective measures for adolescent and adult children. *Educational and Psychological Measurement, 64*, 143-164.
- Flouri, E., Bream, V., & Buchanan, A. (2002). Adolescent perceptions of their fathers' involvement: Significance to school attitudes. *Psychology in the schools, 39*, 575-582.
- Forbes, E. E., Cohn, J. F., Allen, N. B., Lewinsohn, P. M. (2004). Infant affect during parent- infant interaction at 3 and 6 months: Differences between mothers and fathers and influence of parent history of depression. *Infancy, 5*, 61-84.
- Frank, S., Hole, C. B., Jacobson, S., Justkowski, R., & Huyck, M. (1986). Psychological predictors of parents' sense of confidence and control and self-versus child-focused gratifications. *Developmental Psychology, 22* (3), 348-355.
- Goldberg, W. A., Clarke-Stewart, K. A., Rice, J. A., & Dellis, E. (2002). Emotional energy as an explanatory construct for father's engagement with their infants. *Parenting: Science and Practice, 2* (4), 379-408.
- Goldscheider, F. K., & Waite, L. J. (1991). *New families, no families: The transformation of the American home*. Berkeley, CA: University of California Press.
- Greenberger, E. & Goldberg, W. (1989). Work, parenting, and the socialization of children. *Developmental Psychology, 25*, 22-35.
- Greenberger, E., Goldberg, W. A., Crawford, T. J., & Granger, J. (1988). Beliefs about the consequences of maternal employment for children. *Psychology of Women Quarterly, 12*, 35-59.

- Gresham, F. M., & Elliott, S. N. (1990). *The social skills rating system*. Circle Pines, MN: American Guidance Service.
- Grossman, F. K., Pollack, W. S., & Golding, E. (1988). Fathers and children: Predicting the quality and quantity of fathering. *Developmental Psychology, 24*, 82-91.
- Grych, J. H., & Clark, R. (1999). Maternal employment and development of the father-infant relationship in the first year. *Developmental Psychology, 35*, 893-903.
- Harris, K. H., & Morgan, S. P. (1991). Fathers, sons, and daughters: Differential paternal involvement in parenting. *Journal of Marriage and the Family, 53*, 531-544.
- Hawkins, A. J., & Belsky, J. (1989). The role of father involvement in personality change in men across the transition to parenthood. *Family Relations, 38*, 378-384.
- Hawkins, A.J. & Dollahite, D. C. (1997). *Generative fathering: Beyond deficit perspectives*. Thousand Oaks, CA: Sage Publications.
- Hinde, R. A. (1979). *Towards understanding relationships*. New York: Academic Press, 1979.
- Holmes, E. K. (2005, November). *Conceptualizing fathering as an interdependent relationship: An application of Kelley's essential elements of interdependence to father-child relationships*. Paper presented at the meeting of the National Council for Family Relations, Phoenix, AZ.
- Hood, J. (1993). *Men, work, and family*. Newbury Park: CA: Sage.
- Huston, T. L., & Robins, E. (1982). Conceptual and methodological issues in studying close relationships. *Journal of Marriage and the Family, 44*, 901-925.
- Jain, A., Belsky, J., & Crnic, K. (1996). Beyond fathering behaviors: Types of dads. *Journal of Family Psychology, 10*, 431-442.
- Kelley, M. L., Smith, T. S., Green, A. P. (1998). Importance of fathers' parenting to African-American toddlers' social and cognitive development. *Infant Behavior & Development, 21*, 733-744.
- Kuczynski, L. (2003). Beyond bidirectionality: Bilateral conceptual frameworks for understanding dynamics in parent-child relations. In L. Kuczynski (Ed.), *Handbook of dynamics in parent-child relations*, (pp.1-24). Thousand Oaks, CA: Sage Publications.

- Lamb, M. E. (1976). The role of the father: An overview. In M. E. Lamb (Ed.), *The role of the father in child development*, (pp. 1-61). New York: John Wiley & Sons.
- Lamb, M. E. (1977). Father-infant and mother-infant interaction in the first year of life. *Child Development*, *48*, 167-181.
- Lamb, M. E. (1987). Introduction: The emergent American father. In M. E. Lamb (Ed.) *The father's role: Cross-cultural perspectives*, (pp 3-25). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Lamb, M. E. (Ed., 1997). *The role of the father in child development* (3rd Edition). New York: John Wiley & Sons, Inc.
- Lamb, M. E., Pleck, J. H., Charnov, E. L., & Levine, J. A. (1985). Paternal behavior in humans. *American Zoologist*, *25*, 883-894.
- Levi-Shiff, R., & Israelashvili, R. (1988). Antecedents of fathering: Some further exploration. *Developmental Psychology*, *24*, 434-440.
- Lollis, S., & Kuczynski, L. (1997). Beyond one hand clapping: Seeing bidirectionality in parent-child relations. *Journal of Social and Personal Relationships*, *14*, 441-461.
- Maccoby, E. E., & Martin, J. (1983). Socialization in the context of the family: Parent-child interaction. In E. M. Hetherington (Ed.), *Mussen manual of child psychology* (4th Ed., Volume 4, pp. 1-101). New York: Wiley.
- MacDonald, K., & Parke, R. D. (1984). Bridging the gap: Parent-child play interaction and peer interactive competence. *Child Development*, *55*, 1265-1277.
- Marsiglio, W. (1991). Paternal engagement activities with minor children. *Journal of Marriage and the Family*, *53*, 973-986.
- Marsiglio, W., Amato, P., Day, R. D., & Lamb, M. E. (2000). Scholarship on fatherhood in the 1990's and beyond. *Journal of Marriage and the Family*, *62*, 1173-1191.
- McBride, B. A., & Rane, T. R. (1998). Parenting alliance as a predictor of father involvement: An exploratory study. *Family Relations*, *47*, 229-236.
- McBride, B. A., Schoppe, S. J., & Rane, T. R. (2002). Child characteristics, parenting stress, and parental involvement: Fathers versus mothers. *Journal of Marriage and Family*, *64*, 998-1011.

- McCartney, K., & Rosenthal, R. (2000). Effect size, practical importance, and social policy for children. *Child Development, 71*, 173-180.
- McLoyd, V. C. (1990). The impact of economic hardship on Black families and children: Psychological distress, parenting, and socioemotional development. *Child Development, 61*, 311-346.
- NICHD Early Child Care Research Network (2000). Factors associated with fathers' caregiving activities and sensitivity with young children. *Journal of Family Psychology, 14*, 200-219.
- Palkovitz, R. (1984). Parental attitudes and fathers' interaction with their 5-month-old infants. *Developmental Psychology, 20* (6), 1054-1060.
- Palkovitz, R. (1997). Reconstructing "involvement": Expanding conceptualizations of men's caring in contemporary families. In A. J. Hawkins, & D. C. Dollahite (Eds.), *Generative fathering: Beyond deficit perspectives* (pp. 200-216). Thousand Oaks, CA: Sage Publications.
- Palkovitz, R. (2002). Involved fathering and child development. In Tamis-LeMonda, and N. Cabrera (Ed.) *The handbook of father involvement* (119-140). Mahwah, NJ: Lawrence Erlbaum Associates.
- Palkovitz, R., Marks, L., Appleby, D., and Holmes, E. K. (2003). Parenting and adult development: Contexts, processes and products of intergenerational relationships. In L. Kuczynski (Ed.) *The handbook of dynamics in parent-child relationships* (pp. 307-323). Thousand Oaks, CA: Sage Publications.
- Parke, R. D. (1978). The father's role in infancy. A re-evaluation. *Birth & The Family Journal, 5*, 211-213.
- Parke, R. D. (2002). Fathers and families. In M. Bornstein (Ed.) *Handbook of parenting*, (Volume 3: Being and becoming a parent, pp. 27-74). Hillsdale, NJ: Lawrence Erlbaum.
- Pleck, J. (1997). Paternal involvement: Levels, sources, and consequences. In M. E. Lamb (Ed.). *The role of the father in child development* (3rd Edition, pp. 66-103). New York: John Wiley & Sons, Inc.
- Power, T. G., & Parke, R. D. (1982). Play as a context for early learning: Lab and home analyses. In I.E. Sigel & L. M. Laosa (Eds.), *The family as a learning environment*, (pp.). New York: Plenum.

- Radin, N. (1990). Validity and reliability of the Paternal Child Care Index (PICCI). *Unpublished manuscript*.
- Radin, N. (1994). Primary caregiving fathers in intact families. In a. E. Gottfried & A. W. Gottfried (Eds.), *Redefining families: Implications for children's development* (pp. 55-97). New York: Plenum.
- Radloff, L. S. (1977). The CES-D scale: A self report depression scale for research in general population. *Applied Psychological Measurement, 1*, 385-401.
- Rane, T. R., & McBride, B. A. (2000). Identity theory as a guide to understanding fathers' involvement with their children. *Journal of Family Issues, 21*, 347-366.
- Roberts, G. C., Block, J. H., & Block, J. (1984). Continuity and change in parents' child-rearing practices. *Child Development, 55*, 586-597.
- Rubin, D. B. (1987). *Multiple imputation for survey nonresponse*. New York: Wiley.
- Russell, G., & Russell, A. (1987). Mother-child and father-child relationships in middle childhood. *Child Development, 58*, 1573-1585.
- Schafer, J. L. (1997). *Analysis of incomplete multivariate data*. London: Chapman & Hall.
- Schaffer, H. R., Collis, G. M., & Parsons, G. (1977). Verbal interchange and visual regard in verbal and preverbal children. In H. R. Schaffer (Ed.), *Studies in mother-infant interaction*. London: Academic Press.
- Shaefer, E. S., & Edgerton, M. (1985). Parent and child correlates of parental modernity. In I. E. Sigel (Ed.), *Parental belief systems* (pp. 287-318). Hillsdale, NJ: Lawrence Erlbaum.
- Shumow, L. Vandell, D.L., & Posner, J. (1998). Harsh, firm, and permissive parenting in low-income families: Relations to children's academic achievement and behavioral adjustment. *Journal of Family Issues, 19*, 483-507.
- Sirignano, S. W., & Lachman, M. E. (1985). Personality change during the transition to parenthood: The role of perceived infant temperament. *Developmental Psychology, 21*, 558-567.
- Spielberger, C. D., Jacobs, G. A., Russell, S. F., & Crane, R. S. (1983). Assessment of anger: The State-Trait Anger Scale. In J. N. Butcher & C. D. Spielberger (Eds.), *Advances in personality assessment: Vol. 2* (pp. 161-189). Hillsdale, NJ: Erlbaum.

- Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (1983). *Manual for The State-Trait Anxiety Inventory (Form Y)*. Palo Alto, CA: Consulting Psychologists Press.
- Snarey, J. (1993). *How fathers care for the next generation: A four-decade study*. Cambridge, MA: Harvard University Press.
- Tronick, E. (1989). Emotions and emotional communication in infants. *American Psychologist*, *44*, 112-119.
- Volling, B., & Belsky, J. (1991) Multiple determinants of father involvement during infancy in dual earner and single earner families. *Journal of Marriage and the Family*, *53*, 461-474.
- Winer, B. J. (1971). *Statistical principles in experimental design* (2nd Ed.). New York: McGraw-Hill.
- Woodworth, S., Belsky, J., & Crnic, K. (1996). The determinants of fathering during the child's second and third years of life: A developmental analysis. *Journal of Marriage and the Family*, *58*, 679-692.
- Yeung, W. J., Sandberg, J. F., Davis-Kean, P. E., & Hofferth, S. L. (2001). Children's time with fathers in intact families. *Journal of Marriage and Family*, *63*, 136-155.
- Zahn-Waxler, C., Iannotti, R.J., Cummings, E. M., & Denham, S. (1990). Antecedents of problem behaviors in children of depressed mothers. *Development and Psychopathology*, *2*, 271-291.
- Zimmerman, I.L., Steiner, V.G. & Pond, R.E. Pond (1979). *Preschool Language Scale*. The Psychological Corporation, San Antonio, TX.

VITA

Erin Kramer Holmes was born in Provo, Utah on November 4, 1976, the daughter of Neal and Leila Kramer. After completing her work at Provo High School, Provo, Utah, in 1994, she entered Brigham Young University in Provo, Utah. She received the degree of Bachelor of Science in Family Sciences from Brigham Young University in August 1998. In August 1999, she entered the graduate program of Individual and Family Studies at University of Delaware. She received the degree of Master of Science there in August 2001. In September 2001, she entered the doctoral program in Human Development and Family Sciences at The University of Texas at Austin. She lives in Austin, Texas with her husband Chris and her daughter Elena.

Permanent Address: 1664 W. 1320 N., Provo, UT 84604.

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