

# Interdependence of Parenting of Mothers and Fathers of Infants

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This study examined the relations among parenting behaviors of 97 coresident mothers and fathers of infants during a dyadic free-play setting. The authors examined the extent to which observed sensitive and intrusive parenting behaviors in mother–child and father–child dyads were related and how perceived marital quality may be associated with the similarity between maternal and paternal parenting behaviors. The authors found support for interdependence of parenting by mothers and fathers. High perceived marital quality was associated with interdependence of sensitive parenting behaviors in mother–infant and father–infant interactions. Negative parenting behaviors by mothers and fathers were interrelated regardless of marital quality. The findings highlight the importance of studying parenting by mothers and fathers as embedded within particular family systems.

*Keywords:* parenting, family systems, fathers, infancy, marital quality

Parenting of mothers and fathers may be independently and interactively related to child outcomes (Kaczynski, Lindahl, Malik, & Laurenceau, 2006; National Institute for Child Health and Development Early Child Care Research Network [NICHD ECCRN], 2004; Ryan, Martin, & Brooks-Gunn, 2006; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004; Volling, Blandon, & Gorvine, 2006). Moreover, there may be considerable variability of parenting behaviors of mothers and fathers within the same family. A number of studies have compared parenting behaviors and determinants of parenting for mothers and fathers of infants and toddlers (Belsky, Youngblade, Rovine, & Volling, 1991; Corwyn & Bradley, 1999; Feldman, 2000; Lovas, 2005; Pelchat, Bisson, Bois, & Saucier, 2003; Roopnarine, Fouts, Lamb, & Lewis-Elligan, 2005). A related body of literature has explored the relationship between marital processes and parenting behaviors (Cox, Paley, Payne, & Burchinal, 1999; Cummings & Davies, 2002; Erel & Bur-

man, 1995; Fincham, 1998; Grych, 2002; Kaczynski et al., 2006; Krishnakumar & Buehler, 2000). The present study sought to build on these areas of research by examining the interdependency of parenting by mothers and fathers within the same family. Specifically, we explored the extent to which each partner's perception of the marital relationship may be associated with the degree to which mothers and fathers display similar sensitive and negative parenting behaviors. The goal of this investigation was to identify family systems in which there is considerable interdependency of positive or negative parenting behaviors across the mother–infant and father–infant dyads.

Early parenting by mothers and fathers should be studied within a family context. Family systems theories highlight the importance of considering the dynamic nature of interactions between the marital and parenting systems, as mother–father relationships likely influence and are influenced by parent–child relationships (Cox & Paley, 1997; Minuchin, 1985). Considerable research has explored interactions between the marital relationship and parenting, and more limited research has explored associations among the interactions that occur between mothers and children and fathers and children within the same family. The coparenting literature, which focuses generally on whole-family interactions and on how parents present a united (or contradictory) approach to parenting (Feinberg, 2002; Gable, Crnic, & Belsky, 1995; J. McHale, 1997; J. McHale et al., 2002), has explored ways in which the marital relationship may be related to consistency across parents and/or to alliances and agreement in parenting practices (J. McHale et al., 2002). However, there has been little investigation to understand how the marital relationship may be associated with the degree to which observational qualities of mother–child and father–child interactions are similar.

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The present study, therefore, although related to the literatures on coparenting and marital conflict and parenting behaviors, is distinct in that the focus is on the degree to which parenting in one parent–child dyad is interrelated to parenting in the other parent–child dyad. In fact, there is limited empirical or theoretical evidence to suggest when and how the parenting of mothers and fathers within the same family is likely to be similar (Bell et al., 2007; Lovas, 2005; Russell & Russell, 1994; Winsler, Madigan, & Aquilino, 2005). In some families, positive emotions and interactions in one relationship may spread to the other relationship, whereas in other families this may not happen, and in fact negative emotions and interactions in one relationship may spread to the other relationship. Understanding these complex, multilevel interactions may be particularly important during infancy, when patterns of parenting are established (Bell et al., 2007; Cox et al., 1999).

Experiencing negative and insensitive interactions with both parents versus only one parent likely carries greater risk for the child. Likewise, experiencing sensitive, positive interactions with at least one parent may be an important protective factor when the parenting of the other parent is impaired (Mezulis, Hyde, & Clark, 2004). Similarly, exposure to sensitive parenting by both parents is likely linked to optimal child outcomes. For example, Ryan et al. (2006) demonstrated that at 24 and 36 months of age, children in two-parent families that had at least one parent with observed supportive behaviors had better cognitive outcomes than did those children without any supportive parents, whereas those children with supportive mothers and fathers attained the highest cognitive scores. Further, the coparenting literature suggests that consistent, positive parenting is linked to more favorable child outcomes (Feinberg, 2002; Gable et al., 1995; J. McHale et al., 2002). Therefore, it is important to understand the conditions under which there is contagion of negative or positive emotion and behavior between parent–child subsystems.

Recent research on fathers has called attention to the importance of understanding the father–child relationship within the larger family context. Research on fathering has examined the ways in which father–child interactions may differ from mother–child interactions (Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000; Lamb, 1997). The literature sometimes fails to recognize that mothers and fathers parent within the same family, and the parenting of one partner likely influences and is influenced by the parenting of the other partner. Moreover, with the exception of the coparenting literature, similarity among mothering and fathering within the same family has often been assumed implicitly rather than examined explicitly (Russell & Russell, 1994). The extent of influence between mothers and fathers in the same family may be a function of the quality of their relationship with each other.

### Marital Quality

Considerable research has demonstrated links between marital quality and parenting. Two recent meta-analytic reviews have suggested that the relationship between global

marital quality (Erel & Burman, 1995) and marital conflict (Krishnakumar & Buehler, 2000) and parenting is modest but consistent, although the direction of effects is not always clear (Grych, 2002). The *spillover hypothesis* suggests that conflict in the marital relationship is linked to negative parent–child interactions. Marital hostility, conflict, and withdrawal have been linked to harsh and coercive, as well as unresponsive and insensitive, parenting behaviors (Belsky et al., 1991; Cox et al., 1999; Cummings & Davies, 2002; Kaczynski et al., 2006; Krishnakumar & Buehler, 2000). This spillover from the marital relationship to the parent–child relationship has been demonstrated for mothers and fathers. However, paternal parenting behaviors may be more closely related to marital relations than maternal parenting behaviors (Belsky et al., 1991; Feldman, 2000; Fincham, 1998; Kaczynski et al., 2006; Krishnakumar & Buehler, 2000; Parke, 1996; Pelchat et al., 2003). For example, in a review of associations between marital and parenting processes, Coiro and Emery (1998) concluded that marital quality and conflict are often related to the parenting of both parents, but when there are gender differences in the links between marital quality and parenting, the parenting of fathers is more affected, especially during infancy and toddlerhood. In comparison to mothering, fathering may be more interdependent with the mother–child and mother–father relationship (Doherty, Kouneski, & Erickson, 1998). For men, the roles of father and husband may be less distinct than the roles of mother and wife for women (Coiro & Emery, 1998; Parke, 1996). A loving and supportive marital relationship may provide a context for positive fathering behaviors to be learned and practiced (Bradford & Hawkins, 2006).

The nature of the relationship between marital processes and parenting may vary for mothers and fathers. For example, Belsky et al. (1991) showed that mothers and fathers were both influenced in their parenting by the marital relationship, but in different ways. They found that, over time, reduced marital satisfaction among fathers was associated with less sensitive parenting, whereas reduced marital satisfaction among mothers was associated with more involved, sensitive parenting. This compensatory relationship between marital discord and parenting for mothers, however, appears to be rare in the extant literature (Krishnakumar & Buehler, 2000). Margolin, Gordis, and Oliver (2004) also have found that similar marital experiences may facilitate the emergence of different parenting behaviors for mothers and fathers. In their study, they found that marital hostility was related to a lack of empathy toward the child for fathers and the expression of negative affect toward the child for mothers during dyadic interactions with 9- to 13-year-old children.

Thus, the level of emotional support in the marriage and the level of conflict and hostility may be related to different observed qualities of parenting by mothers and fathers. In addition, the coparenting literature suggests that more positive marital relations predict more cohesive coparenting behaviors (J. McHale et al., 2002; Schoppe-Sullivan, Mangelsdorf, Brown, & Sokolowski, 2007). These traditional approaches to studying spillover from the marital to the

parental system, however, do not consider how the relationship between parents may influence associations between qualities of the mother–child relationship and the father–child relationship. The family context that emotionally supportive or hostile and conflicted marital relationships provide may be associated with the extent to which sensitive emotion and behavior and negative emotion and behavior in one parent–child dyad spill over to the other parent–child dyad. As noted, the degree to which there is spillover between positive and negative aspects of the mother–child and father–child relationship likely carries implications for child development.

### Partner Parenting

In addition to the marital relationship influencing parenting, the parenting of mothers may influence the parenting of fathers; and vice versa, the parenting of fathers may influence the parenting of mothers. Early fathering may be particularly contingent on mothering because mothers are likely to assume the primary caregiver role (Bradford & Hawkins, 2006; Coiro & Emery, 1998; Doherty et al., 1998; Parke, 1996). Mothers may model or scaffold parenting behaviors for fathers. However, there has been limited empirical testing of the premise that early parenting contingency is unidirectional, such that mothers influence fathers but fathers do not influence mothers. Family systems perspectives suggest that the influence of partner parenting would flow both ways so that the mother–child and father–child subsystems would influence each other (Cox & Paley, 1997). Especially in infancy when both parents are adjusting to the infant, parents may rely on each other for successful models of interacting with that particular child (Schoppe-Sullivan et al., 2007).

The manner in which one parent influences the parenting of the other parent may differ in specific family systems. When marriages are characterized by high conflict and low emotional support, the negative aspects of parenting in one parent–child relationship may be more likely to spill over to the other parent–child relationship. In contrast, when marriages are characterized by low conflict and high emotional support, the positive aspects of one parent's parenting may be more likely to spill over to the other parent's parenting. Marital system influences on parenting spillover may be particularly apparent for fathers, as the father's parenting may be both more contingent on the mother's parenting and more closely linked to marital quality than the mother's parenting (Doherty et al., 1998).

### Approaches to Studying Maternal and Paternal Behaviors Jointly

Much of the extant research on fathering is subject to shared method variance, as many studies have relied on a single reporter, usually the mother or the child, to provide information regarding paternal behaviors and child outcomes (Coley, 2001; Marsiglio, Amato, Day, & Lamb, 2000), and researchers have often assessed the independent and dependent variables using the same type of methodol-

ogy (Grych, 2002). Furthermore, there is a lack of research that utilizes diverse samples addressing parenting by mothers and fathers within the same family (Cabrera et al., 2000; Kelley, Smith, Green, Berndt, & Rogers, 1998; Roopnarine et al., 2005). Although evidence suggests that the parenting of mothers and that of fathers during early childhood are modestly correlated (Corwyn & Bradley, 1999; Feldman, 2000; Pelchat et al., 2003; Russell & Russell, 1994; Winsler et al., 2005), few studies have systematically examined differences in the magnitude of this correlation or family factors that may shape the nature of this correlation (Lovas, 2005; Russell & Russell, 1994; Ryan et al., 2006). A notable exception is Russell and Russell's (1994) study of Australian middle-class parents of school-aged children, in which they reported considerable variability in the similarity of maternal and paternal parenting behaviors and attitudes across families. Moreover, correlations indicate the degree of within-family similarity, but these correlations tell us little about directional effects or process-level interactions (Lovas, 2005; Russell & Russell, 1994). Designing successful family interventions, however, may require identifying more specifically which parent's behavior is driving the other parent's behavior. In addition, understanding mean differences and correlational patterns in mothering and fathering behaviors reveals little about the nature of family processes that may be related to these differences and that ultimately may impact child outcomes. Uncovering these processes, rather than inferring similar or different processes on the basis of different mean levels, has the potential to inform family interventions.

### The Present Study

In this study, we examined a model to predict simultaneously the observed parenting of mothers and fathers, including measures of partner parenting and interactions among perceived marital quality and partner parenting. In doing so, we examined the spillover of early parenting from one parent–child dyad to the other parent–child dyad and considered how perceived marital quality may be associated with the linkages between parenting behaviors. We addressed three primary research questions: (a) Do maternal sensitivity and negative intrusiveness predict paternal sensitivity and negative intrusiveness? (b) Likewise, do paternal sensitivity and negative intrusiveness predict maternal sensitivity and negative intrusiveness? (c) Does perceived marital quality moderate the relationships between maternal and paternal sensitivity and maternal and paternal negative intrusiveness?

We expected that mothers may scaffold or serve as role models for fathers in interacting with their infants so that higher levels of maternal negative and sensitive parenting would predict higher levels of these same parenting behaviors by fathers. We further hypothesized that spillover between parent–child interactions would differ on the basis of parental perceptions of marital quality. We expected perceived marital quality to moderate the relationship between one partner's parenting and the other partner's parenting. Specifically, we hypothesized that when marital quality was

high, there would be interdependence of sensitive parenting such that the sensitive parenting of each partner would predict the sensitive parenting of the other partner. Likewise, we expected that when marital quality was low, there would be interdependence of negative parenting such that the negative parenting of each parent would be positively related to the negative parenting of the other parent.

## Method

### Participants

The participants in this study were a subset of the Durham Child Health and Development Study (DCHDS), a longitudinal investigation of early child development in a socioeconomically and racially diverse sample living in and around a mid-sized southeastern city. Families were recruited for participation in the study through phone contact via birth record searches, fliers, and advertisements within the child's first 3 months of life. Of those families deemed eligible, approximately 87% enrolled in the study. Of the 185 families participating in the study, 98 families included fathers, and 97 of those families qualified for the present analyses because both parents participated in a dyadic free-play interaction with their 6-month-old infants. Although data collection began when the infant was 3 months old and continued throughout infancy and early childhood, we chose the 6-month time point for the present analyses because observations of parenting by both mothers and fathers were collected only at that time point. The subset of two-parent families was more economically advantaged and was composed of a higher percentage of European American families than the full sample. Of these parents, 80% ( $n = 80$ ) were married, but all parents were coresiding when the child was 6 months of age. The sample was 42% ( $n = 41$ ) African American and 58% ( $n = 56$ ) European American. Approximately 49% ( $n = 48$ ) of the infants were female. Infant age at the actual time of assessment ranged from 6 to 10 months, with a mean of 7 months. The mean income-needs ratio was 3.45 ( $SD = 2.25$ ), with a range of 0–10.87. The mean number of years of education was 15.31 ( $SD = 2.25$ ) for fathers and 15.27 ( $SD = 2.50$ ) for mothers, with a range of 8–20 years for both parents.

### Procedure

Data were collected during a home visit when the child was 6 months of age. The mother and the father were filmed separately in a semistructured 10-min dyadic free-play interaction with the infant. The dyad was seated on a blanket on the floor with a standard set of toys, and the caregiver was instructed to play with the child as he or she normally would if he or she had some free time during the day. The order of participation in the dyadic interaction was determined by a coin toss. When possible, the infant–parent interaction took place in a room apart from other household members. Each parent separately filled out self-report questionnaires while the partner participated in the infant–parent free-play interaction.

### Measures

*Parenting behavior.* An ethnically diverse, trained team of seven coders scored the videotapes for caregiver behavior, and a separate team of five coders scored the interactions for child behavior. All coders were blind to other information about the families. Different coders coded the mother–child and father–child interactions for each family. Two criterion coders trained all other coders until excellent reliability (intraclass correlation coefficient [ICC]  $> .80$ ) was maintained for each coder on every scale. Once reliability was met, noncriterion coders coded in pairs while continuing to code at least 20% of cases with a criterion coder. Reliability was monitored throughout the coding process. All interactions were coded by two coders. Each coding pair met to discuss scoring discrepancies and to reach a final consensus score for each scale.

Parent behavior during the parent–infant free-play interaction at 6 months was rated using seven 5-point global rating scales (Cox & Crnic, 2002) revised from scales adapted from the NICHD Study of Early Child Care (Cox et al., 1999; NICHD ECCRN, 1999). These scales included Sensitivity/Responsiveness, Intrusiveness, Detachment/Disengagement, Positive Regard for the Child, Negative Regard for the Child, Animation, and Stimulation of Development. To inform compositing of variables, we conducted exploratory factor analysis with an oblique rotation (i.e., promax) separately for data from mothers and from fathers. The orthogonal factor analysis suggested the presence of two distinct, relatively independent composites for the behavior of both parents. On the basis of these factors, we formed two composite parenting variables by calculating the mean of the scores for each relevant subscale. Intercoder reliability, which was determined by ICCs across each pair of coders, ranged from .80 to .89, yielding reliabilities of .88 for maternal sensitivity, .82 for paternal sensitivity, .82 for maternal negative intrusiveness, and .84 for paternal negative intrusiveness.

*Negative parenting.* The negative parenting factor, Negative Intrusive Parenting ( $\alpha = .87$  for mothers;  $\alpha = .82$  for fathers), consisted of the mean of negative regard and intrusiveness scores (factor loadings were .92 and .77, respectively). The Negative Regard scale rates the quantity and intensity of the parent's expression of negative feelings toward the child, including disapproving, harsh, or hostile vocalizations or facial expressions and tense and abrupt movements of the baby. The Intrusiveness scale measures the degree to which the parent controlled the interaction in a parent-centered manner. Intrusive behaviors include imposing parental agendas despite clear contrary signals from the child, overstimulation, inappropriately fast pacing, and physically manipulating the child in a way that fails to foster autonomy or to facilitate the child's exploration. Accordingly, higher scores on the Negative Intrusiveness subscale represent parenting behaviors that are parent-focused, harsh, and affectively negative.

*Sensitive parenting.* The second factor, Sensitive Parenting ( $\alpha = .65$  for mothers and for fathers), consisted of the mean of the reverse score for Detachment/Disengagement and

the scores for Sensitivity/Responsiveness, Positive Regard, Animation, and Stimulation of Development (factor loadings were .73, .88, .85, .89, and .71, respectively). The Detachment/Disengagement scale describes the degree to which the parent was emotionally distant, uninvolved, or unaware of the child's signals or needs for appropriate facilitation or care. The Sensitivity/Responsiveness scale, which was adapted from Ainsworth, Blehar, Waters, and Wall (1978), describes the degree to which the parent was aware of and responsive to the child's bids and signals and achieved synchrony with the child. The Positive Regard scale rates the quantity and intensity of the parent's expression of positive feelings toward the child, including praise, smiling, physical affection, playful behavior, and overall enjoyment. The Animation scale rates the quantity and intensity of parental vocal, physical, and affective energy and animation during the interaction. The Stimulation of Development scale measures the degree to which the parent engaged in age-appropriate behaviors that foster cognitive and physical development with the child. Hence, higher scores on the Sensitivity subscale reflect parenting behaviors that are child-centered, engaged, warm, and stimulating.

*Income-needs ratios.* Mothers reported total household income and household size. Income-needs ratios were calculated by dividing the reported household income by the federally determined poverty threshold for the number of individuals living in the household. Income-needs ratios above 1 indicate that a family is able to provide for basic needs, whereas ratios below 1 indicate that the family is unable to do so.

*Partner relationship.* We measured the relationship between the mother and father in terms of emotional intimacy and conflict using two different scales on which both partners self-reported. The Personal Assessment of Intimacy in Relationships (PAIR) scale (Schaefer & Olson, 1981) measures the degree of intimacy in a romantic relationship. The Emotional Intimacy subscale consists of six items rated on a 5-point scale, ranging from *strongly disagree* (1) to *strongly agree* (5). A sample item is "My (spouse/partner) really understands my hurts and joys." The mean of the items is calculated, with higher scores indicating greater emotional intimacy. The measure has demonstrated acceptable levels of test-retest validity and internal consistency (Schaefer & Olson, 1981). The internal consistency for the current sample was  $\alpha = .82$  for mothers and  $\alpha = .75$  for fathers. The Conflict subscale of Braiker and Kelley's (1979) Relationships Scales, which measures the frequency and intensity of overt antagonism and negativity in a relationship, consists of the mean of five items rated on a 9-point scale, ranging from *not at all* (1) to *very much* (9). For example, respondents were asked to rate this item: "How often do you feel angry or resentful toward your partner?" The internal consistency ratings for the current sample on the conflict scale were  $\alpha = .76$  for mothers and  $\alpha = .75$  for fathers. The Emotional Intimacy and Conflict subscales were highly correlated for mothers ( $r = -.65$ ,  $p < .001$ ) and fathers ( $r = -.68$ ,  $p < .001$ ). A marital quality variable was constructed by first converting the 5-point scale into a 9-point scale (multiplying each item's score by 9 and dividing by 5) and then subtracting the

conflict score from the emotional intimacy score. Accordingly, higher levels of marital quality represent perceptions that the marriage is high in emotional intimacy and low in conflict.

*Child affect.* We also rated child behavior during the parent-child free-play interaction at 6 months using 5-point global rating scales (Cox & Crnic, 2002) revised from scales developed in the NICHD Study of Early Child Care (Cox et al., 1999; NICHD ECCRN, 1999). In the present investigation, only the ratings for the child's positive and negative mood were included. Both scales consider the intensity and frequency of the child's affective displays. Intercoder reliability ratings were ICC = .88 for negative mood and ICC = .84 for positive mood. Negative and positive mood were highly correlated ( $r = .72$ ). A composite mood score was created by subtracting negative mood from positive mood, such that higher scores on the composite reflect higher levels of positive mood.

### Analytic Strategy

We estimated a nonrecursive path model, which included reciprocal paths between paternal and maternal parenting, to test the hypotheses (see Figure 1). This modeling technique allows for within-family analyses by facilitating the simultaneous estimation of maternal and paternal parenting while also allowing for the prediction of the parenting of mothers and fathers by the parenting of the partner. This path model provided a direct test of our hypotheses regarding the potential bidirectionality between each parent's parenting behaviors, both alone and in combination with perceived marital quality. This is a relatively novel analytical approach that conforms to the complex research questions regarding parenting contingency. If we modeled these relationships using separate regression equations to predict maternal and paternal parenting, it would not allow for comparisons of maternal and paternal results. Although multilevel regression modeling techniques account for within-family variance, they would not allow for the prediction of one parent's parenting by the other parent's parenting. The bidirectional relationships between maternal and paternal parenting could be estimated only in a nonrecursive path model that allowed the presence of multiple endogenous variables and feedback loops among multiple endogenous variables in a single model (Kline, 2005).

The nonrecursive path model included marital quality, an interaction term between marital quality and partner parenting, and control variables consisting of income-needs ratios, ethnicity, child gender, and observed child affect during the dyadic interaction as exogenous variables. The four parenting composites were included as exogenous and endogenous variables. It is important to note that this nonrecursive path model was identified because we included instrumental variables in the model that were associated with one variable in the reciprocal path but not the other. For example, for the reciprocal paths between maternal and paternal sensitive parenting, child affect during play with mother and mother-perceived marital quality were associated with maternal sensitive parenting, whereas child affect

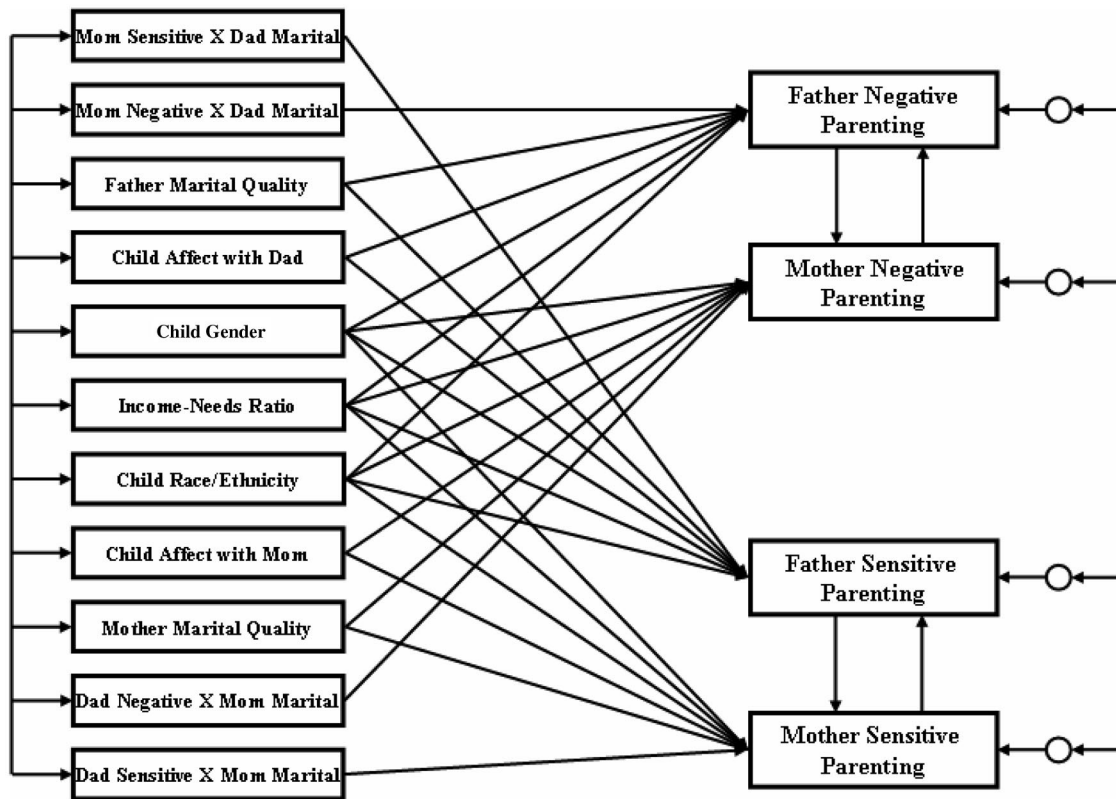


Figure 1. Path model predicting maternal and paternal parenting.

during play with father and father-perceived marital quality were associated with paternal sensitive parenting. See Kline (2005) for further description of the special issues related to nonrecursive models, including identification and underlying assumptions.

Prior to conducting the path analysis, we examined the univariate and multivariate normality assumptions of the data using PRELIS 8.80 (Jöreskog & Sörbom, 1996). The univariate skewness and kurtosis of each endogenous variable was not significant, indicating that every endogenous variable was normally distributed. The multivariate test of skewness and kurtosis also yielded nonsignificant results, indicating multivariate normal distribution of the four endogenous variables.

We estimated the model using the full information maximum likelihood (FIML) estimation. We examined the global fit of the final model using several fit indices, including the comparative fit index (CFI), for which values above .90 indicate a good model fit (Bentler, 1990; Bollen, 1990; Kline, 2005), the root-mean-square error of approximation (RMSEA; Steiger, 1990), for which values below .05 indicate an excellent model fit and values of .05 to .08 indicate a good fit (Browne & Cudeck, 1993), and the  $\chi^2/df$  ratio for which ratios of less than 2.5 or 3 reflect a good model fit (Kline, 2005). If a variable was significantly associated with the parenting of one parent but not with the parenting of the other parent, the model was run with an equality constraint

imposed on the path from this particular variable to maternal parenting and on the path from the same predictor to paternal parenting. If the fit of the model with the imposed equality constraint decreased significantly from the fit of the model without the equality constraint, it could be inferred that the association between this variable and maternal parenting was different from its association with paternal parenting, and the corresponding path coefficients from the model without the equality constraint were reported and interpreted. Conversely, if imposing the equality constraint did not produce a statistically significant decrease in the model fit, it could be inferred that the relationship between the predictor in question and parenting was likely to be consistent for both parents, and the corresponding path coefficients from the model with the equality constraint were reported and interpreted.

## Results

### *Descriptive Statistics and Bivariate Correlations*

The descriptive statistics and bivariate correlations for the variables included in all analyses appear in Table 1. Mothers and fathers demonstrated similar levels of negative parenting behaviors (mean for mothers = 2.34; mean for fathers = 2.30),  $t(97) = 0.43$ ,  $p = .67$ . In addition, negative, intrusive parenting by mothers and fathers were moderately corre-

Table 1  
Descriptive Statistics and Bivariate Correlations Among Independent and Dependent Variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Maternal sensitive parenting	—										
2. Paternal sensitive parenting	.14	—									
3. Maternal negative parenting	-.41***	-.16	—								
4. Paternal negative parenting	-.18	-.25*	.40***	—							
5. Income-needs ratio	.25*	.01	-.17	-.01	—						
6. Race/ethnicity <sup>a</sup>	-.20*	-.09	.25*	.33***	-.07	—					
7. Mother report of marital quality	-.17	-.01	.06	-.08	-.13	-.16	—				
8. Father report of marital quality	.00	.10	-.06	.00	.02	-.15	.45***	—			
9. Child gender <sup>b</sup>	.10	.10	-.14	.15	.00	-.03	-.12	.06	—		
10. Child affect with mother	.41***	.07	-.45***	-.31**	-.03	-.10	-.07	-.09	-.03	—	
11. Child affect with father	-.09	.27**	-.10	-.27**	-.17	.00	.12	.04	.08	.23*	—
<i>M</i>	3.54	3.17	2.34	2.30	3.45		2.50	2.47		0.84	0.91
<i>SD</i>	0.78	0.74	0.81	0.82	2.25		1.28	1.18		1.68	1.51

Note. *N* = 97.

<sup>a</sup>0 = White, 1 = African American. <sup>b</sup>0 = female, 1 = male.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

lated (*r* = .40, *p* < .0001). Mothers, however, demonstrated significantly higher levels of sensitive parenting than did fathers (mean for mothers = 3.54; mean for fathers = 3.17), *t*(97) = 4.53, *p* < .0001. Maternal and paternal sensitive parenting scores were not significantly correlated. There were no significant bivariate correlations between maternal or paternal self-reported marital quality and observed sensitive or negative parenting behaviors.

Path Model

The nonrecursive path model was estimated using AMOS Version 6 (Arbuckle & Wothke, 1999). All continuous variables were mean-centered prior to model estimation. All model fit indexes,  $\chi^2(16, N = 97) = 16.99, p = .39; \chi^2/df = 1.06; CFI = .99; RMSEA = .025$ , indicated that the model fit the data well. Parameter estimates from the path model are summarized in Table 2.

Sensitive Parenting

Although the income-needs ratio and race/ethnicity were shown to relate differently to sensitive parenting of mothers

and fathers in the base model, equality constraint tests, as presented in Table 3, showed that neither the income-needs ratio nor race/ethnicity were differentially related to the observed sensitive parenting of mothers and fathers. When an equality constraint was imposed on the path from the income-needs ratio to maternal sensitive parenting and on the path from the income-needs ratio to paternal sensitive parenting, higher income-needs ratios were significantly positively linked to higher levels of sensitive parenting (*b* = .05, *p* = .02). Child affect predicted sensitive parenting of fathers (*b* = .14, *p* = .004) and mothers (*b* = .17, *p* < .001), such that higher levels of positive affect predicted higher levels of sensitive parenting.

In support of the hypotheses, there were significant interactions between self-perceived marital quality and partner sensitive parenting in the prediction of maternal and paternal sensitive parenting. We used the pick-a-point method to probe the significant interactions in multiple regression analysis (Aiken & West, 1991). Specifically, the simple slopes and their significance levels for the relationship between maternal and paternal sensitive parenting were tested at three levels of self-ratings of marital quality (1 *SD* above the mean, at the mean, and 1 *SD* below the mean).

Table 2  
Path Coefficients and Significance Levels for Path Model in Figure 1

Variable	Paternal negative parenting			Maternal negative parenting			Paternal sensitive parenting			Maternal sensitive parenting		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Income-needs ratio	.02	.04	.06	-.06	.03	-.15	.01	.04	.03	.09	.03	.26**
Race/ethnicity <sup>a</sup>	.34	.17	.20*	.20	.22	.12	-.04	.82	-.02	-.31	.14	-.20*
Child gender <sup>b</sup>	.42	.15	.26**	-.27	.16	-.17	.10	.50	.06	.14	.14	.09
Child affect	-.12	.05	-.21*	-.18	.06	-.37***	.14	.00	.28**	.17	.04	.38***
Marital quality	.02	.06	.03	.01	.05	.01	.05	.06	.08	-.05	.06	-.08
Partner parenting	.58	.22	.57**	.18	.34	.19	.20	.20	.21	-.08	.26	-.07
Partner Parenting × Marital Quality	-.04	.06	-.05	-.03	.05	-.04	.21	.08	.25**	.21	.08	.23**

Note.  $\chi^2(16, N = 97) = 16.99, p = .39; \chi^2/df = 1.06$ ; comparative fit index = .99; root-mean-square error of approximation = .025.

<sup>a</sup>0 = White, 1 = African American. <sup>b</sup>0 = female, 1 = male.

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

Table 3  
Equality Constraint Tests Between Mothers and Fathers

Equality constraint test	Chi-square test		Chi-square difference test		CFI	RMSEA
	$\chi^2$	df	$\chi^2$	df		
Base model without any equality constraint (model in Figure 1)	17.00	16			.99	.025
Equality constraint on income-needs ratio → sensitive parenting	20.03	17	3.03	1	.98	.043
Equality constraint on race/ethnicity → sensitive parenting	18.72	17	1.73	1	.99	.033
Equality constraint on race/ethnicity → negative parenting	17.20	17	0.20	1	1.00	.011
Equality constraint on child gender → negative parenting	21.25	17	4.26*	1	.97	.051
Equality constraint on partner parenting → self-parenting	17.89	17	0.90	1	.99	.023

Note. CFI = comparative fit index; RMSEA = root-mean-square error of approximation.  
\*  $p < .05$ .

The results (as shown in Figure 2) revealed that the slope defining the effect of maternal sensitive parenting on paternal sensitive parenting was significantly different from zero when paternal ratings of marital quality were 1 SD above the mean ( $b = .33, p = .01$ ). Accordingly, paternal ratings of marital quality moderated the relationship between maternal and paternal sensitive parenting such that higher levels of maternal sensitive parenting were related to higher

levels of paternal sensitive parenting only when fathers reported higher levels of marital quality. Similarly, as presented in Figure 3, the slope defining the effect of paternal sensitive parenting on maternal sensitive parenting was significantly different from zero when maternal ratings of marital quality were 1 SD above the mean ( $b = .29, p = .03$ ). Accordingly, maternal ratings of marital quality moderated the relationship between paternal and maternal sen-

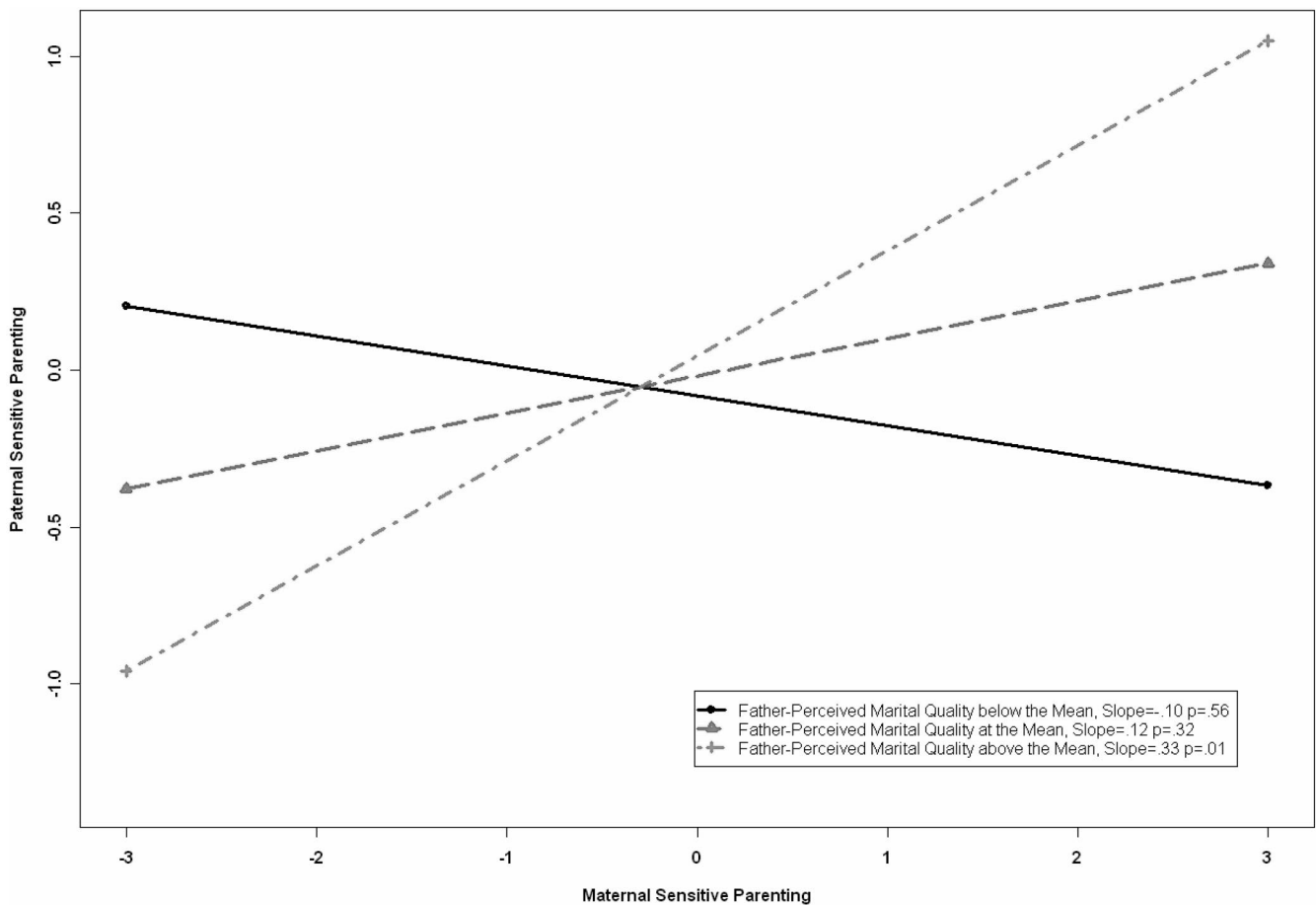


Figure 2. Paternal perceived marital quality moderates the effect of maternal sensitive parenting on paternal sensitive parenting.



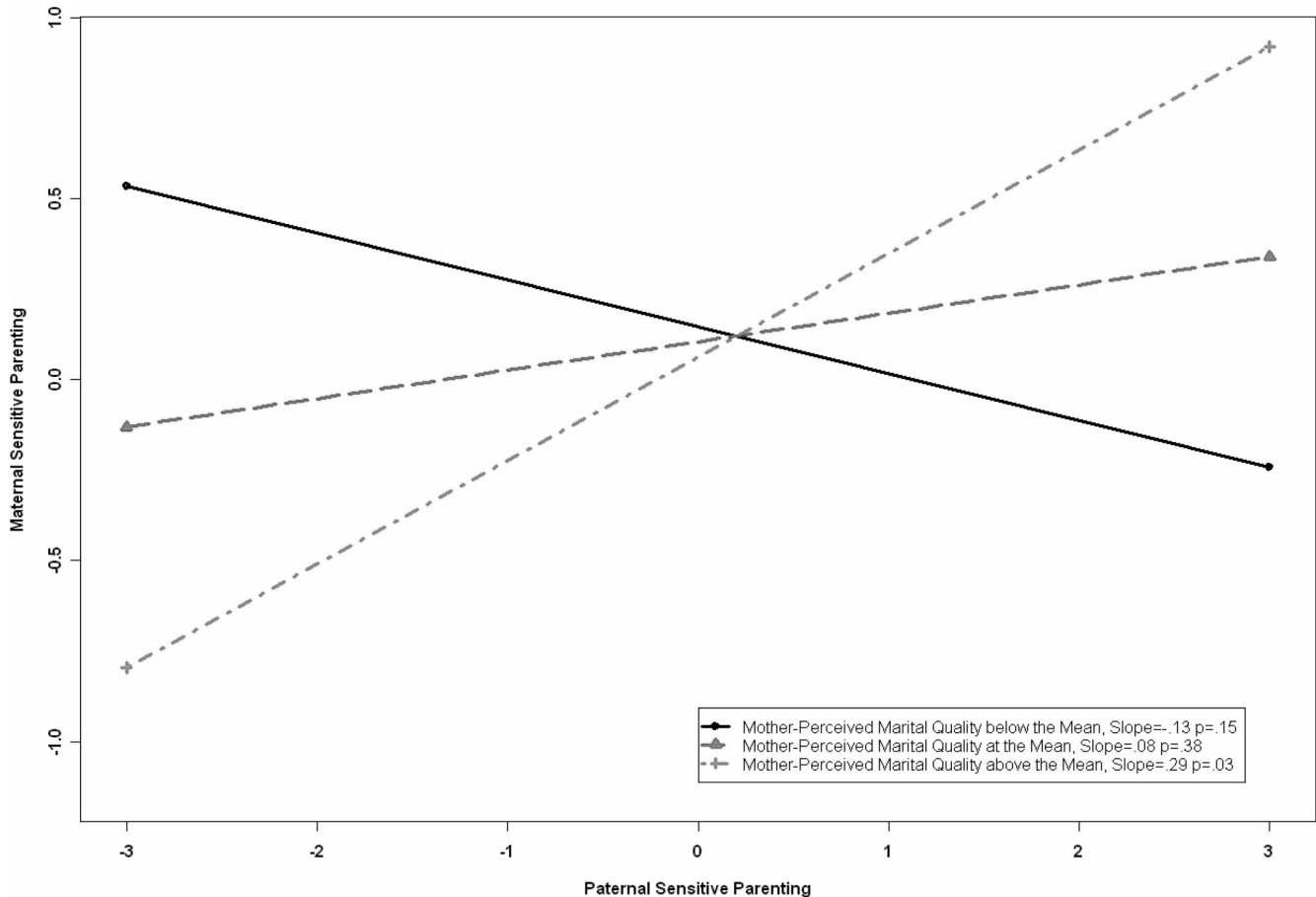


Figure 3. Maternal perceived marital quality moderates the effect of paternal sensitive parenting on maternal sensitive parenting.

sitive parenting such that higher levels of paternal sensitive parenting were related to higher levels of maternal sensitive parenting only when mothers reported higher levels of marital quality.

### Negative Parenting

Although race/ethnicity was shown to relate differently to negative parenting of mothers and fathers in the model, equality constraint tests, as presented in Table 3, showed that race/ethnicity was not differentially related to negative parenting of mothers and fathers ( $b = .29$ ,  $p = .02$ ). This indicated that African American parents exhibited higher levels of negative parenting during play with their children. Child gender was differentially associated with negative parenting of mothers and fathers. When an equality constraint was imposed on the path from child gender to paternal negative parenting and from child gender to maternal negative parenting, the model fit decreased significantly (as presented in Table 3). Specifically, male child gender was significantly associated with paternal negative parenting only ( $b = .42$ ,  $p = .005$ ). Child affect predicted paternal ( $b = -.12$ ,  $p = .02$ ) and maternal ( $b = -.18$ ,  $p = .005$ )

negative parenting, indicating that higher levels of child positive affect during the dyadic interaction predicted lower levels of negative parenting by both mothers and fathers. There was no support for the hypothesis suggesting a moderating role for perceived marital quality in the relationship between maternal and paternal negative parenting. Although there was evidence of only a positive main effect of maternal negative parenting on paternal negative parenting but not vice versa in the model, an equality constraint test showed that the path coefficient for the link from maternal negative parenting to paternal negative parenting did not differ from that for the path from paternal negative parenting to maternal negative parenting. Accordingly, partner negative parenting showed the same positive effect on negative parenting for both mothers and fathers ( $b = .53$ ,  $p = .007$ ).

### Discussion

The primary goal of this investigation was to study relationships among early parenting by mothers and fathers of infants within the same family. Although theoretical work has suggested that early fathering may be contingent on

early mothering (Bradford & Hawkins, 2006; Doherty et al., 1998; Parke, 1996), this study explicitly tested this hypothesis by estimating the relationship between the observed parenting of one partner and the observed parenting of the other partner. Traditional notions of spillover in family research have explored how the marital relationship may influence parenting (Cummings & Davies, 2002; Erel & Burman, 1995; Fincham, 1998; Krishnakumar & Buehler, 2000). In this study, we used a novel analytical approach by estimating a nonrecursive path model to explore how sensitive and negative interactions between the infant and one parent may spill over to interactions between the other parent and the infant. We examined whether the relationship between maternal and paternal parenting may vary depending on perceptions of marital conflict and emotional intimacy. We found consistent evidence for the interdependence of parenting by mothers and fathers.

### *Parenting Spillover*

Identifying family systems in which negative emotions and behavior in one parent–child dyad spill over to the other parent–child dyad presents an important research goal. If the negative, intrusive parenting that characterizes one parent’s interaction with the child does not spill over to the other parent–child interaction, then the parenting of the less negative parent may serve as a buffer so that the child may be less likely to experience the poor outcomes associated with negative, intrusive parenting. Our results suggest that negative, intrusive parenting in each parent–infant dyad is positively associated with negative, intrusive parenting in the other parent–infant dyad. Thus, contrary to the hypothesis, early fathering was not unidirectionally contingent upon early mothering. Rather, there is evidence of contagion of negative, intrusive parenting across parent–infant dyads. This finding suggests that children are likely to experience similar levels of negative, intrusive parenting in interactions with mothers and fathers. Thus, consistency in exposure to negative parenting is likely, such that opportunities for one parent to buffer the child from the poor outcomes associated with the negative parenting of the other parent may be rare. In fact, perhaps one reason for consistent links between parental negative parenting and child behavior problems (Campbell, Shaw, & Gilliom, 2000; NICHD ECCRN, 2004; Shaw, Gilliom, Ingoldsby, & Nagin, 2003; Shaw, Keenan, & Vondra, 1994) is related to experiencing negative parenting with both parents.

Optimal childrearing environments likely feature contagion of positive feelings and behavior between the mother–child and father–child dyads so that the child experiences sensitive, responsive parenting with both parents (Gable et al., 1995; Ryan et al., 2006). Positive marital processes may be associated with positive child outcomes not only because high quality marriages support sensitive parenting by each partner (Cox et al., 1999; Cummings & Davies, 2002; Fincham, 1998; Grych, 2002) but also because these marriages promote the contagion of sensitive parenting from one parent–child dyad to the other parent–child dyad. The findings from this study, in support of the hypothesis, sug-

gest that when parents experience a marital relationship that is low in conflict and high in emotional support, sensitivity that characterizes one parent–child relationship may spill over to the other parent–child relationship. This flow of positive behavior is similar for mothers and fathers, as perceived marital quality functioned in the same manner for both parents. Parents in high-quality marriages may spend more time in triadic family interactions, and thus each may have the opportunity to emulate the partner’s sensitive parenting behaviors. Alternatively, parents who perceive high marital quality may be more supportive of a positive relationship between the child and the other parent. Parents who are not experiencing marital conflict and who feel emotionally close to their partners may be more open to learning and adopting the sensitive ways in which the partner successfully interacts with the infant. Further, perhaps higher levels of marital quality indicate a more affectively positive environment that in turn promotes similar levels of sensitivity for both parents (Bradford & Hawkins, 2006; Schoppe-Sullivan et al., 2007). Alternatively, one source of conflict in parental relationships may involve differences in parenting, so that partners who parent in similarly sensitive ways may report experiencing greater marital quality (Feinberg, 2002). These findings are in line with evidence suggesting links between positive marital relations and harmonious coparenting behaviors (J. McHale et al., 2002; Schoppe-Sullivan et al., 2007). It is important to note, however, that despite similar relations between self-reported marital quality and the associations between sensitive parenting by mothers and fathers, it is premature to conclude that the same processes are linking marital quality and parenting for mothers and fathers. More specific process-oriented longitudinal research is necessary to tease apart potential differences linking marital and parenting processes for mothers and fathers.

### *Maternal and Paternal Parenting*

Mothers and fathers displayed similar mean levels of negative parenting, and negative intrusiveness by mothers and fathers was moderately correlated, suggesting within- and across-parent gender similarities. Mothers displayed higher mean levels of sensitivity than fathers. This finding adds to the growing research base suggesting that mothers of infants and young children tend to provide more cognitive stimulation and to display more positive affect than do fathers (Lamb, 1997; Parke, 1996; Power, 1985; Roopnarine et al., 2005). The ways in which fathers interact with young children may be qualitatively different from the ways in which mothers do so. Viewing fathering through a mothering lens may fail to detect important individual differences and to identify paternal behaviors that ultimately may be related to child outcomes (Lamb, 1997). Fathers may have displayed lower levels of sensitivity in this task due to lack of experience in a dyadic play context, given that mothers may be the primary caregivers at this age. The path model results enhance the bivariate findings because there is a significant positive relationship between sensitive parent-

ing by mothers and fathers in families characterized by high levels of perceived marital quality.

Although not the focus of these analyses, the consistency of predictors of parenting by mothers and fathers highlights the importance of examining mothering and fathering as embedded within particular family contexts. These findings strongly suggest that early parenting behaviors by mothers and fathers are associated with similar family, parent, and child characteristics. However, child gender emerged as the one exception to the homogeneous pattern of predictors of maternal and paternal parenting. Fathers of boys displayed more negative intrusiveness than did fathers of girls, whereas child gender was not associated with parenting by mothers. This finding adds to the mixed literature on the effects of child gender on parenting by providing some support for the more gendered early parenting of fathers (S. M. McHale, Crouter, & Whiteman, 2003; Roopnarine et al., 2005) and, more specifically, by suggesting that father-son dyads may be characterized by less optimal parenting than other parent-child dyads (Lovas, 2005). Perhaps fathers of sons engaged in more rough-and-tumble or physical play with their infants than did fathers of daughters (Lamb, 1997; MacDonald & Parke, 1986; Marsiglio et al., 2000; Power, 1985). Fathers may be less experienced at picking up on the behavioral cues of their infants, so continuing to engage in this play despite protests from the child would be considered intrusive (Lovas, 2005; Power, 1985).

Child affect during the dyadic interaction was included in the models as a control variable, and in fact child affect was associated with maternal and paternal parenting. Each parent is interacting with the same child, so including child mood with each parent can account for some of the situation-specific variance. The direction of effects is unclear and may not be consistent for both types of parenting and for both parents. Harsher, more intrusive parenting behaviors may cause child negative affect, or alternatively, child negative affect may elicit these negative parenting behaviors. Similarly, sensitive parenting may elicit positive affect from the child, or positive affect from the child may be more conducive to sensitive parenting behaviors. A microanalytic approach to the affective nature of these interactions may help to tease apart directionality.

### *Limitations*

Our findings highlight the interdependence of negative and sensitive parenting behaviors in mother-infant and father-infant interactions. Marital quality moderated the relationship between maternal and paternal sensitive parenting, but negative, intrusive parenting by both parents was similar irrespective of self-reported marital quality. Other factors, including stress, depression, and parental relationship duration, may influence the interrelations between parenting and thus should be included in future investigations. This study focused on parent factors, and although child affect during the interactions was used as a control variable, future studies should consider the role of child factors (temperament and gender) in potentially moderating the

relationship between maternal and paternal parenting (Lovas, 2005; Schoppe-Sullivan et al., 2007).

Further, these findings are restricted to parenting of 6-month-old infants from working and middle-class families. Fathers may become more involved as their children age, and thus future investigations should examine the relative trajectories of mothering and fathering and the influences of family system dynamics across development. The interactive effects of parenting may be especially important to study longitudinally, as parents may rely more on their partners for parenting guidance during particular points in child development (Bell et al., 2007; Cox et al., 1999). Additionally, although this study did include a relatively diverse sample, the findings may vary in more affluent and in more disadvantaged samples. We did not directly examine the potential for race/ethnicity or the income-needs ratio to moderate the relationships between maternal and paternal parenting. Although we did find that race/ethnicity was associated with the parenting of mothers and fathers, it is important to note that, as in many community samples, race/ethnicity and economic advantage were likely confounded, such that the race effects may have been partially explained by race-based differences in socioeconomic status. There is a paucity of marital research on African American families, so little is known about how the marital, father-child, and mother-child subsystems may be related (McLoyd, Cauce, Takeuchi, & Wilson, 2000). Finally, child outcomes were not included in this study, yet understanding how parenting by mothers and fathers may differentially influence child outcomes is a clear next step. It will also be important to extend this approach to whole-family interactions to understand how similarities in mother-child and father-child dyads may be linked to coparenting processes. There is little evidence to suggest that the nature of the dyadic relationship will extend directly to the coparenting or triadic relationship (J. McHale et al., 2002).

### *Implications*

This study expands the current research base by using multiple methods to examine relations among early parenting by mothers and fathers within the same family. These findings provide support for examining interactions across multiple family systems, as the relationship between the mother-child and father-child relationships interacts with the marital relationship for sensitive parenting. The interdependence of paternal and maternal negative parenting supports the inclusion of paternal parenting in studies linking maternal behaviors and negative child outcomes. Perhaps the strength of the relationship between maternal negative parenting behaviors and child outcomes is in part accounted for by exposure to negative parenting in both parent-child relationships. In addition, the long-term stability of child behavior problems (Campbell et al., 2000; NICHD ECCRN, 2004; Shaw et al., 1994, 2003) may in part be accounted for by exposure to negative parenting by both parents. Thus, the parenting behaviors of both parents should be considered when examining predictors of behavior problem trajectories. Moreover, these findings may suggest that intervening

to reduce the negative parenting of one parent may have positive, indirect effects on the parenting of the other parent. This study lends support to mounting evidence that effective family interventions may need to target marital, parenting, and coparenting relationships (Feinberg, 2002; Kaczynski et al., 2006). Enhancing marital quality by reducing conflict and promoting emotional intimacy may not only support positive parenting in each dyad, but it may also indirectly support contagion of positive parenting from one parent-child dyad to the other parent-child dyad and thus promote positive child development.

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