

## Goodness-of-fit in family context: Infant temperament, marital quality, and early coparenting behavior<sup>☆</sup>

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### Abstract

This study examined the contributions of infant temperament and marital relationship quality to the quality of the early coparenting relationship for couples parenting 3.5-month-old infants. Marital quality was assessed observationally during the third trimester of pregnancy. When infants were 3.5 months old, infant temperamental characteristics (fussiness and unadaptability) were rated by parents and observers and coparenting behavior was assessed observationally in play and child care contexts. Results indicated that associations between infant temperament and coparenting behavior depended on marital quality: couples with high marital quality showed more optimal coparenting behavior when faced with a challenging infant, whereas couples with low marital quality showed less optimal coparenting behavior when caring for a challenging infant.

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Many parents prepare extensively, both physically and psychologically, for the arrival of a new infant. Nurseries are painted, childbirth education classes completed, discussions with siblings held, and often, fantasies about changes in family life shared with an intimate partner or other likely caregiver. But, throughout this process, for even the most well prepared parents, there is a “wild card” on the horizon. A crucial element remains largely unknown: the infant herself. What kind of baby is about to be welcomed into the family system?

Despite the obvious significance of the infant’s temperament in shaping the larger family system of which she or he is a part, scant research has focused on understanding how the infant’s characteristics affect the family system beyond consideration of effects on parent–child (primarily mother–child) relationships (e.g., Crockenberg, 1981; Mangelsdorf & Frosch, 2000; Vaughn & Bost, 1999), and to a lesser extent marital relationships (e.g., Belsky & Rovine, 1990; Leerkes & Crockenberg, 2002). In the present study, we examined the role of the infant’s temperament in relation to the quality of the emerging *coparenting relationship*, or the relationship between adults in the family as parents. We focused specifically on two aspects of infant negative emotionality, fussiness and unadaptability (Putnam, Ellis, & Rothbart, 2001), which may be particularly challenging for parents. Further, the quality of the marital relationship

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was considered as a potential moderator of the associations between infant temperament and emerging coparenting behavior.

## 1. Coparenting and the family system

Family systems theory gives special importance to the coparenting relationship (e.g., Minuchin, 1974), referring to it as the family's executive subsystem. Coparenting behavior is typically defined as the quality of coordination between adults in their parental roles (Cowan & McHale, 1996; McHale, 1997; McHale, Kuersten-Hogan, Lauretti, & Rasmussen, 2000), and primarily includes supportive and undermining dimensions (Belsky, Putnam, & Crnic, 1996; Gable, Belsky, & Crnic, 1995; McHale, 1995; McHale, Kuersten, & Lauretti, 1996). Over the past decade, research on coparenting has flourished (McHale et al., 2002). Much of this research productivity is reflected in studies of the links between coparenting behavior and children's adjustment. Across a number of studies, consistent associations have been found between more unsupportive, undermining coparenting behavior and child behavior problems and deficits in self-regulation (e.g., Belsky, Woodworth, & Crnic, 1996; Brody & Flor, 1996; McHale & Rasmussen, 1998; Schoppe, Mangelsdorf, & Frosch, 2001), and between more supportive coparenting behavior and children's positive peer behavior, increased self-regulatory capabilities, and more harmonious sibling relationships (e.g., Brody, Stoneman, Smith, & Gibson, 1999; McHale, Johnson, & Sinclair, 1999). Moreover, this accumulating body of research has substantiated claims that coparenting processes can be differentiated from marital and parent-child processes empirically as well as theoretically (Belsky, Putnam, et al., 1996; Floyd, Gilliom, & Costigan, 1998; Margolin, Gordis, & John, 2001; McHale et al., 1999; McHale & Rasmussen, 1998; Stright & Neitzel, 2003).

However, research focused on understanding the forces that shape triadic coparenting processes in families has only just begun (McHale et al., 2004; Schoppe-Sullivan, 2003; Stright & Bales, 2003; Talbot & McHale, 2004; Van Egeren, 2003). Identifying factors that set the course for coparenting dynamics in families with young children is imperative, given the significance of coparenting for understanding children's adjustment, combined with the fact that coparenting quality shows stability across early infancy (Fivaz-Depeursinge, Frascarolo, & Corboz-Warnery, 1996; Van Egeren, 2003) and into toddlerhood (Gable et al., 1995) and the preschool years (Schoppe-Sullivan, Mangelsdorf, Frosch, & McHale, 2004). Moreover, coparenting dynamics forecast changes in marital quality over time (Belsky & Hsieh, 1998; O'Brien & Peyton, 2002; Schoppe-Sullivan, Mangelsdorf, et al., 2004).

## 2. Coparenting and child temperament

Despite widespread recognition by developmental psychologists of the importance of the child's contributions to family processes, research has been slow to give adequate weight to children's contributions (Crouter & Booth, 2003). What we do know about effects of infants' characteristics has been mostly confined to the context of mother-infant relationships, and, with respect to temperament, has tended to focus on measures of infant "difficultiness" (i.e., negative mood, withdrawal, low adaptability, etc.; Sanson & Rothbart, 1995). Moreover, research on children's contributions has typically considered main effects of infant characteristics on family relationships, despite the likelihood that complex, interactive effects may more closely resemble real-world relations and processes, thus more accurately capturing the goodness-of-fit between the infant and her family (Crockenberg & Leerkes, 2003; Thomas & Chess, 1977).

To date, only one published study has examined the role infant temperament may play in shaping early coparenting processes. McHale et al. (2004) found no direct associations between infant negative reactivity and observed coparenting behavior in families with 3-month olds. A few other preliminary reports have considered infant temperament in relation to coparenting, with mixed results. Berkman, Alberts, Carleton, and McHale (2002) found that 3-month olds rated as more negative and inhibited by observers had parents who actually showed greater coparental cooperation during triadic play. In a preliminary report from the present study, Schoppe-Sullivan, Szewczyk Sokolowski, Brown, Beggs, and Mangelsdorf (2004) found that parents of more temperamentally extreme infants displayed both less supportive and less undermining coparenting behavior. In contrast, in Stright and Bales' (2003) study of families with preschoolers, no significant associations were obtained between a measure of children's difficult temperament and observations or self-reports of coparenting relationship quality. These contradictory findings are not clarified by taking into account related studies that have considered the effect of infant temperament on the marital relationship across the transition to parenthood. Such investigations have tended to find that difficult infant temperament is associated with declines in marital quality across the transition (e.g., Belsky & Rovine, 1990; Levy-Shiff, 1994).

However, in many ways the complex nature of relations between infant temperament and family processes mirrors those found between infant temperament and maternal caregiving behavior. Despite the longstanding belief that infants with difficult or challenging temperaments necessarily provoke less optimal parenting, results have been more mixed than might be intuitive (Crockenberg & Leerkes, 2003; Sanson & Rothbart, 1995). Specifically, the expected negative effects of challenging infants are more typically found in high-risk samples than in low-risk samples. In turn, null effects or associations between challenging infant temperament and positive maternal behavior have been more common when considering families free of obvious risk factors (Crockenberg & Leerkes, 2003). The apparent role of risk in these patterns led Crockenberg and Leerkes to hypothesize that infant difficulty may impact parents adversely only in conjunction with other risk factors. Stated more generally, “Everything else we know suggests that the effects of infant negative reactivity on the family vary as a function of other characteristics of family members and family contexts. It follows that we should anticipate interactive effects of infant negative reactivity in relation to the marital and co-parental relationships as well.” (p. 70).

In fact, although McHale et al.’s (2004) study examining infant temperament and coparenting did not find direct effects of temperament, evidence did suggest that mothers’ perceptions of infant negative reactivity interacted with couples’ prebirth functioning in relation to postpartum coparenting. Specifically, maternal pessimism about the future coparenting relationship was linked negatively to levels of supportive coparenting behavior postpartum, but only for families with highly reactive infants. Also unique to families with highly reactive infants was the strong positive relation found between prebirth marital quality and supportive coparenting. Although perspectives diverge concerning whether temperament or characteristics of couples or parents play the moderating role, the interaction effects of McHale et al. are generally consistent with Crockenberg and Leerkes’ (2003) transactive model of infant negative emotionality and family relationships. In this model, they suggest that when parents are psychologically prepared to welcome an infant into their family, the infant’s challenging temperament may draw them together, thus supporting a positive developmental trajectory for the child and family. In contrast, when parents are psychologically unprepared for parenting, the infant’s challenging temperament may negatively affect family, and thus child, functioning. The present study follows this model in examining prebirth marital quality as a moderator of associations between infant temperament and coparenting relationship quality. We conceive of marital quality as foundational to couples’ psychological preparedness for coparenting, such that marital quality “sets the stage” for coparenting behavior. This proposition closely coheres with studies linking prebirth marital quality to family processes in infancy and beyond (e.g., Diamond, Heinicke, & Mintz, 1996; Lewis, Owen, & Cox, 1988; Lindahl, Clements, & Markman, 1997; McHale et al., 2004; Schoppe-Sullivan, 2003), as well as with a growing body of evidence demonstrating concurrent connections between marital and coparenting relationships (e.g., Katz & Gottman, 1996; Kitzmann, 2000; McHale, 1997; Schoppe-Sullivan, Mangelsdorf, et al., 2004).

### 3. The present study

In order to gain a better understanding of coparenting processes in families with infants, we explored the role of the infant’s temperament in shaping the nature of the coparenting relationship. Specifically, we examined two aspects of infant temperament, fussiness, and unadaptability. These temperamental characteristics correspond to two important aspects of infant negative emotionality, irritable and fearful distress, which although often considered together as part of the difficult temperament construct (Putnam et al., 2001), are distinct aspects of emotionality that may pose unique challenges for parents.

Two key questions guided this research: (1) What are the associations between infant fussiness and unadaptability and observed coparenting behavior? As mentioned above, the one published study (McHale et al., 2004) that has addressed this question did not find any direct relationship between infant negative reactivity and coparenting behavior. Other preliminary reports, including one from the present study (Berkman et al., 2002; Schoppe-Sullivan, Szewczyk Sokolowski, et al., 2004), suggest that young infants who are described as emotionally negative may actually have parents with more positive coparenting relationships. Given the lack of consensus, though, we considered our investigation of the nature of direct effects to be exploratory.

The second question we addressed was: (2) Do infant fussiness and unadaptability interact with marital quality in shaping the coparenting relationship? With respect to this question, more firm predictions were made, consistent with the findings of McHale et al. (2004) and the model presented by Crockenberg and Leerkes (2003). Generally, we expected that prebirth marital quality would interact with infant temperament such that couples who had higher quality

relationships would “pull together” when faced with a challenging infant, thereby demonstrating more supportive and less undermining coparenting behavior. In contrast, the coparenting of couples with poorer quality relationships was expected to be more susceptible to the potentially negative effects of an infant’s challenging temperament. In other words, these couples were expected to show less supportive and more undermining coparenting when their infant was more fussy and unadaptable.

## 4. Method

### 4.1. Participants

Participants in this study included 97 couples who took part in a short-term longitudinal study of family transitions conducted in a small Midwestern city and surrounding area. Participating couples were recruited from childbirth education classes, and through local businesses, local newspapers, and newsletters. In order to meet inclusion criteria for this investigation, couples were required to be married or cohabiting and to be the natural parents of the child they were expecting.

At the time of the third-trimester assessment, expectant mothers’ ages ranged from 22 to 42 years with a mean age of 29.20 years (S.D. = 4.49 years). Expectant fathers’ ages ranged from 22 to 64 years with a mean age of 31.94 years (S.D. = 6.85 years). The mean family income ranged from US\$ 51,000 to 61,000 (overall range: *less than US\$ 10,000 to over US\$ 100,000*). Eighty-eight percent of expectant mothers and 80% of expectant fathers had obtained at least a college degree (range for expectant mothers: *some college to doctoral degree*; range for expectant fathers: *some high school to doctoral degree*). Eighty-two percent of the participants were Caucasian, 8% African-American, 7% Hispanic, and 3% Asian. Nine participants chose not to indicate their race/ethnicity. All couples were married or cohabiting (97% married) and had been living together on average for 4.12 years (range = 0–17 years, S.D. = 3.07 years). Fifty-nine couples were anticipating parenthood for the first time; for the remainder, one or both members of the couple were already parents.

Between the first and second phases of this investigation, all expectant mothers gave birth to single, healthy, full-term infants. Forty-six of the infants were female.

### 4.2. Phase 1: third-trimester assessments

#### 4.2.1. Procedure

All couples participated in a 2-h home-based assessment during the third trimester of the pregnancy. Prior to the scheduled home visit, couples completed a series of questionnaires including a demographic questionnaire. At the scheduled home-based assessment, partners participated in a series of assessments including a 10-min videotaped discussion task, in which couples completed together a questionnaire about their division of household labor and planned division of childcare labor.

#### 4.2.2. Measures

**4.2.2.1. Marital relationship quality.** During the discussion episode, couples were asked to complete a modified version of the Who Does What? (Cowan & Cowan, 1990) questionnaire together, after having completed copies of it independently before the home-based assessment. Couples were instructed to “Complete this together as a couple, deciding how you think it is (or *will be*, for child care tasks) and how you would like it to be,” and these episodes were videotaped. Marital behavior was coded by a team of two trained coders using 7-point scales (1 = *low*; 7 = *high*) used in previous work (e.g., Frosch & Mangelsdorf, 2001; Frosch, Mangelsdorf, & McHale, 1998, 2000; Schoppe-Sullivan, Mangelsdorf, et al., 2004), and originally adapted from earlier work on dyadic interaction (e.g., Easterbrooks & Emde, 1988; Markman & Notarius, 1987; Robb, Mangelsdorf, & Fury, 1987). Coders were randomly assigned tapes to code, except for those tapes that both coders rated for reliability purposes. The coders made ratings of dyadic interaction every 5 min. All couples received at least two sets of ratings; some received three. In order to make the samples of dyadic interaction more comparable, averaged ratings across the first two episodes were used as sets of scores for each couple.

The specific dimensions that were coded were: *engagement* (extent of partner-directed behaviors such as visual regard and initiating conversations), *enjoyment* (mutual exchanges of positive affect such as smiling and laughter), *individual positive affect* (smiling and laughter toward spouse scored individually), *irritation* (extent to which subtle displeasure or more overt anger and hostility are expressed), *individual negative affect* (displeasure, anger, or hostility toward spouse scored individually), *cooperation* (extent to which there is a joint focus on the task), *balance* (relative contribution of each spouse), *global interaction quality* (overall quality of relationship including positive emotional regard and caring), *sensitivity* (mutual affirmation of partners' contributions), and *conflict resolution* (how well couples resolve discrepancies).

Coders overlapped on a randomly selected 21% of the videotaped discussions. Interrater agreement within one scale point ranged from 95 to 100% ( $M=99\%$ ). Gamma was also used as a measure of interrater reliability because it is a statistic that controls for chance agreement like kappa but is more appropriate for ordinal data (Hays, 1981; Liebetrau, 1983). Gammas ranged from .63 to 1.00 ( $M=.88$ ).<sup>1</sup> Discrepancies were resolved through conferencing.

Data reduction was conducted based on the results of previous work with these coding scales. Past research (e.g., Frosch & Mangelsdorf, 2001; Frosch et al., 1998, 2000) using these scales has identified two components of marital behavior through principal components analysis: positive engagement and marital conflict (for a full description of these components, see Frosch et al., 2000). In this past work, composite variables were created by summing the scales with rotated factor loadings of .55 and higher. The first composite, *positive engagement*, was created by summing scores for engagement, enjoyment, wife and husband individual positive affect, cooperation, balance, and global interaction quality. The second composite, *marital conflict*, was created by summing the irritation and wife and husband individual negative affect scales, and subtracting the conflict resolution and sensitivity scales. In this investigation, analogous composite variables were created (with the exception of the cooperation scale, which, as noted above, was not included in the creation of the composite variables or in subsequent analyses). Positive engagement and marital conflict were significantly associated,  $r(95) = -.54, p < .01$ .

Because in the present study our interest in couples' prebirth marital quality was at the level of overall adaptation within the marital relationship, a simplified index of observed prebirth marital relationship quality was created by subtracting marital conflict from positive marital engagement (after standardization). Higher scores on this new index indicated the presence of positive interactive behaviors and the relative absence of negative, destructive conflict. For example, a couple receiving a high score on prebirth marital relationship quality exchanged frequent mutual laughs and smiles, made active and relatively equal contributions to completion of the task, and showed appreciation of each other's contributions to family management. Such a couple was unlikely to engage in overt or subtler forms of mutual criticism, and when they did experience a disagreement, they resolved it quickly and smoothly. In contrast, partners receiving a low score for prebirth marital relationship quality did not appear to enjoy working together on the task, and did not work together actively or equally toward task completion. Such a couple likely exchanged critical remarks, expressed negativity or hostility, and displayed negative facial expressions. Moreover, they neglected to take each other's contributions to the division of labor into account, and often "got stuck" when trying to reach agreement about the division of particular tasks.

### 4.3. Phase 2: 3.5-month assessments

#### 4.3.1. Procedure

Contact was maintained with these couples across the transition surrounding the infant's birth, and all couples were scheduled for a second home-based assessment when their infants were approximately 3.5 months old ( $M=3.71$  months,  $S.D.=.36$  months). At the home visit, parents completed questionnaires about their child's temperament independently. Also, parents and their infants participated in a series of videotaped interactive episodes including triadic family interaction episodes, which took place at the end of the assessment. In these episodes, couples engaged in free-play with their infants for 5 min and then changed their infant's clothes together. Immediately following the home assessments, trained raters completed a questionnaire about the infant's temperament after watching the family's videotape and recalling the infant's behavior during the home visit.

<sup>1</sup> The marital behavior scale *cooperation* was dropped from consideration in further analyses because of its low average gamma score (.58).

### 4.3.2. Measures

**4.3.2.1. Infant temperament.** Mothers and fathers each completed the 6-month version of the Infant Characteristics Questionnaire (ICQ; Bates, Freeland, & Lounsbury, 1979), a 28-item measure which contains 4 subscales representing different aspects of temperament: *fussy-difficult*, *unadaptable*, *dull*, and *unpredictable*. For the purposes of this study, we focused on the fussy-difficult and unadaptable scales, given that these aspects of temperament show correspondence with the two important types of negative emotionality identified in the temperament literature (Putnam et al., 2001). An infant with a high score on the fussy-difficult scale cries and fusses vigorously and frequently and is difficult to calm when upset. An infant rated high on unadaptability responds negatively to new persons and situations. Alphas for the fussy-difficult and unadaptable scales were .79 and .77 for mothers and .75 and .82 for fathers. Because mothers' and fathers' ratings of fussiness and unadaptability were significantly and moderately correlated ( $r = .56, p < .01$  and  $r = .50, p < .01$ ), parents' ratings were averaged for use in subsequent analyses.

Trained observers also rated infant temperament. Observers completed a modified 23-item version of the ICQ independently. This questionnaire contained many of the same questions as the parent version, but also included some specific questions about how the infant responded to the context and activities of the home visit. The ICQ has been similarly adapted by previous researchers for use by observers instead of (or in addition to) parents (Bates & Bayles, 1984; Diener, Goldstein, & Mangelsdorf, 1995). The observers were present for the home assessment, and used their impressions from interactions with the infant during the visit, combined with knowledge gained from watching the family's videotape after the visit, to make their ratings. Thus, the observers' ratings were based on a sample of at least 45 min of interactions with the infants. The reliability observer overlapped on 37% of the home visits with other observers. Interrater reliability was calculated using two techniques: within-one scale point agreement and gamma coefficients. Agreement within one scale point ranged from 71 to 100% ( $M = 86\%$ ) and gammas ranged from .62 to 1.00 ( $M = .84$ ). For the present study, the *fussy-difficult* and *unadaptable* scales (analogous to the scales for the parent version) from the observer's version of the ICQ were used. Cronbach's alphas for these scales were .93 and .91. Correlations between parents' and observers' reports of temperament were  $r = .30$  ( $p < .01$ ) for fussy-difficult and  $r = .14$  ( $p = .20$ ) for unadaptable. Given the modest size of these associations, combined with the fact that parents' and observers' ratings were based on different samples of infant behavior, parents' and observers' perceptions of temperament were considered separately in analyses. Means and standard deviations for the parent and observer temperament variables are presented in Table 1.

**4.3.2.2. Coparenting behavior.** In the first family interaction episode, couples were given an infant jungle gym and were instructed to "play together with your baby as you normally would." These 5-min episodes were designed to elicit typical patterns of coparenting behavior in a non-stressful situation. In the second episode, couples were given a "onesie" (infant bodysuit) and were asked to change the infant into this outfit together. This task was designed to assess coparenting behavior during completion of a joint child care task, a situation that is arguably more stressful than triadic play. These episodes lasted on average for 3.22 min (range: 1.24–8.02 min). Both types of family interaction

Table 1  
Intercorrelations and descriptive statistics for temperament, marital quality, and coparenting variables

	1	2	3	4	5	6	7	<i>M</i>	S.D.	<i>n</i>
1 Parents' reports of fussy-difficult		.42**	.30**	.18 <sup>+</sup>	-.13	.00	-.16	3.01	.69	97
2 Parents' reports of unadaptable			.03	.14	-.10	-.18 <sup>+</sup>	.08	2.26	.74	97
3 Observers' reports of fussy-difficult				.57**	.19 <sup>+</sup>	.18 <sup>+</sup>	.03	2.84	1.27	97
4 Observers' reports of unadaptable					.10	.00	.09	3.18	1.21	87
5 Marital quality						.33**	.02	.00	1.76	95
6 Supportive coparenting behavior							-.20*	9.87	1.80	97
7 Undermining coparenting behavior								2.58	.82	97

Notes. *ns* vary as a function of missing data as specified above. Ten infants were missing observers' ratings of unadaptability because observers did not have enough information to rate this temperamental characteristic. Two couples were missing observed couple behavior data due to equipment failure.

\*  $p < .05$ .

\*\*  $p < .01$ .

<sup>+</sup>  $p < .10$ .

episodes (*free-play* and *clothes-change*) were coded for aspects of coparenting behavior using a subset of scales developed by Cowan and Cowan (1996) and used in previous work on coparenting (Schoppe et al., 2001; Schoppe-Sullivan, Mangelsdorf, et al., 2004). “Coparenting incidents,” according to Belsky, Crnic, and Gable (1995), consist of occasions in which one parent either supports and/or undermines the other parent’s parenting goals or intentions. Thus, coparenting reflects partners’ behaviors toward each other in reference to the infant, but does not directly include marital behavior, infant behavior, or individual parent behavior toward the infant. Coparenting coding was completed by a team of two coders (a different team than that which coded prebirth marital behavior). Coders were randomly assigned tapes to code, except for those tapes that both coders rated for reliability purposes. Coders were trained to focus solely on coparenting incidents within the interactions, defined as exchanges between the parents regarding parenting issues. Coders then rated the overall nature of coparenting incidents within each of the episodes using the scales described below.

The dimensions rated were: *pleasure* (degree to which parents seem to enjoy coparenting), *warmth* (how affectionate and emotionally supportive the partners are of each other), *cooperation* (extent to which partners help and support one another instrumentally in coparenting), *displeasure* (degree to which parents do not enjoy working together or coparenting), and *competition* (degree to which parents try to “outdo” each other in their efforts to work successfully with the infant). All dimensions were coded on 5-point scales (1 = *very low*; 5 = *very high*).

Interrater reliability across both family interaction episodes was measured. Coders overlapped on a randomly selected 23% of the videotapes. Percent agreement within one scale point was 100% for all scales across episodes. Gammas ranged from .76 to .98 ( $M = .92$ ). Discrepancies were resolved through conferencing. Data reduction was conducted on a conceptual basis (see Schoppe et al., 2001), by combining the three scales that assessed supportive coparenting behavior (pleasure, warmth, cooperation; intercorrelations for these scales ranged from .57 to .67 for the free-play, and from .51 to .60 for the clothes-change), and combining the two scales that assessed undermining coparenting behavior (displeasure, competition;  $r_s = .32$  and  $.39$  for the free-play and clothes-change episodes, respectively). These composite variables were created separately for each episode, such that each family received scores for supportive and undermining coparenting for the free-play and clothes-change episodes. The two composite variables were significantly correlated for the free-play episode,  $r(97) = -.24, p < .05$ , but not for the clothes-change episode,  $r(96) = -.18, p = .08$ , and were maintained separately to be consistent with previous work and theory which conceptualizes supportive and undermining coparenting as different aspects of the coparenting relationship (Belsky, Putnam, et al., 1996; McHale, 1995; Schoppe et al., 2001; Schoppe-Sullivan, Mangelsdorf, et al., 2004). Looking across episodes, both supportive coparenting,  $r(96) = .64, p < .01$ , and undermining coparenting,  $r(96) = .61, p < .01$ , showed significant stability. Thus, scores for supportive and undermining coparenting were averaged across episodes for use in analyses. Means and standard deviations for the coparenting composite variables are presented in Table 1.

A family who was rated as high on supportive coparenting, for example, was one in which the parents clearly enjoyed watching each other interact with their infant, and showed this through an affectionate connection as parents that involved appreciating (e.g., complimenting) each other’s parenting. In a family rated low on supportive coparenting, the parents did not seem to enjoy or appreciate each other’s relationship with their infant, and seemed to lack connection as parents. A family who received a high score for undermining coparenting was one in which the parents often expressed disapproval or dislike of each other’s parenting strategies with an affectively charged, negative tone (e.g., “Dad, you tore the diaper!”). Parents in this type of family also tended to interfere behaviorally with each other’s parenting efforts (often working “at cross purposes”) or compete with each other for their infant’s attention. In contrast, in a family receiving low scores for undermining coparenting, the parents did not express negatively valenced disapproval of each other’s parenting or interfere with each other’s parenting or relationship with their child during the interactions.

## 5. Results

Data analysis was conducted in several steps. First, preliminary analyses examining potential significant differences in the variables of interest by parent status (first-time versus experienced) and infant gender were conducted. Second, direct associations between infant temperament and observed coparenting behavior were examined. Subsequently, a series of regression equations were computed to examine the combined effects of infant temperament and prebirth marital quality on coparenting behavior.

### 5.1. Preliminary analyses

Potential mean-level differences in prebirth marital quality, perceptions of infant temperament, and coparenting behavior related to whether or not couples were first-time parents were examined. Only one significant difference was obtained: observers perceived the infants of first-time parents as more fussy than those of experienced parents,  $t(95) = 2.38, p < .05$ . The existence of mean-level infant gender differences in the postbirth variables of interest (infant temperament, coparenting quality) was also explored, but no significant differences emerged. Despite few significant relations of parent status (first-time versus experienced) and infant gender with infant temperament and coparenting behavior, these variables were controlled for in subsequent regression analyses.

### 5.2. Direct associations of infant temperament with observed coparenting behavior

Next, correlations of parents' and observers' reports of infant temperament with observed coparenting behavior were computed (see Table 1). No significant associations between parents' or observers' reports of temperament and observed coparenting behavior were obtained. However, there were two trends. Parents who perceived their infants as more unadaptable showed a tendency toward displaying less supportive coparenting,  $r(97) = -.18, p = .08$ . In contrast, parents tended to show greater supportive coparenting when observers rated infants as more fussy,  $r(97) = .18, p = .08$ . Thus, a clear pattern relating infant temperament and coparenting behavior did not emerge from these associations.

### 5.3. Regressions predicting coparenting behavior from infant temperament and prebirth marital quality

In order to investigate the interactive contributions of infant temperament and marital quality to coparenting behavior, a series of hierarchical regression equations were computed. First, four equations were computed predicting supportive and undermining coparenting behavior from parents' perceptions of infant fussiness and unadaptability. Similarly, four equations were also computed predicting supportive and undermining coparenting behavior from observers' perceptions of fussiness and unadaptability. On the first step of each equation, parent status and infant gender were entered as control variables. On the second step, the particular temperamental characteristic under consideration, marital quality, and the two-way interaction between temperament and marital quality were entered as a block. If a significant interaction was obtained, it was graphed and probed according to procedures detailed in Aiken and West (1991). If in a given equation main or interactive effects of infant temperament were not significant, results for such equations are presented in text in order to conserve space.

#### 5.3.1. Equations predicting coparenting behavior from parents' perceptions of temperament

When predicting supportive coparenting behavior and focusing on parents' perceptions of infant fussiness as an independent variable, marital quality was the only significant predictor,  $\beta = .35, p < .01$ . The overall model was also significant,  $F(5, 89) = 2.43, p < .05, R^2 = .12$ . A similar result was obtained when focusing on parents' perceptions of infant unadaptability as a predictor of supportive coparenting: marital quality was the only significant predictor,  $\beta = .32, p < .01$ , again in the context of a significant model,  $F(5, 89) = 2.87, p < .05, R^2 = .14$ .

When predicting undermining coparenting behavior and focusing on parents' perceptions of infant fussiness as an independent variable, the interaction between fussiness and marital quality was a significant predictor (see Table 2). The overall model was significant as well. Interpretation of the interaction effect was aided by constructing a graph and conducting a simple slopes analysis to detect which aspects of the relations were significant. The graph of this interaction is shown in Fig. 1. As noted on the graph, the slope of the regression line representing couples with *high* marital quality was significantly different from zero. This suggests that when these couples perceive their infants as fussier, they refrain from engaging in undermining coparenting behavior. The slope of the regression line representing couples with low marital quality was not significantly different from zero, suggesting that parents' perceptions of infant fussiness were not related to undermining coparenting in these families.

Next, parents' perceptions of infant unadaptability were examined in the context of predicting undermining coparenting. The two-way interaction of unadaptability by marital quality was significant, and the overall model was significant as well (see Table 3). A graph of this interaction is presented in Fig. 2. As indicated on the graph, for this interaction the slope of the line representing couples who showed *low* marital quality was significantly different from zero. This suggests that as parents' perceptions of infant unadaptability increased, undermining coparenting increased, but only



Table 2  
Regression predicting undermining coparenting behavior from parents' perceptions of infant fussiness

Variable(s) entered at each step	<i>B</i>	S.E. <i>B</i>	$\beta$	$\Delta R^2$	<i>F</i>	d.f.
1 Parent status	-.11	.17	-.06			
Infant gender	-.30	.17	-.18	.04	1.92	2, 92
2 Fussy-difficult	-.14	.08	-.16			
Marital quality	.01	.05	.01			
Fussy-difficult $\times$ marital quality	-.12	.05	-.27**	.10	2.85*	5, 89

Note. Total  $R^2 = .14$ .

\*  $p < .05$ .

\*\*  $p < .01$ .

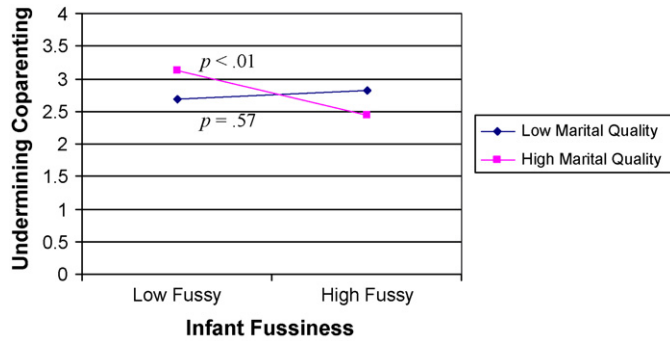


Fig. 1. Interaction of parents' perceptions of infant fussiness and marital quality when predicting undermining coparenting behavior.

Table 3  
Regression predicting undermining coparenting behavior from parents' perceptions of infant unadaptability

Variable(s) entered at each step	<i>B</i>	S.E. <i>B</i>	$\beta$	$\Delta R^2$	<i>F</i>	d.f.
1 Parent status	-.11	.17	-.06			
Infant gender	-.30	.17	-.18	.04	1.92	2, 92
2 Unadaptable	.07	.09	.09			
Marital quality	.01	.05	.01			
Unadaptable $\times$ marital quality	-.12	.05	-.27**	.07	2.27*	5, 89

Note. Total  $R^2 = .11$ .

\*  $p < .05$ .

\*\*  $p < .01$ .

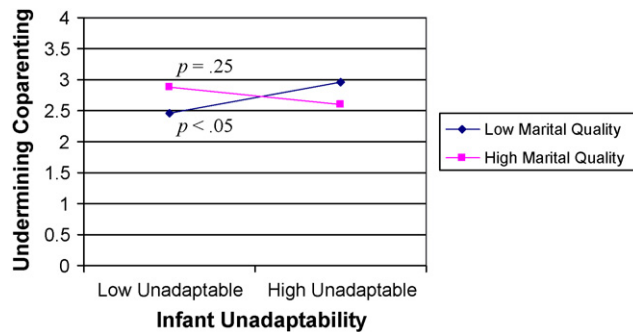


Fig. 2. Interaction of parents' perceptions of infant unadaptability and marital quality when predicting undermining coparenting behavior.

Table 4  
Regression predicting supportive coparenting behavior from observers' perceptions of infant unadaptability

Variable(s) entered at each step		<i>B</i>	S.E. <i>B</i>	$\beta$	$\Delta R^2$	<i>F</i>	d.f.
1	Parent status	-.21	.40	-.06	.00	.14	2, 82
	Infant gender	.00	.40	.00			
2	Unadaptable	-.17	.19	-.10	.17	3.32**	5, 79
	Marital quality	.33	.10	.33**			
	Unadaptable $\times$ marital quality	.24	.13	.21 <sup>+</sup>			

Note. Total  $R^2 = .17$ .

\*\*  $p < .01$ .

<sup>+</sup>  $p < .10$ .

for couples whose relationships were already less optimal prior to their infant's birth. There was no significant association between perceived infant unadaptability and undermining coparenting behavior for parents who showed high prebirth marital quality.

### 5.3.2. Equations predicting coparenting behavior from observers' perceptions of temperament

Results predicting supportive coparenting behavior and focusing on observers' perceptions of fussiness and unadaptability as independent variables were largely consistent with results focusing on parents' perceptions of temperament: marital quality was the most consistent predictor of supportive coparenting behavior. Specifically, when examining observers' perceptions of fussiness in the context of predicting supportive coparenting, the overall model was significant,  $F(5, 89) = 2.71$ ,  $p < .05$ ,  $R^2 = .13$ , undoubtedly carried by the significant effect of marital quality,  $\beta = .33$ ,  $p < .01$ . Similarly, when predicting supportive coparenting and focusing on observers' perceptions of infant unadaptability as an independent variable, marital quality was a significant predictor,  $\beta = .33$ ,  $p < .01$ , in the context of a significant overall model,  $F(5, 79) = 3.32$ ,  $p < .01$ ,  $R^2 = .17$ . In addition, however, the interaction between unadaptability and marital quality approached significance  $\beta = .21$ ,  $p = .06$  (see Table 4). Given that such interaction effects were directly hypothesized, and that detecting moderation effects in non-experimental research is difficult (McClelland & Judd, 1993), this interaction effect was also graphed and probed (see Fig. 3). The patterns underlying this effect were similar to those comprising the interaction depicted in Fig. 2: again, the slope of the line representing couples who showed low marital quality approached significance, suggesting that as observers' perceptions of infant unadaptability increased, supportive coparenting decreased, but only for couples whose relationships were already less optimal prior to their infant's birth. There was no apparent association between observers' perceptions of infant unadaptability and supportive coparenting behavior for families in which couples showed high prebirth marital quality.

Observers' perceptions of infant fussiness and unadaptability did not contribute to the prediction of undermining coparenting, either alone or in combination with marital quality (overall models non-significant;  $F(5, 89) = .89$ ,  $p = .49$  and  $F(5, 79) = .83$ ,  $p = .53$ , respectively).

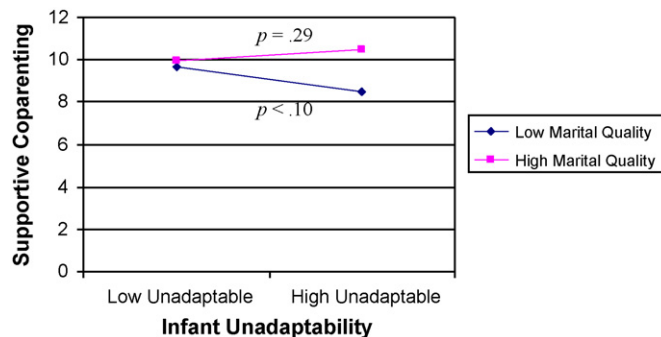


Fig. 3. Interaction of observers' perceptions of infant unadaptability and marital quality when predicting supportive coparenting behavior.

#### 5.4. Summary

In sum, the most consistent predictor of supportive coparenting behavior was marital quality, such that couples with higher marital quality prebirth showed more supportive coparenting behavior postpartum. Parents' perceptions of infant temperament were related to undermining coparenting, but only in combination with marital quality. Specifically, increased infant fussiness was associated with lower levels of undermining coparenting, but only for couples who showed high marital quality prebirth. In contrast, increased infant unadaptability was associated with higher levels of undermining coparenting, but only for couples who showed low marital quality prebirth. The latter pattern reflecting poorer coparenting in couples with low marital quality and a challenging infant was corroborated by analyses suggesting a tentative link between observers' perceptions of higher infant unadaptability and less supportive coparenting among couples with low marital quality.

### 6. Discussion

The present study represents an important advance in the developing literature on early coparenting relationships, and the broader literature on family interaction and processes, by investigating the role of the infant's temperament in relation to the quality of coparenting behavior. Results suggest that the infant's temperamental characteristics are not directly related to coparenting quality. Instead, infant temperament was relevant for understanding early coparenting behavior when considered in conjunction with the quality of the couple's marital relationship prior to the infant's birth.

Generally, consistent with the model proposed by [Crockenberg and Leerkes \(2003\)](#), we predicted that marital quality would interact with infant temperament such that couples who had higher quality relationships would "pull together" when faced with a challenging infant, whereas couples with poorer quality relationships were expected to be at greater risk for non-optimal coparenting behavior when their infant's temperament was more challenging. Thus, the goodness-of-fit between the infant and her family context was expected to be reflected in the quality of parents' coparenting behavior. In the present study, a pattern of results consistent with these predictions did emerge.

Recall that when examining direct relations between infant temperament and coparenting quality, [Berkman et al. \(2002\)](#) and [Schoppe-Sullivan, Szewczyk Sokolowski, et al. \(2004\)](#) reported that families with more difficult infants showed more positive coparenting dynamics. In the present study, no significant direct effects of temperament were found, although there was a tendency for parents to show greater supportive coparenting behavior when observers perceived infants as fussier. However, as expected, the extent to which couples "pulled together" to coparent their fussy infants depended on marital quality, such that parents' perceptions of high infant fussiness were *only* associated with lower levels of undermining coparenting for couples who showed high marital quality prebirth. This is in accord with previous research on dyadic parent-child relationships suggesting that low-risk parents may be somewhat impervious to the negative effects of undesirable infant characteristics ([Crockenberg & Leerkes, 2003](#)), and may sometimes even show more positive parenting when faced with a difficult infant (e.g., [Washington, Minde, & Goldberg, 1986](#)).

Significant direct associations between infant unadaptability and coparenting behavior were also not found, with the exception of a tendency for parents of an infant they perceived as unadaptable to show less supportive coparenting behavior, consistent with the idea that more challenging infants may constitute a risk for early coparenting. However, the role of infant unadaptability became more apparent when examining this characteristic in conjunction with levels of marital quality. Infants perceived as unadaptable by their parents proved most challenging for couples with lower marital quality, who showed their vulnerability by engaging in higher levels of undermining coparenting behavior. This type of effect was tentatively corroborated by a corresponding pattern among parents with low marital quality whose infants were perceived as unadaptable by observers: these parents tended to show lower levels of supportive coparenting behavior. Similar effects of infant unadaptability were not found for couples advantaged by higher quality relationships. It is easy to imagine that an infant with strong reactions to changes in the environment could represent a hardship for couples who already have trouble solving problems together. A similar result was obtained by [McHale et al. \(2004\)](#), who found that the combination of maternal pessimism (or low marital quality) with high infant negative reactivity boded worst for postpartum levels of coparenting cohesion. Our findings are also consistent with research on dyadic parent-child relationships which indicates that negative maternal characteristics and circumstances are more likely to result in non-optimal parenting when infants also have more negative characteristics (e.g., [Mangelsdorf, Gunnar, Kestenbaum, Lang, & Andreas, 1990](#); [Pauli-Pott, Mertesacker, Bade, Bauer, & Beckmann, 2000](#); [van den Boom & Hoeksma, 1994](#)).

A key strength of the current study included the utilization of multiple perspectives on infant temperament. Consistent with the literature on measuring temperament, and not unexpected given their basis on different samples of infant behavior (Mangelsdorf, Schoppe, & Buur, 2000), parents' and observers' perspectives on infant fussiness and unadaptability were not highly correlated. Notably, stronger interactive effects of infant temperament and marital quality were obtained when considering parents' (and not observers') reports of temperament. It is not clear why this was the case. On the one hand, parents may simply have an advantage as accurate reporters of infant temperament given their greater experience with their child. On the other hand, parents' reports of temperament may also in part reflect a parent's psychological state, and thus, other variables such as parent personality or depression may have played a covert role in our findings. Previous research indicates that parental reports of temperament consist of both objective and subjective components (Bates & Bayles, 1984; Mangelsdorf et al., 2000). Given the prominent role of parents' reports of temperament in our findings, the effects of temperament in this study cannot be reduced to effects of transient infant mood on the day of the home assessment, and more likely reflect effects of enduring infant characteristics.

Some limitations of this research should also be mentioned. The sizes of the interaction effects of temperament with marital quality were small. Thus, from these results, we cannot claim that child characteristics are a strong influence on coparenting behavior, but instead that they are a potentially important, but often overlooked, influence, consistent with the role of child characteristics in Belsky's (1984) model of the determinants of parenting. Thus, other influences on coparenting likely exert stronger effects. For example, it is clear from the present study that prebirth marital quality is quite important for setting the stage for early coparenting relationships, consistent with prior research (e.g., McHale et al., 2004; Talbot & McHale, 2004). As some work has already begun to do, future research should focus on factors besides marital quality and infant temperament that may influence coparenting relationship development such as expectant parents' personalities (Schoppe-Sullivan, 2003; Van Egeren, 2003), outlooks about the future family (McHale et al., 2004; von Klitzing, Simoni, Amsler, & Bürgin, 1999), and expectations about the division of child care labor (McHale et al., 2004; Schoppe-Sullivan, 2003). However, it is also important to bear in mind that the sample for the present study consisted of predominantly low-risk families, and thus, stronger effects of infant temperament and other factors may be found for families experiencing greater social or economic risk (Crockenberg & Leerkes, 2003).

We also acknowledge that our assessment of coparenting quality consisted of relatively brief behavioral observations, which may not fully capture the quality of the developing coparenting relationship. Ideally, the most complete picture of early coparental functioning would be obtained by using multiple measures (e.g., structured laboratory observations, narrative and questionnaire measures; McHale & Rotman, this volume). However, the home-based, semi-structured observations we employed, which included play and child care interactions, are advantageous with respect to ecological validity.

Also open to evaluation is the perspective taken in this paper – that it is the characteristics of the infant that have the potential to influence the parents' coparenting – rather than vice versa. Although the infants in this study were only several months old, it is possible that coparenting quality and other aspects of family interaction or parenting could have already influenced the infant's temperament. From the design of the current study, it is not possible to discern whether infant temperament has a greater influence on coparenting, coparenting has a greater influence on infant temperament, or whether likely reciprocal effects exist. Moreover, although our operationalization of marital quality using a prebirth measure was consistent with our conceptualization of processes linking infant temperament and coparenting, use of a prebirth measure was not ideal given the moderating role ascribed to marital quality. Given the stability in marital quality found by previous researchers (e.g., Belsky & Rovine, 1990; Frosch et al., 2000), it is possible that postbirth marital quality, or another related aspect of family functioning, was the "true" moderator. Future studies with more refined designs are needed to investigate these possibilities and replicate our findings.

It is also important to recognize that results obtained in this study do not inform us about the longer term trajectories of coparenting relationship quality for families with particular configurations of infant temperament and marital quality. As Crockenberg and Leerkes (2003) and others (e.g., McHale, Kavanaugh, & Berkman, 2003; Sanson & Rothbart, 1995) have noted, even well-functioning families with difficult infants may have trouble maintaining positive interaction patterns over a longer period of time. For example, it is impossible to tell whether the parents in the current study with high marital quality and fussy infants who were able to refrain from undermining coparenting behavior will be able to continue to do so in the future. Longitudinal studies that track the interplay between the infant's developing personality and coparenting relationship quality across the infancy period would be useful for shedding light on some of these questions.

Finally, despite the fact that the current sample was more diverse in ethnicity and family income than many studies of coparenting and family processes, and included both first-time and experienced parents, we acknowledge that findings of the current study may not apply to ethnic minority families, or families that do not consist of two, heterosexual, married, or cohabiting coparents. Future research should explore the extent to which the infant's temperament may color the quality of other coparenting relationship configurations (e.g., mothers and grandmothers).

Notwithstanding these caveats, the present study makes an important contribution to the nascent literature on early coparenting relationships, and to our understanding of the role of the infant's characteristics and the preexisting marital relationship in contributing to the nature of early coparenting dynamics. Given the stability of early-established coparenting patterns and their relevance for later child and marital adjustment (e.g., Fivaz-Depeursinge et al., 1996; McHale et al., 2002; Schoppe-Sullivan, Mangelsdorf, et al., 2004), uncovering the factors that shape these early family relationships remains a significant goal for family researchers, yet only partially achieved at present.

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