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WE CAN WORK IT OUT: MOTHERS' AND FATHERS' COPARENTING OF TWO CHILDREN

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WE CAN WORK IT OUT: MOTHERS' AND FATHERS' COPARENTING OF TWO CHILDREN

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Dedication

To my family.

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We Can Work It Out: Mothers' and Fathers' Coparenting of Two Children

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The present study has two primary goals: 1) to validate an observational coding system of coparenting in families of four (the Families of Four Rating Scales, or FoFRS) and 2) to explore aspects of coparenting that may be unique to families with two children, in particular, a new type of coparenting termed "divide and conquer," in which each parent interacts one-on-one with one of their two children. To establish validity for the newly proposed coding system, the study examined whether mothers' and fathers support of their partner, involvement with both children, and competency with both children relate to three different types of coparenting qualities - cooperative, competitive, and divide and conquer - in predicted ways, based on past research on families of three. The sample consists of 52 families of four, in which the whole family was video-recorded in a 25-minute home interaction, and afterwards, parents' completed self-report measures of coparenting quality. Results largely replicated findings from studies of coparenting families of three research, providing validity for the Families of Four Rating Scales. Similar to findings for research on coparenting in families of three, higher levels of cooperative coparenting was related to both parents' higher involvement in coparenting

and mutual support of their partner, as well as fathers' high levels of competency with both children. Only mothers' undermining of fathers related to competitive coparenting. Divide and conquer coparenting was found to be an adaptive style of coparenting that was negatively to competitive coparenting and positively to cooperative coparenting. Furthermore, mothers' support of fathers and mothers' involvement with both children related to divide and conquer coparenting. Implications for family intervention and future directions for research in this area are discussed.

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Introduction

Coparenting, how parents work with or against each other when caring for their child, has emerged as an influential aspect of triadic family interactions due to it being viewed as the intersection of the marital and parent-child relationships. Research on triadic family interactions has identified important links between different styles of coparenting and children's socioemotional outcomes (e.g., McHale, Kuersten-Hogan, & Lauretti, 2000; McHale & Lindahl, 2011). Most studies on coparenting have focused on triadic mother-father-child interactions, which family systems researchers argue capture novel information beyond that of the summed effects of dyadic relationships, and which are posited to be most accurately assessed through observational methods (e.g., Cox & Paley, 2003). Although 80% of American families have more than one child, family systems research is only beginning to scratch the surface concerning how families of four function (U.S. Census, 2009). In an effort to better understand how parents coparent two children, this study aims to develop and validate an observational coding system for families of four, as well as to examine individual parent behaviors within coparenting.

While coparenting styles identified for couples with one child are relevant to those of families of four (e.g., cooperative and competitive coparenting), new coparenting styles could emerge when parents care for two children. For instance, parents report having more divided attention with their children upon the arrival of a second child. Specifically, mothers' self-report engaging in less joint play and verbalizations with their first born, in comparison to before their second child was born (e.g., Dunn & Kendrick,

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1980). In turn, it has been suggested that mothers tend to invest more attention to second born children in families of four (e.g., Volling, 2012). Less is known about how father-child relationships change and emerge over the transition to having a second child. However, the few studies that do include fathers acknowledge the importance of fathers and how their involvement promotes positive family dynamics. Supportive fathers generally spend more time with the first born child after a second is born (Kuo, Volling, & Gonzalez, 2017). This suggests that a "divide and conquer" style of coparenting, in which each parent focuses their attention on one child at a time, might be an adaptive and novel form of coparenting for families of four.

Not only is research on coparenting in families of four relatively rare, despite families with two children being more common than families of three (U.S. Census, 2009), but in addition, no observational coding system for families of four has yet been developed. Instead, research to date on families of four has heavily relied on questionnaire methods. Therefore, a key aim of the present study is to validate the Families of Four Rating Scales (FoFRS). This observational coding system offers novel insight into how coparenting functions in "averaged-sized families," and provides a much-needed process-oriented approach to the study of family dynamics in families of four. In addition to observing and coding dyadic coparenting processes, it is also important to explore individual parent behaviors within coparenting, as this line of work in families of three has revealed marked gender differences between mothers' and fathers' in their coparenting efforts (e.g., Murphy, Gallegos, Jacobvitz, & Hazen, 2017).

Markedly, parents' relative involvement, support of their partner (e.g., Murphy et al., 2017), and competency (Schoppe-Sullivan, Brown, Cannon, & Mangelsdorf, 2008), have been shown to be important predictors of the coparenting quality in families of three, and should be important to families of four as well.

The primary goal of validating an observational coding system for families of four – the Families of Four Rating Scales (FoFRS) – will be accomplished in two ways: Aim 1) by examining how measures of coparenting quality derived from this new observational measure relate to conceptually similar self-report measures of coparenting quality, and Aim 2) by examining whether each parents' support of their partner, competency with both children, and involvement with both children relate to coparenting quality (e.g., cooperative and competitive coparenting) in families of four in predicted ways, based on prior observational research on coparenting quality in families of three. A secondary goal of this study is to explore the unique characteristics of coparenting that may emerge in families of four. Two key questions will be explored to accomplish this secondary goal: Aim 3) Does a new type of coparenting (i.e.., divide and conquer coparenting, in which each parent interacts separately with one of the two children) emerge in families of four, and if so, how do individual parental behaviors in coparenting and dyadic coparenting quality (cooperative and competitive) relate to this type of coparenting? Aim 4) How does both parents' level of involvement with each child (e.g., one parent involved/ one parent not involved, both parents equally involved with both

children, both parents involved with predominantly one child, or neither parent involved) relate to their overall coparenting quality?

To present the background literature and rationale for this study, the concept of coparenting will be discussed from a family systems perspective, with an emphasis in highlighting the importance and novel contributions of assessing families as an entire unit, as opposed to separate family relationships. Past research in coparenting in families of three will be discussed next, with a focus on how mothers' and fathers' individual involvement, support, and competence in coparenting has been found to relate to dyadic coparenting quality. This will be followed by a discussion of how this research can be extended to families of four. Next, unique aspects of coparenting that are expected to emerge in families of four will be discussed, including divide-and-conquer coparenting, which is expected to occur when each parent cares primarily for one child. The possible relation of individual parent behaviors within coparenting (e.g., involvement, support, competence) to divide-and-conquer coparenting, as well as to differences in each parents' patterns of involvement in coparenting two children, will be discussed in this section. Finally, an overview of the present study will be presented that outlines the specific research questions to be addressed and the novel contributions that the study is expected to provide to the literature on coparenting.

Family Systems Theory and Coparenting in Families of Three

The concept of coparenting is derived from the tenants of family systems theory, in that it is viewed as the intersection between marital and parent-child dyadic

relationships (Cowan & Cowan, 2002). Coparenting in triadic interactions refers to how parents work with or against each other when caring for their child (McHale, 1995). Since coparenting refers to the parents' joint efforts at parenting, it is related to both mother-child and father-child interaction quality (e.g., Feinberg & Kan, 2008) and includes information about whether parents cooperate or compete in their joint parenting efforts (McHale, 1995).

Family systems theory argues that whole-family interactions, such as coparenting, should predict unique information about child outcomes, beyond that predicted by mother-child and father-child interactions (Cox & Paley, 2003; Minuchin, 1985). Dyadic family subsystems are understood by family systems theorists to be the "thermostat" of the family climate, in that family members can establish separate relationships with other family members that serve as risk or protective factors. Therefore, dyadic family relationships should not only impact other subsystems within the family, but should also influence how the whole family interacts (Cowan & Cowan, 2002; Minuchin, 1985). Moreover, whole-family interactions are argued to be generally superior to dyadic family observations in predicting child and family outcomes because they integrate qualities of all sub-systems. Observational measures of triadic interactions can account for second order effects, in which a parent might change how they interact with a child when the other parent is present (Minuchin, 1985). That is, the ways parents behave dyadically (e.g., in mother-child, father-child, or marital interactions) have been suggested to be different than the way they act as a whole (e.g., mother-father-child). For example, a

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father who generally has positive interactions with his child might be negatively impacted in the presence of his partner and child if there are problems within the marriage.

Extant research on coparenting has almost exclusively been examined in families of three. From this work, the aspects or styles of coparenting have received the most attention in family systems research are cooperative and competitive coparenting, due to their profound impact on children's socioemotional outcomes. *Cooperative coparenting* is considered to be the ideal style of coparenting for couples, in that it is characterized by parents supporting and facilitating each other's' parenting and is related to child's prosocial outcomes (e.g., Scrimgeour, Blandon, Stifter, & Buss, 2013). Alternatively, *competitive coparenting*, in which parents triangulate their child into their inter-parental conflicts, has been shown to be highly influenced by mothers undermining of fathers' involvement in parenting decisions and been related to children's antisocial behavioral issues (e.g., Murphy et al., 2017; Murphy, Jacobvitz, & Hazen, 2016; Schoppe-Sullivan, Weldon, Cook, Davis, & Buckley, 2009).

It is important to note that cooperative and competitive coparenting are not simply opposites on a single dimension, but instead are theoretically orthogonal. For instance, couples would be scored low on both constructs if they did not display any instances of coparenting (e.g., one parent making all the decisions for the child), whereas couples in which both parents are highly involved in coparenting might be very cooperative much of the time yet display marked moments of competition, warranting a high score on both coparenting dimensions. In support of this idea, some studies have found these two types

of coparenting to be uncorrelated (e.g., Murphy et al., 2017; Umemura, Christopher, Mann, Jacobvitz, & Hazen, 2015).

The Role of Mothers' and Fathers' Relative Involvement, Support of their Partner, and Parenting Competence When Coparenting One Child

An important contribution of this project is to extend observational coding systems of whole-family coparenting from families of three to families of four, in part to validate the observation coding system for families of four, as well as to learn more about how coparenting functions in different sized families by examining how individual parenting behaviors within coparenting of two children relate to dyadic coparenting styles. Markedly, parents' relative involvement (e.g., Schoppe-Sullivan et al., 2008), support of their partner (e.g., Murphy et al., 2017), and parenting competence in coparenting (e.g., Schoppe-Sullivan et al., 2008) have all been shown to be influential in predicting coparenting quality with one child, and should therefore be relevant to families with two children as well.

Parental involvement. Parents' *relative involvement* has been operationalized as self-reported hours a parent spent with their child(ren) per week, whereas in observational work, relative involvement often refers to amount of parent decision-making (verbal or non-verbal) made in the context of a coparenting interaction (e.g., McHale et al., 2000). Gender differences have been identified between mothers' and fathers' relative involvement in the coparenting of one child, both when using self-report measures and when using observational measures. Specifically, extant self-report and

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observational research indicates that across the transition to parenthood for families of three, mothers are still viewed as the primary caregivers of their children and are more involved than fathers in childcare tasks, even in dual-income households (e.g., Coltrane & Shih, 2009; Kotila, Schoppe-Sullivan, & Kamp Dush, 2013).

That is not to say that fathers have not become more involved in parenting efforts in recent years. Over the past fifty years, American fathers have increased the average amount of time per week they spend with their children from 2.5 hours in 1965 to 7 hours in 2011 (Pew Research Center, 2015, June 15). However, mothers' increase in parenting time is less discussed in research and media outlets. Over this same period, mothers' have increased their time with their children from 10 hours per week in 1965 to 14 hours per week in 2011 (Pew Research Center, 2015, June 15). Thus, while fathers' involvement in parenting has increased across time, mothers' involvement has as well, leaving a persistent gap between mothers' and fathers' relative involvement with their children. While women have taken on leadership and breadwinner roles outside of the home, it has also been suggested that women are not loosening the reins on their duties at home, but instead are doing double-duty, taking on the role of "supermom" (Schoppe-Sullivan, 2017, February 2).

Parental support of their partner's caregiving. The term "supermom," albeit empowering, has also come with negative implications for families. Markedly, gender differences in parent's involvement with their children has often been accompanied by mothers' and fathers' differential *support of their partner* (that is, their trust and

endorsement of their partners' parenting; McHale et al., 2000). For instance, fathers have been found to be less likely to be involved in coparenting when their parenting decisions were undermined by their wives, and mothers' greater undermining of fathers has been related to more competitive coparenting (Murphy et al., 2017; Jia & Schoppe-Sullivan, 2011). Furthermore, mothers' support of fathers' parenting decisions has been shown to increase father involvement, and in turn, fathers' involvement and support of mothers has been shown to relate to more cooperative coparenting (Murphy et al., 2017). In contrast, mothers' relative involvement has been found to be relatively consistent across both cooperative and competitive coparenting styles (Murphy et al., 2017); thus, maternal involvement has not been found to relate to fathers' support of their spouse's parenting or to competitive or cooperative coparenting in past research.

Parenting competency. Parents' feelings of their own parenting *competency* (parents' observed confidence in interacting with their child; Bayer, 1992) and support of their partner have both been demonstrated to affect their own and their spouse's involvement in coparenting. Markedly, parents can "build-up" their partner by supporting them, which in turn can either promote their partners' confidence in their interactions with their children, or "take them down" through undermining their partner and eroding their self-confidence. In doing this, the family dynamic is ultimately affected and, in turn, influences how parents work as a team to care for their children.

The relation of mothers' support of their partner and fathers' competency has been studied in depth in maternal gatekeeping literature, which posits that mothers play

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an important role in promoting or inhibiting collaborative parenting efforts between

parents (Allen & Hawkins, 1999). Markedly, gatekeeping behavior has been defined as

mothers assuming the major responsibility for caregiving and being highly critical of

fathers' interaction with their children (e.g., Schoppe-Sullivan et al., 2008). However,

mothers are not necessarily the sole root of negativity within gatekeeping dynamics. In

fact, fathers with lower parenting competence (parenting self-efficacy) often appeared to

elicit greater discouraging and critical behavior from their partners (Schoppe-Sullivan,

Altenburger, Lee, Bower, & Kamp Dush, 2015).

Extending Coparenting Research to Families of Four

The introduction of a second child into a family, albeit a normative family

transition, requires major shifts in family dynamics (Volling, 2012). Family systems

theorists conceptualize the family not only by their "separate parts," but also by

emphasizing the importance of the whole family unit (Minuchin, 1985). A family of

three, with two parents and one child, is comprised of three dyadic relationships (marital,

mother-child, and father-child) and one triadic whole-family relationship. After a second

child is introduced into a family, previous relationships in the family change and new

relationships emerge. A family with two parents and two children increases in

complexity, as it consists of six dyadic and four triadic relationships, as well as one

quadratic relationship. It is important to acknowledge the complexity of the quadratic

family unit, as this is a possible reason why this population is understudied. For a parent

to separately recall how they interact with their partner, older child, younger child, and as

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a coparent in whole-family interactions, becomes quite complex and might result in inaccuracies in self-report assessments. As stated previously, second order effects influence how individuals interact with others and how they perceive their relationships (Minuchin, 1985). In turn, family systems theorists highlight the importance of observational methods and posit that this approach is a possible solution to mitigate this issue of inaccuracy in self-reporting. The development of a quadratic observational coding system is thus a major contribution of the present study.

The idea that shifts in parenting responsibilities for fathers and mothers that come with the birth of a second child may have a significant impact on each parents' role within the family system has been firmly established by research demonstrating that the transition to parenthood requires considerable adjustment in parents' roles (e.g., Lawrence, Nylen, & Cobb, 2007). Kreppner (1988) identified three forms of adaptations that parents take to divide household and child labor responsibilities after the arrival of their second child: 1) both mother and father have equal responsibilities for home and child care, 2) fathers become more responsible for the care of the firstborn child, and 3) mothers take care of childcare while fathers upkeep the home. Although specific patterns of readjustment in household and childcare tasks have been suggested, their impact on the quality of coparenting two children is a relatively uncharted territory. Such adjustments in parenting responsibilities for parents with two children may affect how parents work in cooperation with or in competition with each other to raise their child, as well as how mothers and fathers interact as individuals within the coparenting relationship.

The seminal work on coparenting in families of four has relied on questionnaire methods. From this work, parents' self-reports of coparenting of two children support the postulation that both cooperative and competitive coparenting styles are prevalent in families of four (Kolak & Volling, 2007). However, a shortcoming of this work is that parents had to complete coparenting questionnaires separately for each child. This is problematic as parents might find it difficult to parse out their joint parenting efforts for each child, when the experience is arguably interconnected. Observational methods could perhaps better capture this experience more holistically. Moreover, coparenting questionnaires assess the respondents' subjective perceptions of their coparenting behaviors and quality. Although these subjective impressions provide important information, observations from trained observers provide more objective assessments of the couples' actual coparenting behavior and quality.

Similar to families with one child, couples with two children are often likely to display teamwork and facilitating of each other's parenting, captured by the concept of cooperative coparenting. Competitive coparenting is likely to occur when one parent jockeys for the control or favor of one or both children. In addition, each parents' level of involvement, support of their partner, and competency in coparenting are likely to be key factors that related to dyadic coparenting quality in families of four. Thus, a key goal of the present study is to validate an observational measure of cooperative and competitive coparenting in families of four. This will be done by in two ways: first, by relating each of the coded family observations (cooperative coparenting, competitive

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coparenting, and each parents' involvement support, and competence) to validated questionnaire assessments of each of these constructs (Aim 1), and secondly, by examining the association between cooperative and competitive coparenting quality in families of four and parents' involvement in coparenting, support of their partner and displayed competency with their children (Aim 2). Although parents' involvement, support of their partner's parenting, and sense of parenting competency have all been shown to relate to quality of coparenting in families of three, it remains unclear how these individual parenting behaviors will relate to coparenting quality in families of four, although hypotheses can be proposed based on extant observational research done with families of three. Moreover, given that many studies across the transition to having a second child focus only on parents' efforts aimed at the firstborn child (e.g., Volling, 2012), an important extension of the current investigation is to observationally examine parents' involvement and competency with the second child, as well as the older child.

Based on research with families of three, it seems likely that parents' high levels of involvement, support, and competency should also relate to more cooperative coparenting in families of four. Regarding involvement, higher father involvement in particular is likely to predict more cooperative coparenting, as this has been shown in past research with families of three (Murphy et al., 2017), and higher father involvement has been shown to have a positive influence on family dynamics (e.g., Kolak & Volling, 2007; Kuo et al., 2017). In families of three, mothers have been found to be highly involved with children regardless of paternal support (e.g., Murphy et al., 2017), which

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may continue to be the case for families of four. However, in families of four, it is possible that some fathers might be "forced" into parenting responsibilities out of necessity as opposed to adopting them willingly, whereas others may enjoy the opportunity to develop a closer relationship with their older child. In the former case, it is less likely that higher father involvement will relate to more cooperative coparenting.

Additionally, when both parents mutually support each other in their parenting efforts, this should relate to cooperative coparenting in families of four, as has been found in past research on families of three. Mothers' greater support of fathers was also found to relate to greater father involvement, both of which relate to higher cooperative coparenting (Murphy et al, 2017). Given past research, it may be that mothers' lack of support of fathers also plays an important role in competitive coparenting dynamics, similar to what has been found in families of three (e.g., Murphy et al., 2017).

It seems likely that higher parenting competency in both parents should also relate to cooperative coparenting dynamics. However, it is less clear how parents' support and competency with both children should relate to competitive coparenting. It may be that competition between parents could be marked by high undermining by both parents and with low levels of parenting competency in both parents, or by high levels of mothers' undermining of fathers, paired with fathers' low levels of competency with both children. Extending work on parenting competency to families of four is needed.

Novel Patterns of Coparenting That May Emerge in Families of Four

It is likely that when a second child is born, new styles of coparenting will appear.

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Although our understanding of how families with two children divide their parenting responsibilities is relatively uncharted, extant research suggests that mothers and fathers must readjust their parenting roles upon the arrival of a second child. A common theme among early-stage family of four studies is that the quality of the mother-child relationship with the firstborn child diminishes once the second child arrives. In particular, mothers' self-reported warmth and affection decreases towards their firstborn child (e.g., Baydar, Greek, Brooks, & Brooks-Gunn, 1997), in that they engage in less joint play and verbalizations, and pay attention less to their firstborn child, in comparison to before the second child was born (e.g., Dunn & Kendrick, 1980).

Although less is known about how father-child relationships change over the transition to having a second child, research indicates that families in which fathers take a supportive role in the family once a second born child arrives generally have firstborn children who cope with this transition better (e.g., Volling, 2012). A study conducted by Stewart (1990; Stewart et al., 1987) observed fathers interacting with their firstborn child across the transition to having a second child and found fathers' frequency of talking with their firstborn child remained about the same even after the second child arrived. This finding provides evidence that the father-child relationship generally remains consistent and stable during this change in family structure, in contrast with the mother-child relationship, which is more likely to diminish across this transition as mothers spend more time with the younger child (Volling, 2012).

Since mothers generally become more involved with the younger child, and

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because older and young siblings often have different schedules and engage in different activities, joint parenting efforts for parents of two children might often resemble a *divide and conquer* strategy, with each parent focusing on interacting with one child at a time in order to coparent two children. This postulation has yet to be empirically explored by examining individual parent behaviors within the coparenting dynamics of parents with two children; this is an important extension of the coparenting literature to better understand "average-sized" families of four. Thus, the present study aims to not only validate a new observational measure of coparenting in families of four, but also to develop methods of coding new aspects of coparenting that may emerge in families of four; in particular, a new coparenting construct – divide and conquer. This new construct will be validated by a qualitative assessment in which parents are encouraged to discuss how their joint parenting efforts have changed upon the arrival of a second child.

Since divide-and-conquer coparenting is a new construct specifying a novel type of coparenting that is expected to emerge in families of four, it is unclear how it will be related to mothers' and fathers' relative involvement, support, and parenting competency. Divide and conquer coparenting might related to high levels of involvement for each parent with one child and low levels with the other child, or perhaps moderate levels with both children, if parents switch from interacting mainly with one child to interacting with the other. Mothers' support of fathers might be particularly influential in this coparenting dynamic, as mothers support of their partner has been shown to encourage father involvement (e.g., Jia & Shoppe-Sullivan, 2011), which would be necessary for this style

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of coparenting to function well. It is also possible that support might not play an influential role in divide and conquer coparenting since interactions are so divided, or support might occur to help facilitate children moving interchangeably between parents in their one-on-one interactions. Furthermore, in divide and conquer coparenting, it is possible that each parent might be highly competent with one child, but not both children. These questions will be examined on an exploratory basis in the current study.

Given that parenting two children calls for a different division of resources, it is important not only to examine this construct cumulatively (e.g., explore which parent is more involved overall), but also to capture how different patterns of parent involvement with two children (e.g., one parent highly involved with both children and the other parent not very involved, both parents equally involved with both kids, both parents involved with predominantly one child, or both parents showing low overall involvement) relate to coparenting dynamics. For instance, it may be the both parents being equally involved with both children would relate to cooperative coparenting, in that a core tenant of this quality of coparenting emphasizes a collaborate, team-oriented style of family functioning. Additionally, since a key characteristic of divide and conquer coparenting is both parents being equally involved with one child, this pattern of involvement should related to high levels of divide and conquer coparenting, providing an additional validity check for this newly proposed style of coparenting. Involvement patterns are likely to differ in relation to competitive coparenting, as one or both parents could be jockeying for control of how parenting is divided, trying to win favor of one or

both children, or one parent could retreat from the family interaction all together. These associations will be examined on an exploratory basis.

Overview of the Current Study

The overarching goal of this project is to establish construct validity for an observational coding system for families of four, the Families of Four Rating Scales (FoFRS), to help researchers gain clearer insight into how coparenting in families of four functions. This will be examined in two ways: Aim 1) by relating constructs assessed by rating the observations to parallel constructs assessed via validated survey methods, and Aim 2) by examining whether observed coparenting in families of four is similar to observed coparenting in families of three, in terms of how each parents' relative involvement, support of their partner, and parenting competency relate to cooperative and competitive coparenting quality. Regarding Aim 2, the following hypotheses were proposed based on prior observational research done with families of three:

Based on previous research with families of three, cooperative coparenting was expected to relate to: fathers' higher involvement with both children (*Hypothesis 1*; Murphy et al., 2017; Jia & Schoppe-Sullivan, 2011), mothers' increased support of their partner (*Hypothesis 2*; Murphy et al., 2017; Jia & Schoppe-Sullivan, 2011), and fathers' higher parenting competency (*Hypothesis* 3; Schoppe-Sullivan et al., 2008). Additionally, it is expected that certain individual maternal and paternal behaviors will interact to predict cooperative coparenting. Specifically mothers' support of fathers in their parenting efforts and fathers display high levels of competency with the children

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(*Hypothesis 4*; e.g., Schoppe-Sullivan et al., 2008), parents' mutual high support of each other (*Hypothesis 5*; e.g., McHale et al., 2011) both parents' mutual high involvement (*Hypothesis 6*; e.g., McHale et al., 2011), and fathers' high involvement combined with mothers' support of them in parenting (*Hypothesis 7*; e.g., Murphy et al., 2017; Jia & Schoppe-Sullivan, 2011), should positively relate to higher cooperative coparenting.

Based on previous work on families of three, competitive coparenting was expected to relate to: mothers' undermining their partner (*Hypothesis 8*; Murphy et al., 2017), fathers' lower involvement (*Hypothesis 9*; Murphy et al., 2017), and fathers' lower levels of competency with both children (*Hypothesis 10*; (Schoppe-Sullivan et al., 2008). In addition, competitive coparenting should relate to interactions between the following factors: mothers' undermining of fathers with fathers' lower parenting competency (*Hypothesis 11*; Schoppe-Sullivan et al., 2008), both parents' mutual low support of each other (*Hypothesis 12*; McHale et al., 2011), and mothers' low support with fathers' low involvement (*Hypothesis* 13; Jia & Schoppe-Sullivan, 2011).

The second major goal of the present study is to explore aspects of coparenting that are unique to families of four by addressing the following two questions: Aim 3) Does a new type of coparenting (i.e.., divide and conquer coparenting, in which each parent interacts separately with one of the two children) emerge in families of four, and if so, how do individual parental behaviors in coparenting and dyadic coparenting quality (cooperative and competitive) relate to this type of coparenting? Aim 4) How does each parents' level of involvement with each child (e.g., one parent involved/ one parent not

involved, both parents equally involved with both children, both parents involved with predominantly one child, or neither parent involved) relate to the couple's overall coparenting quality?

The association of the individual parenting behaviors in relation to divide and conquer coparenting was examined on an exploratory basis. It may be that higher instances of support, particularly mothers' support of fathers, could relate to higher levels of divide and conquer coparenting, in that mothers' encouragement of fathers has been associated with positive family dynamics (e.g., Murphy et al., 2017; Jia & Schoppe-Sullivan, 2011). If so, it may be that divide and conquer coparenting would associate with cooperative coparenting, since dividing parenting responsibilities and having each parent spend one-on-one time with the two children separately may be a strategy that both parents agree with and find effective. Alternatively, divide and conquer coparenting could be reflective of lower support between partners if parents are not effective in their joint efforts in coparenting, and they care for their children best when they each interact with one child separately from the other child and parent. In this case, divide and conquer coparenting could associate more with competitive coparenting. Divide and conquer coparenting may reflect higher instances of each parents' relative involvement and competency with one child, in that it is characterized by one-on-one time with children.

Aim 4 was examined to better understand how differences in parents' joint involvement with two children (e.g., one parent highly involved with both children and

the other parent not very involved, both parents equally involved with both children, both parents involved with predominantly one child, or both parents showing low overall involvement) relate to coparenting dynamics. For instance, it may be the both parents being equally involved with both children would relate to cooperative coparenting, in that the family is not showing any divisions and is displaying they can all positively interact with one another. It is not clear how the suggested involvement groups might relate to competitive coparenting, as one or both parents could be jockeying for control of how parenting is divided, or one parent could retreat from the family interaction all together. Additionally, as a validity check, both parents being equally involved with one particular child should relate to divide and conquer coparenting. This aim is an important contribution to extant literature, as research is only beginning to scratch the surface on how families of four function.

Methods

Participants

The participants in the present study were fifty-two families of four (two parents, two children; 208 individuals), who were recruited from local preschools within the Austin community (The Jewish Community Center) and The University of Texas at Austin's childcare facilities: The Priscilla Pond Flawn Child and Family Laboratory, Comel Child Development Center, and San Jacinto Child Development Center. Eligible families were couples with two children aged between 5 months to 8 years of age. Siblings could not have more than a 3 year age gap. Parents had to be currently married or cohabitating and had to be English speaking, as our observational coding system must be validated in English before attempting to validate it in other languages. All members of the family involved with the present study had to be in good health with no family members suffering from developmental disabilities. Participants were not included in analyses if they did not meet the target population requirements.

Parents' ages ranged from 29 to 55 years for mothers ($M = 36.90$, $SD = 4.90$) and 27 to 55 years for fathers ($M = 38.96$, $SD = 38.96$). Most participants identified as White/Caucasian (Mothers 77%; Fathers 80%), and the remainder identified as multi-racial (Mothers 18%; Fathers 8%), Hispanic (Mothers 4%; Fathers 4%), Asian/Pacific Islander (Mothers 1%, Fathers 2%), Native American (Fathers 4%), and African American/Black (Fathers 2%). The average annual gross income for the sample was generally over $75,000 (41% of families), with 37% of families earning between $45,000

- $75,000 and 22% earning less than $45,000. The sample was well educated with only 4% of mothers and 3% of fathers having high school as their highest level of education. The remainder of the sample had earned a Bachelor's degree (Mothers = 40% ; Fathers = 36%), a Master's degree (Mothers = 21% ; Fathers = 27%), a Professional Degree (Mothers = 25% ; Fathers = 28%), or a Doctorate of Philosophy (Mothers = 10% ; Fathers = 5%).

Procedure

The multi-method data collected in the present study was during a home visit in which 2 or 3 research assistants visited the homes of participating families for a duration of about 75 minutes. All four family members had to be home and individually consent to be involved in the study, as outlined by the University's IRB. First, the family was involved in a 25 minute task, in which they were recorded interacting with each other. This video footage was later coded for dyadic coparenting quality (e.g., cooperative, competitive, divide and conquer), as well as for each parents' individual behaviors within the quadratic interaction (e.g., support of their partner, involvement with both children, and competency with both children). Afterwards, research assistants instructed parents to separately fill out paper copies of self-report assessments of dyadic and individual coparenting quality and behavior. Parents were instructed to complete their questionnaire packets independently, to not spend too much time on any one question, and to think about their whole family experience as a family of four, unless otherwise indicated. Parents were given approximately 50 minutes to complete this task. Research assistants

played with the children during this time so parents could focus on completing their questionnaire packets.

Measures

Observations of the whole-family quadratic interaction. Family interactions consisted of a 25 minute interaction in which families were videotaped in their homes, after which parents were given approximately 50 minutes to complete questionnaire packets. The entire family visit was approximately 75 minutes long. In the whole-family interaction, parents were instructed to prepare a snack, facilitate play between siblings, and engage in a parenting card-sort activity in the participants' homes. This task was designed to elicit dialogue and negotiation about childrearing and parenting philosophies, as well as to examine whole-family interactions that require parents to complete an adult task while concurrently caring for their children. Parents were told they could complete the tasks in any order, as long as they were completed within a 25 minute timeframe. The time constraints of the activity put the parents under mild pressure, as they must complete several tasks within a short amount of time, which was designed to simulate how parents jointly navigate daily challenges at home.

Coding of family observations. Each type of family interaction was coded using the observational coding system developed for the present study to examine dyadic parent-child and quadratic whole-family interactions in families of four (Families of Four Rating Scales). For each measure, pairs of coders were trained by conference coding, a method in which the coding team watches an interaction as a group and comes to a

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consensus on what the score for the interaction should be. Approximately 20% of the videos were used for conference-coding training purposes before coders could independently rate videos to obtain inter-rater reliability. Three teams of coders that consisted of 2 or 3 individuals each (including the primary investigator who trained assistants in observational coding) were trained to assess either coparenting quality, each parents' support and competency with both children, or each parents' involvement with both children. Inter-rater reliability between pairs of coders was calculated using intra-class correlation coefficients, which were adequate for all ratings (coparenting group >.83, support and competency group >.74, relative involvement group >.76). For all ratings, after reliability calculations, cases in which raters disagreed (scores exceeded a 2-point spread) were conference coded with the coder trainer, so the data would be as accurate as possible. The scores used in analyses were only those of the primary coder that conducted training sessions.

Videotaped observations of the quadratic interactions were coded for coparenting behaviors using adaptations of the Coparenting and Family Rating scales (CFRS; McHale et al., 2000) and Coparenting Incidents scales (Bayer, 1992; used in Cannon, Schoppe-Sullivan, Mangelsdorf, Brown, & Szewczyk Sokolowski, 2008), which were initially developed for coding triadic family interactions. The newly developed observational coding measures in the current investigation are entitled the Families of Four Rating Scales (FoFRS). In addition to adaptations of these previously developed scales, a new observational coding scheme was developed for divide-and-conquer coparenting. This

scheme was inspired by the primary investigator's observations of the whole-family interaction during pilot data collection. When prompted to interact as a whole family during the observational task, parents often spent one-on-one time with an individual child within the interaction. They also were more likely to write comments indicating that they prioritized having special, individualized time with their children. In turn, the divide and conquer coparenting observational code was developed, which captured the extent to which parents in a given family predominantly interacted.

Family-level Ratings

For the family-level ratings of coparenting, coders were instructed not to code instances in the interaction that were reflective of the marital relationship independent of parenting, but rather, to only rate instances when parents are communicating about parenting decisions with one or both children. The family-level coding team was bound to only whole-family coparenting quality and were blind to the coding schemes for the individual parent behaviors. Families were rated on the following scales:

Cooperative coparenting is characterized by parents helping and supporting one other in teaching and playing with one or both children. Cooperative behaviors could be verbal or instrumental, such as a mother noticing the father playing blocks with their children and then making sure all of the blocks are within their reach. Parents would receive a low score of 1 (very low cooperation) if minimal effort is made by parents to support or assist each other. Alternatively, a high score of 5 (very high cooperation)

would indicate couples who frequently displayed cooperation. This measure can be found in Appendix A.

Competitive coparenting is characterized by one parenting undermining the other in order to gain control of parenting decisions, jockeying for control over one or both children, and triangulating children into inter-parental conflict. A low score of 1 (very low competition) indicated that couples were not displaying any instances of competition. A high score of 5 (very high competition) reflected parents trying to outdo one another to the point where such disagreement takes precedence over helping the children. This measure can be found in Appendix B.

Divide and conquer coparenting is characterized by parents working together as a team to take care of children by each interacting one-on-one with one of their children. While it is possible that each parent spends most of his or her time with one child (for example, mother with the younger child and father with the older child), it also could be the case that both parents spend separate time with both children. Despite the distributed efforts, couples that divide and conquer may periodically check-in with each other via verbal or physical contact (e.g., eye contact, instrumental help). Parents were rated from 1 (low divide and conquer), in which families spent most of their time together as a whole family (e.g., parents working in tandem with both children), one parenting playing with two children, or both parents spending a considerable amount of attention on one child. A family received a score of 5 if the interaction was characterized by parents

consistently working apart by interacting with one child at a time and checking-in on each other. This measure can be found in Appendix C.

Individual Parent Ratings

Relative interaction time measures the amount of relative time parents spend interacting with each child (younger and older) separately. Scores range from 1 (parent makes few to no contributions in regard to that child) to 5 (parent makes virtually all of the play initiations or decisions regarding that child). This measure can be found in Appendix D.

Mothers' and fathers' relative involvement with each child was then coded into 4 different categories. *One parent involved:* To be included in this category, one parent scored a 4 or 5 with both children, and the other parent scored a 1 or 2 with both children ($N = 16$). *Both parents equally involved with both kids:* In this group, both parents had to score between 3 and 5 with both children, with no more than a 2-point discrepancy ($N = 16$). *Both parents involved with predominantly one child:* For this category, both parents had to score a 4 or 5 with one child and a 1 or 2 with the other child ($N = 18$). It is important to note that in these circumstances, each parent was involved with a different child (e.g., mother involved with older child, father with younger), *not* that both parents were involved with one child (e.g., mother and father involved with older child only). *Low overall involvement:* In this group, both parents had to score a 1 or 2 with both children ($N = 2$).

Parents' support of their partner in parenting was characterized by verbal and nonverbal behavior each parent displays in support of their partner's interactions with either or both children. Mothers' and fathers' were scored separately. For example, a father may demonstrate facilitating the mother's play with their child(ren) or even revel in the mother's interaction with their child(ren). Each parent is rated from 1 (no or minimal support behaviors are exhibited over the course of the interaction) to 5 (parent is trusting and approving of their partner's interaction with their children). This measure can be found in Appendix E.

Parents' competency with both children measures each parent's confidence in their own ability to interact with the older and younger child, separately. Each parent is separately scored from a low score of 1 (parent seems to strongly question their ability to interact with the child, to be forced into interacting with their child, or to withdraw from interaction) to a high score of 5 (parent seems to interact with child with self-assurance). Mothers' and fathers' competency with each child will be summed for each parent, with a score indicating overall competency with both children. This measure can be found in Appendix F.

Parent Questionnaire Measures

Coparenting. Both mothers and fathers filled out the 14-item Coparenting Relationship Scale – Brief Measure (Feinberg, Brown, & Kan, 2012) that assesses seven domains of coparenting. For the purposes of the present study, the coparenting agreement and undermining sub-scales of the Coparenting Relationship Scale – Brief

Measure were used. This measure has been shown to be a reliable and valid assessment of cooperative and competitive coparenting of parents with young children (e.g., Le, McDaniel, Leavitt, & Feinberg, 2016; Song & Volling, 2015). The 7-point Likert scale ranges from "not true of us" to "very true of us." Coparenting agreement is captured by two items: "My partner and I have the same goals for our children" and "My partner and I have different ideas about how to raise our children." Undermining coparenting is also captured by two items: "My partner tries to show that she or he is better than me at caring for our children" and "My partner undermines my parenting." These sub-scales will be used to validate the coparenting observational measures. Specifically, coparenting agreement will be examined in relation to observed cooperative coparenting, and undermining coparenting will be examined in relation to competitive coparenting. This measure can be found in Appendix G.

Division of childcare and labor. Both parents filled out the Who Does What? Questionnaire developed by Cowan and Cowan (1990), which has been established as a reliable and valid assessment of parents with young children (e.g., Cowan & Cowan, 1990; Cowan & Cowan, 1998). Parents rated their relative responsibility for household tasks, family decision-making, and the caring and rearing of children, as well as each partner's satisfaction with the current arrangements. For each item, each parent indicates who does what ("how it is now") on a scale ranging from 1 (she does it all) through 5 (we do this about equally) to 9 (he does it all). For the same item, each parent also endorses how competent they feel about the given task ("how competent I feel doing this") on a

scale ranging from 1 (not at all competent) to 5 (very competent). For instance, in one item, parents are asked to report on "doing our child's laundry," in relation to the firstborn child. A parent would then endorse who is responsible for doing their older child's laundry ("how it is now") and how competent they would feel with the task of doing the older child's laundry ("how competent I feel doing this"). Items were averaged for each parent separately for parents' relative involvement with both children ("how it is now") and how competent they feel with child-specific tasks. Parents endorsement of "how it is now" will be examined in relation to observed relative involvement with both children and "how competent I feel doing this" will be related to parents observed competency with both children. This measure can be found in Appendix H.

Alliances. Both parents filled out the 20-item Parenting Alliance Inventory developed by Abidin (1995), which has been established as a reliable and valid assessment of parents of young children (e.g., Margolin, G., 2001; Schoppe-Sullivan et al., 2008). This measure uses a 5-point Likert scale (1 strongly agree; 5 strongly disagree) to assess each parents' perception of the strength of their parenting alliance. An example item from this scale is, "My child's other parent and I communicate well about our child." This measure was used to validate observational measures that assess mothers' and fathers' support of the other parent. This measure can be found in Appendix I.

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Parent Qualitative Measure

       Changes in coparenting. Parents were separately asked an open-ended question, in which they had to briefly write about how their individual and joint parenting changed after the introduction of a second child into their family. Specifically, parents were asked: How has your parenting changed from having one to two children (individually and as a coparent)? This measure was used to provide evidence for the validity of the observational measure that assesses divide and conquer coparenting. This measure can be found in Appendix J.

       Coding of qualitative measure. Ratings of the qualitative measure used a dichotomous scale in which 1 indicated no signs of divide and conquer and 2 indicated that divide and conquer was mentioned as a strategy (see Appendix K). For example, a rating of 1 would be given if parents both said that the mother continued to do all of the caregiving, whereas a rating of 2 would be given when parents say they prioritize one-on-one interactions with their children such that one parent cares for one child while the second cares for the other. If parents did not comment on how their coparenting has changed, families were scored with as "N/A" and not included in analyses involving this measure.

       Mothers' and fathers' responses were conference coded by two coders, one in which was the primary investigator who trained the other coder. Both coders had to be in 100% agreement that divide and conquer was or was not salient in the parents' responses. The scores the coders agreed upon were used in analyses, so reliability was not calculated

for this construct. If coders disagreed, the team resolved the issue by providing rationale as to why they disagreed until a consensus was reached.

Control Variables

Both children's age and temperament were used as control variables. Children's temperament has been shown to influence parent-child and whole-family interactions (e.g., Solmeyer & Feinberg, 2011). Children's age has also been shown also influence how parents interact with their children and the relative amount of time spent with them (e.g., Volling, 2012). Given the age-spread of the children in the present study, it was particularly important to control for each child's age in the current investigation. The measures for children's temperament and child age can be found in Appendices L and M, respectively.

Child temperament for both children was assessed using Putnam and Rothbart's (2006) Child Behavior Questionnaire Very Short Form. This measure consists of 36-items in which parents separately reflect on the behaviors of each of their children in the past two weeks. Parents can endorse each statement with *never* (a score of 1) to *always* (a score of 7), or *does not apply* (a score of 0). Examples of statements in this measure include, "During quiet activities, such as reading a story, how often did your child fiddle with his/her hair, clothing, etc.?" and, "When encountering a new activity, how often did your child get involved immediately?" This measure has been shown to be a reliable and valid assessment of child temperament for the ages of children in the present study (e.g., Blair & Peters Razza, 2007; Cameron Ponitz & McClelland, 2009).

Child age was collected for both children from each parent in month increments.

Data Analyses

Aim 1: To examine the association between the newly developed observational measures and existing self-reports of similar constructs. To accomplish this aim, Pearson's correlations were run between the self-report assessments and the newly developed observational measures to determine construct validity. Significant, positive associations were expected between the observational assessments of cooperative coparenting and competitive coparenting with the self-report measures of coparenting agreement and undermining (Coparenting Relationship Scale – Brief Measure; Feinberg et al., 2012), respectively. Furthermore, the observations of parents' relative involvement with both children, competency with both children, and support of the other parent were expected to significantly correlate with self-report measures of division of childcare and labor ("how it is now," "how competent I feel doing this") and parental alliances (Who Does What? Questionnaire; Cowan & Cowan, 1990), respectively. The validity of observed divide and conquer coparenting was established by examining the correlation between the qualitative question that explores changes in coparenting from having one to two children and the observational measure of divide and conquer coparenting, and also by examining the relation between the families' placement in the "both parents predominantly involved with one child" group and the observational measure of divide and conquer coparenting. The associations among the coparenting

measures, as well as the individual parent behaviors, were examined using Pearson's correlations.

Aims 2 & 3: Relation of mothers' and fathers' support of their partner, competency with both children, and relative involvement with each of their two children with aspects of whole-family coparenting dynamics (cooperative, competitive, and divide and conquer). Support for the hypotheses proposed in Aim 2, based on previous research using observations of families of three, provided convergent validity for the observational measures derived from the Families of Four Rating Scales interaction task. Hypotheses 1-3 and 8-10 were examined via main effects in hierarchical regressions run in relation to cooperative and competitive coparenting, respectively. Hypotheses 4-7 and 11-13 were explored via interaction terms entered into the third-step of the hierarchical regressions for cooperative and competitive coparenting, accordingly.

Two sets of three 3-step hierarchical OLS regressions were conducted to address the second aim of the study. The three outcome variables were cooperative, competitive, and divide and conquer coparenting. Due to concerns of statistical power, given the small sample size of the study, all ten individual parent behaviors (each parents' relative involvement with both children, competency with both children, support of the other parent) were not entered into in a single multiple regression. Instead, two separate regressions per outcome variable were conducted. Given extant research that suggests partner support interacts with involvement with children (e.g., Jia & Schoppe-Sullivan, 2011), as well as partner support with competency with children (e.g., Schoppe-Sullivan

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et al., 2008), regression analyses paired these constructs, accordingly. The predictor variables for each of these outcomes were: a) each parents' support of the other parent and competency with both children, and b) each parents' support of the other parent and relative involvement with both children. Mothers' and fathers' relative involvement with each child were summed for each parent, with a score indicating overall involvement with both children. Mothers' and fathers' competency with each child were summed for each parent, with a score indicating overall competency with both children.

Specifically, in the first step for each set of hierarchical regressions, the control variables of both children's age and temperament were entered. For the first set of hierarchical OLS regressions, each parent's support of the other parent and each parent's competency with each child were entered in the second step. In the third step, an interaction term was examined between mothers' support of fathers and fathers' competence.

For the second set of hierarchical OLS regressions, the control variables were entered first. Each parent's relative involvement and each parents' support of the other parent was entered in the second step. In the third step, interaction terms were examined between mothers' and fathers' support of each other, mothers' and fathers' involvement with both children, as well as mothers' support of their partner and fathers' involvement with both children.

Aim 4: Relation of patterns of parents' involvement with two children (e.g., one parent involved with both children/one parent not involved, both parents equally involved with both kids, both parents involved with predominantly one child, low overall involvement) to coparenting dynamics. The relation of involvement groups to coparenting quality was examined by conducting a separate one-way ANOVA for each type of coparenting (cooperative, competitive, divide and conquer), across the following three level-of-involvement groups: both parents equally involved with both children, both parents involved with predominantly one child, and both parents' low overall involvement. Due to a small sample size ($N = 2$), the group in which there was low overall involvement was not included in the One-Way ANOVA analyses, but it was discussed descriptively.

Results

Tables 1 displays the means standard deviations for all of the study variables. First-order correlations among the observed family variables and the control variables can be found in Table 2.

Aim 1: Establishing Construct Validity by Comparing Newly-Developed Observations of Families of Four to Existing Self-Report Measures:

Only one of the self-report measures significantly related to their corresponding observational assessment, as proposed in the data analyses section (Table 3). The observational code for divide and conquer coparenting significantly related to the code developed for parents open-ended responses for changes in coparenting with two children (Table 3).

Aim 2: Establishing Construct Validity by Examining the Relation of Parents' Individual Parenting Behaviors to Coparenting Quality

Each parents' individual coparenting behaviors were expected to related to cooperative and competitive coparenting in similar ways as has been found for families of three.

Cooperative coparenting. In regard to cooperative coparenting, most hypotheses were supported. Specifically, when fathers were more involved with both children (*Hypothesis 1*; Table 4) and when mothers displayed high levels of support for their partner (*Hypothesis 2*; Tables 4 and 5), significantly higher instances of cooperative coparenting were found. In addition, when fathers felt competent with both children,

higher levels of cooperative coparenting were observed (*Hypothesis 3;* Table 5).

Contrary to expectations, the interaction between mothers' support of fathers and fathers'

competency did not significantly predict cooperative coparenting (*Hypothesis 4*; Table 5).

It is also important to note that while it was not specifically predicted, that fathers'

support of mothers' emerged as significant in relation to cooperative coparenting, in that,

increased levels of fathers' support of mothers related to higher levels of this coparenting

quality (Table 4).

As predicted, the interaction between both mothers' and fathers' support of their

partner significantly related to cooperative coparenting (*Hypothesis 10*; Table 4). A

simple slopes analysis revealed that the slope of the line representing fathers' lower

support of their partner was significantly different from zero, whereas the slope of the

line representing fathers' high support of their partner was not. This indicates that when

fathers' support of mothers is low (but not when father's support is high), mothers'

support of fathers is significantly related to cooperative coparenting. It can also be

suggested from Figure 1 that fathers' support of their partner does not differ in regard to

cooperative coparenting levels when mothers' support of fathers is high or when fathers'

support of mothers is high. Figure 1 further suggests that cooperative coparenting is

lowest when both mothers and fathers undermine their partner.

The interaction between both mothers' and fathers' involvement with both

children also emerged as significant in relation to cooperative coparenting (*Hypothesis 6*;

Table 4). A simple slopes analysis indicated that the slope of the line that represented

fathers' high levels of involvement with both children was significantly different than zero. Alternatively, the slope of the line representing fathers' low levels of involvement with both children was not significantly different than zero. This indicates that mothers' involvement is significantly related to cooperative coparenting when fathers' involvement is high, but not when fathers' involvement is low. Figure 2 also suggests that cooperative coparenting is highest when both parents' involvement with both children is high.

Lastly, the interaction between mothers' support of fathers' parenting and fathers' involvement with both children was significantly related to cooperative coparenting (*Hypothesis 7*; Table 4). A simple slopes analysis revealed that the line that represented low father involvement was significantly different from zero, whereas the line that represented high father involvement was not. This suggests that when fathers' involvement is low (but not when their involvement is high), mothers' higher levels of support is significantly related to higher cooperative coparenting. It can also be suggested from Figure 3 that fathers' involvement with both children does not significantly relate to cooperative coparenting when mothers' support of fathers is high, and mother's involvement does not relate to cooperative coparenting when fathers' involvement is high. In addition, Figure 3 indicates that cooperative coparenting is lowest when mothers are undermining of fathers and father involvement is low.

Competitive coparenting. Hypotheses concerning competitive coparenting were partially supported. As expected, mothers' lower support (higher undermining) of their

partner related to higher instances of competitive coparenting in families of four (*Hypothesis 8*; Tables 4 and 5). However, fathers' lower involvement and lower competency with both children did not significantly relate to competitive coparenting quality (*Hypotheses 9 and 10*; Tables 4 and 5, respectively).

It was expected that the interaction of mothers' low support and fathers' low competency with both children (*Hypothesis 11*), the interaction of both parents' low support of each other (*Hypothesis 12*), and the interaction of fathers' low levels of involvement and mothers' low support (*Hypothesis 13*), would all be related to competitive coparenting, but none of these interactions was significantly related to competitive coparenting (Tables 4 and 5).

Aim 3: Establishing Construct Validity for Divide and Conquer Coparenting and Examining Its Relation to Individual Parent Behaviors Within Coparenting

Divide and conquer coparenting was examined on an exploratory basis. Mothers' support of fathers' parenting was related to higher instances of divide and conquer coparenting (Tables 4 and 5), as was mothers' higher levels of involvement with both children (Table 5). Additionally, divide and conquer coparenting was positively related to cooperative coparenting and negatively related to competitive coparenting (Table 2), suggesting divide and conquer coparenting is a positive style of how families of four function.

Aim 4: The Relation of Parent Involvement Groups to Coparenting Quality

Three One-Way ANOVAs were used to examine the relation of parenting involvement groups (one parent involved/one parent not involved with both children, both parents equally involved with both children, both parents involved with predominantly one child, low overall involvement) to coparenting quality (cooperative, competitive, divide and conquer). Table 6 displays the mean, standard deviations, and sample sizes for the ANOVA groups. Since the "low overall involvement" group had a sample size of only 2, it could not be included in the ANOVA, so only the descriptive statistics for this group are presented in Table 6. Significant effects for involvement group displayed in Table 7 were found for cooperative and divide and conquer coparenting, but not for competitive coparenting. All assumptions for normality, equality, and independence of variables were met.

Bonferroni post-hoc tests (Table 8) revealed that significantly higher levels of cooperative coparenting were found when both parents are equally involved with both children, as compared to only one parent being involved (and the other not). In addition, when both parents were predominantly involved with one child, as compared to only one parent being involved, this related to higher levels of cooperative coparenting. Similarly, when parents were involved with predominantly one child, as compared to only one parent being involved and both parents being equally involved with both children, this related to higher levels of divide and conquer coparenting; this provides additional validation of the divide-and-conquer coparenting construct. No significant relations were

identified between the involvement groups and competitive coparenting, suggesting that parents do not follow a particular involvement pattern when jockeying for control of parenting decisions or trying to win favor of children.

While the involvement group in which both parents had low involvement was not included in One-Way ANOVAs due to a small sample size ($N = 2$), this group had distinctive trends in its mean levels in relation to the coparenting outcome measures (Table 5). Overall, the low involvement group on average had very low levels of cooperative coparenting, and high levels of competitive and divide and conquer coparenting. These trends cautiously suggest that when both parents are not interacting with both of their children, this relates to lower levels of positive family dynamics.

Discussion

       The present study is one of the first to observationally examine how parents coparent two children. Despite over 80% of American families having more than one child, coparenting and family interactions in families of four is an understudied topic that warrants much more empirical attention (Volling, 2012; U.S. Census, 2009). An overarching goal of the present work was to validate an observational coding system to assess coparenting in families of four (the Families of Four Rating Scales). Given the substantial amount of literature that highlights the importance of cooperative coparenting in relation to children's prosocial outcomes in families of three (e.g., Murphy, Boyd-Soisson, Jacobvitz, & Hazen, 2017; Jia & Schoppe-Sullivan, 2011), as well as the detrimental outcomes of competitive coparenting (e.g., Murphy et al., 2016), the assessment of cooperation and competition in coparenting for families of four is an important contribution of the present work. Results of this study also support the idea that a new style of coparenting emerges for families of four - divide and conquer coparenting. The findings from the present study not only extend literature on families of three to families of four, which are arguably averaged-sized families in the United States (U.S. Census, 2009), but it also extends literature on coparenting, partner support, parents' involvement with two children, and parents' competency with two children.

The Relation Between the Newly-Developed Observational Codes and Existing Self-Report Measures

With the exception of the relationship between observed divide and conquer coparenting and the interview question developed for the present study assessing how the coparenting relationship changed since the second child was born, none of the observed measures significantly related to their respective self-report measures. While the emergence of significant relations would have aided the overarching goal of the present work to establish validity for the Families of Four Rating Scales, it is not especially surprising that it did not. Self-report measures of parenting and coparenting assess parents' subjective perceptions of their own parenting and that of their partner, whereas observational measures are obtained from researchers who have been trained to observe and make inferences objectively, as much as possible (Hawes & Dadds, 2006). For example, a father might perceive himself to be supportive towards his partner and, in turn, rate himself highly in partner support. However, objectively, an observational researcher might think this father is only moderately supportive, as there are other parents that display much more supportive behaviors and verbal actions. This "falsely positive" bias is suggested in data from the present study, since the mean scores of the self-report measures are disproportionally high, as compared to the observations.

This discrepancy might also be attributed to the prompt in self-report measures that asks for a broad overview of the occurrence of a particular construct in the past two weeks, or a month (Holden & Edwards, 1989). Observations, on the other hand,

represent the occurrence of a construct in real-time. For these reasons, measures of parents' self-reports of their parenting quality are often unrelated or modestly related to observational measures of similar parenting constructs. This is also why it is not common practice for observational measures to be validated by self-reports in past coparenting research (e.g., McHale et al., 2000), as self-reports and observations are assessing essentially different aspects of the same concept. Thus, it was not particularly discouraging that significant relationships did not emerge between the newly-developed observations of family interactions and their respective self-report measures.

Individual Parent Behaviors in Families of Four and their Relation to Coparenting Quality

Overall, results suggest that similar patterns of mothers' and fathers' support of their partner, involvement with their children, and competency with both children in families of four mimic the results of these constructs for families of three. Differences found between expected and anticipated results will be discussed, as will the relation of divide and conquer coparenting to these individual parenting behaviors within coparenting.

Parental behaviors relating to cooperative coparenting. Results indicated that fathers' greater involvement with both children, both mothers' and fathers' increased levels of support for their partner, and fathers' higher levels of competency with both children related positively to cooperative coparenting. These results mimic those found for families of three, which emphasize the positive presence of fathers on coparenting

quality and emphasize that mothers' support is influential in promoting father involvement, which promotes a more positive family dynamic (Murphy et al., 2017; Jia & Schoppe-Sullivan, 2011; Schoppe-Sullivan et al., 2008). These associations were anticipated to emerge, as parents' mutual involvement, support, and competence highlight key facets of cooperative coparenting.

As expected, the interaction of both mothers' and fathers' involvement with both children also significantly related to cooperative coparenting. Specifically, when both parents were highly involved with both children, rates of cooperative coparenting were highest. These results help provide further validity for the Families of Four Rating Scales, in that involvement from both parents has been found to be an important aspect of cooperative coparenting in families of three (e.g., McHale et al., 2000). It is interesting that in research of families of three, fathers' involvement has been found to be more variable than mothers' involvement, while maternal involvement has been found to be generally high and therefore uncorrelated with coparenting quality (Murphy et al., 2017). However, in the present study of families of four, when fathers were highly involved, maternal involvement was significantly associated to higher cooperative coparenting, such that cooperative coparenting was highest when both parents were highly involved, but lowest when mother involvement was low and father involvement was high. Moreover, when father involvement was low, cooperative coparenting was relatively low regardless of whether or not mothers were highly involved. Thus, high paternal involvement did not buffer the negative effects of low maternal involvement on

cooperative coparenting, nor did high maternal involvement buffer the negative effects of low paternal involvement. It may be that in families of four, involvement from both parents is more critical to promoting positive family dynamics than in families of three, perhaps because of the increased parenting demands when caring for two children.

Also as expected, the interaction between mothers' and fathers' support of each other significantly related to cooperative coparenting, which suggested that when both mothers and father undermine their partner, there were fewer instances of cooperative coparenting. This result helped provide validity for the Families of Four Rating Scales (FoFRs), as both parents' lack of support for each other's parenting is the opposite of key characteristics of cooperative coparenting in families of three (McHale et al., 2000). Interestingly, however, fathers' support of their partner did not differ in regard to cooperative coparenting levels when mothers' support of their partner was high, nor was mother's support of father related to cooperative parenting when fathers' support of mother was high. Thus, at least one parent should show high support of the other parent in order to promote cooperative coparenting in families of four.

Finally, the interaction between mothers' support of their partner and fathers' involvement with both children was also significantly related to cooperative coparenting, as predicted. Specifically, when mothers' have low levels of support for their partner and when fathers have low involvement with both children, this relates to the lowest levels of cooperative coparenting. This result highlights a similar trend identified in families of three; specifically, when mothers have high levels of support for their partner and fathers

are more involved, this related to higher instances of cooperative coparenting (Murphy et al., 2017; Jia & Schoppe-Sullivan, 2011).

However, results of this interaction also suggest that high levels of cooperative coparenting is still possible when fathers involvement is low, as long as mothers support of fathers is high. This goes along with past findings that mothers have a greater impact on fathers' parenting behaviors than fathers' do on mothers' parenting behaviors (e.g., Schoppe-Sullivan et al., 2015). Mothers' support of fathers may buffer the possible negative effects of low father involvement in caregiving since mothers are generally assumed to have greater expertise in parenting of infants and toddlers. In some families, both parents may feel that fathers' lower involvement is to be expected, and that fathers may need more support when both parents are actively involved in coparenting. What seems important to cooperative coparenting overall is that mothers are gate-openers and supportive of fathers during coparenting, so that whatever coparenting interactions they have are cooperative.

Interestingly, results of the interaction also suggest that fairly high levels of cooperative coparenting are also possible when fathers are highly involved but mothers' support of their partner is low. The emergence of this result came somewhat as a surprise, as studies of families of three suggest that when mothers are undermining of fathers, this positively relates to competitive coparenting (e.g., Murphy et al., 2017) and fathers' retreating from family dynamics (e.g., Gallegos, Murphy, Benner, Jacobvitz, & Hazen, 2017). However, perhaps in families with two children, even if a mother is not

being supportive of them, fathers' involvement in families with two children can possibly buffer the negative effects of mothers' lack of support and promote cooperative coparenting dynamics – particularly through play. In the present study's observed family interaction, parents were instructed to complete a card sorting task to promote discussion of parenting, as well as support play between the children. Recent work suggests play serves an important role in father-child relationships in that it promotes emotional engagement, capacity for physiologically rigorous activities, and knowledge of survival skills (e.g., Creighton, Brussoni, Oliffe, & Olsen, 2014). Further work demonstrates that through sensitive caregiving, fathers can help scaffold their child's ability to regulate their emotions (Hazen, McFarland, Jacobvitz, & Boyd-Soisson, 2010).

For example, in one of the families in the present study in which the mother's low support of her partner and cooperative coparenting occurred, it seemed as if the mother was tired from a long day's work, sitting away from the other family members and focusing her attention predominantly on completing the card-sorting activity. The father, however, was actively engaged in play with his children while paying attention to his partner in the card sorting task, which promoted family cohesion and lightened the family dynamics. Therefore, it may be that fathers' play with the children may become particularly important in families of four. This behavior might "save" the positive coparenting dynamic in circumstances in which the couple agrees that the father should take over the caregiving to give the mother time to complete other activities.

Despite mothers' support of their partner and fathers' competence separately relating to cooperative coparenting, when entered into an interaction, the results were not significant. This interaction may have failed to emerge due to fathers' competence being calculated as a total score for both children in the regression analyses, as opposed to looking at fathers' competence separately with the older and child younger child. Empirical work is mixed on whether fathers spend more time with the older child or younger child (e.g., Kreppner, 1980; Kuo et al., 2017), which informed the design in the present investigation to look at overall competence for each parent with both kids.

Overall, cooperative coparenting in families of four was most facilitated when both parents were mutually highly involved and supportive. When mothers are supportive of fathers' parenting, they serve as gate openers, promoting fathers' involvement. In turn, fathers' high involvement and support of mothers promotes cooperative coparenting, as has been found in research with families of three (Murphy et al., 2017). Fathers' high involvement and support from mothers is likely to also promote fathers' parenting competency, which should in turn, further promote father involvement, mothers' support of fathers, and cooperative coparenting. In contrast, cooperative coparenting was lowest when mothers were undermining of fathers' parenting during coparenting, fathers were lower in involvement (or fathers were highly involved and mothers were not), and fathers showed low competency.

Parental behaviors in relation to competitive coparenting. Results were mixed for competitive coparenting. Results indicated that mothers' lack of support for

their partner related to higher instances of competitive coparenting, which mirrors findings on studies of families of three (e.g., Murphy et al., 2017; Jia & Schoppe-Sullivan, 2011). Findings in the present study also suggested that fathers' lower involvement and lower competency with both children did not significantly relate to quadratic competitive coparenting. In addition, interactions between mothers' low support with fathers' low competency with both children, both parents' low support of their partner, and mothers' low support with fathers low involvement, were not found to be significantly related to competitive coparenting. Taken together, these results highlight that mothers' undermining of fathers' parenting plays a particularly important role in competitive coparenting dynamics, which has also been found in families of three research (e.g., Murphy et al., 2017), and provides support for the Families of Four Rating Scale.

It is possible that fathers' involvement, and interactions involving fathers' involvement, may not have emerged as significant because fathers' involvement might be more variable in families of four than families of three. For instance, it has been argued that fathers retreat from negative family dynamics, so in families of three, fathers may become less involved in coparenting when it is competitive. However, in families with two children, fathers may be less able to remove themselves from negative family dynamics if the responsibility of having two children almost forces their involvement. For instance, findings of a study conducted on fathers' involvement with two children indicated that fathers in dual-income households are more likely to be involved with their

children than fathers in single-income households, and are more likely to hold egalitarian parenting beliefs (e.g., Kuo et al., 2017).

A similar argument for fathers' competency can be made. Whether or not fathers feel competent with two children might function more separately from mothers' support of them in families of four as compared to families of three, as having two children calls for "more hands on deck," despite how confident fathers feel interacting with their children. Other factors such as parenting beliefs might be muddling the results of the present work, in that some fathers might feel as if they can remove themselves from competitive coparenting dynamics, and others feel a need to be involved despite a lack of parenting competency because of their parenting beliefs or because their parenting involvement is more necessary.

Parental behaviors in relation to divide and conquer coparenting. An exploratory examination of the relation of divide and conquer coparent to whole-family coparenting quality indicated that divide and conquer coparenting positively related to cooperative coparenting and negatively related to competitive coparenting, suggesting that divide and conquer coparenting might be a positive family dynamic in which parents adaptively coparent two children. There was speculation that divide and conquer coparenting might be the result of negative family dynamics that divided the family, but at least in this sample, this was not the case. It was interesting to see this emerge as a coparenting style, as in the observational task parents were instructed to interact as a whole family while completing tasks. However, many parents noted this being an

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effective coparenting strategy for them in the open-response question about changes in coparenting they had experienced after having their second child, as it allowed them to have valuable one-on-one time with their children.

An exploratory examination of the relation of individual parenting behaviors to divide and conquer coparenting revealed that both higher levels of mothers' support of fathers and higher maternal involvement with both children related to higher instances of divide and conquer coparenting. While it might be expected that both mothers' and fathers' involvement should relate to divide and conquer coparenting, this would not correspond to self-reports of parents' involvement with two children (e.g., Kuo et al., 2017), in that mothers in our sample on average were more involved with both children than fathers were with both children. In the regression analyses conducted in the present study, parent involvement was a summed score for each parents' involvement with both children. For example, mothers' overall involvement with both children was a sum between mothers' involvement the older child and their involvement with the younger child. Therefore, a middle score could represent mothers' having high involvement with one child, and low involvement with another child. On average, in the present study mothers were more involved with both children than fathers, so it makes sense that mothers' involvement, as opposed to fathers' overall involvement, emerged as significant in relation to divide and conquer coparenting.

Parent Involvement Groups in Relation To Coparenting Quality

The relation of parenting involvement groups (both parents equally involved with both children, both parents involved with predominantly one child, low overall involvement) to coparenting quality (cooperative, competitive, divide and conquer) indicated that involvement groups differed significantly for cooperative and divide and conquer coparenting, but not for competitive coparenting.

Cooperative coparenting. Post-hoc analyses revealed that higher levels of cooperative coparenting were more prevalent when both parents were equally involved with both children and when each parent was predominantly involved with one child, as compared to only one parent being highly involved in coparenting of both children. An assumption of cooperative coparenting in families of three research has suggested that for parents to coparent cooperatively, both parents have to be involved (Murphy et al., 2017). This inference has come from the core definition of the concept – parents' joint efforts and support of each other in caregiving (McHale et al., 2000). This is further supported by one observational study reporting that for cooperative coparenting, fathers' involvement was particularly important and mothers' involvement is seemingly normative and consistent (Murphy et al., 2017). The findings in the present study of families of four suggest that parents can indeed be both mutually involved with both children, but that divide and conquer coparenting, in which each parent is involved with one child, is also related to cooperation within coparenting.

Divide and conquer coparenting. The pattern of results found for that relation of parent involvement to divide and conquer coparenting was similar to that for cooperative coparenting. Specifically, higher levels of divide and conquer coparenting was found when each parent was involved with predominantly one child, as compared to only one parent being involved and both parents being equally involved with both children. As previously suggested, these results help provide further validation of divide and conquer coparenting, as by definition, this type of coparenting is defined as occurring when each parent spends one-on-one time with one child in whole-family settings – even when prompted to interact as a whole family.

Competitive coparenting. Although results did not emerge for competitive coparenting, this construct assessed in families of four should continue to be explored. Families of four, as argued previously, are more complex and convoluted than families of three. In addition, competitive coparenting is likely to be more complex than cooperative coparenting in families of four. That is, while cooperative coparenting simply calls for mutual support, involvement, and parenting competency, in competitive coparenting dynamics, it may be that one or both parents were jockeying for control of parenting decisions, or perhaps only one child or both were being triangulated into these competitive instances. These different scenarios would result in differing levels of involvement from both parents, even though all of these hypothetical configurations could be considered as high levels of competitive coparenting within a given family

interaction. As suggested, further refinement and exploration of competitive coparenting is needed to better understand this construct.

Low involvement of both parents. While the group in which both parents had low involvement was not included in analyses due it having a small sample size ($N = 2$), it is important to briefly discuss this group, as this type of parent involvement might be more normative than is suggested by the present study. For instance, in the prompt parents were given for the observational task, they were asked to interact as a whole family and to support play between siblings while completing a card-sorting activity with their partner. In other words, their involvement was somewhat forced and might not accurately represent how often their whole family typically interacts. Overall, the low involvement group on average had markedly low mean averages of cooperative coparenting, and high mean averages of competitive and divide and conquer coparenting. These trends might suggest that when both parents are not interacting with both of their children, this relates to lower levels of cooperation in the family. In addition, coparents with two children might withdraw from family interactions when they are highly competitive, as opposed to having one parent or both involved. Also, low levels of involvement in divide and conquer coparenting might relate to children's ages, in that parents may be less involved in sibling play and take on more of an observer role when their children are older. Further exploration of this is needed.

Limitations and Future Directions

Despite the contributions of the present work to extant literature on families of four, several limitations of the study need to be acknowledged. As noted previously, the small size of the sample limits the power of the findings and the possibility of using more advanced statistical analyses. However, the significance of the results in the study despite this limitation demonstrates the robustness of the findings. Another limitation of the study is that the data is cross-sectional. Certainly, it would be quite interesting to follow the development of not only the initial transition to coparenthood, but also to follow families across the transition to having a second child. Here, one could examine whether and how patterns cooperative and competitive coparenting change across to parenthood transitions, and also watch when and how divide and conquer coparenting emerges.

In addition, the results of this study might not generalize to coparenting in families with older children. Coparenting is likely to change as children get older. As previously suggested, it may be that parents become more "hands off" with their children, and the low involvement group might be more likely to be seen for these populations, although this pattern might have less developmental ramifications for children, as it is more developmentally appropriate for parents with older children not to be as involved with their children, as compared to parents with younger children.

It is also important to note that this study did not include analyses with child outcomes. While coparenting has been identified as an important family dynamic that

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relates to children's anti- and pro-social outcomes, the present work focused on coparenting and parents' individual behaviors as a starting point on this understudied population.

Additionally, it is not clear that the results of the present study would generalize to more diverse samples, given the predominantly White, well-educated sample that was examined in the present work. It is important to explore parents' individual behaviors within coparenting in more culturally, economically, and ethnically diverse samples. For instance, divide and conquer coparenting might not be considered a positive family dynamic or as prevalent in cultures that emphasize intergenerational, collective efforts in caregiving. Furthermore, parents in dual-income households have emphasized having more egalitarian parenting beliefs than single-earner families (e.g., Kuo et al., 2017), which may suggest that coparenting efforts might vary by socioeconomic status.

Future research should continue to explore observed competitive coparenting in families of four. Mothers' lack of support for their partners' parenting efforts related to competitive coparenting in families of four, which mimics results found in families of three (e.g., Murphy et al., 2017). However, given that this is the only significant relationship to emerge, this points to the importance of further dissecting of the competitive coparenting construct. For instance, it was suggested that perhaps in some families, only one parent exhibits the competitive behavior, while, in other families, both may. In addition, some parents only triangulate one child into their conflict, whereas in other circumstances, both children could be involved. The identification of the nuances

of competitive coparenting in a quadratic family interaction is an important future direction for research, given the negative impact identified for competitive coparenting in families of three (e.g., Murphy et al., 2016; Murphy et al., 2017). Competitive coparenting in families of four could potentially have a broader impact to not only negatively influence the socioemotional trajectories of both individual children, but also the quality of the sibling relationship.

Future work should also continue to explore divide and conquer coparenting in families of four. Markedly, it would be interesting to explore the development of divide and conquer coparenting across the transition to parenthood and explore which prenatal factors (for the second child) relate to divide and conquer coparenting dynamics. For instance, parents with a low threshold for anxiety might prefer divide and conquer coparenting, as they have to manage one child instead of two at a time. Or perhaps parents with less reactive temperaments who are high in sensitivity may prefer to nurture one relationship at a time. Other factors, such as each parent's time spent at home or flexibility in work hours might also relate to divide in conquer coparenting. For instance, it may be that parents with little time to spend with their children may want to spend as much time with both children as possible, or nurture one-on-one relationships with individual children, emphasizing quality time. Divide and conquer coparenting might also differ by gender of the children and gender of the parents – matching mothers with daughters, and fathers with sons, or promoting shared interests. Unfortunately, the sample size in the present study did not offer opportunity to explore these differences.

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While the identification of divide and conquer coparenting was a major contribution of the study, much has yet to be explored on this style of coparenting.

Future research should also observationally examine cooperative, competitive, and divide and conquer coparenting in relation to the sibling relationship and second-child socioemotional wellbeing. Developmental researchers regard becoming an older sibling as a significant life event, referred to as the transition to siblinghood, as this marks the first role change most firstborn children experience. Thus, a substantial amount of studies that do exist on introducing a second child into the family have primarily focused on firstborn children's adjustment. A recent study by Kolak and Volling (2013) used a prenatal observation of coparenting as a moderator in the relationship between mothers' and fathers' reports of their firstborns' temperaments and problem behavior over the transition to siblinghood. Families were observed in a 25-minute mother-father-child interaction prior to the birth of the second child, in which they were asked to play together as they normally would. This family interaction was coded for supportive coparenting, comprised of high levels of observed pleasure, cooperation, and interaction between family members. Results indicated that firstborns who had parents who engaged in supportive coparenting managed this transition easier than those who had parents who undermined each other, evidenced by high levels of displeasure, competition, and coldness between family members. Even though this observation was only gathered prenatally and did not examine how coparenting changed with a second child present,

these findings suggest that family-level interactions should be considered when examining firstborn children's adjustment across the transition to siblinghood.

In turn, there is much to be explored in regard to the second-child's socioemotional wellbeing and the sibling relationship, as well as the influence of competitive and divide and conquer coparenting in relation to these outcomes. For instance, the influence of divide and conquer coparenting on the sibling relationship might be positive, in that children do not feel as if they are struggling for attention from their parents. Alternatively, divide and conquer coparenting might resemble a divided family, separating siblings from each other and marking the start of early parenting alliances.

Research on families of four indicates that the birth of a second child is a stressful turning point for many families, often resulting in behavior problems and emotional distress (e.g., Kolak & Volling, 2013). Other families, however, experience this transition with little difficulty (Volling, 2012; Legg, Sherick, & Wadland, 1974). Very little is known about why this transition is more stressful and problematic for some families than it is for others. To assist in answering this question, the present work focused on parents' observed support of their partner, involvement with both children, and competency with both children. However, other individual parenting behaviors might be contributing to maladaptive family dynamics. Thus, while other studies with larger samples should attempt to replicate the findings in the present study, another fruitful line of work would be to explore other parenting behaviors to relation to quadratic

coparenting quality. For example, other work in families of three suggests that gatekeeping impacts coparenting quality (e.g., Jia & Schoppe-Sullivan, 2011). The examination of specific challenges related to having two children, such as health stressors, adjustment difficulties, and newly formed relationship dynamics with the second child, could provide additional insight in to family functioning for averaged-sized families, as well as quadratic coparenting quality.

Furthermore, it would be important to explore contextual influences in coparenting quality in families of four. A new avenue of coparenting research has been identifying gender differences in coparenting. Societal pressures have already been identified to influence coparenting dynamics in families of four. For instance, Kuo and colleagues (2017) found that traditional versus egalitarian parenting beliefs influence fathers' involvement in family interactions. Specifically, fathers in dual-earner households more likely to hold egalitarian parenting beliefs and be more involved with their children than fathers in single-earner households. Additionally, there have been questions about the social and instrumental support parents receive across the transition to having a second child. This is an important avenue of research, as couples might be assumed to be fully capable parents – since they have already transitioned into parenthood – and therefore they may not receive the support they did with their first child. However, having two children calls for more division of childcare and household responsibilities, as well as the interjection of a new personality into the family (e.g.,

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Volling, 2012). In turn, families with two children might be needing help that is being overlooked.

In summary, the observational examination of quadratic family interactions after a second child enters the family offers an important extension of extant literature on the dynamics of coparenting in average-sized families. Specifically, the present study offers three novel contributions to the family systems literature. First, observation of families of four can clarify how parents individually and jointly adjust to caring for two children. It is important to note that past research on families of four has relied on self-report measures, which increase potential for bias as parents are emotionally and physically taxed, whereas observations of family interactions could arguably provide a more impartial assessment for family interaction quality. Second, the present study examines how whole-family coparenting assessments in families of four relate to individual parenting behaviors – markedly, each parent's relative involvement with both children, support of their partner, and competency with both children. This effort offers novel insight into the inner-workings of coparenting families of four, as this has yet to be empirically examined. Observations of whole-family coparenting interactions also capture father involvement, permitting the examination of gender differences in mothers' and fathers' individual behavior during coparenting. Third, this work extends the coparenting literature by introducing the concept of divide and conquer coparenting through developing an assessment of this type of coparenting and examining how it relates to the aforementioned individual parenting behaviors and interrelations with the

cooperative and competitive dimensions of coparenting. It is hoped that this new observational method can open the door to many exciting new studies of coparenting and family interaction in families of four.

Taken together, results of this study suggest several differences in coparenting of one child versus two children. There seems to be a common public impression that once couples become parents, their parenting identities are established and the learning curve is over. For instance, parents might learn how to change diapers across the transition to parenthood, but once a second child arrives parents can change diapers blindfolded. Results of this study indicate that having two children, as opposed to just one, is a novel experience. For example, we see evidence of the emergence of a new, adaptive coparenting strategy: divide and conquer coparenting. Increased involvement from both parents emerged as important. Perhaps one parent's involvement is necessary for one child, but having two requires "all hands on deck" to provide adequate attention and resources for two young lives. While research on families with one child emphasizes the importance of mothers' involvement, results of the present study highlight fathers as a positive presence that can potentially buffer negative family dynamics – instead of fathers retreating when there are negativities within the family. While our understanding of family functioning with four members remains limited, this study provides a foundation and springboard for the exploration of coparenting in "average-sized" families and offers novel contributions to extant literature on coparenting.

Table 1

Table 1

Descriptives of Study Variables

Observed Family Variables

Variables	N	Mean	Standard Deviation
Cooperative coparenting	52	3.50	1.32
Competitive coparenting	52	2.82	1.35
Divide and conquer coparenting	52	3.51	1.64
Mothers' support of fathers	52	2.90	1.26
Fathers' support of mothers	52	3.23	1.28
Mothers' competency with both children	52	7.73	2.25
Fathers' competency with both children	52	6.21	3.06
Mothers' involvement with both children	52	7.52	2.08
Fathers' involvement with both children	52	6.15	2.48

Self-Report Variables

Variables	N	Mean	Standard Deviation
Cooperative coparenting	49	4.93	.82
Competitive coparenting	52	.73	.92
Divide and conquer coparenting	104	1.54	.33
Mothers' support of fathers	50	1.48	.42
Fathers' support of mothers	50	1.49	.41
Mothers' competency with both children	50	4.68	.40
Fathers' competency with both children	47	4.24	.54
Mothers' involvement with both children	49	3.61	.81
Fathers' involvement with both children	48	3.80	.76
Older sibling age (in months)	52	54.24	20.29
Younger sibling age (in months)	52	27.19	14.14
Older sibling temperament	52	3.65	.25
Younger sibling temperament	52	3.95	.57

Note: Parents' involvement and competency with both children are sums of their scores with the older and younger child

Table 2

Table 2

Correlations Among Observed Family Interactions and Control Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Cooperative cop.	---												
2. Competitive cop.	-.69***	---											
3. Divide and conquer cop.	.41**	-.34*	---										
4. M support of D	.74***	-.59***	.46**	---									
5. F support of M	.67***	-.42**	.39**	.72***	---								
6. M competency w/ both children	.24	-.24	.07	.28*	.31*	---							
7. F competency w/ both children	.62***	-.39**	.19	.54***	.54***	.01	---						
8. M involvement w/ both children	.02	.01	-.17	.15	.14	.68***	-.12	---					
9. F involvement w/ both children	.60***	-.41**	.28*	.53***	.44**	.00	.81***	-.07	---				
10. OS age in months	-.23	.10	-.09	-.22	-.21	-.17	-.08	-.10	-.14	---			
11. YS age in months	-.08	-.13	.05	-.11	-.14	-.07	.03	-.15	-.06	.60***	---		
12. OS temperament	.08	-.18	.08	.08	.15	.04	.03	.04	.07	-.06	.08	---	
13. YS temperament	.14	-.12	.04	.27	.31*	-.02	.05	-.03	-.02	-.44**	-.39**	.33*	---

Note: F = fathers'; M = mothers'; cop. = coparenting; w/both children = with both children; OS = older sibling; YS = younger sibling; ***p <.001;
**p <.01; *p< .05

Table 3

Table 3

Associations Between Observational and Self-Report Measures

Variables	r	p-value
Cooperative coparenting[a,b]	-.01	.946
Competitive coparenting[a,b]	-.09	.508
Divide and conquer coparenting[a,c]	.34	.047
Mothers' support of fathers[a,d]	-.10	.477
Fathers' support of mothers[a,d]	-.09	.545
Mothers' competency with both children[a,e]	.09	.542
Fathers' competency with both children[a,e]	.01	.945
Mothers' involvement with both children[a,e]	-.06	.672
Fathers' involvement with both children[a,e]	.04	.773

Note: [a]All observational measures used were from the Families of four Rating Scales developed for the present study; [b]Coparenting Relationship Scale – Brief Measure developed by Feinberg, Brown, & Kan, 2012; [c]Qualititative coding scheme developed by author, see Appendix J and K; [d]Parenting Alliance Inventory developed by Abidin, 1995; [e]Who Does What? Questionnaire developed by Cowan and Cowan, 1990.

Table 4

Table 4

Hierarchical Regression of Parents' Involvement with Both Children and Support of Their Partner Predicting Coparenting Quality

Step and Predictor Variables	Cooperative Coparenting[a]		Competitive Coparenting[b]		Divide and Conquer Coparenting[c]	
	B(SE)	β	B(SE)	β	B(SE)	β
Step 1						
Intercept	2.97(3.01)		5.79(3.07)		2.49(3.93)	
OS age	-.02(.01)	-.35	.02(.12)	.30	-.02(.12)	-.27
YS age	.01(.02)	.08	-.02(.02)	-.23	.02(.02)	.16
OS temperament	.37(.83)	.07	-.89(.84)	-.17	.64(1.07)	.10
YS temperament	.03(.42)	.01	-.04(.43)	-.02	-.18(.54)	-.06
Step 2						
Intercept	1.40(2.03)		7.63(2.77)		2.67(3.85)	
M support of F	.42(.18)	.37*	-.58(.24)	-.51*	.58(.32)	.40*
F support of M	.34(.16)	.32*	.07(.22)	.07	.19(.30)	.14
M involvement	-.08(.06)	-.13	.02(.09)	.04	-.24(.12)	-.31*
F involvement	.14(.07)	.25*	-.13(.10)	-.22	-.06(.13)	-.09
Step 3						
Intercept	-.34(1.99)	1.99	8.93(3.00)		1.06(4.36)	
M support of F * F support of M	-.31(.12)	-.37*	.17(.18)	.20	-.10(.25)	-.09
M involvement * F involvement	-.05(.02)	-.23*	.05(.03)	.24	.04(.05)	.16
M support of F * F involvement	.20(.07)	.44**	-.13(.11)	-.30	-.14(.15)	-.24

Note: F = fathers'; M = mothers'; **$p <.01$; *$p <.05$; [a] [$R^2 = .75$, $F(11,35) = 9.55$, $p <.001$]; [b] [$R^2 = .46$, $F(11,35) = 2.67$, $p <.05$]; [c] [$R^2 = .35$, $F(11,35) = 1.63$, $p <.05$]

Table 5

Hierarchical Regression of Parents' Competency with Both Children and Support of their Partner Predicting Coparenting Quality

Step and Predictor Variables	Cooperative Coparenting[a] B(SE)	β	Competitive Coparenting[b] B(SE)	β	Divide and Conquer Coparenting[c] B(SE)	β
Step 1						
Intercept	2.98(3.04)		5.76(3.02)		2.52(3.95)	
OS age	-.02(.01)	-.34	.02(.01)	.28	-.02(.02)	-.26
YS age	.01(.02)	.06	-.02(.02)	-.19	.02(.02)	.14
OS temperament	.33(.84)	.06	-.76(.83)	-.15	.56(1.09)	.09
YS temperament	.06(.44)	.03	-.17(.43)	-.07	-.10(.55)	-.03
Step 2						
Intercept	1.03(2.09)		8.31(2.68)		2.43(3.90)	
M support of F	.44(.18)	.39*	-.58(.23)	-.51*	.65(.33)	.46*
F support of M	.23(.19)	.21	.23(.25)	.22	.40(.35)	.29
M competency	.00(.07)	.01	-.11(.09)	-.20	-.17(.13)	-.23
F competency	.14(.07)	.30*	-.11(.08)	-.26	-.17(.12)	-.31
Step 3						
Intercept	.82(2.20)		8.94(2.80)		.86(4.15)	
M support of F * F competency	-.02(.05)	-.05	.05(.07)	.13	-.10(.10)	-.20

Note: F = fathers'; M = mothers'; *$p < .05$; [a] [$R^2 = .65$, $F(9,36) = 7.56$, $p < .001$]; [b] [$R^2 = .44$, $F(9,36) = 3.02$, $p < .01$]; [c] [$R^2 = .28$, $F(9,36) = 1.50$, $p < .05$]

Table 6

Table 6

Descriptives for One-Way ANOVA Involvement Groups in Relation to Coparenting Quality

	Mean (SD)			
	One parent involved/ one parent not involved with both children	Both parents equally involved with both children	Both parents involved with predominantly one child	Both parents low overall involvement*
	(N = 16)	(N = 16)	(N = 18)	(N = 2)*
Cooperative coparenting	2.94(1.39)	3.94(1.18)	3.89(.96)	1.00(0.00)*
Competitive coparenting	3.00(1.59)	3.06(1.29)	2.39(1.20)	3.50(.71)*
Divide and conquer coparenting	2.80(1.78)	3.06(1.61)	4.67(.77)	3.50(1.64)*

Notes: *Not included in One-Way ANOVAs due to small sample size

Table 7

Table 7

Summary of One-Way ANOVAs with Parent Involvement Groups

	Cooperative Coparenting				Competitive Coparenting				Divide and Conquer Coparenting			
	Sum of Squares	df	Mean Square	F	Sum of Squares	df	Mean Square	F	Sum of Squares	df	Mean Square	F
Between groups	10.35	2	5.17	3.70*	4.97	2	2.39	1.29	39.66	2	13.14	8.54**
Within groups	65.65	47	1.40		87.22	47	1.86		93.34	46	2.03	
Total	76.00	49			92.00	49			128.00	48		

Note: **$p < .01$; *$p < .05$

Table 8

Table 8

Bonferroni Comparisons for Parent Involvement Groups

	Cooperative Coparenting				Competitive Coparenting				Divide and Conquer Coparenting			
			95% Confidence Interval				95% Confidence Interval				95% Confidence Interval	
Comparisons	Mean Difference (I-J)	Std. Error	Lower Bound	Upper Bound	Mean Difference (I-J)	Std. Error	Lower Bound	Upper Bound	Mean Difference (I-J)	Std. Error	Lower Bound	Upper Bound
1 vs. 2	-1.00*	.42	-2.14	.14	-.06	.48	-1.38	1.26	-.26	.51	-1.53	1.01
1 vs. 3	-.95*	.41	-2.06	.15	.61	.47	-.67	-.55	-1.87**	.50	-3.10	-.63
2 vs. 1	1.00*	.42	-.14	2.14	.06	.48	-1.25	1.13	.26	.51	-1.01	1.53
2 vs. 3	.05	.41	-1.06	1.15	.67	.47	-.60	-.49	-1.60*	.49	-2.82	-.39
3. vs. 1	.95*	.41	-.15	2.06	-.61	.47	-1.89	-1.77	1.87**	.50	.63	3.10
3 vs. 2	-.05	.41	-1.15	1.06	-.67	.47	-1.95	-1.84	1.60*	.49	.39	2.82

Note: 1 = one parent involved; 2 = both parents involved equally with both children; 3 = both parents involved with predominantly one child; **$p < .01$; *$p < .05$

Figure 1
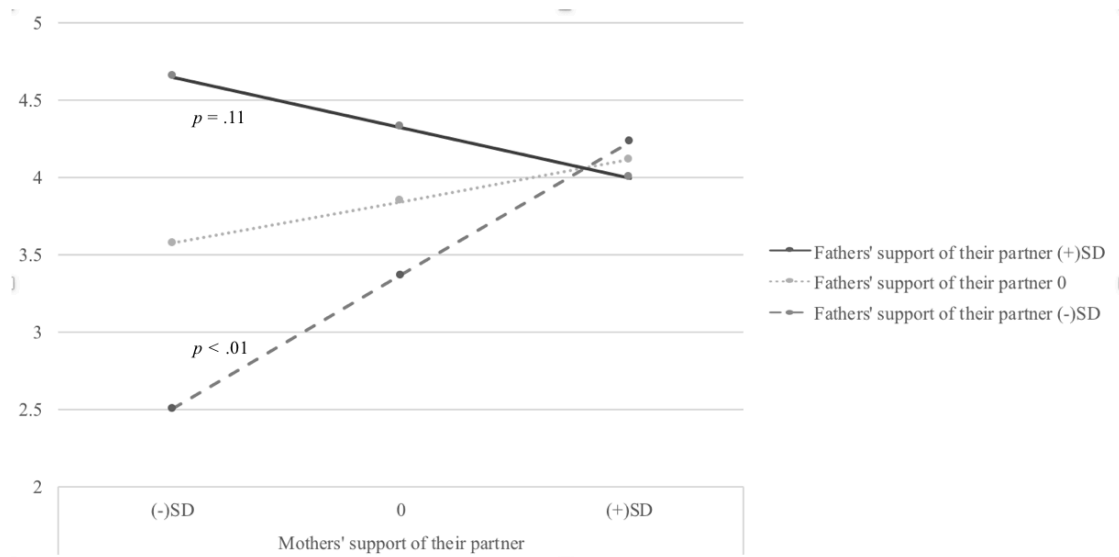
Figure 1. Graph of the interaction of fathers' support of their partner and mothers' support of their partner predicting cooperative coparenting.

Figure 2
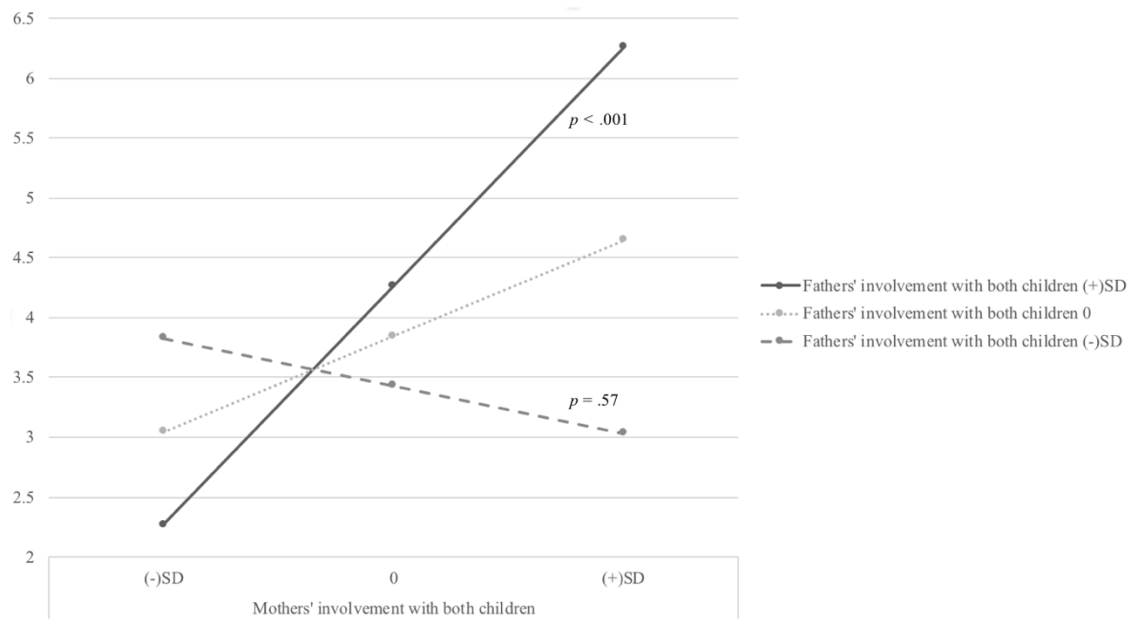
Figure 2. Graph of the interaction of fathers' involvement with both children and mothers' involvement with both children predicting cooperative coparenting.

Figure 3

Legend:
- Fathers' involvement with both children (+)SD
- Fathers' involvement with both children 0
- Fathers' involvement with both children (-)SD

p = .09

p < .001

X-axis: Mothers' support of their partner, (-)SD, 0, (+)SD
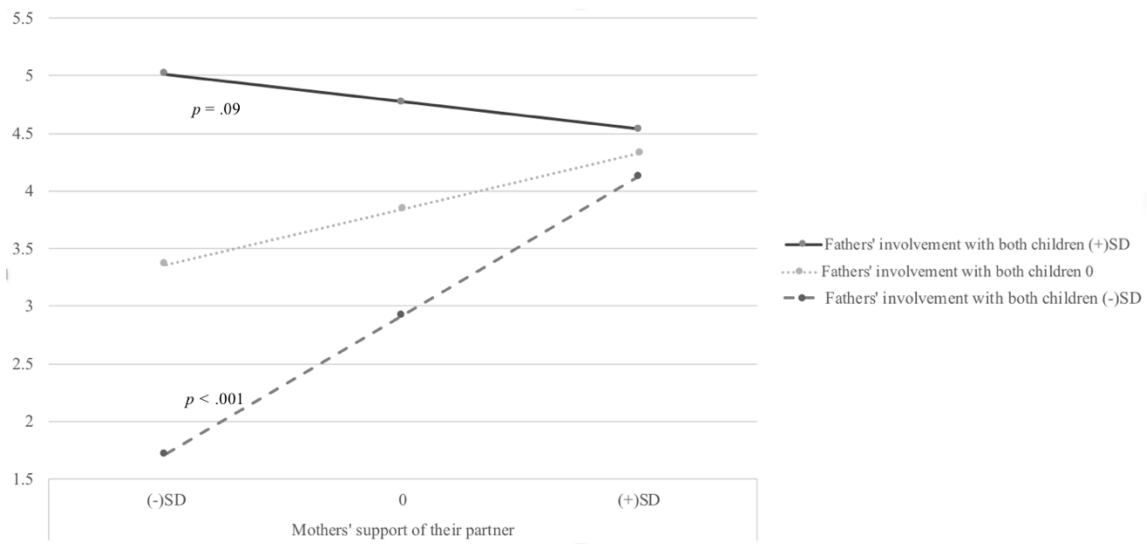
Figure 3. Graph of the interaction of fathers' involvement with both children and mothers' support of their partner predicting cooperative coparenting.

Appendix A

Quadratic Whole-Family Assessment of Cooperative Coparenting:

Quadratic Whole-Family Assessments:

Cooperation: Reflects the degree to which parents help and support one another in teaching and playing with their children. Help and support between parents can be instrumental as well as emotional. For instance, a parent might as their partner to grab a snack for their child. This is an example of instrumental support. Furthermore, cooperation between parents can occur when parents are playing one-on-one with each of their children, seperately. In these instances, parents can periodically reconnect with each other by paying attention to each others interaction with the other child.

5= Very high cooperation: Parents are very frequently cooperative. Cooperation seems effortless. They do not interrupt one another or distract from the other's interventions with their children.
4= High cooperation: Each parent builds on the other's efforts to help their children. There are a few instances of minimal interruption or distraction from the other parent's interactions. Cooperation is easy/smooth and frequent.
3= Moderate cooperation: Parents generally work well with and support each other, though there are times when helping one another lapses and parents appear less in concert.
2= Low cooperation: Parents are usually not supportive or working together; they appear to have separate ways of working with their children. Occasionally, they'll share the same approach.
1= Very low cooperation: Minimal effort is made by parents to support and assist each other. Parents appear to be working with their children independently.

WHY? (2-3 bullet points)
_____
_____
_____

Overall, who was more cooperative (e.g., engaging in more facilitation, encouragement)?
1. Clearly him   2. Clearly her   3. Both were equally cooperative 4. N/A

Which child received the most attention in the cooperative interaction(s)?
1. Clearly older sibling   2. Clearly younger sibling 3. Both were equally involved   4. N/A

WHY? (2-3 bullet points)
_____
_____
_____

Appendix B

Quadratic Whole-Family Assessment of Competitive Coparenting:

Competition: Parents try to outdo each other's efforts to teach, work, and play with their children. Lower-level competition includes parents using different approaches with their children but this type of competition seems accidental. At lower and moderate levels, couples lack coordination. But, in couples that receive higher ratings, parents appear to be intentionally competing for their children's attention or jockeying for control of the child. Triangulation of the child into parental disagreement is important to note – instances where parents "bring" their child(ren) in to disagreements. This can include mixed messages from parents (one parent instructs child to do one thing and the other parent doesn't help implement the request or actively refutes it).

5= Very high competition: Efforts to outdo one another's teaching/playing take precedence over helping the children learn. Competition is consistent and obvious throughout all parts of the interaction. Parents' main concern is clearly to outdo each other.
4= High competition: Parents may be playing with the child, but frequently try to outdo each other to get the attention of the children. There are multiple instances of competition, but it is not seen in all parts of the interaction.
3= Moderate competition: There are multiple low-level instances of competition or 1 very strong instance seen.
2 = Low competition: Occasionally, a comment or behavior will be made by one parent suggesting that they feel they have a more effective parenting strategy, though it comes across as constructive (or accidental) and not challenging. May be 1 instance of trying to mildly out-do each other.
1= Very low competition: No competition visible.

WHY? (2-3 bullet points)

_____
_____
_____

Overall, who was more competitive (e.g., engaged in more jockeying for control, triangulation)?
1. Clearly him   2. Clearly her   3. Both were equally competitive 4. N/A

Which child was triangulated most in the competitive interaction(s) by the _mother_?
1. Clearly older sibling   2. Clearly younger sibling 3. Both were equally involved   4. N/A

Which child was triangulated most in the competitive interaction(s) by the _father_?
1. Clearly older sibling   2. Clearly younger sibling 3. Both were equally involved   4. N/A

WHY? (2-3 bullet points)

_____
_____
_____

Appendix C

Quadratic Whole-Family Assessment of Divide and Conquer Coparenting:

Divide and Conquer: Parents working together as a team to take care of two children by working one-on-one with their children. It is possible that parents spend the majority of their time with one particular child, or both equally. Parents periodically "check-in" with one another by making verbal or physical contact (e.g., eye contact, instrumental help). Children should be able to move interchangeably between the parents in a natural manner, however, this is not required.

5=Parents are consistently working apart from each other and predominately interacting with one child at a time. Parents check-in with each other (e.g., eye contact, making comments).

4= Parents may be working together with children at some points, but predominately each parent is interacting with one child at a time. Parents occasionally check-in with each other when play is separate.

3= Parents play with children one-on-one multiple times, but not pervasively.

2= Low levels of one-on-one play between parents and children occur. However, the predominant interaction is the whole family playing together, or one parent with two children.

1= Predominant interaction is the whole family playing together, one parent playing with two children, or both parents focusing predominantly on one child.

WHY? (2-3 bullet points)
_____
_____
_____

Which child spent the most time with the *mother*?
1. Clearly older sibling   2. Clearly younger sibling   3. Both were equally involved   4. N/A

Which child spent the most time with the *father*?
1. Clearly older sibling   2. Clearly younger sibling   3. Both were equally involved   4. N/A

WHY? (2-3 bullet points)
_____
_____
_____

Appendix D

Individual Parent Assessment of Relative Involvement with Two Children:

FATHER - *OLDER* CHILD Relative Interaction Time: This scale is designed to measure strictly the amount of relative time the father spends interacting with the older child during the episode.

5= Father makes almost all of the interaction with this child. Father makes viritually all of the play initations or makes virtually all the decisions in this interaction session concerning this child (e.g., setting limits, enforcing limits, giving directions). Mother may repeat or endorse fathers' decisions, nothing more.

4 = Father makes the majority of the interactions with the child. The father also spends most of the time playing with and interacting with the child, including making most of the child-rearing decisions.

3= Father makes a moderate amount of decisions concerning the child.

2= Father makes few child-rearing decisions and play initations with the child; they are either made by the mother or there is little direction or attention given to the child.

1= Father makes few to no contributions in regard to interacting with the child. It also may be that the father's interaction with their child feels forced and is not self-selecting (e.g., mother leaves to change one child's diaper and the father now must interact with the other child).

WHY? (2-3 bullet points)
_____
_____
_____

FATHER – *YOUNGER* CHILD Relative Interaction Time: This scale is designed to measure strictly the amount of relative time the father spends interacting with the younger child during the episode.

5= Father makes almost all of the interaction with this child. Father makes viritually all of the play initations or makes virtually all the decisions in this interaction session concerning this child (e.g., setting limits, enforcing limits, giving directions). Mother may repeat or endorse fathers' decisions, nothing more.

4 = Father makes the majority of the interactions with the child. The father also spends most of the time playing with and interacting with the child, including making most of the child-rearing decisions.

3= Father makes a moderate amount of decisions concerning the child.

2= Father makes few child-rearing decisions and play initations with the child; they are either made by the mother or there is little direction or attention given to the child.

1= Father makes few to no contributions in regard to interacting with the child. It also may be that the father's interaction with their child feels forced and is not self-selecting (e.g., mother leaves to change one child's diaper and the father now must interact with the other child).

WHY? (2-3 bullet points)
_____
_____
_____

Individual Parent Assessment of Relative Involvement with Two Children, continued:

Relative Interaction Time: This scale is designed to measure strictly the amount of relative time the parents spend interacting with the older child during the episode.

MOTHER - *OLDER* CHILD Relative Interaction Time: This scale is designed to measure strictly the amount of relative time the mother spends interacting with the older child during the episode.

5= Mother makes almost all of the interaction with this child. Mother makes viritually all of the play initations or makes virtually all the decisions in this interaction session concerning this child (e.g., setting limits, enforcing limits, giving directions). Father may repeat or endorse mothers' decisions, nothing more.
4 = Mother makes the majority of the interactions with the child. The mother also spends most of the time playing with and interacting with the child, including making most of the child-rearing decisions.
3= Mother makes a moderate amount of decisions concerning the child.
2= Mother makes few child-rearing decisions and play initations with the child; they are either made by the father or there is little direction or attention given to the child.
1= Mother makes few to no contributions in regard to interacting with the child. It also may be that the mother's interaction with their child is forced; not self-selecting (e.g., father leaves to change one child's diaper and the mother now must interact with the other child).

WHY? (2-3 bullet points)

_____
_____
_____

MOTHER – *YOUNGER* CHILD Relative Interaction Time: This scale is designed to measure strictly the amount of relative time the mother spends interacting with the younger child during the episode.

5= Mother makes almost all of the interaction with this child. Mother makes viritually all of the play initations or makes virtually all the decisions in this interaction session concerning this child (e.g., setting limits, enforcing limits, giving directions). Father may repeat or endorse mothers' decisions, nothing more.
4 = Mother makes the majority of the interactions with the child. The mother also spends most of the time playing with and interacting with the child, including making most of the child-rearing decisions.
3= Mother makes a moderate amount of decisions concerning the child.
2= Mother makes few child-rearing decisions and play initations with the child; they are either made by the father or there is little direction or attention given to the child.
1= Mother makes few to no contributions in regard to interacting with the child. It also may be that the mother's interaction with their child is forced; not self-selecting (e.g., father leaves to change one child's diaper and the mother now must interact with the other child).

WHY? (2-3 bullet points)

_____
_____
_____

Appendix E

Individual Parent Assessment of Parent Support of Their Partner:

Paternal Support of Mothers' Parenting
On this scale, fathers will be rated for their overall positive support of mothers' parenting, based on both their verbal and nonverbal behavior during the episode as well as the intent of the message given. A father who receives a score of 1 will show no signs of positive support, while a father who receives a score of 5 will show many signs of positive support. Positive support is defined as any behavior that displays trust or approval of the father's interaction with the child(ren). For example, the father may demonstrate facilitating the mothers play with their child(ren) or even revel in the mothers interaction with their child(ren).

5= Father is approving and trusting of the mother's interaction with the child. He may facilitate, enjoy, or even revel in the mother's interaction with the child.
4= Father is generally satisfied with mother's interaction with the child.
3= Father seems doubtful of the mothers' parenting abilities. Father might occasionally offer gentle, but unsolicited direction. He can tolerate mother's interaction with the child politely and unintrusively, but does not facilitate it.
2= Father shows disapproval or mild resentment of mothers' interaction with the child(ren).
1= No positive support behaviors are exhibited over the course of the videotaped segment (nothing even subtle). Father displays pervasive dispproval and distrust of the mother.

WHY? (2-3 bullet points)
_____
_____
_____

Which child was highlighted most in the support instance(s)?
1. Clearly older sibling   2. Clearly younger sibling   3. Both were equally involved   4. N/A

WHY? (2-3 bullet points)
_____
_____
_____

Individual Parent Assessment of Parent Support of Their Partner, continued:

Maternal Support of Fathers' Parenting
On this scale, mothers will be rated for their overall positive support of fathers' parenting, based on both their verbal and nonverbal behavior during the episode as well as the intent of the message given. A mother who receives a score of 1 will show no signs of positive support, while a mother who receives a score of 5 will show many signs of positive support. Positive support is defined as any behavior that displays trust or approval of the father's interaction with the child(ren). For example, the mother may demonstrate facilitating the fathers play with their child(ren) or even revel in the fathers interaction with their child(ren).

5= Mother is approving and trusting of the father's interaction with the child. She may facilitate, enjoy, or even revel in the father's interaction with the child.
4= Mother is generally satisfied with father's interaction with the child.
3= Mother seems doubtful of the fathers' parenting abilities. Mother might occasionally offer gentle, but unsolicited direction. She can tolerate father's interaction with the child politely and unintrusively, but does not facilitate it.
2= Mother shows disapproval or mild resentment of fathers' interaction with the child(ren).
1= No positive support behaviors are exhibited over the course of the videotaped segment (nothing even subtle). Mother displays pervasive dispproval and distrust of the father.

WHY? (2-3 bullet points)
_____
_____
_____

Which child was highlighted most in the support instance(s)?
1. Clearly older sibling   2. Clearly younger sibling   3. Both were equally involved   4. N/A

WHY? (2-3 bullet points)
_____
_____
_____

Appendix F

Individual Parent Assessment of Competency With Both Children:
Paternal Perceptions of Competence During Task – <u>OLDER CHILD</u>
This scale measures the father's feelings of confidence in his own abilities to interact with his children, independent of the mother's suggestions, opinions, or behavior.

5= Father seems to perceive himself as quite competent with the child. He performs the task with a self-assured attitude, and portrays himself as extremely competent throughout the episode (e.g., initatites play with child, displays a willingness offers to provide support to the child when upset or in need of something). He seems to have implicit knowledge of the child's preferences, which is likely derived from a history of time spent with the child (e.g., selecting toys the child enjoys playing with, engages in narratives from previous time spent together). His interactions are fluid, not choppy, with the child and he does not make any negative attributions about his competence with the child.

4= Father seems to perceive himself as handling the task well and is in control of the situation with the child (clearly more confident than not). Although some slight doubt about himself could be introduced, it is rather mild in intensity, and does not detract from his perception of his own competence. He may, for example, begin the episode by saying, "I haven't done this very much," and then proceed to execute the task in a very confident, self-assured manner without questioning his competence level with the child.

3= Father portrays himself as fairly confident and secure in his interactions with one child, but may question his ability to respond to the child's needs or demands. The tone is not that he perceives himself as unable to handle the child; rather, he questions a particular aspect of his level of ability with the child. His tone is not self-deprecating nor overly insecure, but it is one of uncertainty (He waffles a bit). For example, the father might execute the task in a fairly confident manner and then say, "I wonder if I should have played a musical toy, and then she might not have been so upset."

2= Father portrays himself as not being very competent with the child during the episode, although some slight confidence about interacting with the child might be included. Father may not involve himself much with the child, or he may make one or two self-deprecating comments during the episode (e.g., "I got her mad"), but confidence is not completely absent. When father plays with the child, the moment is fleeting, and he does not become fully engaged in play.

1= Father seems to strongly question his competence level during the free-play or cardsorting activity. He makes several self-deprecating comments during the episode, and he seems to perceive himself as being rather inadequate in interacting with the child. For instance, he may make *frequent* comments like, "Daddy isn't doing a very good job at this." No positive attributions toward his interactions with the child are made. The father might also withdraw from the interaction by not engaging in play with the child by focusing solely on the card activity with his partner.

WHY? (2-3 bullet points)
_____
_____
_____

Individual Parent Assessment of Competency With Both Children, continued:
Paternal Perceptions of Competence During Task – <u>YOUNGER CHILD</u>
This scale measures the father's feelings of confidence in his own abilities to interact with his children, independent of the mother's suggestions, opinions, or behavior.

5= Father seems to perceive himself as quite competent with the child. He performs the task with a self-assured attitude, and portrays himself as extremely competent throughout the episode (e.g., initatites play with child, displays a willingness offers to provide support to the child when upset or in need of something). He seems to have implicit knowledge of the child's preferences, which is likely derived from a history of time spent with the child (e.g., selecting toys the child enjoys playing with, engages in narratives from previous time spent together). His interactions are fluid, not choppy, with the child and he does not make any negative attributions about his competence with the child.4= Father seems to perceive himself as handling the task well and is in control of the situation with the child (clearly more confident than not). Although some slight doubt about himself could be introduced, it is rather mild in intensity, and does not detract from his perception of his own competence. He may, for example, begin the episode by saying, "I haven't done this very much," and then proceed to execute the task in a very confident, self-assured manner without questioning his competence level with the child.

3= Father portrays himself as fairly confident and secure in his interactions with one child, but may question his ability to respond to the child's needs or demands. The tone is not that he perceives himself as unable to handle the child; rather, he questions a particular aspect of his level of ability with the child. His tone is not self-deprecating nor overly insecure, but it is one of uncertainty (He waffles a bit). For example, the father might execute the task in a fairly confident manner and then say, "I wonder if I should have played a musical toy, and then she might not have been so upset."

2= Father portrays himself as not being very competent with the child during the episode, although some slight confidence about interacting with the child might be included. Father may not involve himself much with the child, or he may make one or two self-deprecating comments during the episode (e.g., "I got her mad"), but confidence is not completely absent. When father plays with the child, the moment is fleeting, and he does not become fully engaged in play.

1= Father seems to strongly question his competence level during the free-play or cardsorting activity. He makes several self-deprecating comments during the episode, and he seems to perceive himself as being rather inadequate in interacting with the child. For instance, he may make *frequent* comments like, "Daddy isn't doing a very good job at this." No positive attributions toward his interactions with the child are made. The father might also withdraw from the interaction by not engaging in play with the child by focusing solely on the card activity with his partner.

WHY? (2-3 bullet points)
_____
_____
_____

Individual Parent Assessment of Competency With Both Children, continued:

Maternal Perceptions of Competence During Task – <u>OLDER CHILD</u>
This scale measures the father's feelings of confidence in his own abilities to interact with his children, independent of the mother's suggestions, opinions, or behavior.

5= Mother seems to perceive herself as quite competent with the child. She performs the task with a self-assured attitude, and portrays herself as extremely competent throughout the episode (e.g., initatites play with child, displays a willingness offers to provide support to the child when upset or in need of something). She seems to have implicit knowledge of the child's preferences, which is likely derived from a history of time spent with the child (e.g., selecting toys the child enjoys playing with, engages in narratives from previous time spent together). Her interactions are fluid, not choppy, with the child and she does not make any negative attributions about her competence with the child.

4= Mother seems to perceive herself as handling the task well and is in control of the situation with the child (clearly more confident than not). Although some slight doubt about herself could be introduced, it is rather mild in intensity, and does not detract from her perception of her own competence. She may, for example, begin the episode by saying, "I haven't done this very much," and then proceed to execute the task in a very confident, self-assured manner without questioning her competence level with the child.

3= Mother portrays herself as fairly confident and secure in her interactions with one child, but may question her ability to respond to the child's needs or demands. The tone is not that she perceives herself as unable to handle the child; rather, she questions a particular aspect of his level of ability with the child. Her tone is not self-deprecating nor overly insecure, but it is one of uncertainty (she waffles a bit). For example, the mother might execute the task in a fairly confident manner and then say, "I wonder if I should have played a musical toy, and then she might not have been so upset."

2= Mother portrays herself as not being very competent with the child during the episode, although some slight confidence about interacting with the child might be included. Mother may not involve herself much with the child, or she may make one or two self-deprecating comments during the episode (e.g., "I got her mad"), but confidence is not completely absent. When mother plays with the child, the moment is fleeting, and she does not become fully engaged in play.

1= Mother seems to strongly question her competence level during the free-play or cardsorting activity. She makes several self-deprecating comments during the episode, and she seems to perceive herself as being rather inadequate in interacting with the child. For instance, she may make *frequent* comments like, "Mommy isn't doing a very good job at this." No positive attributions toward her interactions with the child are made. The mother might also withdraw from the interaction by not engaging in play with the child by focusing solely on the card activity with his partner.

WHY? (2-3 bullet points)

_____
_____
_____

Individual Parent Assessment of Competency With Both Children, continued:

Maternal Perceptions of Competence During Task – <u>YOUNGER CHILD</u>
This scale measures the father's feelings of confidence in his own abilities to interact with his children, independent of the mother's suggestions, opinions, or behavior.

5= Mother seems to perceive herself as quite competent with the child. She performs the task with a self-assured attitude, and portrays herself as extremely competent throughout the episode (e.g., initatites play with child, displays a willingness offers to provide support to the child when upset or in need of something). She seems to have implicit knowledge of the child's preferences, which is likely derived from a history of time spent with the child (e.g., selecting toys the child enjoys playing with, engages in narratives from previous time spent together). Her interactions are fluid, not choppy, with the child and she does not make any negative attributions about her competence with the child.

4= Mother seems to perceive herself as handling the task well and is in control of the situation with the child (clearly more confident than not). Although some slight doubt about herself could be introduced, it is rather mild in intensity, and does not detract from her perception of her own competence. She may, for example, begin the episode by saying, "I haven't done this very much," and then proceed to execute the task in a very confident, self-assured manner without questioning her competence level with the child.

3= Mother portrays herself as fairly confident and secure in her interactions with one child, but may question her ability to respond to the child's needs or demands. The tone is not that she perceives herself as unable to handle the child; rather, she questions a particular aspect of his level of ability with the child. Her tone is not self-deprecating nor overly insecure, but it is one of uncertainty (she waffles a bit). For example, the mother might execute the task in a fairly confident manner and then say, "I wonder if I should have played a musical toy, and then she might not have been so upset."

2= Mother portrays herself as not being very competent with the child during the episode, although some slight confidence about interacting with the child might be included. Mother may not involve herself much with the child, or she may make one or two self-deprecating comments during the episode (e.g., "I got her mad"), but confidence is not completely absent. When mother plays with the child, the moment is fleeting, and she does not become fully engaged in play.

1= Mother seems to strongly question her competence level during the free-play or cardsorting activity. She makes several self-deprecating comments during the episode, and she seems to perceive herself as being rather inadequate in interacting with the child. For instance, she may make *frequent* comments like, "Mommy isn't doing a very good job at this." No positive attributions toward her interactions with the child are made. The mother might also withdraw from the interaction by not engaging in play with the child by focusing solely on the card activity with his partner.

WHY? (2-3 bullet points)
_____
_____
_____

Appendix G

Coparenting Rating Scales

CRS (Feinberg, Brown, & Kan, 2012)							
For each item, select the response that best describes the way you and your partner work together as parents:							
	Not True of Us		**A Little Bit True of Us**		**Somewhat True of Us**		**Very True of Us**
1. I believe my partner is a good parent.	0	1	2	3	4	5	6
2. My relationship with my partner is stronger now than before we had children.	0	1	2	3	4	5	6
3. My partner pays a great deal of attention to our children.	0	1	2	3	4	5	6
4. My partner likes to play with our children and then leave dirty work to me.	0	1	2	3	4	5	6
5. My partner and I have the same goals for our children.	0	1	2	3	4	5	6
6. My partner and I have different ideas about how to raise our children.	0	1	2	3	4	5	6
7. My partner tries to show that she or he is better than me at caring for our children.	0	1	2	3	4	5	6
8. My partner does not carry his or her fair share of the parenting work.	0	1	2	3	4	5	6
9. My partner undermines my parenting.	0	1	2	3	4	5	6
10. We are growing and maturing together through experiences as parents.	0	1	2	3	4	5	6
	Not True of Us		**A Little Bit True of Us**		**Somewhat True of Us**		**Very True of Us**
11. My partner appreciates how hard I work at being a good parent.	0	1	2	3	4	5	6
12. My partner makes me feel like I'm the best possible parent for our children.	0	1	2	3	4	5	6
These questions ask you to describe things you do when both you and your partner are physically present together with your children (i.e., in the same room, in the car, on outings).							
Count only times when all three of you are actually within the company of one another (even if this is just a few hours per week).							
How often in a typical week, when all 3 of you are together, do you:							
	Never		**Once or Twice a Week**		**Often**		**Several times a day**
13. Argue about your relationship or marital issues unrelated to your child, in the child's presence?	0	1	2	3	4	5	6
14. One or both of you say cruel or hurtful things to each other in front of the child?	0	1	2	3	4	5	6

Appendix H

Parents' Involvement and Competency

On this page we ask you about 3 aspects of caring **for your first child**. Use the numbers on the 1-9 scale to show **HOW IT IS NOW** and **HOW I WOULD LIKE IT TO BE**.

1	2	3	4	5	6	7	8	9
she Does it all				we both do this about equally			**he** does it all	

*In the farthest right column, show how competent you feel—that is, how much you feel you do each of these tasks well—using the 1-5 competence scale for competence below.

5	4	3	2	1
Very Competent		Moderately competent		Not at all competent

HOW IT IS NOW (1 to 9)			HOW I'D LIKE IT (1 to 9)	HOW COMPETENT I FEEL DOING THIS (1 to 5)
	A1.	Reading to our child		
	B.	Preparing meals for our child		
	C1.	Choosing our child's clothes		
	D.	Cleaning or bathing our child		
	E.	Deciding whether or how to respond to child's crying		
	F.	Getting up at night with our child		
	G.	Taking our child out: drives, parks, walks, visits, playgrounds		
	H.	Choosing toys for our child		
	I.	Playing with our child		
	J.	Doing our child's laundry		
	K.	Arranging for babysitters or childcare		
	L.	Dealing with the doctor regarding our child's health		
	M1.	Getting our child to and from school		
	N.	Tending to our child in public: restaurants, visiting, shopping, playgrounds		
	O.	Setting limits for our child		
	P.	Disciplining our child		
	Q.	Teaching our child		
	R.	Picking up after our child		
	S.	Arranging our child's visits, play with friends		
	T.	Helping when our child has a problem with playmates/siblings		

Parents' Involvement and Competency, continued:

On this page we ask you about 3 aspects of caring **for your** *SECOND CHILD.* Use the numbers on the 1-9 scale to show **HOW IT IS NOW** and **HOW I WOULD LIKE IT TO BE**.

1	2	3	4	5	6	7	8	9
she				we both do				**he**
does it all				this about equally				does it all

*In the farthest right column, show how competent you feel—that is, how much you feel you do each of these tasks well—using the 1-5 competence scale for competence below.

1	2	3	4	5
Not at all		Moderately		Very
competent		competent		competant

HOW IT IS NOW (1-9)		HOW I'D LIKE IT TO BE (1-9)	HOW COMPETENT I FEEL DOING THIS (1-5)
	A. Deciding about our child's meals		
	B. Mealtimes with our child		
	C. Changing our child's diapers; dressing our child		
	D. Bath time with our child		
	E. Deciding whether to respond to our child's cries		
	F. Responding to out child's crying in the middle of the night		
	G. Taking out child out: walking, driving, visiting		
	H. Choosing toys for our child		
	I. Playtime with our child		
	J. Doing our child's laundry		
	K. Arranging for baby sitters or child care		
	L. Dealing with the doctor regarding our child's health		

Appendix I

Parenting Alliance Inventory

PAI (Abidin, 1995)
The questions listed below concern what happens between you and your child's other parent, or the other adult most involved in the care of your child. While you may not find an answer which exactly describes what you think, please select the answer that comes closes to what you think. YOUR FIRST REACTION SHOULD BE YOUR ANSWER.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1. My child's other parent enjoys being alone with our child.	1	2	3	4	5
2. During pregnancy, my child's other parent expressed confidence in my ability to be a good parent.	1	2	3	4	5
3. When there is a problem with our child, we work out a good solution together.	1	2	3	4	5
4. My child's other parent and I communicate well about our child.	1	2	3	4	5
5. My child's other parent is willing to make personal sacrifices to help take care of our child.	1	2	3	4	5
6. Talking to my child's other parent about our child is something I look forward to.	1	2	3	4	5
7. My child's other parent pays a great deal of attention to our child.	1	2	3	4	5
8. My child's other parent and I agree on what our child should and should not be permitted to do.	1	2	3	4	5
9. I feel close to my child's other parent when I see him/her play with our child.	1	2	3	4	5
10. My child's other parent knows how to handle children well.	1	2	3	4	5
11. My child's other parent and I are a good team.	1	2	3	4	5
12. My child's other parent believes I am a good parent.	1	2	3	4	5
13. I believe my child's other parent is a good parent.	1	2	3	4	5
14. My child's other parent makes my job of being a parent easier.	1	2	3	4	5
15. My child's other parent sees our child in the same way I do.	1	2	3	4	5

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
16. My child's other parent and I would basically describe our child in the same way.	1	2	3	4	5
17. If our child needs to be punished, my child's other parent and I usually agree on the type of punishment.	1	2	3	4	5
18. I feel good about my child's other parent's judgement about what is right for our child.	1	2	3	4	5
19. My child's other parent tells me I am a good parent.	1	2	3	4	5
20. My child's other parent and I have the same goals for our child.	1	2	3	4	5

Appendix J

Qualitative Prompt for Changes in Coparenting:

Please provide a short written response to the following prompts (use back of paper if needed):

How has your parenting changed from having one to two children? (individually and as a coparent)

Appendix K

Rating Scale for Changes in Coparenting Quality

Changes in coparenting quality

Ratings of the qualitative measure used a dichotomous scale in which 1 indicated no signs of divide and conquer and 2 indicated that divide and conquer was mentioned as a strategy.

Appendix L

Temperament Measures for Older and Younger Sibling

CBQ-VSF; Putnam &Rothbart, 2006							
As you read each description of the child's behavior below, please indicate how often the child did this during the last two weeks by circling one of the numbers in the right column. These numbers indicate how often you observed the behavior described during the last two weeks.							
The "Does Not Apply" column (NA) is used when you did not see the child in the situation described during the last two weeks. For example, if the situation mentions the child going to the doctor and there was no time during the last two weeks when the child went to the doctor, circle the (NA) column. "Does Not Apply" (NA) is different from "NEVER" (1). "Never" is used when you saw the child in the situation but the child never engaged in the behavior mentioned in the last two weeks. Please be sure to circle a number or NA for every item.							
	Always	Almost Always	More Than Half the Time	Less Than Half the Time	Very Rarely	**Never**	**Does not apply**
1. When approached by an unfamiliar person in a public place (for example, the grocery store), how often did your child cling to a parent?	1	2	3	4	5	6	N/A
2. While having trouble completing a task (e.g., building, drawing, dressing), how often did your child get easily irritated?	1	2	3	4	5	6	N/A
3. During daily or evening quiet time with you and your child, how often did your child enjoy just being quietly sung to?	1	2	3	4	5	6	N/A
4. When engaged in play with his/her favorite toy, how often did your child play for more than 10 minutes?	1	2	3	4	5	6	N/A
5. When engaged in play with his/her favorite toy, how often did your child continue to play while at the same time respond to your remarks or questions?	1	2	3	4	5	6	N/A
6. During quiet activities, such as reading a story, how often did your child fiddle with his/her hair, clothing, etc.?	1	2	3	4	5	6	N/A
7. When being gently rocked or hugged, how often did your child seem eager to get away?	1	2	3	4	5	6	N/A
8. When engaged in an activity requiring attention, such as building with blocks, how often did your child tire of the activity relatively quickly?	1	2	3	4	5	6	N/A
9. During everyday activities, how often did your child pay attention to you right away when you called to him/her?	1	2	3	4	5	6	N/A
10. During everyday activities, how often did your child seem to be irritated by tags in his/her clothes?	1	2	3	4	5	6	N/A
11. During everyday activities, how often did your child become bothered by sounds while in noisy environments?	1	2	3	4	5	6	N/A
12. While in a public place, how often did your child seem afraid of large, noisy vehicles?	1	2	3	4	5	6	N/A

Temperament Measures for Older and Younger Sibling, continued

	Always	Almost Always	More Than Half the Time	Less Than Half the Time	Very Rarely	Never	Does not apply
13. When told "no", how often did your child stop the forbidden activity?	1	2	3	4	5	6	N/A
14. When told "no", how often did your child become sadly tearful?	1	2	3	4	5	6	N/A
15. Following an exciting activity or event, how often did your child seem to feel down or blue?	1	2	3	4	5	6	N/A
16. When s/he asked for something and you said "no", how often did your child have a temper tantrum?	1	2	3	4	5	6	N/A
17. When asked to wait for a desirable item (such as ice cream), how often did your child wait patiently?	1	2	3	4	5	6	N/A
18. When being gently rocked, how often did your child smile?	1	2	3	4	5	6	N/A
19. While being held on your lap, how often did your child mold to your body?	1	2	3	4	5	6	N/A
20. When asked to do so, how often was your child able to be careful with something breakable?	1	2	3	4	5	6	N/A
21. When visiting a new place, how often did your child not want to enter?	1	2	3	4	5	6	N/A
22. When s/he was upset, how often did your child cry for more than 3 minutes, even when being comforted?	1	2	3	4	5	6	N/A
23. When s/he was upset, how often did your child become easily soothed?	1	2	3	4	5	6	N/A
24. When you were busy, how often did your child find another activity to do when asked?	1	2	3	4	5	6	N/A

Appendix M

Children's Ages

What is your firstborn child's age (in months)_____ and gender? (circle one) Male   Female

What is your second-born child's age (in months) _____ and gender? (circle one) Male   Female

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