Published in final edited form as:

J Fam Issues. 2017 April ; 38(5): 677–699. doi:10.1177/0192513X15616850.

Coresidential Father Transitions and Biological Parents' Coparenting Quality in Early and Middle Childhood

Anne Martin¹, Rebecca M. Ryan², Elizabeth M. Riina³, and Jeanne Brooks-Gunn¹

¹Columbia University, New York, NY, USA

²Georgetown University, Washington, DC, USA

³City University of New York, Flushing, NY, USA

Abstract

This study examined how the entrances and exits of biological and social fathers into and out of children's households were associated with biological parents' coparenting quality. Piecewise growth curve models tested for variation in these associations between child ages 1 and 3, 3 and 5, and 5 and 9. Data came from the Fragile Families and Child Wellbeing Study ($n = 2,394$). Results indicated that in all three age intervals, a biological father's entrance was associated with a contemporaneous increase in coparenting quality, whereas his exit was associated with a contemporaneous decrease. A biological father's exit between child ages 1 and 3, or 3 and 5, was associated with declining coparenting quality in subsequent intervals. A social father's entrance was consistently associated with a contemporaneous decrease in the biological parents' coparenting quality, whereas his exit was associated with a contemporaneous increase between ages 3 and 5, and 5 and 9.

Keywords

coparenting; coresidence; Fragile Families and Child Wellbeing Study; living arrangements; nonresidential parents

The dramatic increase in family instability in recent decades (Cherlin, 2005) is cause for concern because children are adversely affected by family instability (Fomby & Cherlin, 2007; Ryan & Claessens, 2013; Waldfogel, Craigie, & Brooks-Gunn, 2010). One mechanism that may explain this effect may be the deterioration of biological parents' quality of coparenting. Coparenting is defined as "the degree of solidarity and support between the coparental partners" (McHale, Kuersten-Hogan, & Rao, 2004, p. 222). As a family systems construct, coparenting is susceptible to developmental transitions (e.g., Cox & Paley, 2003), such as the entrances and exits of father figures into and out of the household. Therefore, it is critical to understand the implications of changes in father

Reprints and permissions: sagepub.com/journalsPermissions.nav

Corresponding Author: Anne Martin, National Center for Children and Families, Teachers College, Columbia University, 525 West 120th Street, Box 39, New York, NY 10027, USA. arm53@columbia.edu.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

coresidence for the quality of coparenting between biological parents. Yet little is known about how coparenting changes in response to father transitions. Even less is known about whether the implications of father transitions vary as a function of child age.

The present study fills this gap in our knowledge by examining how biological and social fathers' entrances into and exits out of a child's household between ages 1 and 9 affect the quality of coparenting between biological parents. Using the Fragile Families and Child Wellbeing Study (FFCWS), a study that oversampled nonmarital births, we test whether the association between father transitions and coparenting varies across child age intervals (ages 1–3, 3–5, and 5–9), and whether some types of father transitions have longer lasting associations with biological parents' coparenting quality than others.

Family Instability and Coparenting

The increase in family instability in recent decades (Cherlin, 2005) reflects rising rates of nonmarital births (Curtin, Ventura, & Martinez, 2014), cohabitation (Kennedy & Bumpass, 2008), and multipartnered fertility (Carlson & Furstenberg, 2006). Research has shown that a greater number of entrances and exits by father figures is associated with children's poorer cognitive and behavioral development (Fomby & Cherlin, 2007; Waldfogel et al., 2010). One potential reason may be a decline in the quality of coparenting. The dissolution of a parental union—whether marital or cohabiting—makes it difficult to divide and coordinate parenting responsibilities. Common sources of conflict include access to the child, child support, and parenting practices (Bonach, 2005). While it seems likely that a biological father's exit from the household is associated with a decline in coparenting quality, this proposition has never been directly tested. Nor is there research on coparenting quality as a function of other increasingly common father transitions.

For example, it is unknown whether coparenting quality improves when a biological father moves into the household after a child's birth. Although approximately half of unwed parents live apart at the time of the child's birth (Sigle-Rushton & McLanahan, 2002), many begin to cohabit in order to share expenses and child-rearing duties, and to increase the baby's access to his or her biological father (Reed, 2006). From a practical standpoint, the biological father's entrance should improve coparenting by facilitating communication and coordination. Furthermore, it may signal an increased investment in the family (Rusbult, 1980), particularly if it occurs in the context of marriage (Stanley, Rhoades, & Markman, 2006). It is also likely to increase the father's emotional well-being (Dush & Amato, 2005), which is associated with higher quality coparenting (Bronte-Tinkew, Horowitz, & Carrano, 2010; Isacco, Garfield, & Rogers, 2010). Among mothers, the entrance of a biological father is linked to lower parenting stress (Cooper, McLanahan, Meadows, & Brooks-Gunn, 2009), which, in turn, is inversely related to coparenting quality (e.g., Feinberg, 2003). Thus, there is reason to suspect that biological fathers' entrances and exits correspond to increases and decreases in coparenting quality, respectively, but to date, this hypothesis has not been empirically tested.

Research also suggests that the transition of a new father figure (or "social" father) into the child's household may erode the quality of the biological parents' coparenting. Past studies

indicate that nonresident biological fathers feel that it is reasonable to decrease their financial support of the child when a new social father enters the child's household (Ganong, Coleman, & Mistina, 1995). Similarly, maternal repartnering through marriage or cohabitation is associated with decreased nonresident biological father visitation and child support (Berger, Cancian, & Meyer, 2012; Juby, Billette, Laplante, & LeBourdais, 2007; Tach, Mincy, & Edin, 2010). These findings generally support the "package deal" model of parenting, in which fathers tend to feel responsible for only the children shared with a current romantic partner (Townsend, 2002).

Using data from the FFCWS, Dush, Kotila, and Schoppe-Sullivan (2011) found that mothers' start of a new romantic relationship was associated with a decline in biological parents' coparenting quality between child ages 1 and 5. This study did not distinguish, however, between coresidential and nonresidential new relationships, leaving open the question of whether such declines in coparenting quality are observed specifically when mothers' new partners move in to the child's household. The extant research on family structure concentrates on the individuals children live with and the consistency of those arrangements, not the identity and consistency of mothers' romantic relationships. It finds that changes in household composition, including the entrance of new social fathers, are associated with meaningful increases in children's behavior problems (Fomby & Cherlin, 2007). With 64% of unwed mothers entering one or more new coresidential arrangements by the child's fifth birthday (Cooper, Beck, & Högnäs, 2011), family scholars must turn their attention to the mechanisms by which social fathers' coresidence influences child development (Berger, Carlson, Bzostek, & Osborne, 2008; Bzostek, 2008; Jayakody & Kalil, 2002). The present study asks how new coresident social fathers shape biological parents' coparenting quality.

Social fathers' exits from the household also deserve attention, as they may occasion a renegotiation of coparenting arrangements between biological parents. Mothers may become more dependent on biological fathers, which might cause strain, particularly if the biological father has a new family to care for (Bronte-Tinkew & Horowitz, 2010). On the other hand, it might improve coparenting relationship quality, as it may be easier, in general, for two people than three to communicate clearly about caregiving arrangements and reach compromises. To date, no study has tested these competing hypotheses.

Timing of the Effects of Father Transitions on Coparenting

Life course theory posits that stressful events such as the transition of a father or father figure in or out of a household influence children differently at different stages of life (Elder, 1998). The same theory can be applied to the influence of a father transition on the coparenting relationship. Past studies find that the infant through preschool years are particularly taxing to coresident parents (Kurdek, 1990; Margolin, Gordis, & John, 2001; Williford, Calkins, & Keane 2007), as that period requires constant supervision of the child and the coordination of multiple activities (e.g., feeding and napping). Additionally, early childhood is a time when many parents value consistency in the child's daily routines, but this may be particularly difficult for parents to achieve when they live apart. Thus, coparenting quality may decline more steeply in the wake of a biological father's exit from

the household if it occurs during early versus middle childhood. Indeed, the distress associated with divorce is greatest among women with young children (Williams & Dunne-Bryant, 2006). Conversely, the entrance of a biological father into the household may be associated with a larger increase in coparenting quality during the child's early childhood.

The entrance of a social father into the child's household may also have stronger negative implications for coparenting when the child is in early, versus middle, childhood. To the extent that older child age corresponds to a greater passage of time since the biological parents' split, the parents of an older child may be more accepting of new relationships for their ex-partners. Biological fathers may also be more apt to cede authority to a social father if they themselves have already formed a new romantic partnership, which is associated with lower engagement in the child's caregiving (Gibson-Davis, 2008), particularly, if the partnership produces children (Cooksey & Craig, 1998; Manning, Stewart, & Smock, 2003).

It is less clear whether the exit of a social father should be differentially associated with changes in coparenting quality with the biological father by child's age. There is no literature describing how biological fathers perceive the breakup of a mother's relationship with a new partner. If, as we speculated earlier, the exit of a social father makes biological parents' coparenting easier, it might do so most when children are youngest, given the stresses associated with parenting a young child. Alternatively, the exit of a social father may be associated with a decrease in coparenting quality if it places extra demands on the biological father. This might produce the greatest resentment in biological fathers when children are older and fathers have developed other priorities (such as new partners) in the intervening years. Given that these hypotheses are speculative, the current analyses should be viewed as exploratory in nature.

Durability of the Effects of Father Transitions on Coparenting

If transitions in father coresidence affect the quality of biological parents' coparenting, it is important to know how long those effects endure, and whether that duration is conditioned on child age. Given the literature reviewed above, we might expect that transitions are associated with longer, as well as stronger, impacts on coparenting when they occur in early versus middle childhood. However, no studies to date have addressed the possibility that some shifts in coparenting quality last longer than others, likely owing to a paucity of data. Most coparenting studies are cross-sectional (e.g., Dorsey, Forehand, & Brody, 2007; Sobolewski & King, 2005; Stright & Bales, 2003) or span 4 years or less (e.g., Baril, Crouter, & McHale, 2007; Bronte-Tinkew et al., 2010; Cabrera, Scott, Fagan, Steward-Streng, & Chien, 2012; Carlson, McLanahan, & Brooks-Gunn, 2008). Thus, there is a need for research that tests whether and when father transitions have long-term implications for coparenting quality.

The Present Study

The present study draws on the FFCWS to examine coparenting in families between the child's first and ninth birthdays as a function of biological and social fathers' entrances into and exits out of the child's household. Specifically, we measure changes in father presence

and biological parents' coparenting quality during three intervals between study waves: ages 1 to 3, 3 to 5, and 5 to 9. The change in coparenting quality during each interval is regressed not only on father transitions made in that interval but also on transitions made in earlier intervals. We test for differential associations by child age by comparing the amount of change across intervals.

A vexing problem with all observational studies is the threat of omitted variable bias. In this study, an association between father transitions and coparenting quality may be attributable to a third variable that has not been measured. To minimize this possibility, we use "change-on-change" models that measure the change in coparenting quality, and the change in father coresidence, between adjacent waves (Magnuson, 2007). This approach has the effect of controlling for all unobserved variables whose associations with the independent and dependent variables stay constant over time (Allison, 2009). We also used change scores to control for the two time-varying factors likely to be confounded with both father transitions and coparenting. Mothers who have more depressive symptoms may experience more father transitions (Osborne, Berger, & Magnuson, 2012) and lower coparenting quality (Feinberg, 2003), although the direction of these associations is unclear. Father transitions are also likely to be associated with changes in household income (Osborne et al., 2012), which may be a source of coparenting conflict (Feinberg, 2003). To ensure that father transitions were isolated from attendant shifts in maternal depression and household income, the change over time on both factors was controlled.

Method

Sample

The FFCWS enrolled nearly 4,900 children born between 1998 and 2000 in 20 cities selected to represent U.S. cities with populations of 200,000 or more. Children born to unmarried parents were oversampled. Mothers were recruited in hospitals after giving birth, and both mothers and fathers were interviewed soon thereafter. The core study consisted of mother and father phone interviews when the child was 1, 3, 5, and 9 years of age.

Children were eligible for our analytic sample if they were sampled from the 18 cities where coparenting questions were the same across waves. From those 4,241 children, we selected 2,692 (63%) whose mother participated in all four study waves since birth. An additional 244 children were excluded because they did not live with their mothers at all waves, and 54 children were excluded because their biological fathers died during the study period. The resulting analytic sample of 2,394 children differed from excluded children in that their biological parents were slightly more likely to be married (26% vs. 22%) and slightly less likely to be cohabiting (34% vs. 38%) at baseline. Included children also had more educated mothers than excluded children; for example, 33% of included mothers had less than a high school degree, compared with 44% of excluded mothers. Compared with excluded mothers, included mothers were more likely to be White (24% vs. 20%) or Black (51% vs. 47%) and less likely to be Hispanic (22% vs. 29%). Included children had higher income-to-needs ratios than excluded children at baseline (2.4 vs. 2.1). However, included and excluded cases did not differ on child sex, number of children in the household, or maternal age. Although parents were interviewed by the FFCWS at the time of the child's birth, the interview at

child age 1 was the first wave considered in our study because it was the first time coparenting was measured.

Measures

Coparenting Quality—Coparenting quality was measured following Carlson et al. (2008) and Dush et al. (2011). At each wave, mothers were asked to endorse six items describing how parents work together in raising a child: (a) When FATHER is with CHILD, he acts like the father you want for your child; (b) You can trust FATHER to take good care of CHILD; (c) He respects the schedules and rules you make for CHILD; (d) He supports you in the way *you* want to raise CHILD; (e) You and FATHER talk about problems that come up with raising CHILD; and (f) You can count on FATHER for help when you need someone to look after CHILD for a few hours. Response options ranged from 0 (*rarely true*) to 2 (*always true*) at age 1; at later ages, options ranged from 0 (*never true*) to 3 (*always true*). The first two responses at later ages were combined into a single category (*never or rarely true*) for continuity across waves. Previous research using factor analysis at ages 1, 3, and 5 confirmed the integrity of these scales (Carlson et al., 2008). Alphas for coparenting quality were .85 at age 1 and .89 at ages 3, 5, and 9.

Interviewers automatically skipped the coparenting questions if mothers indicated that the father had not been in contact with the child over the past year. We assigned such cases a zero on coparenting (the minimum score) because couples could not cooperate on parenting efforts if one party was absent. Admittedly, we cannot be certain that all mothers would have given zero responses if the coparenting questions had been asked, but this is likely true of the majority, as suggested by other survey responses. For example, most (86%) mothers who reported that the father was not in contact with the child at age 3 rated the quality of their relationship with him as poor. At child age 5, 47% reported that it was poor, and another 37% reported that they never saw him. At child age 9, these figures were 24% and 58%, respectively. It therefore appears reasonable to assume that a father's lack of contact with the child signaled poor coparenting, but a sensitivity test altering this assumption was also run (results reported below).

Entrances and Exits of Fathers—An indicator variable denoted whether the child's biological father coresided with the child and mother at child age 1 (via either marriage or nonmarital cohabitation). Indicator variables for ages 3, 5, and 9 denoted whether the biological father entered the household since the previous wave. Analogous variables were created at ages 3, 5, and 9 to denote whether the child's biological father exited the household since the previous wave. Similarly, an indicator variable denoted whether a social father coresided with the child and mother at child age 1. Indicator variables for ages 3, 5, and 9 denoted whether a social father entered the household, and whether a social father exited the household, since the previous wave. (We were unable to distinguish the case of a social father who moved out and then back in from a case with multiple social fathers in succession.)

Because of sample size considerations, we did not distinguish coresidence transitions according to whether they occurred during marriage. Cohabitation and marriage fulfill many

of the same functions (e.g., increase the number of caregivers, augment household income). Biological fathers may be apt to view social fathers as if they were marital partners and make similar assumptions about their child-rearing authority and household contributions. Nevertheless, we control for marital status at age 1 (the first observation of coparenting).

Controls—Maternal depression at ages 1, 3, 5, and 9 was measured with the Composite International Diagnostic Interview—short-form, Section A (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998). At each wave, we summed the number of depressive symptoms mothers indicated having had in the past year for at least 2 weeks (range: 0–7). Household income at child ages 1, 3, 5, and 9 was the ratio of the total household income to the poverty threshold for a family of that size in the previous year.

The remaining controls, measured at child age 1, included indicators denoting whether the child was female; whether the biological parents were married; whether the child's grandmother lived with the mother and child; maternal age at first birth; number of other children in the household; maternal race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, or other); and maternal education (less than high school, high school degree or GED, or greater than high school). Mothers' engagement in parenting was controlled because time spent with child is likely to be associated with both father transitions and perceived coparenting quality (Feinberg, 2003). Mothers reported the number of days (0–7) in a typical week they engaged in eight activities (e.g., play games like “peek-a-boo” or “gotcha” with CHILD, tell stories to CHILD); responses were averaged ($\alpha = .63$). The difficulty of the child's temperament was controlled because it might theoretically contribute to or be exacerbated by father exits and is known to strain coparenting (Burney & Leerkes, 2010). Mothers were asked to rate how well three items (often fusses and cries, gets upset easily, reacts intensely when upset; $\alpha = .60$; Buss & Plomin, 1984) described their child (1 = *not at all*, 5 = *very much*). Finally, there was an indicator of whether the mother and child lived alone at age 1, and an indicator of whether they lived with a social father at age 1.

Analytic Strategy

Missing Data—There was a small amount of missing data on covariates such as maternal depression (5% to 6% across waves) and maternal education (<1%). The ICE command in Stata was used to conduct multiple imputation on the assumption that data were missing at random. Values on coparenting quality were missing in fewer than 3% of cases, but they were not imputed. Five imputed data sets were created.

Piecewise Growth Curve Models—The piecewise variant of the growth curve model is used here because it allows separate slopes to model change during each age interval instead of imposing a single slope over the entire period of observation. Piecewise growth curve models were estimated in HLM 7.01 with hierarchical linear models (HLMs) consisting of three levels. Level 1 described coparenting quality over time, Level 2 described variation across children in different families, and Level 3 accounted for the sampling of households within cities. Specifically, there was a single Level-1 equation that had as its intercept the child's initial coparenting score at child age 1, and as slopes, three coefficients corresponding to the changes in coparenting between ages 1 and 3, 3 and 5, and 5 and 9.

The Level-1 intercept and slopes were themselves estimated in Level-2 models. The Level-2 model of the intercept estimated coparenting at age 1 as a function of whether that child's mother lived alone and whether a social father coresided. The reference group for these two indicators was children who lived with their biological mother and father. Maternal depression, household income, and all child and family characteristics at age 1 were controlled. The Level-2 model of the Level-1 slope for change in coparenting between ages 1 and 3 included indicator variables denoting whether the child's biological father entered or exited the household during this interval. There were also indicator variables denoting the entrance and exit of a social father between ages 1 and 3. The two variables indicating whether the mother lived alone or with a social father at age 1 were included in this model so that the reference group remained children whose biological father lived stably in their household. Additional variables captured changes in maternal depression and household income between ages 1 and 3.

The Level-2 models of the slopes representing changes in coparenting between child ages 3 and 5, and ages 5 and 9, both included indicators of the entrances and exits of biological and social fathers during each interval. There were also measures of the change in maternal depression and household income during each interval. Importantly, the model of the change in coparenting between ages 3 and 5 also included variables capturing the lagged effects of all biological and social father transitions made between ages 1 and 3. The model of the change in coparenting between ages 5 and 9 included variables capturing the lagged effect of father transitions between ages 1 and 3 and between 3 and 5. All Level-2 models of the slopes had a random error term capturing the remaining variance for each child around their city's mean slope. A random error term in the Level-2 model of the intercept was omitted to allow the model to be identified and because variation around the intercept was of no substantive interest.

Each Level-2 coefficient was modeled at Level 3 as a function of its grand mean. The model for the Level-2 intercept included an error term capturing each city's deviation from the grand mean, but other Level-2 coefficients were not assigned error terms to allow model identification.

All continuous variables were centered on their grand means. Full information maximum likelihood methods were used to estimate all parameters. Postestimation Wald tests were run in HLM using Bonferroni-adjusted pairwise comparisons (results not tabled).

Results

Father Transitions Between Child Ages 1 and 9

As presented in Table 1, 62% of mothers reported that the child's biological father resided with her and the child at child age 1. Five percent of biological fathers entered the household between child ages 1 and 3; another 3% entered between child ages 3 and 5; and another 3% entered between child ages 5 and 9. By age 3, 12% of biological fathers had left the child's household. Between ages 3 and 5, another 11% left the household, and another 10% did so between ages 5 and 9. Only 5% of mothers reported that there was a coresident social father when the child was aged 1. Between child ages 1 and 3, 6% of mothers reported that a social

father entered the household. Nine percent reported that a social father entered between child ages 3 and 5, and 12% reported that a social father entered between ages 5 and 9. Overall, coparenting quality declined between child ages 1 ($M = 1.55$) and 9 ($M = 1.20$).

Biological Parents' Coparenting Quality at Child Age 1

The intercept in the Level-1 model (Table 2) represented the quality of the biological parents' coparenting at child age 1 when continuous covariates were at their mean and indicator variables were set to zero ($b = 1.74$, [standard error] $SE = 0.04$, $p < .001$). Compared with children whose biological father resided in the household, coparenting quality was significantly lower for children whose mother lived alone or with a social father.

Biological Fathers' Entrances and Exits and Changes in Coparenting Quality

The intercept of each slope term can be interpreted as the average change in coparenting quality during that interval for the reference group (children whose biological father stably coresided). As Table 2 shows, coparenting quality declined 0.04 points ([effect size] $ES = 0.06$) for this group between child ages 1 and 3. The coefficient for mothers who lived alone at age 1 ($b = -0.16$, $SE = 0.03$, $p < .001$, $ES = 0.23$) represents the decline in coparenting quality for children whose mothers continued to live alone at age 3 (and thus received zeros on all variables denoting biological and social father entrances and exits). Similarly, the coefficient for mothers who coresided with a social father at age 1 ($b = -0.16$, $SE = 0.08$, $p < .05$, $ES = 0.23$) represents the decline in coparenting when mothers continued to coreside with a social father at age 3.

Transitions in biological fathers' residence were accompanied by large changes in coparenting quality. The entrance of the child's biological father into the household between ages 1 and 3 was associated with a large increase in coparenting quality ($b = 0.62$, $SE = 0.05$, $p < .001$, $ES = 0.87$). The biological father's exit from the household was associated with a smaller but still sizable decrease in coparenting quality ($b = -0.43$, $SE = 0.03$, $p < .001$, $ES = 0.61$).

Coparenting quality did not change, on average, between child ages 3 and 5. This was true not only when mothers and biological fathers stably coresided but also when mothers stably lived alone and when social fathers stably coresided. Still, as in the earlier period, biological fathers' entrances and exits were associated with contemporaneous changes in coparenting quality. Between ages 3 and 5, the biological father's entrance into the household was associated with an increase in coparenting quality of 0.62 points ($SE = 0.06$, $p < .001$, $ES = 0.87$), and his exit was associated with a decline of 0.49 points ($SE = 0.04$, $p < .001$, $ES = 0.69$). Furthermore, there was a 0.26-point decrease ($SE = 0.04$, $p < .001$, $ES = 0.37$) in coparenting quality between ages 3 and 5 in cases where the biological father had exited the household between ages 1 and 3.

Coparenting quality stayed constant between child ages 5 and 9 when biological parents stably coresided, but it declined for mothers who lived alone continuously between ages 1 and 9. Between ages 5 and 9, a biological father's entrance into the household was associated with an increase of 0.57 points ($SE = 0.06$, $p < .001$, $ES = 0.80$) in coparenting quality, while his exit was associated with a decrease of 0.59 points ($SE = 0.04$, $p < .001$, ES

= 0.83). There were also lagged effects of earlier transitions. Coparenting quality between ages 5 and 9 declined by 0.15 points ($SE = 0.05$, $p < .001$, $ES = 0.21$) as a function of the biological father's exit from the household between ages 1 and 3. Coparenting quality between ages 5 and 9 declined by 0.22 points ($SE = 0.05$, $p < .001$, $ES = 0.31$) as a function of the biological father's exit between ages 3 and 5. Last, coparenting quality between ages 5 and 9 rose by 0.16 points ($SE = 0.08$, $p < .05$, $ES = 0.23$) when the biological father had entered the household between ages 3 and 5.

Postestimation tests compared the coefficients for biological fathers' entrances across intervals. Results revealed that the increase in coparenting quality associated with the biological father's entrance into the household did not vary across age intervals. Similar tests on the coefficients for biological fathers' exits from the household showed that the decrease in coparenting quality between ages 1 and 3 ($ES = 0.61$) was significantly smaller than the decrease between ages 5 and 9 ($ES = 0.83$). Thus, it appeared that biological parents' coparenting quality was least sensitive to the father's departure between child ages 1 and 3. However, it should be remembered that when a biological father left the household between ages 1 and 3, not only was there a concurrent decline in coparenting quality but there were also subsequent declines during ages 3 to 5 and 5 to 9.

Social Fathers' Entrances and Exits and Changes in Coparenting Quality

Social fathers' entrances into the household were consistently associated with declines in biological parents' coparenting quality. If a social father moved into the household between child ages 1 and 3, the biological parents' coparenting quality declined 0.33 points ($SE = 0.05$, $p < .001$, $ES = 0.46$). If a social father moved in between child ages 3 and 5, the biological parents' coparenting quality declined 0.19 points ($SE = 0.04$, $p < .001$, $ES = 0.27$). If a social father moved in between child ages 5 and 9, coparenting quality fell 0.19 points ($SE = 0.03$, $p < .001$, $ES = 0.27$).

Social fathers' exits from the household between ages 1 and 3 were not associated with changes in biological parents' coparenting quality. However, if a social father exited the household between child ages 3 and 5, coparenting quality increased by 0.16 points ($SE = 0.08$, $p < .05$, $ES = 0.23$). Similarly, if a social father exited the household between child ages 5 and 9, coparenting quality increased by 0.15 points ($SE = 0.05$, $p < .01$, $ES = 0.21$). There were no lagged effects of social fathers' entrances and exits on later coparenting quality.

Postestimation testing compared the coefficients associated with social fathers' entrances into the household across age intervals to see if they varied significantly. The decline in coparenting quality associated with a social father's entrance was greater between child ages 1 and 3 ($ES = 0.46$) than between ages 3 and 5 ($ES = 0.27$) and 5 and 9 ($ES = 0.27$). The improvement in coparenting quality associated with social fathers' exits did not significantly vary over time.

Sensitivity Analyses

In sensitivity analyses, we revisited our decision to assign a coparenting score of zero to cases where the coparenting questions were skipped because the father was not in contact

with the child. Our measure of coparenting quality primarily captured cooperation, which is not necessarily inversely related to conflict (Waller, 2012). In our sample, there may have been qualitative differences among mothers who scored low on coparenting because the father was absent and those who experienced high conflict with him over childrearing goals and responsibilities. To ensure that the lowest coparenting quality scores did not simply reflect father absence, all models were reestimated after coparenting quality was restored to missing for intervals in which the father was out of contact (results available from the first author on request). The improvement in coparenting associated with a biological father's entrance was smaller, but still significant, and the decline associated with his exit was smaller, and still significant in all but one case. Similarly, the decline in coparenting associated with a social father's entrance was smaller but still significant. The improvement associated with a social father's exit was smaller and in some instances no longer significant. The mean coparenting score for nonresident biological fathers had been weighted downward by the zeros assigned to out-of-contact fathers; thus the difference between resident and nonresident biological fathers was greater when out-of-contact fathers were assigned zeros rather than dropped. In sum, although dropping out-of-contact fathers may understate the advantage in coparenting held by mothers living with biological fathers, and setting the coparenting measure to zero may overstate that advantage, under both assumptions biological and social fathers' entrances and exits from the home are associated with meaningful changes in coparenting quality.

Fathers also reported on coparenting, but we used mothers' reports because of their lower rate of attrition. When we repeated all analyses using fathers' reports instead of mothers', the overall pattern of findings did not change, although coefficients were generally smaller (results available from the first author on request).

Discussion

Most children in the United States now experience one or more changes in family structure (Bumpass & Lu, 2000; U.S. Census Bureau, 2006). These changes include not only the biological father's exit from the home but also the entrance of biological fathers after a nonmarital birth, and the entrance and exit of mothers' new romantic partners. The present study investigates the implications of family instability for biological parents' coparenting quality. Overall, the exit of biological fathers from, and entrance of social fathers into, the home were associated with declines in coparenting quality, whereas the entrance of biological fathers into, and exit of social father from, the home were associated with improvements. Although the contemporaneous effects of these changes did not vary consistently by child age, the effects of early changes accumulated over time to produce long-term effects on coparenting quality.

Fathers' Coresidence Transitions and Changes in Coparenting Quality

As hypothesized, we found that biological fathers' entrances into the household were consistently associated with a large uptick in coparenting quality. Moving in together should enhance the quality of coparenting between biological parents by enabling more direct communication and shared resources. It should also inspire (or reflect) a greater

commitment to family life (Rusbult, 1980). Alternatively, it is possible that improvements in coparenting quality facilitate parents' moving in together. Additionally, coresidence and coparenting both may be, to some extent, the product of relationship quality. Past research shows that among couples who do not coreside at the child's birth, those that move in together or marry in the child's first year of life have more supportive relationships than those who break up (Carlson, McLanahan, & England, 2004). The present study is unable to adjudicate among these explanations for the association between biological fathers' entrances and higher coparenting quality. A qualitative approach might be best suited for future efforts at identifying causal directionality.

Results showed that the entrance of a social father consistently interfered with coparenting. This finding complements data from the National Survey of Families and Households indicating that cooperative coparenting declines after biological fathers remarry (McGene & King, 2012). Our results are also consistent with an earlier analysis of the FFCWS showing that mothers' new boyfriends, though not necessarily their new residential partners, were associated with poorer coparenting through age 5 (Dush et al., 2011), and with research showing that mothers' new partners are associated with lower biological father involvement and support (Berger et al., 2012; Juby et al., 2007; Tach et al., 2010). The "package deal" model of parenting, in which fathers feel responsible for only the children shared with a current romantic partner (Townsend, 2002), might suggest that nonresident biological fathers would welcome social fathers because they signal relief from financial and other responsibilities for the child. However, the current findings indicate that a new social father only strains the coparenting relationship. This conclusion is reinforced by the finding that the social father's exit partly restores the coparenting relationship between ages 3 and 9. Further research should identify the mechanisms linking the coresidence of a social father to impaired coparenting between biological parents. For example, it is unclear whether a social father's entrance evokes conflict between biological parents or merely reduces biological fathers' coparenting activity. Studies that assess changes in parents' disagreements and division of labor are needed to address this question directly.

The Role of Child Age

Our results suggest that the advantage of a biological father moving in for coparenting quality remains relatively stable from child ages 1 to 9, although we had predicted it would be greatest during early childhood. Even if early childhood is more challenging than middle childhood, it is possible that at all ages, biological fathers do not move in unless a satisfactory level of coparenting quality is achieved. Nevertheless, the timing of biological fathers' entrances was not irrelevant. There was a lagged effect when biological fathers moved in between ages 3 and 5, such that coparenting quality not only rose contemporaneously but also continued to rise between ages 5 and 9. Further research should investigate why biological fathers' entrances in the age 1 to 3 interval did not have similar long-term consequences for coparenting. Perhaps biological fathers who do not move in until the preschool years are unusually deliberative about family roles and make more committed coparents in the long term.

The exit of a biological father was associated with a smaller decline in coparenting quality between ages 1 and 3 than between ages 5 and 9. However, it does not seem to be the case that coparenting quality is least vulnerable to decline during infancy/toddlerhood. First, the decline in coparenting quality associated with the entrance of a social father was greatest between child ages 1 and 3. Second, there were lagged effects of biological fathers' early exits that augmented the contemporaneous effects. If a biological father left the household between ages 1 and 3, coparenting quality continued to decline through age 9.

Our findings suggest that contemporaneous associations underestimate the net effect of father transitions on coparenting. For example, when a biological father exited between ages 5 and 9, the ES of the drop in coparenting was 0.83. This is significantly steeper than the decline accompanying an exit between ages 1 and 3 ($ES = 0.61$). However, those mothers who experienced the father's exit between ages 1 and 3 also experienced a dip in coparenting quality of 0.21 ES between ages 5 and 9. This decline followed an earlier reduction of 0.37 ES during the age 3 to 5 interval. In sum, the mothers of children whose biological father exited between ages 1 and 3 experienced a cumulative decrease of 1.18 ES in coparenting quality by the time their child reached age 9 (assuming no other transitions). This compares with a net decrease of 1.0 ES by age 9 if the biological father exited during ages 3 to 5. From this standpoint, the link between biological fathers' exits and reductions in coparenting quality was strongest during the child's first years.

The finding that the negative association between coparenting quality and the entrance of a social father was greatest between ages 1 to 3 suggests that biological fathers may be more accepting of mothers' new partners as time goes on. A previous study of the FFCWS found that the negative association between mothers' new romantic (but not necessarily coresident) partners and biological fathers' involvement with the child weakened over the child's first 5 years of life (Tach et al., 2010). Further study is needed to determine whether biological fathers become decreasingly reactive to maternal repartnering as children age.

Social fathers' exits were associated with partial rebounds in coparenting quality between child ages 3 and 5 and between ages 5 and 9. It is unclear whether the lack of significance in the age 1 to 3 interval reflects a special feature of this period of child development or a power problem, given the small number of children whose social fathers exited then. Subsequent studies of coparenting are likely to encounter the same problem without a very large sample size.

Limitations

This study had several limitations that should be noted. First, our measure of coparenting quality assessed the degree of cooperation and support between parents. Although some items captured the parents' agreement on goals and rules, there was no attempt to explicitly measure parents' conflict, division of labor, or attempts to undermine each other's authority, other important dimensions of coparenting (Feinberg, 2003). Further research is needed to directly assess how those aspects of coparenting are linked to father transitions. Also, our study was not able to assess biological fathers' engagement in parenting over time. Furthermore, the coparenting measure drew exclusively on mothers' reports; however, sensitivity analyses using fathers' reports produced similar results.

Second, we could not account for precisely how long mothers had been exposed to each father transition when they reported on coparenting, and the intervals between waves were of uneven duration. Another problem is that short spells of fathers' coresidence may have gone undetected if they began and ended between waves. We were also unable to distinguish repeat entrances of a single social father from new entrances of multiple social fathers. The reentrance of a social father may affect coparenting differently than the entrance of a new social father. It is also important to recall that inclusion in the analytic sample was conditioned on mothers' participation in four study waves. Because included mothers were slightly more likely than excluded mothers to be married and were more socioeconomically advantaged at baseline, our sample may have experienced fewer father transitions and higher coparenting quality than the full study sample. Last, we did not distinguish between coresidence due to marriage versus cohabitation. In a larger sample, it would be fruitful to test whether marriage moderates associations between fathers' residential transitions and changes in biological parents' coparenting quality.

Summary

In sum, the present study investigated novel questions about the implications of different types of family instability for coparenting among biological parents, an aspect of family functioning that meaningfully affects parent and child well-being. Our analytic approach accounted for both concurrent and lagged associations between father transitions and coparenting while minimizing the influence of family characteristics likely to confound these associations. Our findings reveal the importance of both biological and social father transitions for the coparenting relationship during both early and middle childhood. Moreover, associations between early father transitions and coparenting do not fade over time but in most cases accumulate across childhood. These results suggest that interventions aimed at enhancing the coparenting relationship, particularly after a nonmarital birth, should consider not only the biological parents' relationship but also the impact of mothers' new coresident partnerships. Such interventions should also note that father transitions made in early childhood can have implications for coparenting for many years to come.

Acknowledgments

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The authors thank the Eunice Kennedy Shriver National Institute of Child Health and Human Development through Grants R01HD36916, R01HD39135, and R01HD40421, as well as a consortium of private foundations for their support of the Fragile Families and Child Wellbeing Study.

References

- Allison, PD. Fixed effects regression models. Thousand Oaks, CA: Sage; 2009. Quantitative applications in the social sciences series
- Baril ME, Crouter AC, McHale SM. Processes linking adolescent well-being, marital love, and coparenting. *Journal of Family Psychology*. 2007; 21:645–654. [PubMed: 18179336]
- Berger LM, Cancian M, Meyer DR. Maternal re-partnering and new-partner fertility: Associations with nonresident father investments in children. *Children and Youth Services Review*. 2012; 34:426–436. [PubMed: 22581998]

- Berger LM, Carlson MJ, Bzostek SH, Osborne C. Parenting practices of resident fathers: The role of marital and biological ties. *Journal of Marriage and Family*. 2008; 70:625–639. [PubMed: 21909158]
- Bonach K. Factors contributing to quality coparenting: Implications for family policy. *Journal of Divorce & Remarriage*. 2005; 43:79–103.
- Bronte-Tinkew J, Horowitz A. Factors associated with unmarried, nonresident fathers' perceptions of their coparenting. *Journal of Family Issues*. 2010; 31:31–65.
- Bronte-Tinkew J, Horowitz A, Carrano J. Aggravation and stress in parenting: Associations with coparenting and father engagement among resident fathers. *Journal of Family Issues*. 2010; 31:525–555.
- Bumpass L, Lu HH. Trends in cohabitation and implications for children's family contexts in the U.S. *Population Studies*. 2000; 54:29–41.
- Burney RV, Leerkes EM. Links between mothers' and fathers' perceptions of infant temperament and coparenting. *Infant Behavior & Development*. 2010; 33:125–135. [PubMed: 20116859]
- Buss, AH., Plomin, R. *Temperament: Early developing personality traits*. Hillsdale, NJ: Lawrence Erlbaum; 1984.
- Bzostek SH. Social fathers and child well-being. *Journal of Marriage and Family*. 2008; 70:950–961.
- Cabrera NJ, Scott M, Fagan J, Steward-Streng N, Chien N. Coparenting and children's school readiness: A mediational model. *Family Process*. 2012; 51:307–324. [PubMed: 22984971]
- Carlson MJ, Furstenberg FF. The prevalence and correlates of multi-partnered fertility among urban U.S. parents. *Journal of Marriage and Family*. 2006; 68:718–732.
- Carlson MJ, McLanahan SS, Brooks-Gunn J. Coparenting and nonresident fathers' involvement with young children after a nonmarital birth. *Demography*. 2008; 45:461–488. [PubMed: 18613490]
- Carlson M, McLanahan S, England P. Union formation in fragile families. *Demography*. 2004; 41:237–261. [PubMed: 15209039]
- Cherlin AJ. American marriage in the early twenty-first century. *Future of Children*. 2005; 15:33–55. [PubMed: 16158729]
- Cooksey EC, Craig PH. Parenting from a distance: The effects of paternal characteristics on contact between nonresidential fathers and their children. *Demography*. 1998; 35:187–200. [PubMed: 9622781]
- Cooper, CE., Beck, AN., Högnäs, RS. *Maternal partnership instability and coparenting in fragile families*. Princeton, NJ: Princeton University; 2011. *Fragile families Working Paper No. WP11-06-FF*
- Cooper CE, McLanahan SS, Meadows SO, Brooks-Gunn J. Family structure transitions and maternal parenting stress. *Journal of Marriage and Family*. 2009; 71:558–574. [PubMed: 20046951]
- Cox MJ, Paley B. Understanding families as systems. *Current Directions in Psychological Science*. 2003; 12:193–196.
- Curtin, SC., Ventura, SJ., Martinez, GM. *Recent declines in nonmarital childbearing in the United States*. Hyattsville, MD: U.S. Department of Health and Human Services; 2014. *NCHS Data Brief No. 162*
- Dorsey S, Forehand R, Brody G. Coparenting conflict and parenting behavior in economically disadvantaged single parent African American families: The role of maternal psychological distress. *Journal of Family Violence*. 2007; 22:621–630.
- Dush CMK, Amato PR. Consequences of relationship status and quality for subjective well-being. *Journal of Social and Personal Relationships*. 2005; 22:607–627.
- Dush CMK, Kotila LE, Schoppe-Sullivan SJ. Predictors of supportive coparenting after relationship dissolution among at-risk parents. *Journal of Family Psychology*. 2011; 25:356–365. [PubMed: 21534670]
- Elder GH. The life course as developmental theory. *Child Development*. 1998; 69:1–12. [PubMed: 9499552]
- Feinberg ME. The internal structure and ecological context of coparenting: A framework for research and intervention. *Parenting: Science and Practice*. 2003; 3:95–131.

- Fomby P, Cherlin AJ. Family instability and child well-being. *American Sociological Review*. 2007; 72:181–204. [PubMed: 21918579]
- Ganong LH, Coleman M, Mistina D. Normative beliefs about parents' and stepparents' financial obligations to children following divorce and remarriage. *Family Relations*. 1995; 44:306–315.
- Gibson-Davis CM. Family structure effects on maternal and paternal parenting in low-income families. *Journal of Marriage and Family*. 2008; 70:452–465.
- Isacco A, Garfield CF, Rogers TE. Correlates of coparental support among married and nonmarried fathers. *Psychology of Men & Masculinity*. 2010; 11:262–278.
- Jayakody R, Kalil A. Social fathering in low-income, African American families with preschool children. *Journal of Marriage and Family*. 2002; 64:504–516.
- Juby H, Billette JM, Laplante B, LeBourdais C. Nonresident fathers and children: Parents' new unions and frequency of contact. *Journal of Family Issues*. 2007; 28:1220–1245.
- Kennedy S, Bumpass LL. Cohabitation and children's living arrangements: New estimates from the United States. *Demographic Research*. 2008; 19:1663–1692. [PubMed: 19119426]
- Kessler RC, Andrews G, Mroczek D, Ustun TB, Wittchen HU. The World Health Organization Composite International Diagnostic Interview short-form (CIDI-SF). *International Journal of Methods in Psychiatric Research*. 1998; 7:171–185.
- Kurdek LA. Effects of child age on the marital quality and psychological distress of newly married mothers and stepfathers. *Journal of Marriage and the Family*. 1990; 52:81–85.
- Magnuson K. Maternal education and children's academic achievement during middle childhood. *Developmental Psychology*. 2007; 43:1497–1512. [PubMed: 18020827]
- Manning WD, Stewart SD, Smock PJ. The complexity of fathers' parenting responsibilities and involvement with nonresident children. *Journal of Family Issues*. 2003; 24:645–667.
- Margolin G, Gordis EB, John RS. Coparenting: A link between marital conflict and parenting in two-parent families. *Journal of Family Psychology*. 2001; 15:3–21. [PubMed: 11322083]
- McGene J, King V. Implications of new marriages and children for coparenting in nonresident father families. *Journal of Family Issues*. 2012; 33:1619–1641. [PubMed: 23794773]
- McHale JP, Kuersten-Hogan R, Rao N. Growing points for coparenting theory and research. *Journal of Adult Development*. 2004; 11:221–234. [PubMed: 21127732]
- Osborne C, Berger LM, Magnuson K. Family structure transitions and changes in maternal resources and well-being. *Demography*. 2012; 49:23–47. [PubMed: 22215507]
- Reed JM. Not crossing the "extra line": How cohabitators with children view their unions. *Journal of Marriage and Family*. 2006; 68:1117–1131.
- Rusbult CE. Commitment and satisfaction in romantic associations: A test of the investment model. *Journal of Experimental Social Psychology*. 1980; 16:172–186.
- Ryan RM, Claessens A. Associations between family structure changes and children's behavior problems: The moderating effects of timing and marital birth. *Developmental Psychology*. 2013; 49:1219–1231. [PubMed: 22866830]
- Sigle-Rushton W, McLanahan S. The living arrangements of new unmarried mothers. *Demography*. 2002; 39:415–433. [PubMed: 12205750]
- Sobolewski JM, King V. The importance of the coparental relationship for nonresident fathers' ties to children. *Journal of Marriage and Family*. 2005; 67:1196–1212.
- Stanley SM, Rhoades GK, Markman HJ. Sliding versus deciding: Inertia and the premarital cohabitation effect. *Family Relations*. 2006; 55:499–509.
- Stright AD, Bales SS. Coparenting quality: Contributions of child and parent characteristics. *Family Relations*. 2003; 52:232–240.
- Tach L, Mincy R, Edin K. Parenting as a "package deal": Relationships, fertility, and nonresident father involvement among unmarried parents. *Demography*. 2010; 47:181–204. [PubMed: 20355690]
- Townsend, NW. *The package deal*. Philadelphia, PA: Temple University Press; 2002.
- U.S. Census Bureau. *Statistical abstract of the United States*. 126th. Washington, DC: U.S. Government Printing Office; 2006.

- Waldfoegel J, Craigie T, Brooks-Gunn J. Fragile families and child wellbeing. *Future of Children*. 2010; 20:87–112. [PubMed: 20964133]
- Waller MR. Cooperation, conflict, or disengagement? Coparenting styles and father involvement in fragile families. *Family Process*. 2012; 51:325–342. [PubMed: 22984972]
- Williams K, Dunne-Bryant A. Divorce and adult psychological wellbeing: Clarifying the role of gender and child age. *Journal of Marriage and Family*. 2006; 68:1178–1196.
- Williford AP, Calkins SD, Keane SP. Predicting change in parenting stress across early childhood: Child and maternal factors. *Journal of Abnormal Child Psychology*. 2007; 35:251–263. [PubMed: 17186365]

Table 1

Descriptive Statistics for Study Variables.

	% or <i>M</i> (<i>SE</i>)
Coparenting quality	
Age 1	1.55 (0.01)
Age 3	1.42 (0.01)
Age 5	1.34 (0.01)
Age 9	1.20 (0.02)
Biological father coresided, age 1	62%
Social father coresided, age 1	5%
Biological father entered household	
Age 1–3	5%
Age 3–5	3%
Age 5–9	3%
Biological father exited household	
Age 1–3	12%
Age 3–5	11%
Age 5–9	10%
Social father entered household	
Age 1–3	6%
Age 3–5	9%
Age 5–9	12%
Social father exited household	
Age 1–3	3%
Age 3–5	3%
Age 5–9	6%
Maternal depression	
Age 1	0.86 (0.04)
Age 3	1.12 (0.04)
Age 5	0.91 (0.04)
Age 9	0.85 (0.04)
Household income	
Age 1	1.95 (0.04)
Age 3	2.06 (0.06)
Age 5	2.05 (0.05)
Age 9	2.06 (0.05)
Parents married at child age 1	32%
Child female	48%
Mother's age at child's birth	25.24 (0.12)
Mother's race	
White	24%
Black	51%

	% or <i>M</i> (<i>SE</i>)
Hispanic	22%
Other race/ethnicity	3%
Mother's education	
<High school	30%
High school/GED	32%
>High school	41%
Grandmother coresided at age 1	19%
Number of other children in home	1.06 (0.03)
Mother's engagement in parenting	5.36 (0.02)
Child's difficult temperament	2.78 (0.02)

Note. *SE* = standard error. Calculations based on five multiply imputed data sets.

Table 2

Prediction of Changes in Coparenting Quality by Entrances and Exits of Biological and Social Fathers.

	Intercept at age 1 (π_{0ij}), <i>b</i> (SE)	Slope between ages 1 and 3 (π_{1ij}), <i>b</i> (SE)	Slope between ages 3 and 5 (π_{2ij}), <i>b</i> (SE)	Slope between ages 5 and 9 (π_{3ij}), <i>b</i> (SE)
Intercept	1.74 *** (0.04)	−0.04 * (0.02)	0.02 (0.02)	−0.01 (0.02)
Age 1				
Lived alone	−0.64 *** (0.03)	−0.16 *** (0.03)	−0.06 (0.03)	−0.10 ** (0.04)
Social father coresided	−0.88 *** (0.05)	−0.16 * (0.08)	−0.12 (0.09)	−0.13 (0.10)
Maternal depression	−0.03 *** (0.00)	—	—	—
Household income	0.00 (0.00)	—	—	—
Ages 1–3				
Biological father's entrance	—	0.62 *** (0.05)	0.08 (0.06)	0.07 (0.07)
Biological father's exit	—	−0.43 *** (0.03)	−0.26 *** (0.04)	−0.15 ** (0.05)
Social father's entrance	—	−0.33 *** (0.05)	0.09 (0.06)	0.06 (0.07)
Social father's exit	—	0.05 (0.10)	0.21 (0.12)	−0.02 (0.12)
Change in maternal depression	—	−0.02 *** (0.00)	—	—
Change in household income	—	−0.00 (0.00)	—	—
Ages 3–5				
Biological father's entrance	—	—	0.62 *** (0.06)	0.16 * (0.08)
Biological father's exit	—	—	−0.49 *** (0.04)	−0.22 *** (0.05)
Social father's entrance	—	—	−0.19 *** (0.04)	−0.07 (0.05)
Social father's exit	—	—	0.16 * (0.08)	0.06 (0.10)
Change in maternal depression	—	—	−0.02 *** (0.00)	—
Change in household income	—	—	0.00 (0.00)	—
Ages 5–9				
Biological father's entrance	—	—	—	0.57 *** (0.06)
Biological father's exit	—	—	—	−0.59 *** (0.04)
Social father's entrance	—	—	—	−0.19 *** (0.03)
Social father's exit	—	—	—	0.15 ** (0.05)
Change in maternal depression	—	—	—	−0.01 (0.00)
Change in household income	—	—	—	0.00 (0.00)

Note. — = not included in model. The intercept at age 1 was also regressed on biological parents married, number of children in household, maternal education, maternal race/ethnicity, difficult temperament, coresident grandmother, maternal engagement in parenting, child sex, and maternal age.

*
 $p < .05$.

**
 $p < .01$.

***
 $p < .001$.