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Coparenting and Nonresident Fathers' Monetary Contributions to Their Children

Julia S. Goldberg

University of Wisconsin—Madison

Abstract

The percentage of children in the United States living apart from their biological father has increased, while public assistance for single mothers has diminished. This has resulted in a need to better understand and promote nonresident fathers' economic support of their children. In the present study the author used data from the Fragile Families and Child Wellbeing Study ($N = 1,752$) to examine how coparenting—the degree to which parents are mutually supportive and cooperative in raising their child—is related to nonresident fathers' monetary contributions. Results from pooled regression and fixed effects models indicate that coparenting is positively associated with fathers' likelihood of paying formal and informal child support and the amount of these payments. Findings from cross-lagged structural equation models suggest that the association between coparenting and fathers' payments is reciprocal but that coparenting has a stronger effect on fathers' payments than fathers' payments do on coparenting.

Keywords

child support; family relations; Fragile Families and Child Wellbeing Study; nonresidential parents; parental investment/involvement

Over the past several decades, the percentage of children living apart from their biological father has increased substantially in the United States. Because of high levels of divorce, separation, and nonmarital childbearing (Cherlin, 2010), about 50% of children spend some of their childhood living with a single-parent, usually their mother (Ellwood & Jencks, 2004). This is concerning, because children have been shown to fare better on a host of outcomes when they live with both of their biological parents (McLanahan, Tach, & Schneider, 2013). Yet, even when living apart, fathers have the potential to enrich their child's life.

One critical way in which nonresident fathers contribute to their children is via economic support. These contributions can be differentiated into three types: (a) formal, (b) informal, and (c) in kind. *Formal* payments occur in response to a court- or state-mandated child support order, whereas *informal* payments occur when fathers provide money directly to

Department of Sociology, University of Wisconsin, 128 William H. Sewell Social Sciences Building, 1180 Observatory Dr., Madison, WI 53706 (jsgoldbe@ssc.wisc.edu)

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their child's mother outside of a formal agreement. *In-kind support* is defined as all noncash goods that fathers provide to their children, such as clothes, toys, or food. By improving the financial security of mothers, fathers' economic contributions—in particular, their monetary contributions—enhance children's physical, social, and academic development (Amato & Gilbreth, 1999; Argys, Peters, Brooks-Gunn, & Smith, 1998; Nepomnyaschy, Magnuson, & Berger, 2012). Moreover, the importance of nonresident fathers' economic support may have increased over time, as public support for single mothers and children has diminished and legislation emphasizing private support and self-sufficiency among these families has grown (Cancian, Meyer, & Han, 2011).

Unfortunately, a sizable percentage of nonresident fathers (estimates suggest around 50%) do not provide any monetary assistance to their children (Garasky, Stewart, Gundersen, & Lohman, 2010; Nepomnyaschy & Garfinkel, 2007). Most research on the antecedents of nonresident fathers' economic provision has focused on socioeconomic characteristics that are likely to affect fathers' capacity to provide this support, such as their income, employment, or fertility (Bartfeld & Meyer, 2003; Beller & Graham, 1993; Manning & Smock, 2000; Seltzer, Schaeffer, & Charng, 1989). In the present study I moved beyond this research by asking how parents' level of cooperation in raising their child—a feature of the parental relationship known as *coparenting*—is related to nonresident fathers' monetary contributions.

Parents' coparental relationship often persists long after their romantic relationship has ended as they continue to interact over issues related to their shared child (Maccoby, Depner, & Mnookin, 1990). A supportive coparental relationship may encourage nonresident fathers' continued involvement in their child's life, whereas a relationship marred by conflict is likely to have the opposite effect. Using panel data collected from a large national sample, in this study I addressed several analytic issues, including unobserved heterogeneity and reciprocal effects, to investigate this association.

Background

Coparenting and Nonresident Fathers' Economic Contributions

Coparenting refers to parents' agreement and communication about how their child should be raised, as well as supportiveness of each other's parenting efforts (McHale, 1995). It is a central component of family life, with implications for both parenting behavior and child outcomes (Feinberg, 2003). The coparental relationship (potentially) exists regardless of the status of the parents' romantic relationship. In fact, it may be even more relevant for family functioning among parents living apart, given that it is often the primary interaction they have with one another (Maccoby et al., 1990).

There are a number of reasons why coparenting may be related to nonresident fathers' economic contributions. First, mothers play an important role in reinforcing men's identity as a father and encouraging their involvement in their child's life (Rane & McBride, 2000). When mothers respect and trust fathers' parenting abilities, fathers are more likely to engage with and provide for their child. This may explain why men's involvement with their child tends to diminish when their romantic relationship with the child's mother dissolves

(Furstenberg & Cherlin, 1991; Townsend, 2002). However, being able to interact positively with their child's mother even after the romantic relationship has ended may be critical for helping men continue to maintain a relationship with their child (Marsiglio & Roy, 2012).

A second, related, reason why coparenting may influence fathers' economic contributions stems from research suggesting that nonresident fathers' access to their child depends on mothers' approval—a concept known as *maternal gatekeeping* (Allen & Hawkins, 1999). Mothers who have a conflicted coparental relationship with the father may worry about the negative influence the father will have on their child and decide to limit his contact. In turn, fathers who have little contact with their child may be reluctant to make payments to their child because they cannot easily monitor how their money is spent and do not trust the mother to use the money as it was intended (Edin & Nelson, 2013; Weiss & Willis, 1985).

Most empirical research on the association between coparenting and nonresident fathers' involvement has focused on the outcomes of fathers' contact or engagement with their child. This literature has uncovered abundant evidence that a better coparental relationship is associated with more frequent visitation and more time spent engaging in father-child activities (Carlson, McLanahan, & Brooks-Gunn, 2008; Ryan, Kalil, & Ziol-Guest, 2008; Sobolewski & King, 2005). Given that nonresident fathers' visitation and economic support have been shown to be positively correlated (Garasky et al., 2010; Nepomnyaschy, 2007; Seltzer et al., 1989), it is reasonable to suspect that coparenting may also be positively associated with the latter type of involvement. On the other hand, because economic support is often court ordered and requires less direct contact with the mother than visitation, its association with coparenting may be weaker. A small body of ethnographic work (Edin & Lein, 1997; Edin & Nelson, 2013) and one quantitative study (Hofferth, Forry, & Peters, 2010) has found that coparenting is an important factor for nonresident fathers' economic support. However, these studies are limited in their generalizability and ability to test for causal relationships by their use of small samples and measures of coparenting at a single point in time.

Differences by Type of Economic Support

Nonresident fathers can contribute economically to their child via the formal child support system and/or via contributions made directly to their child's mother. Formal payments are court or state ordered, and their amount is determined by numeric guidelines based on fathers' annual income (Garfinkel, Meyer, & McLanahan, 1998; Pirog & Ziol-Guest, 2006). These payments are typically withheld from fathers' wages and transferred directly to the custodial parent. Although most families are not required to participate in the formal child support system, some families are, including those in which the mother is receiving benefits through Temporary Assistance for Needy Families (TANF) or—in some states—the Supplemental Nutrition Assistance Program. In these cases, states often keep some or all of the child support collected on behalf of these mothers to offset the cost of these programs.

In addition to, or instead of, formal support, nonresident fathers may choose to make informal and/or in-kind contributions to their children. There is some evidence that mothers prefer informal payments to formal payments because they encourage fathers to be more involved in the child-rearing process (Edin, 1995). Studies of fathers also have revealed a

preference for informal and in-kind support because they give fathers more flexibility over how much to contribute and how often to contribute it (Edin, 1995; Edin & Nelson, 2013). Unfortunately, the data used in the present study contain limited measures of fathers' in-kind contributions. The focus of this article is therefore on fathers' formal and informal cash payments, although supplemental analyses addressed in-kind support as well.

It is likely that the association between coparenting and fathers' monetary contributions differs by the type of payment under consideration. Informal payments require fathers to be motivated to support their child and to have some contact with the mother to discuss how much money to send and where to send it. In contrast, formal child support payments are supposed to occur automatically, requiring little action from fathers and practically no communication between parents. As a consequence, coparenting may be a stronger predictor of fathers' informal payments than their formal payments, given the greater role of fathers' willingness to pay, and contact with the mother, in the former than the latter (Bartfeld & Meyer, 2003; Nepomnyaschy, 2007; Nepomnyaschy & Garfinkel, 2010). However, even within the formal child support system there exists a lot of variation in men's compliance with their orders (Bartfeld & Meyer, 2003; Grall, 2013). Thus, the strength of parents' coparental relationship may play a key role in motivating men to make this type of payment as well.

Analytic Issues

Ideally, we would want to know whether coparenting has a causal effect on fathers' payments. However, it is possible that any apparent association between coparenting and payments is driven by factors that affect them both. Such factors include parents' demographic and human capital characteristics, such as their age, race, education, health, and employment (Bartfeld & Meyer, 2003; Beller & Graham, 1993; Peterson & Nord, 1990; Teachman, 1990). The child's gender may also be relevant, given that evidence suggests nonresident fathers may be more involved with sons than with daughters (Lundberg, McLanahan, & Rose, 2007). Parents' romantic and childbearing relationships—both with each other and with new partners—may also influence coparenting and fathers' contributions (Berger, Cancian, & Meyer, 2011; Manning & Smock, 2000; Tach, Mincy, & Edin, 2010). To minimize bias in my estimates of this association, I controlled for these characteristics in my models. I also estimated models that examined how changes in coparenting are related to changes in fathers' payments within the same families over time in order to account for some unobserved heterogeneity in this association.

A second issue concerns the direction of the association between coparenting and fathers' payments. The discussion thus far has focused on why the quality of the coparental relationship may influence fathers' payments. However, the amount of money nonresident fathers provide may also influence the quality of the coparental relationship, or both of these processes may affect each other in a feedback loop. For instance, fathers' lack of payment might introduce tension into the coparental relationship, which in turn might further decrease fathers' payments. By using panel data from a large sample of families, I was able to estimate cross-lagged models that can identify reciprocal effects.

Method

Data

To conduct my analyses, I used data from the Fragile Families and Child Wellbeing Study (hereafter *Fragile Families*), a longitudinal study of 4,897 births (1,187 married and 3,710 unmarried) that occurred between 1998 and 2000 in 20 large U.S. cities (<http://www.fragilefamilies.princeton.edu/>). The weighted sample is representative of births in U.S. cities with populations over 200,000. Mothers and fathers were interviewed in the hospital within 48 hours of the focal child's birth, and follow-up interviews were conducted with parents when the child was about 1, 3, 5, and 9 years old. Among cases in which the mother completed a baseline interview, completion rates for the four follow-up surveys were 89%, 86%, 85%, and 72% for mothers and 69%, 65%, 64%, and 54% for fathers, respectively. Unfortunately, completion rates for fathers who lived apart from the mother and focal child were considerably lower than for coresident fathers; thus, I relied exclusively on mothers' reports. I discuss the robustness of my findings to my use of mothers' reports in the RESULTS section.

My sample was limited to 2,360 children in which the father lived apart from the mother and focal child at two or more follow-up waves. To be included in the analyses, mothers also had to have valid reports of fathers' formal and informal contributions and coparenting at two or more survey waves. Four hundred nine children (17.3%) did not meet these criteria and were excluded from the analyses. Of these 409 children, 317 were dropped because they did not have two or more measures of fathers' monetary contributions; 40 were dropped because they did not have two or more measures of coparenting; and 52 were dropped because, although they had the requisite number of reports on both of these measures, they were not at the same two survey waves. Finally, I excluded 199 cases (8.4%) that were missing information on one or more of the covariates in my multivariate models. Multiple imputation could not be used to deal with missing information on the covariates because the large number of categorical variables in the analysis led to a failure of model convergence (White, Royston, & Wood, 2011). A comparison of the 199 children who were dropped to the final analytic sample revealed no notable differences in terms of key sociodemographic characteristics. The final analytic sample consisted of 1,752 cases that contributed a total of 6,741 person-years to the analyses (1,752 at baseline, 937 at 1 year, 1,306 at 3 years, 1,503 at 5 years, and 1,243 at 9 years).

Measures

Fathers' monetary contributions—Nonresident fathers' monetary contributions to their child were measured from mothers' responses to a series of questions. First, I created an indicator of whether the father *had a child support order* at each survey wave, based on mothers' reports of whether she and the father had a legal agreement requiring the father to pay child support for the focal child. Mothers who responded affirmatively were then asked about the amount of child support the father had paid in the year preceding the survey (at the 5-year survey, the reference period was 2 years) or since the date the order was established or changed. At the 1- and 3-year surveys, mothers reported the dollar amount received from the father, whereas at the 5- and 9-year surveys mothers were asked whether they had

received “all,” “some,” or “none” of the amount agreed on in the child support order, and only mothers who responded “some” were asked to provide a specific amount. To deal with this inconsistency across waves, I top-coded the amounts so as not to be larger than the child support order (results were robust to the use of mothers’ unaltered reports). From this information, I created a dichotomous variable indicating whether the father had paid *any formal support* to mothers and a continuous variable measuring the average *amount of formal support* (in dollars) the father had paid each month. Because fathers without an order could not contribute formal support, in my regression models for formal support I included only fathers who had an order ($n = 1,074$).

At each follow-up wave, mothers were also asked whether the focal child’s father had given her money for the child in addition to/instead of paying formal child support (the only exception was at the 1-year survey, when 220 mothers who indicated that they had a formal child support order from the child’s father were not asked about fathers’ informal contributions). I created a dichotomous measure indicating whether the father had given *any informal support* to the mother to help with raising the focal child in the year preceding the survey (again, the reference period for the 5-year survey was 2 years). I also created a continuous variable reflecting the average *amount of informal support* (in dollars) the father had paid each month.

Finally, to assess the total package of monetary support nonresident fathers contributed to their child, at each survey wave I created a dichotomous variable indicating whether the father had paid *any support* (formal or informal) and a continuous variable indicating the *total amount of support* (in dollars) the father had paid each month.

Coparenting—The quality of parents’ coparental relationship was measured from mothers’ responses to the following 6 items: (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) “[Father] respects the schedules and rules you make for [child],” (d) “[Father] supports 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] to help you when you need someone to look after [child] for a few hours.” At the 3-, 5-, and 9-year surveys, responses were measured on a 4-point scale (1 = “always true,” 2 = “sometimes true,” 3 = “rarely true,” and 4 = “never true”), whereas at the 1-year survey they were measured on a 3-point scale (1 = “always true,” 2 = “sometimes true,” 3 = “rarely/never true”). To keep the measures consistent across waves, I combined the third and fourth response categories at the later surveys into one category reflecting *rarely/never true*. I then reverse-coded and took the average of all six items to create a single measure of coparenting quality that ranged from 1 (*low quality*) to 3 (*high quality*; $\alpha = .87$ at 1 year, .88 at 3 years, .87 at 5 years, and .89 at 9 years). Mothers who indicated that the father had not seen the focal child since the previous survey (or in the previous year, at the 9-year survey) were not asked about the quality of their coparental relationship. I retained these 410 cases (1,802 person-year observations) in my analyses by assigning them the lowest value on coparenting and including a flag in my regression models. Supplemental analyses (available on request) indicated that my results were largely the same if I excluded these cases or if I re-ran the analyses using a categorical measure of coparenting with categories for “no coparenting” if the father had not seen the

child, “low-quality coparenting” if coparenting was at or below the sample mean, and “high-quality coparenting” if coparenting was above the sample mean.

Controls—Finally, I controlled for several variables in my multivariate models in order to account for factors that may be related to the quality of parents’ coparental relationship and fathers’ likelihood of providing financial assistance to their child. These included *mothers’ and fathers’ ages* at the focal child’s birth (in years), *mothers’ race/ethnicity* (non-Hispanic White, non-Hispanic Black, Hispanic, or other), whether the mother was a different race/ethnicity than the father, mothers’ educational attainment (less than high school, high school/some college, bachelor’s degree or higher), whether the father had higher educational attainment than the mother, children’s gender, parents’ marital status at the focal child’s birth, and *whether parents had any other children together*. All of these variables were measured at baseline except for whether parents had any other children together, which was measured at the first wave in which the family appeared in my data (i.e., after the father began living apart from the mother).

I also controlled for several time-varying items from each of the follow-up surveys. These included whether parents were in a romantic relationship with each other, the number of months that had passed since the end of parents’ romantic relationship, mothers’ poverty status, and whether *mothers were receiving TANF benefits*. I also included self-reports of *mothers’ risk of depression*—indicated by the Composite International Diagnostic Interview—Short Form (see www.hcp.med.harvard.edu/wmhcdi/)—and *mothers’ physical health* on a scale that ranged from 1 (*poor*) to 5 (*excellent*). *Mothers’ employment* was measured by the total number of hours worked in the past week. I also controlled for whether *mothers were living with a romantic partner* and whether mothers had children with someone other than the focal child’s father. Finally, mothers provided information about whether the focal child’s *father was currently employed*, whether the *father was living with a romantic partner*, and whether the *father had kids with another partner*. Mothers’ responses to these items included “yes,” “no,” and “don’t know.”

Analytic Strategy

Descriptive statistics—I first present descriptive information on the independent and control variables, followed by information on fathers’ monetary contributions. Payments were adjusted to reflect 2010 dollars. City sampling weights were used for the descriptive statistics but not for the regression models because they included the variables for which the weights adjust.

Regression models—I used four types of regression models to examine the association between fathers’ monetary contributions and the quality of parents’ coparental relationship. These models can be divided into two categories: (a) pooled regression models and (b) fixed effects models. Pooled regression models use both between- and within-family variation to estimate the associations of interest. As such, they address the question of whether fathers provided more monetary support in families that displayed higher levels of coparenting. I used logistic regression models to assess the associations between coparenting and the dichotomous outcome variables and ordinary least squares (OLS) models to assess the

association between coparenting and the continuous outcome variables. To account for positive skew in the amount of fathers' payments, a log transformation was applied (to deal with fathers without payments, \$1 was added before taking the log). All of these models included all of the time-constant and time-varying covariates. Standard errors were adjusted to account for repeated observations over time.

Although the large number of covariates included in these pooled regression models accounted for many factors that could be driving the association between coparenting and fathers' monetary contributions, the estimates could still be biased by unobserved differences across families. To account for this heterogeneity, I also ran fixed effects models. Fixed effects models use only within-family variation and thus address the question of whether changes in fathers' payments were associated with changes in coparenting *within the same families over time*. In this way, these models control for observed and unobserved, time-invariant factors. For the dichotomous outcome variables, I ran conditional logit models, whereas for the continuous outcome variables I ran standard fixed effects models (again, the amount of payments was log transformed). These models included all of the time-varying covariates; time-constant covariates cannot be included in the estimation of fixed effects models.

Cross-lagged structural equation models—Finally, to account for the possibility of reciprocal effects, I used cross-lagged structural equation models (Finkel, 1995). These models allowed me to estimate the extent to which coparenting at an earlier point in time ($t1$) affected fathers' monetary contributions at a later point in time ($t2$), over and above the effect of fathers' payments at $t1$ on coparenting at $t2$. These models also controlled for the lagged association of each variable, their correlation at $t1$, their disturbance correlation at $t2$, and the covariates (measured at baseline or $t1$). For each type of payment (total, formal, and informal), I estimated separate models for the association between coparenting and payments between 1 year and 3 years, 3 years and 5 years, and 5 years and 9 years, resulting in a total of nine cross-lagged models. To simplify the estimation of these models and interpretation of the results, I used only the continuous (logged transformed) versions of each payment variable. The sample for each model consisted of cases with complete information at both survey waves.

Results

Descriptive Results

Descriptive information for the time-constant covariates is presented in Table 1. I highlight select information about the sample here. On average, mothers and fathers were young—24 and 27 years old, respectively—at the time of the focal child's birth. The vast majority of mothers were non-Hispanic Black or Hispanic and had a high school education or less. Only 16% of parents were married when the focal child was born, and 36% had other children together by the time their relationship ended.

Turning to the time-varying covariates (see Table 2), I observed that the quality of parents' coparental relationship diminished over time. This was largely due to an increase in the percentage of fathers who had no contact with the focal child because these observations

were assigned the lowest value on coparenting. About half of mothers were living below the poverty line at each survey. The percentage of mothers who lived with or had a child with another partner increased over the course of the study. At 1 year, 11% of mothers lived with another partner and 37% had a child with another partner; by 9 years these figures had increased to 42% and 68%, respectively. The percentage of mothers who stated that the father was employed decreased from 54% at 1 year to 33% at 9 years, and the percentage of mothers who stated that they did not know the fathers' employment status increased from 15% to 42%. The percentage of fathers living with another partner increased from 19% at 1 year to 41% at 9 years, and the percentage of fathers who had children with another partner increased from 48% at 1 year to 67% at 9 years.

A summary of fathers' monetary contributions to the focal child is provided in Table 3. The percentage of fathers contributing any support decreased over the study from about 63% at 1 year to 48% at 9 years. The average amount of support paid was generally between \$110 and \$120 per month, although this figure was slightly higher (\$154/month) at 3 years.

The bottom section of Table 3 separates these payments into formal and informal support. Looking at formal support, one sees that only a small fraction of fathers contributed formal support at 1 year (10%) and, on average, they paid less than \$20 each month. At 9 years, over 30% of fathers in the sample contributed some formal support, and they paid an average of \$79 each month. One obvious reason for this increase was the rise in the percentage of fathers with a child support order. At the 1-year survey, only 16% of mothers reported that they had a legal order requiring the father to pay child support; by the 9-year survey, 64% of mothers reported that they had an order. Of the fathers who had an order, the percentage who paid remained fairly stable, ranging from roughly 50% to 60%. In contrast, the average amount of formal support paid by these fathers varied somewhat over the survey period, from a low of \$116 per month at 1 year to a high of \$191 per month at 3 years. Additional analyses (not shown) indicated that this jump in formal payments at 3 years was largely due to fathers entering the sample who were married at the focal child's birth. These fathers not only contributed more child support than unmarried fathers, but they were also weighted more heavily in the Fragile Families data.

Fathers' provision of informal support declined substantially over the study period. At 1 year, 53% of mothers reported that the father had paid any informal support to assist with raising the focal child. This figure was even higher (63%) if I considered only those mothers who did not have a formal child support order and were therefore asked about fathers' payments at 1 year. By 9 years, less than 25% of mothers reported receiving informal payments from the father. The amount of informal support paid by fathers also decreased as the focal child got older. At 1 year, mothers reported receiving \$97 per month (\$116 for mothers who were asked about informal payments at 1 year). By 9 years, this figure had declined to \$38 per month.

Regression Results

The primary aim of this research was to examine whether coparenting is related to nonresident fathers' monetary contributions. Results from the regression models for the outcome of fathers' total payments are displayed in Table 4. Looking first at whether fathers

provided any payment, the results from the pooled logistic regression model indicate that a one-unit increase in coparenting was associated with a 129% increase in the odds of fathers' payment. This association was also strong in the conditional logit model, where a one-unit increase in coparenting was associated with a 160% increase in the odds of fathers' payment. Taken together, the results from these two models indicate that higher levels of coparenting were associated with higher odds of payment not only across all families in the sample but also within families that experienced a change in fathers' payments. This suggests that unobserved heterogeneity was not driving the association between the quality of parents' coparental relationship and fathers' likelihood of providing for their child.

In regard to the logged amount of fathers' payments, the results from the pooled OLS model suggest that, across all families in the sample, a one-unit increase in coparenting was associated with an increase of 1.00 in fathers' log monthly payments, which is equivalent to an increase of $\exp(1.00) = 172\%$ per month. In the fixed effects model, which considered only changes within families over time, a one-unit increase in coparenting was associated with a 0.96-increase in log monthly payments, or an increase of $\exp(0.96) = 161\%$ per month. Although a one-unit increase in coparenting was very large (1.3–1.4 *SD* units), the magnitude of these coefficients implies that even much smaller increases in coparenting would still produce substantial increases in payments (for instance, a 0.5-*SD* increase in coparenting would be associated with about a 60%–65% increase in payments). Moreover, research suggests that a sizable minority of unmarried parents do actually experience improvements in coparenting over time on the order of a full standard deviation or more (Goldberg & Carlson, 2014).

A number of covariates also predicted fathers' monetary contributions. The strongest predictor was fathers' employment. In the pooled regression models, fathers who were employed had over three times greater odds of contributing financially than those who were not, and contributed $\exp(1.48)$, or 339%, more per month. These coefficients were cut approximately in half in the conditional logit and fixed effects models, but they remained statistically significant. Some additional factors that were positively associated with payments included parents' educational attainment, being married at the focal child's birth, being in a romantic relationship, the number of months that had passed since end of the relationship, mothers' physical health, and fathers' coresidence with another partner. Some factors that were negatively related to fathers' payments included mothers' participation in TANF and having a child with another partner. Fathers who had not seen the focal child since the previous survey were also less likely to support their child.

In Table 5 I disaggregate fathers' monetary contributions into the separate outcomes of formal and informal support. Looking first at the models for formal support, one sees that coparenting was negatively associated with fathers' likelihood of having a child support order; a one-unit increase in the quality of parents' coparental relationship was associated with a 30%–32% decrease in the odds that fathers had a child support order (this association was statistically significant only in the pooled regression model). Among fathers who had an order, coparenting was positively associated with both the likelihood and the amount of payments: A one-unit increase in coparenting about doubled the odds that fathers paid any formal child support in both types of regression models. With regard to the amount of these

payments, in both models a one-unit increase in coparenting predicted an increase of about $\exp(0.70)$, or 100%, in the amount fathers paid per month.

Coparenting was an even stronger predictor of fathers' informal payments. In the pooled logistic regression model, a one-unit increase in coparenting nearly tripled the odds that fathers provided informal support; this coefficient was reduced in the conditional logit model, but it remained statistically significant. In regard to the amount of fathers' payments, in the pooled OLS model a one-unit increase in coparenting was associated with an increase of $\exp(1.14)$, or 213%, per month; in the fixed effects model it was associated with an increase of $\exp(0.96)$, or 161%, per month. Despite the fact that a one-unit increase in coparenting was quite large, these results indicate that coparenting was associated with a sizable increase in fathers' payments—particularly their informal payments.

Cross-Lagged Structural Equation Results

The results from the cross-lagged models are displayed in Table 6. The purpose of this analysis was to test for the existence of reciprocal effects. For the outcomes of fathers' total payments and informal payments, I found consistent evidence of a reciprocal association; at all three time periods higher levels of coparenting at $t1$ were associated with higher levels of payments at $t2$, and higher levels of payments at $t1$ were associated with higher levels of coparenting at $t2$. For the outcome of fathers' formal payments, payments appeared to be a stronger predictor of coparenting than vice versa, except between Years 5 and 9, where I again found evidence of a reciprocal association. Nevertheless, it is important to note that the magnitude of the effect of payments on coparenting was very small (in all of the models, a 100% increase in payments was associated with less than a 0.05-unit increase in coparenting). In contrast, a one-unit increase in coparenting was associated with a more meaningful increase in payments (between $\exp[0.17]$ and $\exp[0.59]$, or between 18% and 80%). Thus, although the cross-lagged models supported the existence of reciprocal effects, when considered in more substantive terms, coparenting appeared to matter more for fathers' payments—particularly their informal payments—than vice versa.

Supplemental Analyses

Finally, I ran a number of supplemental analyses to examine the sensitivity of these results to various analytic choices. First, I reran the OLS models as Tobit models to account for the large number of fathers who did not provide any payments. The marginal effects of coparenting on payments from the Tobit regressions were in the same direction and slightly larger than the estimates from the OLS regressions, suggesting that, if anything, my main results may have been too conservative. Second, to account for the possibility that fathers' perception of the coparental relationship had different implications than mothers' perception of this relationship for fathers' monetary support, I reran my analyses using fathers' reports of coparenting for the subset of interviewed fathers ($N = 900$). The findings indicated that fathers' reports were positively related to their provision of informal support and negatively related to the likelihood of having a child support order; however, they were not associated with their formal child support payments. This suggests that mothers may be more likely than fathers to take fathers' formal child support payments into consideration when evaluating the coparental relationship. Unfortunately, nonresident fathers were not asked

about their monetary contributions at the 3- or 5-year surveys, making it impossible to rerun the analyses using fathers' reports of payments.

Third, I examined whether the association between coparenting and fathers' in-kind support followed the same pattern as their monetary contributions. At each survey wave, mothers were asked how often in the year prior to the interview fathers purchased certain items for the child, such as clothes, toys, or food. Response options included "often," "sometimes," "rarely," and "never." I coded mothers as having received in-kind support if they stated that fathers had provided any item "often" or "sometimes" (46% of observations met this criterion). The results from logistic and conditional logit models (including all controls) indicated that a one-unit increase in coparenting was associated with over a seven times greater odds of fathers providing in-kind support. Although it would have been preferable to have more information on the amount of this support, these results suggest that coparenting is positively associated with fathers' in-kind contributions.

Discussion

This study makes an important contribution to our understanding of how interpersonal relationships are related to nonresident fathers' monetary support of their children—an aspect of parental investment that is critical for children's development and well-being. Using data from the Fragile Families study, I examined the association between coparenting and fathers' likelihood of contributing financially to their child in the 9 years following their child's birth, and the amount of these payments. A key strength of these data is that they allowed me to disaggregate fathers' total payments into formal and informal support in order to see how these two outcomes were related to coparenting. Also notable is that the data set's longitudinal design made it possible to account for some unobserved heterogeneity across families and to test for reciprocal effects.

The findings strongly support the hypothesis that the quality of parents' coparental relationship matters for nonresident fathers' financial support. For the outcome of fathers' total payments, results from logistic regression and OLS models indicated that, across families, higher levels of coparenting were associated with much higher odds of paying and higher payment amounts. Results from conditional logit and fixed effects models indicated that, within the same families over time, increases in coparenting were associated with sizable increases in the likelihood and amount of payments. By removing some unobserved heterogeneity across families, these latter models provide more robust evidence of a causal relationship between coparenting and payments. These results are consistent with previous research that has examined the relationship between coparenting and nonresident fathers' contact and engagement with their child (Carlson et al., 2008; Sobolewski & King, 2005). Just as a high-quality coparental relationship appears to encourage fathers' physical and emotional involvement in their child's life, it also appears to be positively related to their financial support.

Separating fathers' total payments into formal and informal support revealed some notable differences by payment type; specifically, the results indicated that coparenting was negatively related to fathers' likelihood of having a child support order. In contrast, among

fathers who had an order, coparenting was positively related to their likelihood of making formal payments and to the amount of these payments. Finally, coparenting was positively associated with fathers' likelihood of making informal payments and to the amount of these payments, and these associations were even stronger than those for formal support.

These findings make sense in light of evidence that mothers and fathers tend to prefer informal support to formal support (Edin & Lein, 1997; Edin & Nelson, 2013), and they may help explain previous research that has found that nonresident fathers' informal payments are often replaced by formal payments over time (Nepomnyaschy & Garfinkel, 2010). As the quality of the coparental relationship deteriorates as more time passes since the end of the romantic relationship, so too does fathers' informal support of their child. When this happens, mothers may have little choice but to get a court order to compel fathers to contribute. In turn, mothers' decision to obtain an order may cause the coparental relationship to deteriorate further. Given this process, it may seem surprising that coparenting was positively related to formal payments among fathers who had a child support order. Moreover, the formal child support system is supposed to be highly automatized and should leave little room for coparenting to influence payments. However, in reality there exists a great deal of variation in men's compliance with their child support orders (Grall, 2013). The results of this study suggest that once an order has been established, parents' ability to maintain a supportive coparental relationship encourages men's continued support of their child. Nevertheless, given men's greater discretion about whether to make payments outside of the formal system, it is no surprise that coparenting is a stronger predictor of their informal payments.

Finally, the cross-lagged models provide a test of the causal direction of these associations. In general, the results of these analyses suggested that coparenting and fathers' payments were reciprocally related. However, the magnitude of these associations was such that increases in fathers' payments produced little noticeable difference in the quality of the coparental relationship, whereas increases in the quality of parents' coparental relationship produced meaningful increases in fathers' payments. Again, this finding is consistent with research that has looked at the direction of the association between coparenting and nonresident fathers' engagement with their child (Carlson et al., 2008). Previous work has also uncovered evidence of a reciprocal relationship between nonresident fathers' contact and their monetary contributions (Nepomnyaschy, 2007). Given these linkages, future research might usefully investigate the nature of the relationship among coparenting, engagement, and economic support. Examining these three constructs together may help illuminate the process by which some nonresident fathers come to contribute high levels of time and money to their children's development, whereas others contribute little or nothing at all (Garasky et al., 2010).

Readers should be aware of a number of limitations when interpreting the results of this study. First, the analyses relied exclusively on mothers' reports. Sensitivity analyses using fathers' reports of coparenting revealed that many—but not all—of the key findings were robust to the choice of reporter. Furthermore, the use of mothers' reports of fathers' payments meant that this measure really captured mothers' receipt of payments rather than payments themselves. Although in most cases the amount of money fathers paid and

mothers received should have been equal, in some cases, such as for mothers participating in TANF or for fathers paying arrears on top of their monthly orders, it would not have been. Second, although the fixed effects models accounted for time-constant, unobserved factors that might have been driving the associations between coparenting and fathers' payments, the results could still have been biased by unobserved characteristics that changed over time, such fathers' short-term unemployment or residential mobility. Third, the time lags between waves were long (2–4 years), which may have downwardly biased the estimates from the cross-lagged structural equation models. Fourth, the sample represented a disadvantaged group of families. Future work should examine whether the results of this study are generalizable to divorced and higher income families.

In sum, the present study offers evidence that the quality of the coparental relationship is intricately related to nonresident fathers' monetary contributions to their children. The results suggest that coparenting is positively associated with fathers' formal and informal child support payments but negatively associated with fathers' having a child support order. Although associations between coparenting and payments appear to be reciprocal, the effect of coparenting on fathers' payments is larger than the effect of fathers' payments on coparenting. These findings underscore the potential efficacy of programs to enhance the quality of parents' coparental relationship as a means of encouraging nonresident fathers' economic support. Such coparenting interventions have been shown to be moderately successful among parents following divorce (Emery, Sbarra, & Grover, 2005). Although poor, unmarried parents face a number of additional structural and interpersonal barriers to effective coparenting, these divorce interventions may offer a useful starting point for strengthening coparenting among all nonresident parents—a goal that is critical for protecting the well-being of this at-risk population of children.

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Table 1
Descriptive Statistics for Time-Constant Characteristics

Characteristic	<i>M</i> or %	<i>SD</i>
Age at focal child's birth		
Mother (<i>M</i> , in years)	23.84	5.65
Father (<i>M</i> , in years)	26.70	7.63
Mother's race/ethnicity		
White	14.1	
Black	61.2	
Hispanic	22.3	
Other	2.4	
Mother is different race than father	19.4	
Mother's education		
Less than high school	34.3	
High school or some college	61.7	
Bachelor's degree or higher	4.0	
Mother has less education than father	23.5	
Focal child is a boy	53.2	
Parents married at focal child's birth	15.7	
Parents have other children together	36.4	

Note. Unweighted $N = 1,752$. All variables are based on mothers' reports and weighted by city sampling weights.

Table 2

Descriptive Statistics for Time-Varying Characteristics

Characteristic	Years after focal child's birth									
	1 year		3 years		5 years		9 years			
	<i>M</i> or %	<i>SD</i>	<i>M</i> or %	<i>SD</i>	<i>M</i> or %	<i>SD</i>	<i>M</i> or %	<i>SD</i>		
Coparenting (<i>M</i> , range: 1–3)	2.16	0.70	1.83	0.74	1.81	0.75	1.69	0.75		
Father did not see child since previous survey ^a	8.8		23.7		29.6		38.3			
Parents in a romantic relationship	14.9		5.3		3.6		4.1			
Time since relationship ended (<i>M</i> , in months)	8.17	6.11	22.51	11.62	40.32	18.80	82.44	28.09		
Mother below poverty line	57.7		54.1		54.2		48.0			
Mother receiving TANF benefits	40.5		30.0		31.3		16.3			
Mother's depression	12.5		16.3		11.2		11.9			
Mother's physical health (<i>M</i> , range: 1–5)	3.88	1.08	3.73	1.11	3.57	1.06	3.56	1.09		
Mother's hours worked last week (<i>M</i> , in hours)	18.90	20.27	21.88	19.77	21.35	20.70	23.47	19.85		
Mother lives with other partner	10.5		20.8		30.7		42.2			
Mother has kids with other partner	37.3		47.4		57.8		68.2			
Father is employed										
Yes	54.4		46.2		39.6		33.3			
No	31.2		35.5		22.0		24.4			
Don't know	14.5		18.2		38.4		42.3			
Father lives with other partner										
Yes	18.7		27.1		30.2		40.7			
No	71.5		56.8		46.0		40.0			
Don't know	9.8		16.1		23.8		19.3			
Father has kids with other partner										
Yes	47.5		52.5		58.3		66.5			
No	48.4		38.2		33.1		25.4			
Don't know	4.1		9.2		8.6		8.2			
Unweighted <i>N</i>	937		1,306		1,503		1,243			

Note. N_s represent the number of observations contributed at each survey wave by the 1,752 families in the sample. All variables are based on mothers' reports and weighted by city sampling weights.
TANF = Temporary Assistance for Needy Families.

μ At the 9-year survey, mothers were asked whether fathers saw the focal child in the previous year (rather than since the previous survey).

Table 3

Descriptive Statistics for Fathers' Monetary Contributions

Contribution	Years after focal child's birth									
	One year		Three years		Five years		Nine years			
	M or %	SD	M or %	SD	M or %	SD	M or %	SD		
Total payments (all fathers)										
Any payments (%)	62.8		52.6		47.9		48.3			
Amount of payments (\$)	116.10	202.89	153.86	346.75	113.75	213.54	116.18	216.65		
Formal child support payments										
Any payment (all fathers, %)	10.0		20.7		20.9		31.5			
Amount of payments (all fathers, \$)	19.11	80.45	61.90	172.95	50.11	148.60	78.62	178.39		
Has a child support order (all fathers, %)	16.4		32.4		36.2		63.7			
Any payment (fathers w/child support order, %)	60.0		63.7		57.9		49.4			
Amount of payments (fathers w/child support order, %)	116.39	201.06	190.77	296.56	138.56	255.34	123.40	220.54		
Informal payments (all fathers)										
Any payment (%)	52.9 ^a		36.5		33.5		24.3			
Amount of payments (\$)	96.98 ^a	195.97	91.96	311.04	63.64	167.67	37.57	123.82		
Unweighted N										
All fathers	937		1,306		1,503		1,243			
Fathers w/child support order	220		549		722		867			

Note. Ns represent the number of observations contributed at each survey wave by the 1,752 families (1,074 families with a child support order) in the sample. All variables are based on mothers' reports and weighted by city sampling weights. Payments have been adjusted to reflect 2010 dollars. Amount of payments reflect monthly figures.

^a At the 1-year survey, mothers who indicated they had a child support order from the father were not asked about fathers' informal support. Of the mothers who were asked about fathers' informal support at the 1-year survey ($n = 717$), 63.3% indicated that the father had contributed any support, and the average amount of support contributed was \$116.04 per month.

Table 4
Regression Models of Nonresident Fathers' Total Payments on Coparenting

Predictor	Any payment (odds ratios)			Log amount of payment			
	Pooled logistic regression model		Conditional logit model	Pooled OLS model		Fixed effects model	
	exp(β)	z	exp(β)	z	β	t	t
Coparenting	2.29***	12.86	2.60***	8.53	1.00***	16.05	0.96***
Mother's age	1.00	0.23			0.00	0.36	
Father's age	1.00	-0.33			0.00	0.19	
Mother's race/ethnicity (ref.: White)							
Black	0.81 [†]	-1.67			-0.20 [†]	-1.62	
Hispanic	0.78 [†]	-1.73			-0.14	-0.98	
Other	0.69	-1.45			-0.18	-0.73	
Mother is a different race than father	0.99	-0.08			0.04	0.35	
Mother's education (ref.: less than high school)							
High school/some college	1.21*	1.94			0.26**	2.95	
Bachelor's degree or higher	1.35	1.33			0.48*	2.07	
Mother has less education than father	1.16	1.47			0.21*	2.17	
Focal child is a boy	0.89	-1.46			-0.10	-1.46	
Parents married at focal child's birth	1.28	1.40			0.47**	2.60	
Parents have other children together	0.91	-1.16			-0.04	-0.55	
Father did not see child since previous survey	0.50***	-6.14	0.86	-0.84	-0.43***	-4.28	0.03
Mother in a romantic relationship with father	1.91***	3.74	2.78***	4.21	0.63***	4.58	0.77***
Time since relationship ended	1.00**	2.46	1.00	0.57	0.01	5.82	0.01***
Mother below poverty line	0.98	-0.25	0.97	-0.25	-0.16*	-2.30	-0.03
Mother receiving TANF benefits	0.68***	-4.69	0.74*	-2.26	-0.38***	-5.32	-0.21*
Mother's depression	1.02	0.22	1.19	1.14	0.10	1.08	0.21*
							1.98

Predictor	Any payment (odds ratios)				Log amount of payment			
	Pooled logistic regression model		Conditional logit model		Pooled OLS model		Fixed effects model	
	exp(β)	z	exp(β)	z	β	t	β	t
Mother's physical health	1.08 *	2.22	1.10 [†]	1.65	0.09**	2.81	0.08 [†]	1.85
Mother's hours worked last week	1.00	-0.04	1.00	-0.04	0.00	0.08	-0.00	-0.57
Mother lives with other partner	1.01	0.14	0.90	-0.82	-0.02	-0.26	-0.09	-1.04
Mother has kids with other partner	0.77***	-3.22	0.95	-0.30	-0.32***	-4.28	-0.07	-0.60
Father is employed (ref.: no)								
Yes	3.26***	13.95	1.95***	5.02	1.48***	18.09	0.78***	8.18
Don't know	0.98	-0.25	0.94	-0.47	-0.05	-0.57	-0.04	-0.39
Father lives with other partner (ref.: no)								
Yes	1.48***	4.38	1.25 [†]	1.65	0.40***	4.87	0.21 *	2.20
Don't know	0.99	-0.12	1.16	0.83	0.06	0.61	0.11	0.96
Father has kids with other partner (ref.: no)								
Yes	0.91	-1.09	1.00	0.02	-0.14 [†]	-1.73	0.04	0.25
Don't know	0.94	-0.40	0.77	-1.03	-0.17	-1.22	-0.17	-0.96
N	1,752		811 ^a		1,752		1,752	
Number of person-year observations	4,989		2,474 ^a		4,989		4,989	

Note. Payments have been adjusted to reflect 2010 dollars. ref. = reference category; TANF = Temporary Assistance for Needy Families.

^a Sample size was reduced because cases with no change on the dependent variable were dropped from the model.

[†] p .10.

* p .05.

** p .01.

*** p .001.

Table 5
Regression Models of Nonresident Fathers' Formal and Informal Payments on Coparenting

Predictor	Formal payments						Informal payments			
	Has an order (odds ratios)		Any payment (odds ratios)		Log amount of payments		Any payment (odds ratios)		Log amount of payments	
	exp(β)	z	exp(β)	z	β	t	exp(β)	z	β	t
Pooled regression models ^a	0.70***	-5.09	1.97***	6.84	0.73***	8.15	2.94***	15.28	1.14***	19.73
Fixed effects models ^a	0.68	-1.51	2.25***	4.22	0.70***	5.31	2.52***	7.95	0.96***	14.30
N	1,752 ^b		1,074 ^{b,c}		1,074 ^c		1,752 ^b		1,752	
Number of person-year observations	4,989 ^b		2,358 ^{b,c}		2,358 ^c		4,989 ^b		4,989	

Note. All models control for the full set of covariates. Payments have been adjusted to reflect 2010 dollars.

^a Pooled logistic regression and conditional logit models were used for dichotomous outcome variables, and pooled ordinary least squares and fixed effects models were used for continuous outcome variables.

^b Sample size is reduced in conditional logit models for dichotomous outcomes because cases with no change on the dependent variable were dropped from the model. $N = 588$ (person-year observations = 1,796) for outcome of whether father has an order. $N = 347$ (person-year observations = 962) for outcome of formal support, and $N = 809$ (person-year observations = 2,455) for outcome of informal support.

^c Sample size is reduced because only fathers with a child support order were included in these models.

p .001.

Table 6
Cross-Lagged Structural Equation Models of Coparenting and Fathers' Payments

Model	Total payments		Formal payments		Informal payments	
	β	t	β	t	β	t
	1 year–3 years					
Coparenting → log payments	0.24 [†]	1.88	−0.17	−0.67	0.57***	5.44
Log payments → coparenting	0.06***	5.82	0.05**	2.92	0.03**	3.05
N	763		198		763	
Model fit	$\chi^2(55) = 159.37^{***}$, RMSEA = .05, CFI = .92		$\chi^2(55) = 91.98$, RMSEA = .06, CFI = .88		$\chi^2(55) = 109.59^{***}$, RMSEA = .04, CFI = .95	
	3 years–5 years					
Coparenting → log payments	0.17 [†]	1.62	0.20	1.35	0.39***	4.44
Log payments → coparenting	0.03***	3.30	0.03**	2.57	0.03***	3.70
N	1,137		471		1,137	
Model fit	$\chi^2(55) = 131.65^{***}$, RMSEA = .04, CFI = .96		$\chi^2(55): 102.70^{***}$, RMSEA = .04, CFI = .94		$\chi^2(55): 111.72^{***}$, RMSEA = .03, CFI = .97	
	5 years–9 years					
Coparenting → log payments	0.42***	4.11	0.38**	2.55	0.59***	7.91
Log payments → coparenting	0.04***	5.09	0.04***	3.72	0.02**	2.52
N	1,119		590		1,119	
Model fit	$\chi^2(55) = 178.18^{***}$, RMSEA = .05, CFI = .94		$\chi^2(55) = 128.86^{***}$, RMSEA = .05, CFI = .93		$\chi^2(55) = 111.50^{***}$, RMSEA = .03, CFI = .97	

Note. Payments have been adjusted to reflect 2010 dollars. Models for “total payments” and “informal payments” include all fathers who were present in both survey waves, whereas models for “formal payments” include fathers with a child support order who were present in both survey waves. All models include controls for time-constant covariates and those time-varying covariates measured at Time 1. RMSEA = root-mean-square error of approximation; CFI = comparative fit index.

[†]
 $p < .10$.

**
 $p < .01$.

 $p < .001$.