RESIDENTIAL FATHER FAMILY TYPE AND CHILD WELL-BEING: INVESTMENT VERSUS SELECTION*

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This research links residence with biological and nonbiological married and unmarried parents to the cognitive achievement and behavioral problems of children aged 3–12, controlling for factors that make such families different. The data were drawn from the 1997 Child Development Supplement to the Panel Study of Income Dynamics. Achievement differences were not associated with father family structure per se, but with demographic and economic factors that differ across families. In contrast, behavioral problems were linked to family structure even after controls for measured and unmeasured factors were included. Children in all family types except the married-biological-parent family showed higher levels of behavioral problems. Paternal and maternal engagement time explained some of the differences in behavioral problems across families. Although children in blended families tended to achieve at lower levels than those not in blended families, stepchildren in blended families achieved at levels comparable to those of half-siblings. Finally, children in blended families tended to have fewer behavioral problems than those not in blended families.

Children who do not reside with their married biological father and mother are almost always worse off financially and have a higher risk of high school dropout and teen births than children who do (McLanahan and Sandefur 1994). Yet the family structures of the former are heterogeneous. Although the majority of children who do not live with both parents experienced parental divorce, almost one out of three children was *born to* an unmarried woman. Because rates of remarriage and repartnering are high (Fields 2001; Kreider and Fields 2002; Teachman, Tedrow, and Crowder 2000), children today are increasingly likely to live in two-parent families in which they are not the biological children of the mother's new partner (Coleman, Ganong, and Fine 2000; Hogan and Goldscheider 2001), and many of these parents will cohabit rather than marry. In 1996, about 69% of children were living with two married parents, and four out of five of these married couples were biological parents. In contrast, 28% of all children were living with an unmarried parent; only about half of these children were living with both biological parents (Fields 2001). The well-being of children who are not reared solely by biological parents increasingly depends upon the behavior of stepfathers, stepmothers, and father figures in their lives.

Just as has family formation, fathering behavior has changed. Recent cohorts of men, many of whom are not biological fathers, show active interest in their partners' children and spend time with them (Marsiglio 2004; Sandberg and Hofferth 2001). In spite of these changes, much recent public policy and research focuses on the biological father rather than the father with whom children actually live. It is assumed that increasing the involvement of the biological father has the biggest payoff. However, this may not be a realistic goal because involvement of the nonresidential biological father tends to decline over time (Fragile Families and Child Wellbeing 2000). Improving the relationship of residential nonbiological fathers and father figures with children may be more effective in improving child well-being. It is, therefore, important to understand the implications of the involvement of various types of residential fathers for children's achievement and behavior.

Most research has examined the relationship between the mother-child relationship and child development. Instead, this paper examines differences in child achievement and

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behavior according to the child's relationship to the residential father or prospective father figure. Although nonresidential fathers may also be involved in children's lives, their participation will be lower because they do not live with the child. In addition, because substantial research has established the fact that children living without a residential father fare more poorly than those living with one, this paper does not need to revisit that issue. The paper focuses, first, on whether, relative to living with two married biological parents, children living with (a) two unmarried biological parents, (b) the biological mother and the child's stepfather, (c) the biological mother and her unmarried partner, (d) the biological father and the child's stepmother, or (e) a single father score lower on tests of achievement and higher on indices of behavioral problems. Second, it tests predictions regarding how child well-being depends upon the time parents invest in their children. This study uses nationally representative data on time with mothers and fathers drawn from 24-hour time diaries of child activities rather than from respondent-recalled estimates. Third, it examines whether men who are stepfathers or cohabiting partners differ in observed and unobserved ways from men who raise biological children in a marital union, and whether those differences, rather than something about the stepfamily or cohabiting family itself, lead to differences in child achievement and behavior. The contributions of this research to understanding differences in child outcomes are that it examines the links between residential father family type and the achievement and behavior of children from early to middle childhood; examines mediating factors; separates cohabiting from married fathers; includes extensive controls for characteristics of the father, mother, and family; and compares siblings within and across families.

BACKGROUND

Family Structure and Child Well-being

Children who have not developed cognitive skills or learned how to get along with others achieve at lower levels in school and have more behavioral problems than their peers, putting them at high risk of school drop out and later economic disadvantage (Guo 1996; Rumberger 1987). Thus, these are important potential child development outcomes.

Achievement. Research that has examined the association between father family structure and child achievement has generally found children living with stepparents to be more likely to drop out of high school than children living with two biological parents (Astone and McLanahan 1991; McLanahan and Sandefur 1994). However, research has not found a consistent association between father family type and academic performance. Thomson, Hanson, and McLanahan (1994) found no association between living in a mother-stepfather family and grades of children aged 5–11, although Cooksey and Fondell (1996) and Hanson, McLanahan, and Thomson (1996) found an association with a child's class ranking in school. Surprisingly few studies have examined differences in test scores among children who live in different father family types in early and middle childhood. A comparison of 10 research studies (Amato and Keith 1991) found the average effect of living in a stepfamily compared with a two-biological-parent family on academic achievement to be quite weak—less than one-tenth of a standard deviation.

Of the few studies that have been conducted on cohabiting families, Thomson et al. (1994) found an association between living in a mother-partner family and lowered school grades. In this conceptualization, a "partner" was the nonbiological father of the child, basically an unmarried stepfather. Unmarried biological couples were omitted from the analysis. No prior research has compared the academic achievement of children of biological and nonbiological cohabiting fathers with that of married biological parents.

Behavioral problems. In contrast, research has consistently found increased behavioral problems among children in stepfather families (Amato and Rivera 1999; Dunn et al. 1998; Hanson et al. 1996; Hetherington and Clingempeel 1992; Thomson et al. 1994; Zill,

Morrison, and Coiro 1993). The effect size over a set of 12 studies was about one-third of a standard deviation (Amato and Keith 1991). Behavioral problems do not manifest themselves in all circumstances, however. Hanson et al. (1996) found that children in low-conflict stepfather families had levels of behavioral problems similar to those in two-biological-parent households.

Few studies have examined behavioral problems among children of unmarried parents, and fewer still have distinguished between biological and nonbiological unmarried parents. Recent research has found that behavioral problems of children living with unmarried biological parents are greater than those of children living with married biological parents and similar to the behavioral problems of children living with the mother and her partner (Brown 2004). The present research distinguishes biological and nonbiological relationships of children to the parents with whom they reside.

Father Family Structure and Parental Investment

Father family structure is not expected to directly cause achievement and behavioral problems. Rather, this association is hypothesized to result from family-type differences in maternal and paternal financial resources and investments (Brooks-Gunn et al. 1995; Maccoby and Martin 1983; Thomson et al. 1994). Because most children live with their biological mothers, paternal investment is seen as the major source of variation.

Money and time investment. Money provides food, clothing, and housing, but it also locates children in neighborhoods and schools, provides books and learning materials, and facilitates access to learning opportunities. Stepfathers have been shown to spend less than biological fathers on the college expenses of their children (Anderson 2000). Although most studies have examined differences in financial resources, few studies have focused on parental time. Time is hypothesized to be the resource that is most strongly linked to socio-emotional outcomes for children; parental sensitivity to the child is consistently associated with favorable adjustment and fewer aggressive-behavior problems (NICHD Early Child Care Research Network 2004). Research has demonstrated differential time investment by father family type: for example, stepfathers spend less time with their young stepchildren than with biological children (Hofferth and Anderson 2003). Cohabiting unions are shorter, and less history with the child is likely to be associated with less investment.

New relationships may also interfere with a mother's investment in her children. A new partner may distract the mother's attention and, as a result, could reduce her time spent with her children. Research has shown that maternal time investment is lower in mother-partner and mother-stepfather families (Thomson et al. 1994).

A number of studies have tested the effects of parental resources in explaining child outcomes, but mediating effects have generally been small (Brown 2004; Thomson et al. 1994). The set of financial resources is usually limited to earnings and education, and the measure of time invested is limited to parents' reports on selected activities (Amato and Rivera 1999; Cooksey and Fondell 1996; Thomson et al. 1994). No previous studies have directly measured parental time with children.

Father investment by family type. Why might there be differential father investment in children by family type? One of the time-honored motivations for having children is to continue the genetic family line (Fawcett 1983), and investment in biological children increases the ability of the next generation to reproduce (Emlen 1995). Biological parents expect that their relationship will be long lasting and that such investments will pay off in the long run through the success of the child. For nonbiological parents, however, financial and emotional investments in stepchildren may not reap returns for fathers in the long-term unless they are seen as investments in the current relationship with the mother. Not only less positive involvement but also harsher treatment and risk for abuse are more likely from nonbiological than biological fathers (Daly and Wilson 1998). Harsh parenting has been linked to child behavioral problems (Elder and Caspi 1988; McLoyd 1990).

Therefore, children living with a nonbiological father, either a stepfather or partner to the mother, are expected to have lower test scores and more behavioral problems than those living with a biological father. According to this biological argument, however, children of unmarried biological parents are not expected to fare worse than children of married biological parents.

A second perspective is that of the ambiguous status of the mother's unmarried partner regarding parenting obligations to children. Sociologists have argued that marriage provides normative guidelines for behavior, narrows the range of choice, and reduces the number of decisions that could lead to disagreements (Berger and Luckmann 1966). Although married stepfamilies have been argued to be incompletely institutionalized (Cherlin 1978), these relationships are more institutionalized than families that are formed by cohabitation; research suggests substantial agreement about what stepparents should and should not do (Coleman, Ganong, and Cable 1996; Fine 1995). Ambiguity is greater for unmarried families. Unmarried partners of the mother, whether the biological father or not, do not have the legitimacy and rights of married fathers (Buchanan, Maccoby, and Dornbusch 1996), even though they may have some of the responsibility (e.g., child support, in the case of unmarried biological fathers). Their relationships are shorter, on average (Manning, Smock, and Majumdar 2004; Seltzer 2000). This perspective predicts less investment in residential children by unmarried biological fathers than by married biological fathers. Thus, nonbiological children of unmarried male partners are expected to fare the worst.

An alternative perspective is selection. Recent research has shown that men who become stepfathers are disadvantaged in myriad ways, all of which can lead to less-positive parental involvement and to poorer child outcomes (Bernhardt and Goldscheider 2001; Hofferth and Anderson 2003; Manning and Lichter 1996; Sassler and Goldscheider 2004). The research examining child outcomes has found some evidence that paternal selectivity, a "rotten dad syndrome," is the cause of differences in behavior and achievement. The most common methodological technique to correct for selection is to control for as many known or observable characteristics of parents as possible, eliminating them as potential explanations for differences in child outcomes among family types. Partners of the mother are likely to be younger, minority, less educated, with less income, and working fewer hours than married biological fathers, for example (Brown 2004; Manning and Lichter 1996). Stepfamilies are likely to be larger than original two-biological-parent families. Stepfathers and partners of the mother are also less likely to have had a long-term residential relationship with the child, which could further reduce investment (Manning et al. 2004).

TESTING HYPOTHESES

This study examines the relationship between family structure and outcomes first without demographic controls, such as race/ethnicity, age, and family size, all of which may differ between stepfather and married-biological-parent families or between mother-partner and married-biological-parent families, and then including these controls, to see whether the relationship changes. However, even with controls for myriad paternal characteristics, many other characteristics were not measured and could, therefore, bias the analysis. A new methodological approach to equalizing father characteristics uses another strategy: comparing, within families, the achievement of half-siblings who have the same residential father or father-figure, with one being a nonbiological child (stepchild, child of the partner) of the father and the other a biological child (Ginther and Pollak 2004). Consistent with Census Bureau terminology (Fields 2001), I refer to family households in which children share one (or no) parent as *blended families*. If the performance of biological children does not exceed nonbiological children with the same residential father, the overall negative effect of having a stepparent across all families is likely to have resulted from unmeasured differences between men that led them to be in these family types (e.g., stepfather vs. married-biological-parent family).

Instead of negative selectivity for paternal employability and earnings, another type of selection may be operating in blended families—that for childbearing (Anderson 2000). As suggested earlier, men who father children with their new partner, their stepchildren's mother, may be the most selected of all. A stepfather who marries a woman with children and then fathers his own biological child with her is likely to be a person who gets along well with and likes children and who is a better caregiver (Anderson 2000; Lillard and Waite 1993). Therefore, investment in blended families may reflect the positive effect of selection for whether the couple has another child. Positive selection may offset some of the negative effect of living with a stepfather. If positive selection holds, then stepchildren in blended families should fare better relative to biological children than stepchildren in nonblended families.

Several studies have used this "within family" approach. Ginther and Pollak (2004) found that the achievement of stepchildren and biological children was more similar when only children within the same family were compared than when stepchildren and biological children living in different families were compared. However, negative selection was still indicated because children in blended families scored lower than those in nonblended families on several measures of achievement. Anderson, Kaplan, and Lancaster (2001) also found that differences between stepchildren and genetic children in paternal financial expenditures were smaller in blended families than across families. In contrast, Case, Lin, and McLanahan (2001) found that although differences in outcomes were smaller for stepchildren and biological children within families than across families, stepchildren in blended families nonetheless completed less education as young adults than biological children from the same households. Similarly, using a large sample of adolescents, Evenhouse and Reilly (2004) found only a small reduction in differential investments and outcomes within families compared to between families. These varying results may be based on differences in ages of children, samples, or outcomes. Parenting adolescent children is generally agreed to be more difficult than parenting younger children (Hetherington and Jodl 1994). Little research has addressed the issue of differential outcomes for young children in the same family.

The first set of analyses addresses the issue of whether children's achievement and behavior differ by father family type, and whether any differences are associated with demographic characteristics, financial resources, or time investments in children, using a national sample of children and their families. The second set of analyses addresses whether observed outcome differences across family types could result from differential treatment of nonbiological children and biological children or whether they result from observed and unobserved differences across these different family types. The sibling-differencing approach is used to control for unobserved differences, but sample sizes are small. Therefore, an expanded set of observed controls, including controls for whether the family is blended and the interaction between blendedness and stepfather family type, is added to the analysis of two-parent, two-child families. If biological children and stepchildren achieve and behave more similarly after these controls are added, then selectivity may be at least partially to blame for the negative effects seen across families. The direction of the association between the blendedness of the family and child outcomes is the key to the interpretation of the type of selection. If children in blended families overall, including biological children, fare worse than children in nonblended families, negative selection is implied. If children in blended families fare better than children in nonblended families, positive selection is implied.

DATA

The study sample is drawn from the 1997 Child Development Supplement (CDS) to the Panel Study of Income Dynamics (PSID). The PSID is a 30-year longitudinal survey of a representative sample of U.S. men, women, and children, and the families in which they

reside. When weights are used, the PSID has been found to be representative of U.S. individuals and their families (Fitzgerald, Gottschalk, and Moffitt 1998). With funding from the National Institute of Child Health and Human Development, data were collected in 1997 on up to two randomly selected 0- to 12-year-old children of PSID respondents both from the primary caregivers (mostly mothers) and secondary caregivers (mostly fathers) and from the children themselves (Hofferth et al. 1999). Interviews were completed with 2,380 households containing 3,563 children under age 13. The response rate was 88%. Weights based on the 1997 Current Population Survey were used to make the data nationally representative.

Samples

This study focuses on child achievement and behavior, which were identified only for children aged 3 and older. To focus on paternal characteristics, I excluded children in single-mother families and children who were not living with a parent. The resulting sample includes 1,977 PSID-CDS children aged 3 and older living with a residential father or father figure. Of these children, 82% (unweighted N = 1,538) lived with two married biological parents, 4% (unweighted N = 106) lived with two unmarried biological parents, 1% (unweighted N = 36) lived with a biological father and a stepmother, 2.3% (unweighted N = 47) lived with a single father, 6.3% (unweighted N = 155) lived with a biological mother and a stepfather, and 4.1% (unweighted N = 92) lived with a biological mother and a cohabiting partner. Three cases were missing the information used to determine family type. The weighted distribution of children's family types is similar to that calculated from the 1996 Survey of Income and Program Participation (Hofferth et al. 2002).

Measures of Children's Behavior and Achievement

Children's socioemotional adjustment was measured by the Behavior Problems Index, a standard instrument used in the NLSY-Child study to obtain primary caregivers' reports of the incidence and severity of child behavioral problems for a wide age range of children (Peterson and Zill 1986). Although there is individual variability, there is no evidence of any overall trend in behavioral problems with age (Kowaleski-Jones and Duncan 1999), so the analysis includes all children aged 3–12.[1] The 30-item scale (excluding two items specifically for school-age children) is divided into two subscales, one measuring withdrawn or distressed behavior, called "internalizing," and the other measuring aggressive behavior, called "externalizing" (Rogers, Parcel, and Menaghan 1991). Responses to the items (1 = often true, 2 = sometimes true, and 3 = not true of the child's behavior) were reverse coded and summed so that a high value on the scale indicates more and more-frequent behavioral problems. Means for the full scale averaged 39.78, with a standard deviation of 7.93 (N = 1,956). Reliabilities for the total behavior, internal behavior, and external behavior scales, as measured by Cronbach's alpha, are 0.90, 0.81, and 0.86, respectively.

Two subtests of the Woodcock-Johnson Revised Test of Basic Achievement were used to measure cognitive achievement: calculation, which is a test of mathematical calculation performance, and passage comprehension, which is a test of reading skills (Woodcock and Mather 1989). Because of trends in achievement with age, only the two assessments of school-age children aged 6 and older were examined. Scores were calculated based on national norms that were age-standardized with a mean of 100 and a standard deviation of 15. In this data set, children's scores were higher than national norms, and the variation was also greater: 107.90 (SD = 15.36) on the passage comprehension test and 105.16 (SD = 16.99) on the calculation test. Because of the smaller range of ages and because not all

1. All analyses of children's behavioral problems were replicated using only children aged 6–12. The coefficients are similar, but have slightly larger standard errors because of the smaller sample size.

eligible children aged 6–12 in these families were assessed,[2] sample sizes were smaller for passage comprehension and calculation (N = 957 and N = 953, respectively) than for behavioral problems (N = 1,956). Dropping children without time diaries and eliminating a few cases with missing information on control variables led to reductions in sample size in the multivariate analysis.

Measures of Parental Involvement

The PSID-CDS used several methods for collecting data on parental involvement. Items were drawn from standard scales asked in questionnaire format, but there was one major innovation for a large-scale, nationally representative survey: children's time with fathers and mothers (residential and nonresidential) was collected through detailed 24-hour time diaries. Time-diary data have higher internal consistency and reduced social desirability compared with standard single-item questions asked in most surveys (Hofferth forthcoming; Juster and Stafford 1985).

Time children spend engaged with or with access to their parents. The CDS collected a diary for one weekday and one weekend day for each study child. The time diary, which was completed by the primary caregiver or the primary caregiver and the child, asked about the child's flow of activities over a 24-hour period beginning at midnight of the randomly assigned day. The questions asked about each primary activity, when it began and ended, and whether any other activity was taking place. Two additional questions—"who was doing the activity with child?" and "who else was there but not directly involved in the activity?"—provide unbiased details on the extent of one-on-one interactions of others with the child. Codes were provided for mothers, fathers, stepmothers, stepfathers, and other adult nonrelatives of the child. For the present analysis, times when the residential father or stepfather was reported as engaged in activities with a child were coded as father or stepfather engaged.[3] If the child lived with a partner of the mother, the report of the time spent by other adult nonrelatives was used.[4] Time with the mother is similarly defined but includes nonresidential time when the primary caregiver is a single father. Times the father or mother was engaged were summed over all activities for weekdays and weekends for each child. To provide an overall weekly average of time spent, I computed weekly time by multiplying weekday time by 5 and weekend-day time by 2. This method has been used in previous time-diary studies to summarize an average week (Hofferth and Sandberg 2001; Timmer, Eccles, and O'Brien 1985). Research has found few differences in time with parents across weekdays or across weekend days (Sandberg and Hofferth 2001; Yeung et al. 2001). Consequently, the analyses presented here used the estimated number of hours mothers and fathers spent engaged in activities with their children during the survey week.

To test whether the inclusion of father and mother involvement explained any of the differences in child outcomes, for the initial multivariate analysis, I used only the sample with a time diary and data on all the key variables—1,563 cases. Children with black parents were less likely than children with white parents to complete the diaries, and children with married parents were more likely than children with unmarried parents to do so, but there was no difference in educational levels between fathers in families with and without a time diary. Including children without diary reports in Models 1 to 3 did not change

2. Children in families living in areas that were too far from other families to make it efficient to send an interviewer to conduct in-person interviews did not take the achievement tests. The exclusion of these children should not bias the results unless location is associated with achievement.

3. Nonresidential father time was not included.

4. Using the time of all other nonrelatives could potentially overestimate the cohabiting partner's time with the child if the child spent time with other unrelated adults either within or outside the household. Even if the time is not solely that of mother's partner but captures the total time of unrelated persons with this child, such time provides crucial support for children.

results, but the coefficients for family structure were more highly significant because of the larger sample.

Control Variables

This study controlled for standard family and individual characteristics, such as race and ethnicity, age of the father, total number of siblings, and age and gender of the child. Father's education and the father's (and mother's) income were included to represent family resources. Also included were father's (and mother's) work hours because work hours constrain the amount of time a parent can spend with a child. In the first set of analyses, only father's characteristics were included because there may not be a mother in each household. In the second set of analyses, both parents' characteristics were included.

Although outcome data were collected at the same time that the father relationship was identified, this longitudinal study contains information about the child's previous history with this father since birth. The proportion of the child's lifetime that the father has lived with the child was calculated to control for the stability and length of the relationship. This variable, together with current age and the current father family type, provides an accurate representation of the child's most recent family experience. Evidence suggests that the quality of stepfather-child relationships is higher if the relationship begins when the stepchildren are younger than when they are older (Hetherington and Jodl 1994). Research conducted on low-income families (Osborne and McLanahan 2004) found an association between partnership instability and child aggressive behavior. Parental closeness and engagement with mothers and fathers decline as biological children age (Hetherington and Clingempeel 1992; Hofferth 1998), a normal developmental change. Stepfathers may also be more positively involved with younger than with older children (Dunn et al. 2000). In addition, remarrying when children are young means that the stepparent and child will live together for a larger proportion of the child's life (White 1994) and facilitates agreement regarding the stepparent role (Visher and Visher 1988).

Finally, the set of obligations that fathers have outside the household—in particular, the obligation to support a nonresidential child—is likely to affect their ability and willingness to support residential children. Although mothers' childbearing is well-reported in the PSID, fathers' childbearing is not. To determine whether the father had children residing elsewhere that he supported financially, I matched the identifying information from each residential father in the CDS to PSID reports from a 1997 child support supplement of whether he supported a nonresidential child. This is an indicator of the burden of children on CDS fathers' resources. In an early phase of the research, the impact of regular contact between a residential child and a nonresidential father on child achievement and behavior was examined. Because the extent of contact between a child and the nonresidential father was not associated with the involvement of the residential father and including it reduced the number of cases, it was dropped from the analysis.

RESULTS: ALL CHILDREN LIVING WITH A FATHER

This research first compares characteristics of different family types and then shows means on the behavior and achievement of children across the various family types for the full sample of children living with a father. These analyses include only fathers' characteristics; because not all children were living with a mother, the characteristics of some mothers were unknown. However, time with a nonresidential mother that was captured in the diary was included.

Social and Demographic Characteristics of Children's Family Types

The 1997 social and demographic characteristics of the six family types are shown in Table 1. Except for biological father and stepmother families, children not living with two married biological parents were at a considerable educational and economic disadvantage. Of

Table 1. Characteristics of All Children Who Live With a Father, by Father Family Type (means)

Variable	All Families	Biological Parents, Married	Biological Parents, Unmarried[a]	Biological Father and Step-mother[a]	Biological Father, Single[a]	Biological Mother and Stepfather[a]	Biological Mother and Mother's Partner[a]
White	0.72	0.74	0.44***	0.65	0.80	0.65*	0.76
	(0.45)	(0.45)	(0.43)	(0.36)	(0.40)	(0.43)	(0.40)
Black	0.09	0.06	0.27***	0.25**	0.14†	0.16***	0.18***
	(0.28)	(0.25)	(0.38)	(0.33)	(0.34)	(0.33)	(0.36)
Hispanic	0.13	0.14	0.26**	0.10	0.03†	0.14	0.02**
	(0.34)	(0.35)	(0.38)	(0.23)	(0.18)	(0.31)	(0.13)
Other Race	0.06	0.06	0.03	0.00	0.04	0.05	0.04
	(0.23)	(0.25)	(0.15)	(0.00)	(0.19)	(0.20)	(0.18)
Child Aged 3–5	0.29	0.30	0.52***	0.26	0.13*	0.23	0.18*
	(0.46)	(0.47)	(0.43)	(0.34)	(0.33)	(0.38)	(0.36)
Child Aged 6–8	0.29	0.29	0.21	0.28	0.20	0.27	0.34
	(0.45)	(0.47)	(0.35)	(0.34)	(0.40)	(0.40)	(0.44)
Child Aged 9–12	0.40	0.39	0.24**	0.41	0.67***	0.46	0.48
	(0.49)	(0.50)	(0.37)	(0.37)	(0.47)	(0.45)	(0.47)
Gender of Child (1 = female, 0 = male)	0.51	0.51	0.62†	0.20**	0.59	0.45	0.48
	(0.50)	(0.51)	(0.42)	(0.30)	(0.49)	(0.45)	(0.47)
Father's Age	38.1	38.2	36.6*	35.6†	42.8***	35.7***	37.7
	(6.8)	(6.6)	(6.4)	(5.8)	(11.8)	(6.0)	(7.0)
Number of Siblings (including child)	2.5	2.5	2.2	2.3	2.0***	2.3†	2.2*
	(1.1)	(1.1)	(0.8)	(1.0)	(0.9)	(0.9)	(1.2)
Father's Education	13.2	13.3	12.0***	13.0	12.6	12.7*	12.9
	(2.9)	(3.1)	(2.1)	(2.0)	(2.7)	(1.8)	(1.5)
Father's Weekly Work Hours	44.4	45.1	38.4***	47.4	34.8***	44.2	40.4**
	(13.2)	(13.2)	(12.0)	(11.5)	(17.6)	(10.7)	(12.7)
Father's Earnings (in 000s)	40.10	42.62	24.37**	40.16	26.92*	28.57**	30.06*
	(48.02)	(53.19)	(16.01)	(20.03)	(23.19)	(18.65)	(16.23)
Total Family Income (in 000s)	60.30	65.10	30.50***	63.10	37.80**	41.86***	32.87***
	(64.70)	(70.70)	(29.80)	(35.60)	(21.20)	(28.40)	(28.83)
Percentage of Months Lived With Father	93.4	99.2	95.8***	93.7***	95.9***	44.9***	47.6***
	(21.2)	(6.4)	(11.6)	(10.8)	(9.6)	(32.1)	(37.6)
Father Paying Child Support	0.03	0.02	0.11***	0.00	0.01	0.03	0.07**
	(0.16)	(0.14)	(0.27)	(0.00)	(0.11)	(0.15)	(0.24)
No Father Identifier	0.03	0.00	0.17***	0.07***	0.01	0.11***	0.24***
	(0.16)	(0.05)	(0.32)	(0.19)	(0.10)	(0.28)	(0.40)
Number of Cases	1,974	1,538	106	36	47	155	92

Notes: All analyses are weighted; sample sizes are unweighted. Numbers in parentheses are standard deviations.

[a]Children in this category are compared with children who live with two married biological parents.

†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$

the fathers in the six family types, married biological fathers completed the highest number of years of schooling (M = 13.3 years). Unmarried biological fathers were the most disadvantaged in this regard, completing only 12 years of schooling. Stepfathers were in between, completing 12.7 years of schooling, still significantly lower than married biological

fathers. Unmarried fathers, whether biological or nonbiological, worked fewer hours than married biological fathers, and single fathers worked the fewest hours per week. Stepfathers worked only slightly fewer hours than married biological fathers, and this difference was not statistically significant.

Consistent with the picture of lower education and fewer work hours, fathers' earnings were lower in four of the five family types compared with families with two biological parents. Compared with the married biological fathers' mean earnings of $42,600 per year, stepfathers earned $28,600 per year, unmarried partners of the mother earned $30,100, and unmarried biological fathers earned $24,400. Single fathers also earned less—about $26,900 annually. Consequently, children in mother-partner, unmarried-biological-parent, single-father, and stepfather families also experienced lower family incomes than children living with two married biological parents. Because of these substantial economic differences alone, differences between child development in four of the family types and in the married-biological-parent family are expected. The biological father–stepmother family, in contrast to the others, does not differ from the married-biological-parent family on any of these measures.

Some residential fathers had obligations to other households. Eleven percent of unmarried biological fathers and 7% of unmarried partners of the mother paid child support to another household, compared with 3% of stepfathers and 2% of married biological fathers. Only a small fraction of the single fathers paid child support to another family, and none of the fathers in a biological father–stepmother family paid child support. In one-quarter of families with a mother and her unmarried partner and in 17% of families with two unmarried biological parents, the PSID did not contain enough information to link the father to a family to which he may have been paying support; fractions unknown are smaller in the other family types. In these families, it was not possible to determine whether the father paid child support to another family; therefore, a dummy variable that controlled for this data limitation was included in the analyses.

Family life-cycle stage also varies. Unmarried biological partners are just starting a family. Less than one-quarter of children in unmarried-biological-father families were aged 9–12. In contrast, half of children in stepfather and mother-partner families and two-thirds of those living with a single father were aged 9–12. It takes a number of years before stepparent, single-father, or mother-partner families are established, thus the older age of child. Age of child represents time in terms of family formation, not actual parental age. Fathers of children in unmarried-biological-parent, stepmother, and stepfather families were younger than those in families with two married biological parents, whereas single fathers were significantly older than fathers in families with two married biological parents. Unmarried biological fathers are similar to married biological fathers in that the majority had been present since the child's birth (M = 96% of months lived together, compared with 99% for two married biological parents). The average stepfather had spent about 45% of the child's life with that child, and the unmarried partner, about 48%. Younger father's age and a smaller proportion of the child's life spent with the father (94%) are among the few significant differences between stepmother–biological father families and married-biological-parent families. Finally, children in biological father–stepmother families were more likely to be male, the only significant gender difference. This finding suggests that fathers are more likely to have custody of boys than of girls after remarriage. There was no difference in gender in any other family type.

There were substantial differences by race across family types. Overall, 72% of the total sample was white, 9% was black, 13% was Hispanic, and 6% was of another race. In 1997, 74% of children living with two married biological parents were white, compared with only 65% of children living with stepfathers and 44% of children living with an unmarried biological father. Racial/ethnic differences reflect the larger proportion of black and Hispanic children than white children who are born outside of legal marriage to biological parents.

Although mother–unmarried partner families were a common family type among whites and blacks, few children living in this family type were Hispanic. Finally, few children living with single fathers were Hispanic. Unmarried Hispanic families clearly tended to contain two biological parents, whereas unmarried black families showed a high prevalence of nonbiological fathers, relative to white families.

Achievement by Family Type

Children's achievement and behavior are shown by family type in Table 2. As expected, children living with their married biological father were found to achieve at significantly higher levels than children living with a nonbiological father. The calculation and passage comprehension test scores of children living with their stepfather or the mother's unmarried partner were significantly lower than those of children living with their two married biological parents. On the calculation and the passage comprehension test, there was no significant difference between the scores of children living with their unmarried biological parents and children living with two married biological parents. On both tests, however, children living with single fathers scored significantly lower than children living with two married biological parents.

The results suggest that the biological relationship of the father matters more than the marital relationship of the parents because in two-parent families, the scores of children living with nonbiological fathers were consistently lower than those of children living with biological fathers. Therefore, the achievement story in two-parent families may be simply about having a biological father: children living with a biological father and a spouse, regardless of the biological status of the mother, achieved at levels similar to children living with two married biological parents. It also confirms previous research on the importance of having two parents because children living with single fathers scored poorly on all the tests compared with children living with two married biological parents.

Behavioral Problems by Family Type

Scores for externalizing behavioral problems were higher for children in stepfather families, unmarried-biological-father families, mother-partner families, and single-father families ($M = 24.8$, 24.5, 24.4, and 24.6, respectively) than for children in families with two married biological parents ($M = 22.2$). The results for the internalizing scale were similar but slightly weaker. Scores for total behavioral problems, as for those of the externalizing scale, were significantly higher for children in stepfather, unmarried-biological-father, mother-partner, and single-father families than for children in families with two married biological parents.

In contrast to achievement, both living with a biological father and living with a married father matter in terms of children's behavioral problems. Consistent with this, the behavioral problems of children in families with a married biological father and stepmother were never higher than those of children living with two married biological parents. Of course, children of single fathers, unmarried parents, and stepparents are clearly disadvantaged because of the large demographic and economic differences across families. It is important to examine whether family type is linked to children's achievement and behavior after such differences are controlled.

Parental Time by Family Type

The greatest amount of engaged time was spent by single fathers with their children—22 hours. Married biological fathers spent about 15 hours per week engaged with their children. In contrast, unmarried biological fathers, stepfathers, and mothers' partners spent less time engaged with children (12, 9, and 11 hours, respectively). As hypothesized, maternal time engaged also varied by family type. Table 2 shows that mothers in families with two biological parents spent the most time with children, 22 to 25 hours per week, and mothers

Table 2. Father Involvement, Achievement, and Behavior, All Children Who Live With a Father, By Father Family Type

	All Families		Biological Parents, Married		Biological Parents, Unmarried[a]		Biological Father and Stepmother[a]		Biological Father, Single[a]		Biological Mother and Stepfather[a]		Biological Mother and Mother's Partner[a]	
Variable	Mean	*N*	Mean	*n*	Mean	*n*	Mean	*n*	Mean	*n*	Mean	*n*	Mean	*n*
Achievement														
Calculation test score	104.9 (16.7)	953	106.1 (16.8)	763	110.7 (13.3)	25	110.8 (11.86)	15	98.8* (16.76)	23	96.6*** (14.4)	87	92.7*** (15.1)	40
Passage comprehension test score	107.7 (15.4)	957	108.9 (15.3)	766	107.9 (11.1)	25	113.8 (8.21)	15	98.9** (16.16)	23	99.2*** (14.0)	88	98.6*** (16.3)	40
Total Behavioral Problems	39.8 (7.9)	1,956	39.2 (7.8)	1,521	42.5*** (8.3)	104	39.5 (5.99)	36	43.8*** (8.42)	47	42.8*** (7.7)	154	42.4*** (8.1)	91
Externalizing	22.7 (5.4)	1,956	22.2 (5.3)	1,521	24.5*** (5.6)	104	22.7 (3.86)	36	24.6** (5.91)	47	24.8*** (5.4)	154	24.4*** (5.3)	91
Internalizing	15.8 (3.2)	1,956	15.6 (3.2)	1,521	16.3† (3.5)	104	15.4 (2.21)	36	17.7*** (3.12)	47	16.5** (3.1)	154	16.5 (3.2)	91
Parental Time														
Weekly hours engaged with residential father	14.1 (10.8)	1,563	14.6 (11.0)	1,257	12.0† (8.5)	74	11.4 (7.26)	28	22.1*** (13.54)	34	9.1*** (7.9)	123	10.6** (10.5)	61
Weekly hours engaged with mother	21.1 (13.6)	1,563	21.9 (13.7)	1,257	25.1† (14.3)	74	9.2*** (5.81)	28	0.9*** (1.32)	34	19.1† (9.9)	32	15.9*** (10.5)	61

Notes: All analyses are weighted; sample sizes are unweighted. Numbers in parentheses are standard deviations.

[a]Children in this category are compared with children who live with two married biological parents.

†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$

in either stepfather or mother-partner families spent somewhat less time (16 to 19 hours) with their children. Nonresidential biological mothers whose children live with their biological father and stepmother spent the least time with children. We address whether any of these differences in engaged time explain children's achievement and behavior differences across father family types.

Multivariate Analyses of Cognitive Achievement and Behavior

The multivariate analysis examines the association between father family type and child achievement and behavior using ordinary least-squares multiple regression, first without controls (Table 3, Model 1) and then with controls introduced for the observed set of demographic variables characterizing the family and child (Model 2), for economic variables (Model 3), and for the measures of father and mother involvement (Model 4). Using Stata, I estimated robust standard errors that adjust for clustering within families and used them to calculate significance levels. One-tailed tests were used for father family types because the direction of the effect was predicted. I calculated effect sizes (not shown in tables) by dividing the unstandardized regression coefficient by the standard deviation of the outcome variable. Finally, I calculated the percentage reduction in coefficient size from model to model as a result of adding variables (Table 4).

Calculations. Table 3 shows the results of regressing the calculation test score on family structure with and without controls. The results are almost identical for passage comprehension and calculation; I present only the results for the calculation test. Before controls for background factors were added (Model 1), there were significant differences on calculation scores for children in mother-stepfather, mother-partner, and single-father families. Demographic controls were particularly important in reducing the effect of father family type. After demographic controls were introduced (Model 2), the effect of living with a stepfather declined 33% to nonsignificance. The effect of living with the mother's partner declined 13% but was still significant. Adding economic factors (Model 3) further reduced the effect of living with a stepfather (by 9%) and with a mother's partner by 13%. It reduced the coefficient for a single father by 68% to nonsignificance. With controls for demographic and economic factors, children living with a mother and her partner had test scores that were 10.09 points lower than did those living with two married biological parents. The effect size of this coefficient (not shown in the table) was about .60 of a standard deviation—a large effect.

Adding parental time (Model 4) reduced the effect of living with a stepfather by another 6%, but neither mother nor father engagement was associated with higher scores on the calculation test. Only the mother-partner family type was associated with lower child achievement after economic controls were introduced, and its effect was not reduced by the inclusion of mother and father engagement. Thus, parental time did not appear to explain the relationship between father family type and calculation test scores.

In Model 4, after all variables were added, the percentage of the effect for mother-stepfather and single-father families explained by the model was substantial: 43% for mother-stepfather and 54% for single-father families (Table 4, column 5). The effect of the stepfather family was mostly explained by demographic factors (Model 2), and the effect of single-father families was explained by economic factors (Model 3). The effect of the mother-partner family type was partially explained (a 24% reduction in size of the coefficient) by both demographic and economic factors, but a significant direct effect remained. Thus, observed variables explained the effect of living with a single father or a stepfather on cognitive test scores, but not the effect of living with the mother and her partner.

Background and control variables. Several demographic variables were associated with test scores. Girls scored higher than boys on the passage comprehension test (not shown), but there was no difference on the calculation test (Table 3). Although black children scored lower than white children on the calculation test, racial/ethnic differences did

Table 3. Regression of Child Achievement on Father Family Type, All Children Living With a Father

	Calculation Test Score				Total Behavioral Problems			
Variable	1	2	3	4	1	2	3	4
Intercept	106.13***	100.32***	69.32***	67.94***	39.30***	41.99***	46.89***	48.45***
Married Biological Parents	omitted				omitted			
Unmarried Biological Parents	6.22	8.38	9.20	9.44	2.35‡	2.58‡	1.94	1.90
Father and Stepmother	4.63	5.49	5.36	5.56	−1.36	−1.60	−1.46	−1.99
Mother and Stepfather	−8.18‡‡	−5.51	−4.99	−4.68	2.88‡‡	2.65‡	2.45‡	2.30
Mother and Partner	−13.30‡‡‡	−11.60‡‡	−10.09‡	−10.10‡	3.04‡	3.00‡	2.62	2.45
Single Father	−7.34‡	−9.32‡	−2.96	−3.41	4.73‡‡	4.89‡‡	3.73‡	3.22‡
White	omitted				omitted			
Black		−3.67*	−1.44	−1.32		−0.23	−0.78	−0.87
Hispanic		−3.16	0.70	0.57		0.70	−0.18	−0.02
Other Race		−0.37	−0.89	−0.92		1.04	0.62	0.58
Child Aged 3–5	NA				omitted			
Child Aged 6–8	omitted					0.44	0.43	0.10
Child Aged 9–12		−0.26	−0.45	−0.41		1.20*	1.20*	0.76
Sex of Child		−0.62	−0.80	−0.72		−1.37**	−1.37**	−1.35**
Age of Father		0.15	0.04	0.05		−0.07	−0.06	−0.06
Number of Children		−0.92	−0.43	−0.39		−0.04	−0.16	−0.27
% of Months Lived With Father		0.03	0.02	0.02		0.00	0.00	0.00
Father Pays Child Support			2.43	2.35			−0.22	−0.36
No Father Identifier			1.09	1.43			0.10	−0.17
Father's Education			2.02***	2.01***			−0.19	−0.18
Father's Work Hours			0.13*	0.13*			−0.04†	−0.04
Father's Earnings (in 0000s)			0.24	0.24			−0.16†	−0.16†
Father Engagement				0.08				−0.03
Mother Engagement				0.01				−0.04‡
N	878	878	878	878	1,563	1,563	1,563	1,563
R^2	0.04	0.05	0.15	0.15	0.02	0.04	0.05	0.06

†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed test)

‡$p < .05$; ‡‡$p < .01$; ‡‡‡$p < .001$ (one-tailed test)

Table 4. Percentage Reduction in Coefficient Explained by the Models Shown in Table 3

Assessment/Family Type	Model 1 to Model 2	Model 2 to Model 3	Model 3 to Model 4	Model 1 to Model 3	Model 1 to Model 4
Calculation					
Unmarried biological parents	NA	NA	NA	NA	NA
Father and stepmother	NA	2	NA	NA	NA
Mother and stepfather	33	9	6	39	43
Mother and partner	13	13	0	24	24
Single father	NA	68	NA	60	54
Behavioral Problems					
Unmarried biological parents	NA	25	2	NA	20
Stepmother	NA	9	NA	NA	NA
Stepfather	8	8	6	15	20
Mother's partner	1	13	6	14	20
Single father	NA	24	14	21	32

Note: NA = not appropriate because the coefficient increased across models.

not persist after controls were introduced. There were no differences by age within the school-age group. The percentage of months lived with the father was not significantly associated with the child's score on either test. This finding provides little support that the stability of arrangements, separate from their current father family type, is linked to child achievement in a national sample of children. Economic variables indicating greater human and social capital, such as greater paternal education and number of work hours, were associated with higher scores on the calculation test (Table 3), and father's education and earnings were associated with passage comprehension (not shown). Whether the father paid child support was not related to the child's calculation test score.

Multivariate Analyses of Behavioral Problems

The same analytic strategy used for cognitive achievement was applied to children's behavioral problems scores.

Total behavioral problems. Because the results are similar for externalizing, internalizing and total behavioral problems, we focus only on total behavioral problems scores in the multivariate analyses. Before controls were added (Table 3, Model 1), children living with two unmarried biological parents, the mother and a stepfather, the mother and her partner, or a single father were more likely than children in families with two married biological parents to have behavioral problems. Introducing demographic controls (Model 2) explained little of the effects of family structure. The coefficients for unmarried biological parents and for mother and partner declined to nonsignificance after controls for economic circumstances were introduced (Model 3), but children living with stepfathers and single fathers continued to have more behavioral problems. In contrast, children living with a stepmother and biological father had fewer behavioral problems than children living with two biological married parents across all models, though the coefficients were not statistically significant.

These results are not consistent with the biological hypothesis that children living with a biological father will consistently fare well; they do not. Even after controls were introduced, through Model 3, children living with unmarried single fathers exhibited more behavioral problems than children living with married biological parents. However,

behavioral problems were not explained by parental marital status either. Children living with stepfathers had more problems than children of married biological parents, again, through Model 3. Thus, after controls for observed variables but prior to the addition of the variables for father and mother involvement, children living with a stepfather and children living with a single father had significantly higher scores for behavioral problems than children in families with two married biological parents.

In the fourth column of Table 3 (Model 4), mother and father engagement were added. Mother engagement was related to significantly fewer behavioral problems, and the relationships between single-father, mother-stepfather, and mother-partner family types and behavioral problems declined (by 14%, 6%, and 6%, respectively; see Table 4). Only the coefficient for single father remained statistically significant. Mother engagement can be seen as a weak mediating variable. At similar levels of father involvement, children with more-engaged mothers have fewer behavioral problems. However, the association is small: a 10-hour increase in mother's engaged time per week is associated with a .05-standard-deviation reduction in behavioral problems. The coefficient for father's engaged time was similar in sign and size to mother's and was statistically significant for externalizing problems (not shown). The results suggest that mother *and* father involvement mediated some of the effect of family type on behavioral problems. In fact, of the total reduction in the coefficient for the stepfather, about 20% (Table 4), the proportion associated with the addition of parental time was almost as large as that explained by either demographic or financial factors. Mother-partner and single-father effects, in contrast, were explained more by financial variables than by parental time.

The percentage of the effect of father family type on behavioral problems that was explained by our four models was about 20% for families with unmarried biological parents, 20% for mother-stepfather families, 20% for mother-partner families, and 32% for single-father families (Table 4), which was considerably less than the 40%–50% of their effects on achievement. Demographic factors (Model 2) explained little—only 8% of the stepfather coefficient. Economic factors, particularly lower father's earnings, explained 25% of the effect of living with two unmarried biological parents, 8% of the effect of living with a stepfather, 13% of the effect of living with the mother's partner, and 24% of the effect of living with a single father on behavioral problems.

Background and control variables. Only a few family and child variables were associated with behavioral problems (Table 3). As expected, girls had fewer behavioral problems than boys, and older children had more behavioral problems than younger children. Economic factors were important. Greater financial resources were associated with reduced behavioral problems. Children of fathers who earned more and who worked more hours had fewer behavioral problems than fathers who earned less or worked fewer hours. Other research has shown unemployment or underemployment to cause serious stress for men (Elder and Caspi 1988), which may be associated with less-positive parenting. However, more work time means less time with children. The previously discussed results showed that for a given work schedule, more father time engaged with children was associated with reduced child behavioral problems.

RESULTS: CHILDREN IN TWO-PARENT, TWO-CHILD FAMILIES

The second test of our hypothesis involved, first, comparing children who have at least one sibling and live with two parents and, then, adding more-detailed, observable variables to a traditional regression model across their families. It focuses on four father family types of interest: (1) living with two married biological parents, (2) living with two unmarried biological parents, (3) living with the biological mother and the child's stepfather, and (4) living with a biological mother and her unmarried partner. Characteristics of both partners can be included in this analysis. The final sample contained 1,326 study children aged 3–12 who lived with their biological mother, a father or father figure, and a sibling in the study.

In 1997, 87% lived with two married biological parents (unweighted $N = 1{,}105$), 4% lived with two unmarried biological parents ($N = 64$), 6% lived with a biological mother and stepfather (unweighted $N = 98$), and 3% lived with their biological mother and her cohabiting partner (unweighted $N = 59$).

One more important set of categories was created: whether a child lived with a sibling of the same or different relationship to the father. Of this sample, 94 study children lived in a family that contained at least one biological child and one nonbiological child of the father (*blended*), and 1,232 lived in a family that contained two biological children, two stepchildren, or two children who were unrelated to the mother's cohabiting partner (*not blended*). Forty percent of stepchildren, 12% of children living with unmarried biological fathers, 22% of children living with partners to the mother, and 1% of children of married biological fathers lived in a blended family. Stepfather × blended, the interaction between stepfather and blended family, represents children living with a stepfather in a blended family.

In this set of analyses, I used the subset of 1,326 two-parent, two-child families to test the hypotheses regarding selection on unobservable characteristics for calculation and total behavioral problems. Sample sizes were too small to permit an examination of all the different father family types within families. Therefore, after examining differences between children of married biological fathers and their half sibling whose father is a married stepfather, I examined children across the above four father family types, but added two key variables—blendedness and the interaction between father family type and blendedness. In the first step of the multivariate analyses, measures of the four family types were regressed on outcomes without any controls. In the second step, background factors were controlled. In the third step, whether the family was blended and the blended × stepchild interaction were added. I then used the regression coefficients to estimate family type–specific predicted values of achievement and behavior for an average child by setting control variables to their means and systematically varying family type.

Because all children in this sample lived with their biological mother, the source of variation in family type is the father-child relationship. A family may be one type of family to one child and a different type to another child in the same family. Thus, in this analysis, the wording emphasizes the child-father relationship rather than the overall family type.

Sibling Comparison Within Families

Of the 94 blended families in this sample, we focused on 33 pairs of half-siblings living with two married parents, one the biological child of both parents and the other the biological child of the mother and the stepchild of the father. The means of the two sets of siblings are shown in Table 5. The biological child of the father had no clear advantage over the stepchild on either achievement test (Table 5, top panel). In fact, stepchildren scored better on the passage comprehension test than did biological children; however, sample sizes are small and the difference was not statistically significant. Most important, biological children had significantly fewer total behavioral problems and internalizing behavioral problems than their half-siblings (Table 5, middle panel). When behavioral problems are examined within the same 17 families whose children took the calculation and passage comprehension tests (Table 5, lower panel), the difference in overall mean behavioral problems is smaller, but the within-family difference in internalizing behavior remains large and significant.

The fact that achievement differences between siblings in the same family were neither large nor consistently favorable toward biological children supports other research findings that achievement differences across families may result from observed and unobserved differences. However, the fact that nonbiological children consistently showed more behavioral problems than their siblings suggests that children may experience differential parenting, particularly in terms of time and attention from parents. In

Table 5. Child's Achievement and Behavior, Half-Siblings Living in Married, Blended Families

	Married Parents, Father Is				
	Biological Father		Stepfather[a]		
Variable	Mean	*SD*	Mean	*SD*	*n*
Achievement					
Calculation	98.5	5.2	95.2	16.7	17
Passage comprehension	83.0	11.6	95.5	15.7	17
Total Behavioral Problems, Full Sample of Half-Siblings	39.1	7.5	43.9*	8.6	30
Externalizing	23.3	6.4	25.1	5.4	30
Internalizing	14.3	1.9	17.4**	4.1	30
Total Behavioral Problems, Those Who Took Achievement Tests	40.1	8.3	44.1	9.4	17
Externalizing	24.4	7.1	25.0	5.5	17
Internalizing	14.3	2.1	17.6**	4.5	17

Note: All analyses are unweighted.

[a]Children in this category are compared with children who live with a married biological father.

$^{*}p < .05$; $^{**}p < .01$ (two-tailed test)

the following analyses we compare children's achievement and behavior in blended and nonblended families and examine whether the outcomes for different family types differ in blended and nonblended families.

Multivariate Analyses of Cognitive Achievement

Calculation test. Before controls were added (Table 6, Model 1), children living with a stepfather or mother's partner scored lower on the calculation test than children living with a married biological father. The effects were large, about 0.75 of a standard deviation for children living with their mother and stepfather and 0.94 of a standard deviation for children living with the mother and her partner. Children living with an unmarried biological father scored marginally higher than children living with a married biological father.

After controls were added (Model 2), the effects of family structure on the calculation test declined, although they were still large. The decline was a result of including other variables, such as father's education and parental work hours and earnings, which were related to differences in family structure and increased the proportion of variance explained to .17. Children who lived with a mother and stepfather scored 7.26 points lower (effect size = .43), and children who lived with the mother and her partner scored 8.85 points lower (effect size = .52); both were significant at the 10% level for a two-tailed test. An unexpected finding was that children living with an unmarried biological father scored 12 points higher than those living with a married biological father.

These coefficients continued to hold with the introduction in Model 3 of blended family, which was negatively and significantly associated with the calculation score, suggesting negative selection into blended families. However, the interaction of stepfather and blended family was positive and statistically significant. Predicted calculation scores by father family type, holding all controls at their means, are depicted in Table 7. In general, children in blended families scored lower on this achievement test than children in

Table 6. Regression of Child Achievement/Behavior on Father Family Structure, Two-Parent, Two-Child Families

	Calculation Test Score			Total Behavioral Problems		
Variable	1	2	3	1	2	3
Intercept	106.43***	70.06***	71.95***	39.16***	47.02***	46.37***
Married Biological Father	omitted			omitted		
Unmarried Biological Father	8.86†	12.04*	11.45*	3.82*	3.48†	3.69†
Stepfather	−12.71***	−7.26†	−10.06*	4.9***	4.88**	6.65**
Mother's Partner	−15.97***	−8.85†	−9.34*	5.94***	5.11*	6.12*
White	omitted			omitted		
Black		0.01	−0.12		0.02	0.03
Hispanic		2.92	2.88		0.42	0.43
Other Race		5.56*	5.41*		2.06	2.11
Child Aged 3–5	NA			omitted		
Child Aged 6–8	omitted				0.28	0.32
Child Aged 9–12		−0.81	−1.02		1.00	1.02
Sex of Child (1 = female, 0 = male)		−1.28	−1.36		−0.87†	−0.91†
Age of Father		0.06	0.07		−0.22***	−0.22***
Number of Children		−0.45	−0.43		0.09	0.09
Percentage of Months Lived With Father		0.07	0.05		0.02	0.03
Father Pays Child Support		2.23	2.22		2.38	2.83†
Unknown if Father Pays Child Support		0.10	2.11		−0.48	−0.18
Father's Education		1.56***	1.54***		−0.03	−0.02
Mother's Work Hours		−0.15*	−0.16*		−0.01	−0.01
Father's Work Hours		0.19*	0.20*		−0.03	−0.03†
Mother's Earnings (in 0000s)		2.01**	2.04**		0.04	0.04
Father's Earnings (in 0000s)		0.05	0.04		−0.08	−0.09
Blended Family			−6.40**			−3.50*
Stepfather × Blended			10.78*			0.09
N	628	628	628	1,326	1,326	1,326
R^2	0.06	0.17	0.17	0.04	0.07	0.07

†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$ (two-tailed test)

nonblended families, a result of the less-desirable unobserved characteristics of men and women who form such families. However, whereas stepchildren in nonblended families scored lower than biological children in nonblended families, in blended families, the order was reversed. Stepchildren in blended families scored similarly to or a bit higher than children of a married biological father, and they scored higher than stepchildren in nonblended

Table 7. Predicted Scores on the Calculation Test and on Behavioral Problems, by Father Family Type

Assessment/ Father Family Type	Type of Family	
	Not Blended	Blended
Calculation Test		
Married biological father	106.1	99.7
Unmarried biological father	117.6	111.2
Stepfather	96.1	100.4
Mother's partner	96.8	86.8
Behavioral Problems		
Married biological father	39.2	35.7
Unmarried biological father	42.9	39.4
Stepfather	45.8	42.4
Mother's partner	45.3	41.8

families. Children living with an unmarried biological father continued to score high, and children living with an unmarried partner of the mother scored low.

Multivariate Analysis of Behavioral Problems

The analyses of total behavioral problems among children in two-parent, two-child families are also shown in Table 6. Before controls were added (Model 1), children living with any type of father except their married biological father were reported to have more behavioral problems. The effect sizes were quite large—.62 for children living with a stepfather, .75 for children living with the mother's partner, and .44 for children living with an unmarried biological father. Including background and control variables (Model 2) increased the proportion of variance explained to .07 but reduced the sizes of the coefficients on family structure only slightly.

Rather than being positive, the coefficient for blendedness of the family was negative and significant for total behavioral problems, meaning that behavioral problems were reduced in blended families and suggesting a positive selectivity into such families. The coefficient for being a stepchild in a blended family was not statistically significant, however. All children had fewer behavioral problems in blended families than in nonblended families. Stepchildren were neither advantaged nor disadvantaged in this regard. When blended family and the interaction between stepfather and blended family were added (Model 3) the family structure coefficients increased slightly.

Predicted values are shown in Table 7. Consistent with the regression results, behavioral problems were higher for children in all family types compared with children in families with two married biological parents. In addition, children in blended families had lower levels of behavioral problems across all family types, without any interaction effects.

DISCUSSION

The response to the question that motivated this research, whether differential investment explains young children's achievement, is that it depends on the type of outcome and on the type of father. Observed differences between children of stepfathers and married biological fathers appear to be quite important for children's achievement. Most of the achievement difference between elementary school–age children in stepfather and biological-father families was attributable to the characteristics and resources of fathers, not directly to the

time parents spent with children. For example, stepfathers had lower educational levels and earnings than married biological fathers. The large difference between stepchildren and biological children of married fathers on the passage comprehension and calculation tests declined and was no longer significant with the introduction of controls for differences between families on race and father's education and work hours, and by characteristics of the child, such as gender and age. Similarly, observed differences explained most of the behavioral problems of children in stepfather and mother-partner family types, although not those of children living with single fathers. However, father and mother time mediated a small part of the effect of family type on child behavior, whereas it did not do so for achievement. Time and attention in the early years may be critical to avoiding behavioral problems but less critical to the achievement of school-aged children. Of course, not all aspects of parental investment in children were measured. As children become older, financial investments will become even more important to their continued achievement and should be measured in our surveys.

Although we explained part of the lower achievement of children in mother-partner families compared with married-biological-parent families, the difference remained large and significant. Differences in test scores between children in mother-partner families and married-biological-parent families declined equally with the inclusion of demographic variables and economic variables, such as father's education, work hours, and earnings. Economic controls did not eliminate the lower test scores of children in mother-partner families on the calculation test, though they diminished them. Sample sizes were too small to investigate this further, and the remaining analyses focused on comparing children living with stepfathers or biological fathers.

One of the issues this paper addressed was whether selectivity into who becomes a stepfather, rather than poor fathering, may lead to lower achievement and greater behavioral problems in such families. The selection hypothesis received some support with regard to children's achievement: the expected differences between biological children and stepchildren on passage comprehension and calculation were not found when half-siblings in blended families were compared. Some negative selection was confirmed in the second set of analyses because calculation test scores were lower for biological children in blended families than for biological children in nonblended families. Thus some of the stepchild–biological child difference in achievement that was found across families may be due to this negative selection into stepfamilies. However, there was some support for positive selection into childbearing in such families because stepchildren in blended families had higher calculation test scores than stepchildren in nonblended families and biological children in blended families. Mothers who are married to stepfathers who demonstrate more positive parenting skills may be more likely to have additional children, creating a blended family.

Differences in behavioral problems, in contrast, are unlikely to be solely the result of selection. Stepchildren showed more behavioral problems than biological children in both blended and in nonblended families, and even when half-siblings living in the household were compared, these differences remained significant. However, there was evidence of positive selection into blended family structure: behavioral problems for all children were lower in blended than in nonblended families. Parental investment of time is crucial. Greater father and mother time were associated with fewer behavioral problems, even in this small sample, and time explained a small fraction of family type effects on behavioral problems. Other research has shown the importance of parental warmth and involvement in preventing behavioral problems, but none has shown the importance of parental time for this age group.

The research shown here also examined what it was about family structure—biology, marriage, or something else—that affects children's achievement and behavior. The research on achievement provided evidence for the importance of the biological relationship.

Children living with a biological father, married or not, scored higher on the calculation test than those not living with a biological father. Although I also hypothesized that children living with a married stepfather would fare as well as those living with a married biological father and that children of unmarried fathers, biological or not, would fare worse, this was not the case for achievement. Their relatively large family size and minority status explained lower child achievement in mother-stepfather families compared with two two-married-biological-parent families; when those controls were introduced, the size of the stepparent family effect declined substantially.

Biology was not as important in explaining higher levels of behavioral problems for children not living with two married biological parents as it was for their achievement. Behavioral problems were consistently large for all four groups of children compared with children living with both biological married parents. The hypothesis that not marrying leads to emotional and behavioral problems in children's lives was supported. Children of unmarried residential biological or nonbiological fathers continued to have higher levels of behavioral problems, even after controls for a variety of observed child and family characteristics were added. For unmarried biological partners, moving to marriage reflects both a good relationship and reduced uncertainty, both of which should improve the lives of children. Controls for economic factors consistently reduced the effect of having a cohabiting father on behavioral problems, though it did not disappear. This is consistent with previous research showing that economic factors mediated some of the effect of having a cohabiting father on behavioral problems (Brown 2004).

Strengths and Limitations

The contributions of this research to understanding differences in child outcomes by father family structure are that it examined children in middle childhood; focused on less-researched, unmarried-parent families; separately analyzed biological and nonbiological relationships; reduced the potential effects of unmeasured differences between fathers by expanding the set of observed controls; and utilized detailed, high-quality measures of children's achievement and behavior. The limitation of the study is that the number of children in unmarried-parent families was too small to compare children within families, and the number of blended families was too small to examine mediating effects of paternal involvement. In addition, although some information on living-arrangement history was included, child assessments were collected at the same time as father family structure, limiting the extent to which conclusions about the causal effects of family structure could be drawn.

Finally, in an interesting side note, children living with their married biological father and the child's stepmother did as well as children living with both married biological parents. This suggests that, contrary to the Cinderella fairy tale, mothers may be more fungible than fathers. Of course, selection through death or abdication of the mother plays a role in children coming to live with their biological father and a stepmother, and our sample size was not large enough to test selection effects for this group.

Conclusions

Achievement differences do not appear to be directly related to family structure per se, but rather to demographic and economic differences between fathers across families. This was shown most dramatically when achievement differences within families were compared with achievement differences across families. Within families, stepchildren achieved at levels similar to those of their half-siblings. In contrast, behavioral problems continued to be linked to stepfather family structure even after controls for measured and unmeasured factors were included. However, overall, children in blended families had fewer behavioral problems than children in nonblended families. Some of this link could be attributable to greater paternal and maternal time spent with their children. Although the study was unable

to explain the causes of these problems, the finding that children of unmarried biological parents experienced higher levels of behavioral problems than those of married biological parents was novel. The biological relationship between father and child is well-established in the literature as a basis for paternal investment and, therefore, child well-being; however, the finding that the legal relationship between parents is also linked to child well-being is a relatively new and important discovery.

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