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Are All Dads Equal? Biology Versus Marriage as a Basis for Paternal Investment

The stepfather relationship provides a source of potential conflict in remarriage families, because the mother and partner may have different interests in the well-being of children from a prior union. Using three different theoretical perspectives—biology, sociology, and selection—this paper examines the engagement, availability, participation, and warmth of residential fathers in married biological parent, unmarried biological parent, married stepparent, and cohabiting father families. The data come from 2,531 children and their parents who were interviewed during the 1997 wave of the Child Development Supplement to the Panel Study of Income Dynamics. Biology explains less of father involvement than anticipated once differences between fathers are controlled. Marriage continues to differentiate paternal investment levels, as do age of child and financial responsibility to nonresidential children.

As a result of the rise in out-of-wedlock childbearing, divorce, and remarriage in the last quarter of the 20th century, an increasing proportion of children have lived in a stepfamily; that is, a married two-parent family in which one parent is a biological parent and the other parent is not. In 1990, about 8 out of 10 American children lived with married parents; of these, 16% lived in a stepfamily (U.S. Bureau of the Census, 1994). Because family structure changes over time, children who do not currently have a stepparent may eventually come to live with one; current estimates suggest that about one third of children in the U.S. will live with a stepparent, usually a stepfather, before reaching age 18 (Bumpass, Raley, & Sweet, 1995).

An increasing proportion of children also live with unmarried parents. In 1990 roughly 2.2 million children in the United States lived with an unmarried parent and his or her partner (Manning & Lichter, 1996). This is likely to be higher today because the number of cohabiting couples rose 50% between 1990 and 1997 alone (Casper & Cohen, 2000). Childbearing occurs in about one fourth of such families. In recent years, public policy has shown a renewed interest in fostering marriage, but informal unions have been ignored. It is important to know whether children living with their mother and a cohabiting partner are as well-off as those living with two married parents. Although cohabiting couples are not as prosperous as married couples, their children have been found to be better off than those of single parents. Including the income of the cohabiting partner was shown to lift two of five poor children in cohab-

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iting unions out of poverty (Manning & Lichter). Although they may be better off financially, their children are still disadvantaged on parental education, employment, and earnings. Relatively little is known about father involvement in such families.

The biological relationship of children to residential parents is important. Research has shown that children living with two biological parents achieve more in school and are better adjusted than children in mother-stepfather families (McLanahan & Sandefur, 1994). Surprisingly, in terms of their risk of high school dropout, teen childbearing, and productive activity as young adults, the latter are more similar to children in single-parent than to those in two–biological parent families (McLanahan & Sandefur). Why is this the case? One of the earliest explanations of this difference in child outcomes was the income difference across family types (Duncan & Brooks-Gunn, 1997; McLanahan & Sandefur). But if income were the determining factor, children would do as well in two-parent stepfamilies after their custodial parent remarried as in two–biological parent families, because one study found the incomes of both types of families to be comparable (McLanahan & Sandefur). Part of the differential in achievement between children in mother-stepfather and two–biological parent families has been attributed to residential mobility at divorce or remarriage, disrupting the social capital invested in that community (McLanahan & Sandefur). Yet one might expect such disruption to have only short-term effects, whereas child outcomes appear long-lasting. Differential involvement, warmth, supervision, aspirations, parenting practices, and food expenditures have been proposed to explain long-term differences in child well-being (Amato, 1987; Case, Lin, & McLanahan, 2000; Cooksey & Fondell, 1996; McLanahan & Sandefur; Thomson, Hanson, & McLanahan, 1994; Thomson, McLanahan, & Curtin, 1992). This paper continues this tradition with a focus on residential fathers. Although many fathers continue their involvement with children after separation, levels of parenting investments by necessity are lower for nonresidential fathers because contact is less frequent (Hofferth, Pleck, Stueve, Bianchi, & Sayer, 2002).

Even after reviewing the substantial body of previous research, a number of gaps exist. First, most of the research has focused on married parents. Little is known about differences in parenting by unmarried parents. Second, much of the research on stepparenting has been based on families with adolescents, a group whose adjustment to remarriage is difficult (Hetherington & Jodl, 1994). Research on families with younger children is less common. Third, much of the research has been conducted with middle-income families; less is known about stepparenting across a broad range of families. Using a nationally representative sample with multiple measures of involvement with individual children reported by mothers and by fathers (engagement, availability, activities, and warmth), this paper compares the involvement of married and unmarried fathers with residential biological and nonbiological children under age 13. The analysis focuses on children living with their biological mother and either father, stepfather, or father figure as well as on all children living with a father or father figure.

Theoretical Perspective

Investments of biological fathers in their children are substantial and enforced by legal means, including a child support order if the marriage breaks down or the parents do not marry (White, 1994). In contrast, legal and social expectations for residential nonbiological father involvement are minimal. Not only do we expect less positive involvement, but we also expect harsher treatment (Coleman, Ganong, & Cable, 1996) and that children may be at risk for abuse (Daly & Wilson, 1998). This paper develops biological and sociological explanations of differential paternal time investment in and involvement with residential biological and nonbiological children. The paper initially focuses on how the relationship of the residential male to child and partner may influence paternal investment in children. It then examines an alternative hypothesis—that these stepparent relationships may be selective of fathers with less desirable characteristics and parenting skills, and that is why investments are lower.

Biology and Investment in Children

One of the most time-honored motivations for having children is to carry on the family name (Fawcett, 1983). From an evolutionary perspective, investment in biological children increases the ability of the next generation to reproduce and continue the genetic family line (Emlen, 1995). There is also motivation to invest in biological children because it is likely that the relationship will be long-lasting and that such investments will

TABLE 1. CLASSIFICATIONS OF FATHER RELATIONSHIPS

Residence and Relation of Partner to Child	Relationship of Father to Child and Partner			
	Married Father		Unmarried Father	
	Biological	Nonbiological	Biological	Nonbiological
Living with partner				
Biological mother	Married father	Stepfather	Unmarried father	Cohabiting partner
Nonbiological mother	Father, stepmother	NA	NA	NA
Not living with partner	NA	NA	Single father	NA

Note: NA = not applicable.

pay off in the long run through the success of the child and the continued relationship. Thus research shows that parents invest heavily in adoptive children as well (Guo & Harris, 2002).

The presence of (nonadopted) nonbiological children creates a conflict of interest between partners (Emlen, 1997). Nonbiological children do not further the father's genes, may not continue to have a relationship, and may actually interfere with having additional children that would be the biological children of the father. Close genetic relatedness of family members is expected to maximize cooperation and minimize conflict, a balance that is upset by the introduction of an individual with a different set of interests, such as a stepparent. In the simplest form of the theory, men should be motivated to contribute to biological children more than to nonbiological children. However, the children's mother would benefit if the stepparent invested highly in her children. Not only do human fathers and mothers invest in nonbiological offspring, but there are also examples from other species of tolerant or caring behavior by stepparents (Rohwer, Herron, & Daly, 1999). By investing in their spouse's children from a prior union, remarried men increase the prospect of further childbearing as well as continuation of supportive and reciprocal exchanges with their partner. American and Dutch data show that marital quality and quality of the parent-stepchild relationship are linked (Fine & Kurdek, 1995; Kalmijn, 1999).

The presence of biological children elsewhere should affect involvement. Stepparents who already have children from a prior union need not worry about future reproductive fitness. More important today than simply having children, however, is rearing high-quality children (Willis, 1973), children who will grow up to successfully rear their own progeny. Supporting children outside the household may take both the stepparent's time and financial resources, leaving less for children in the new family (Manning & Smock, 2000). Whether outside obligations interfere with current family obligations depends on whether the stepparent supports children outside the household, not whether he has ever had any children, because fathers may not know about or may simply disavow children from previous unions.

Paternal investment in nonbiological offspring might also take place if the father is older. As fathers age, relationship investment may become more important to childrearing success. High-income and well-educated fathers may not be concerned about having the resources to support additional childbearing and may have a more positive relationship with children, including stepchildren (Dunn, Davies, O'Connor, & Sturgess, 2000).

Most previous analysis has focused on two married parents. In this paper we extend the analysis to children in unmarried two–biological parent families and children living with their mother and a cohabiting male father figure who is not the child's biological father (Table 1, row 1). Cohabiting men provide an important test of the importance of biology. Evolutionary theory would not predict a lower investment by an unmarried biological father than by a married biological father. Although some may argue that the motive for relationship investment is smaller in cohabitation, the opposite is as likely to be true. Investment in their partner's child may be an important relationship strategy for cohabiting men who wish to have their own children. Those who invest more may be more likely to marry the mother (Anderson, 2000). If so, differences in nonbiological fathers' investment by marital status should also be small. Research that has compared cohabiting men's involvement with their partner's children to that of married stepfathers found a difference in involvement by the residential father figure in only one of five areas examined: participation in youth ac-

tivities (Thomson et al., 1992), thus supporting the biological argument.

The evolutionary perspective predicts no difference or greater father investment relative to two–biological parent families when the father has sole custody of the child and when a custodial father acquires a new wife. Fathers may attempt to compensate for absence of the biological mother by spending more time with their children. Stepmothers are not as invested in children and are not likely to devote as much time and attention to them. To attain the same total level of investment in children as children of two biological parents, we would expect both single fathers and fathers married to a woman who is not the biological mother to invest more in them.

Marriage and Parental Investment

Sociologists Berger and Luckmann (1966) argued that an important source of family unity is routinization or habituation, which provides normative guidelines for behavior, narrows the range of choice, and reduces the number of decisions that could lead to disagreement. In contrast to first marriages, in remarriage families such habit is missing (Cherlin, 1978). The stepparent relationship, in particular, is ambiguous and, therefore, incompletely institutionalized. Unfortunately, ambiguity does not clearly lead to expectations for stepfathering.

A large body of research has examined expectations of married parents for the treatment of biological and stepchildren. Rather than ambiguity, it seems that there is agreement that stepparents are not expected to do what parents do (Coleman et al., 1996; Fine, 1995). Stepfathers vary in their agreement with a set of statements about appropriate stepparenting (Fine & Kurdek, 1995; Marsiglio, 1995). However, when stepfathers and mothers within the same family are asked their perceptions of parenting behavior, there is agreement (Bray, Berger, & Boethel, 1994). Stepfathers are expected to be friendly and to be supportive of the mother but not to act as the child's primary disciplinarian (Buchanan, Maccoby, & Dornbusch, 1996; Fine; Fine, Coleman, & Gonong, 1999). Consistent with this expectation, research has shown less monitoring by stepfathers compared with biological fathers (Hetherington & Jodl, 1994). Although stepfathers are not legally responsible for the support of stepchildren (White, 1994), financial support is expected (Ganong, Coleman, & Mistina, 1995).

Ambiguity is greater for unmarried than married fathers. Cohabiting fathers, whether biological parent or not, do not have the legitimacy and rights of married fathers (Buchanan et al., 1996), although they may have some of the responsibility (such as child support in the case of unmarried biological fathers). Their relationships are shorter, on average (Seltzer, 2000). The sociological perspective predicts lower investment by unmarried residential male partners in their or their partners' children than married partners, regardless of the biological relationship of father and child.

Other factors may alter the expectations of the stepfather role. There is some evidence that the quality of stepfather-child relationships is higher when the role is taken when the stepchildren are younger than when they are older (Hetherington & Jodl, 1994). First, for biological children mothers' and fathers' closeness and engagement decline as children age (Hofferth, 1998; Hetherington & Clingempeel, 1992). Stepfathers may be more positively involved with younger than with older children (Dunn et al., 2000). Second, remarrying when children are young means that stepparent and child will live together for a larger proportion of the child's life (White, 1994). Biological fathers have been living with their children since birth, whereas stepfathers and father figures generally have not. Research has shown that father figures who enter a family when the child is still young are better able to establish a good relationship than those who enter when the child is adolescent; adolescence is a particularly difficult time to establish a stepparent family (Bray, 1999; Hetherington & Jodl). The longer period of time permits the development of consensus regarding the stepparent role (Visher & Visher, 1988), and under these circumstances norms for stepparenting may not differ from those for biological parenting and may not be as ambiguous. Of course, consensus may vary across developmental stages. Ambiguity may be less for younger children than older children (Fine, 1995) because of their different developmental needs.

The stepfather role may be more ambiguous if the children's biological father maintains regular contact with the child (Bray, 1999; Buchanan et al., 1996). There is less need for an active stepparent in such circumstances, and stepfathers may not gain as large a payoff from being engaged with stepchildren under such circumstances. From a normative point of view, having two fathers results in more ambiguity than having only one (White & Gilbreth, 2001).

The ambiguity becomes even more marked in families that contain both biological children and stepchildren, which we refer to as *blended.* Each spouse is a biological parent and one spouse (at least) a stepparent. This ambiguity could lead to more, rather than less, equitable treatment, as the presence of a biological child may make differential treatment of a stepchild obvious and normatively unacceptable (Marsiglio, 1995). The research to date, however, suggests that differences in treatment within families are similar to those found across families. According to one study, stepmothers and stepfathers in blended families were less warm and supportive and monitored the activities of their stepchildren less than did biological parents of their own children (Hetherington & Jodl, 1994). Stepfathers, in particular, judge themselves to be less warm than do biological parents, although observers may not (Hetherington & Clingempeel, 1992). Disengaged parenting characterizes stepfathers more than biological fathers (Hetherington & Clingempeel), although, as Amato (1994) pointed out, focusing on means emphasizes small (but consistent) differences between groups, rather than their substantial similarities. However, a father's relationship with a stepchild or biological child is usually compared across households. Few studies have examined whether fathers and stepfathers treat children in the same family differently.

The research is consistent in that parents and children expect fathers and stepfathers to have different parenting roles and responsibilities, and these expectations are reflected in consistent behavioral differences as well. This is a prediction that also arises from both evolutionary theory and sociological theory. However, only the sociological perspective predicts that marital status would also make a difference to these expectations and to behavior. Married parents are expected to have a closer relationship than unmarried parents with children of the same biological relationship.

Selection and Parental Investment

A third approach states that it is not the biological relationship that leads to differential treatment; rather, nonbiological fathers differ in a variety of unmeasured ways from biological fathers, and it is these factors, rather than biology, that influence investment in children (Ginther & Pollak, 2000). For example, they may be less attractive partners because their earnings are lower. If they are unable to find a childless woman willing to marry them, they may settle for someone who already has children (Anderson, 2000). Controlling for these measured and unmeasured factors should reduce the biological father-stepfather involvement differential. This negative selectivity also leads to an expectation of a lower overall level of investment in children in blended families because of the shortcomings of the stepparent. The research examining outcomes such as achievement and behavior has found evidence both for a high degree and for a modest degree of selectivity. Ginther and Pollak found that differential outcomes for stepchildren and biological children disappeared when siblings within the same family were examined. Anderson, Kaplan, and Lancaster (2001) found that differences in paternal financial expenditures between stepchildren and genetic children 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 than biological children from the same households. Similarly, using a large sample of adolescents, Evenhouse and Reilly (2000) found only a small reduction in differential investments and outcomes within families compared with between families. These varying results may be based on differences in ages of children, different samples, or different outcomes. Parenting adolescent children is generally agreed to be more difficult than parenting younger children (Hetherington & Jodl, 1994). Little research has addressed the issue of differential investments in young children, and the research there is has not attempted to compare within- versus between-family investments.

Another type of selection may be operating in blended families: childbearing (Anderson, 2000). As suggested earlier, men who have genetic children by the stepchildren's mother may be the most selected of all: they have been selected on the basis of being good stepfathers and, consequently, likely good genetic parents as well. A stepfather who marries a woman with children and then goes on to have his own biological child with her may be highly selected for being a parent who gets along well, who likes children, and who is a nicer and better caregiver (Anderson, 2000; Lillard & 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 being a stepparent. This is not inconsistent with the evolutionary perspective, which argues that stepparent investment may be adaptive under certain circumstances when care for stepchildren serves as mating effort and a signal of mate quality.

To test these hypotheses, in this paper we first compare the involvement of biological children and nonbiological children with residential fathers across married and unmarried parent families. The focus is on children living with a biological mother. Support for the biological perspective is signaled by lower investment of nonbiological compared with biological fathers in children (Table 1, row 1, comparison of columns 2 and 4 vs. 1 and 3). Marital status should not matter (comparison of columns 3 vs. 1 and 4 vs. 2). It also predicts greater engagement when the stepparent has had biological children whom he supports. From the sociological perspective, we would expect marital status to make a difference in investments, as it leads to differences in normative expectations regarding fathering (i.e., columns 3 and 4 vs. 1 and 2). Incomplete institutionalization would also predict that stepfathers would be more involved with young children, male children, and children with whom they have lived longer. Stepfathers whose stepchildren have more contact with their biological fathers will be less involved. Better-educated, high-income men should be more involved and those who work more hours will be less involved. We examine biological and marital status comparisons without controls for other variables; we then make the comparisons controlling for the observed confounding factors and interactions described above.

Second, we compare nonbiological and biological children within families of a given marital status (O'Connor, Dunn, Jenkins, Pickering, & Rasbash, 2001). If selection of who becomes a stepparent is the cause of differential treatment of nonbiological and biological children in married parent families, differences will be smaller within than across families. This is because unobserved differences between fathers are eliminated. Lowered paternal investment in biological children in blended families compared with nonblended families provides evidence for the negative selection hypothesis, because evolutionary theory would not predict lowered investments in biological children in blended families. Positive selection can be signaled by increased investment in biological children and stepchildren in blended families, relative to such children in nonblended families.

Key Investments: Time and Parenting Practices

Parental investment includes both transfers of items requiring production (food, money) and direct caregiving (time). The present research focuses on the quality and quantity of time investments, rather than financial ones, because even the most detailed household consumption surveys provide no data on how consumption expenditures are allocated to different household members. Although financial expenditures are important, paternal time is considered to be crucial to children's development, particularly in the preteen years. We selected four key factors: engagement, availability, activities, and warmth (Hetherington & Jodl, 1994). Most developmental psychologists argue that the quality of parenting and the parent-child relationship are crucial to developing competent children. A combination of responsiveness and high demands is believed to create the best environment for child development (Maccoby & Martin, 1983). In the present study, warmth measures responsiveness by providing information on the emotional content of the interaction between parent and child. Previous studies have found stepparents to score lower than biological fathers on the warmth of their relationship with the child (Amato, 1987; Hetherington & Jodl; Thomson et al., 1992), at least as reported by the father himself (Hetherington & Clingempeel, 1992).

Shared activity is widely agreed upon both as an appropriate indicator and as a correlate of children's development (Cooksey & Fondell, 1996). Children learn through interacting with and observing parents (Bandura, 1969), and the level of interaction or engagement affects such learning (Lamb, Pleck, Charnov, & Levine, 1985). Mothers' engagement is generally high. In contrast, fathers vary in the level of engagement with children, as measured by time spent with them (Sandberg & Hofferth, 2001; Yeung, Sandberg, Davis-Kean, & Hofferth, 2001). Previous research has demonstrated lower participation of stepfathers in activities with children compared with fathers (Evenhouse & Reilly, 2000; Thomson et al., 1994; Thomson et al., 1992).

METHOD

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, children, and the families in which they reside. In 1997, the PSID added a refresher sample of immigrants to the United States (since 1968) so that the sample represents the U.S. population in 1997. When weights are used, the PSID has been found to be representative of U.S. individuals and their families (Fitzgerald, Gottschalk, & Moffitt, 1998). With funding from the National Institute of Child Health and Human Development (NICHD), 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 and from the children themselves (Hofferth, Davis-Kean, Davis, & Finkelstein, 1999). The CDS survey period began in March 1997 and, with a break from mid-June through August, ended on December 6, 1997. Interviews were completed with 2,380 child households containing 3,563 children under age 13. The response rate was 90% for those families regularly interviewed in the core PSID and 84% for those contacted the first time this year for the immigrant refresher to the sample, for a combined response rate for both groups of 88%. Poststratification weights based on the 1997 Current Population Survey are used to make the data nationally representative. This research used weights calculated by the CDS to adjust for the lower response rate (60%) by partners to the survey instruments.

Sample

In this paper we focus on a sample of 2,522 children who are reported by the primary caregiver to be living with an adult male, either their biological father, a stepfather who is a nonbiological father married to the mother, or their mother's cohabiting partner. The 1,032 remaining children (of the total sample of 3,563) were living with only the mother ($n = 940$), were not living with a parent ($n = 88$), or were missing data on family structure ($n = 13$). In our analysis sample, 83% of the children (unweighted $n = 1{,}983$) lived with two married biological parents, 5% (unweighted $n = 184$) lived with two unmarried biological parents, 1.8% (unweighted $n = 47$) lived with a biological single father, 5% (unweighted $n = 162$) lived with a biological mother and stepfather, 1% (unweighted $n = 42$) lived with a biological father and stepmother, and 3.5% (unweighted $n = 104$) lived with their biological mother and an unmarried partner, which we refer to as a *cohabiting father figure* or the *mother's cohabiting partner*. These distributions are similar to those calculated from the 1996 Survey of Income and Program Participation (Federal Interagency Forum on Child and Family Statistics, 2000). We focus on a subsample of 1,628 study children who live with their biological mother, a father, and a sibling in the study; 72 study children live in a family that contains at least one biological child and one nonbiological child of the father; and 1,556 live in a family that contains two biological children, two stepchildren, or two children unrelated to the mother's cohabiting partner.

Measures of Parental Involvement and Parenting

The PSID CDS used several methods for collecting data on parental involvement. Many of the items were standard scales asked in questionnaire format; however, there were three innovations for a large-scale nationally representative survey. First, time with fathers was collected through detailed 24-hour time diaries provided by the child and mother. Time diary data have higher internal consistency and reduced social desirability compared with standard single-item questions asked in most surveys (Hofferth, 1999; Juster & Stafford, 1985). Second, similar questions were asked of both parents in two-parent families; thus, information on father involvement was provided directly by the father himself. Third, the PSID-CDS obtained child-specific information on several parenting scales for up to two children under age 13 in a family.

Time children spend engaged with or with access to their parents. The CDS collected one weekday and one weekend day diary for each child age 0–12 in the family. The time diary, which was answered primarily by the mother or by the mother and the child, asked several questions about the child's flow of activities over a 24-hour period beginning at midnight of the randomly assigned designated day. These questions asked the primary activity that was going on at that time, 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?''—when linked to activity codes such as *playing* or *being read to* provide unbiased details on the extent of one-on-one interactions of others with the child. Codes were provided for

fathers, stepfathers, and for other adult nonrelatives of the child. For this analysis, times when the residential father or stepfather was reported as engaged in activities with a child were coded as father or stepfather engaged. Times when the father or stepfather was reported as available but not engaged were coded as father or stepfather available. We also report the total summed time that children of stepfathers spent with both nonresidential biological fathers and residential stepfathers because data on both types of father time are reported in the time diary. If the child lived with a partner of the mother we used the report of the time spent by other adult nonrelatives. Using the time of all other nonrelatives could potentially overestimate the cohabiting partner's time with the child if the child spent time with various nonrelated adults either within or outside the household. We examined each case and determined that the estimates were reasonable for what might be contributed by a partner. Our justification for including it is that this measure captures the total time of unrelated persons with this child; such time provides crucial support for children in this increasingly common family type. Times the father was engaged and accessible were summed over all activities for weekdays and weekends for each child. Weekly time was computed by multiplying weekday time by 5 and weekend day time by 2. We focus on the total number of hours spent (0 = *none*).

Types of activities with parents. Besides gathering data in a time diary, the CDS asked fathers directly about 13 different activities they may have done together with each of up to two children 3 years and older in the past month (1 = *did the activity*, 0 = *did not do the activity*). These include going to the store; washing or folding clothes; doing dishes; cleaning house; preparing food; looking at books or reading stories; doing arts and crafts; talking about the family; working on homework; building or repairing something; playing computer or video games; playing a board game, card game, or puzzle; and playing sports or outdoor activities. The total score reflecting the number of activities fathers reported doing with each child has a reliability coefficient (Cronbach's alpha) of 0.78. Sample sizes are lowest for these activity items, which are asked only of fathers of children 3 years and older.

Parental warmth. The warmth of the relationship between child and father is measured by six items asking how often in the past month the father hugged each child, expressed his love, spent time with child, joked or played with child, talked with child, and told child he appreciated what he or she did (Hofferth et al., 1999). The five response categories range from 1 = *not in the past month* to 5 = *every day*, with a mean above 4. In order to distinguish high from low responders, we dichotomized each response into 1 = *the father did this at least several times a week* or 0 = *the father did this less frequently.* The scores on the six items were summed to create a scale with a reliability coefficient (Cronbach's alpha) of 0.77. The scale represents the number of warm behaviors the father expresses with the child at least several times a week.

Fathering motivation. To assess the father's motivation for having children we also measured him on fathering attitudes and skills. Questions on fathering were drawn from the Being a Father scale (Pleck, personal communication, February 10, 1997) and from the Role of the Father questionnaire (Palkowitz, 1984), tapping the belief that the father role is important in child development. Items included the following: ''A father should be as heavily involved in the care of his child as the mother,'' and ''In general, fathers and mothers are equally good at meeting their children's needs.'' The responses ranged from 1 = *strongly disagree* to 4 = *strongly agree.* These eight items were factor analyzed using principal components analysis, but one factor was sufficient to describe these data. After recoding so that a high score indicates a positive attitude toward fathering and substituting mean values for individual missing items, the total score on the eight items was obtained by summing across items. The reliability coefficient was 0.70 on this scale.

Father pays child support. To determine whether the father had children he supported financially residing elsewhere we took advantage of a child support supplement asked in 1997 of PSID households. We matched the identifying information from residential fathers in the CDS to PSID fathers who reported whether they supported a nonresidential child. Although mothers' childbearing is well-reported in the PSID, fathers' childbearing is not. We considered this the highest quality indicator of paternal childbearing that we could obtain for the CDS fathers.

RESULTS

Sample Characteristics

Sample characteristics are shown in Table 2.

Child characteristics. Children of residential fathers average 6 years of age. As might be expected because it takes time for parents to bear children, separate from their original partners, and find new partners, children in stepfamilies and cohabiting father figure families are older, averaging 7.5 years of age, compared with 5.9 for children in married biological-father families. Children of unmarried biological fathers are significantly younger; more are infants and toddlers. As a measure of the length of time children have lived with their father, and, therefore, had a chance to get to know him, we calculated the percentage of months of their lifetime the child had lived with this father or father figure. Children of two married biological parents had lived with their father 99% of the time, and children of two unmarried biological parents had lived with their father 94% of the time. However, for stepchildren the average was 46%, and for children of a cohabiting partner, 48%.

Family composition and race-ethnicity. Family composition includes father's age, number of children, and family type. Fathers and father figures are about 37 years old; on average they have 2.4 coresident children. Stepfathers are significantly younger than biological fathers, although the mean difference is only 1 year. Overall, 73% of children are White, 8% Black, 13% Hispanic, and 6% of other race-ethnicities; a substantially higher proportion of children living with a stepfather are Black (16%), and a lower proportion are White (65%). Cohabiting-father figures are more likely than married biological fathers to be Black (18% vs. 6%); however, the highest proportion Black and lowest proportion White is among unmarried biological fathers, of whom one quarter (24%) are Black. Hispanics are represented in about the same proportion in all groups except cohabiting father figures, where the proportion that is Hispanic is only 1.6%.

Economic characteristics. Economic variables are measured first by the education and employment of the child's mother and father. Educational levels of fathers average about 13 years. Stepfathers' educational levels are significantly lower than married biological fathers, consistent with selection models of becoming a stepparent (Anderson, 2000). The educational level of unmarried biological fathers is also lower.

Fathers work 44 hours per week and mothers about 25 hours, on average. Cohabiting partners work 4 fewer hours, and unmarried biological fathers work 5 fewer hours than married biological fathers. Fathers' earnings average $38,000 per year, and their wives' or partners' earnings average $13,500, with total family income averaging $59,000. In contrast to what was found in other research (McLanahan & Sandefur, 1994) but consistent with the negative selectivity argument, in our data stepfathers and cohabiting father figures earn significantly less ($28,000 and $30,000, respectively) than married biological fathers ($40,000). As a result, total income is significantly lower in stepparent and in cohabiting-partner families ($42,000 and $34,000, respectively) than in biological father families ($63,000). The data in the earlier study were collected during a period of increased divorce and increased female labor force participation. It may be that in earlier years a mother was less likely to (re)marry a man with a low income, whereas contemporary mothers may be more inclined to do so because they have their own earnings. In addition, these findings reflect the stagnating earnings of men without a college education during the 1980s and early 1990s (Levy, 1998).

Finally, to measure whether the father has obligations to a nonresidential family, we determined whether the father paid child support to another household. About 3% of biological children of married parents lived with a father paying child support to another household, compared with 2.8% of children of stepfathers, 7.7% of children of cohabiting father figures, and 8.1% of children of unmarried biological fathers. We also include a dummy variable for whether or not we were able to determine if the father had such an obligation (whether we could match the father to outgoing child support information). In 2% of the cases we could not make such a determination. Finally, for stepchildren, we examined whether they had any contact with their nonresidential biological father. Most (65%) had no or minimal contact; 35% had frequent contact.

These results provide a consistent picture of disadvantage of unmarried biological and nonbiological fathers and married stepfathers relative to married biological fathers. Unmarried fathers are the most likely to be Black, work the fewest

TABLE 2. CHARACTERISTICS OF ALL CHILDREN LIVING WITH A FATHER, BY RELATIONSHIP TO FATHER

			Married Father				Unmarried Father			
	All Families		Biological Father		Stepfather[a]		Biological Father		Mother's Partner[a]	
Variable	*M*	*N*	*M*	*n*	*M*	*n*	*M*	*n*	*M*	*n*
White	0.73	2,531	0.75	1,998	0.65*	162	0.55**	258	0.77	104
Black	0.08	2,531	0.06	1,998	0.16***	162	0.24**	258	0.18***	104
Hispanic	0.13	2,531	0.14	1,998	0.14	162	0.17	258	0.02**	104
Other race	0.06	2,531	0.06	1,998	0.05	162	0.04	258	0.04	104
Child 0–2 years	0.24	2,531	0.25	1,998	0.08***	162	0.32*	258	0.09**	104
Child 3–5 years	0.23	2,531	0.23	1,998	0.22	162	0.26	258	0.16	104
Child 6–8 years	0.22	2,531	0.23	1,998	0.26	162	0.16*	258	0.31†	104
Child 9–12 years	0.31	2,531	0.30	1,998	0.44***	162	0.27	258	0.44**	104
Age of child (*M*)	6.04	2,528	5.97	1,998	7.53***	162	5.29*	258	7.48***	104
Gender of child (1 = *female*, 0 = *male*)	0.51	2,531	0.51	1,998	0.43	162	0.57	258	0.49	104
Mother's age	34.48	2,437	34.67	1,992	32.52***	159	33.14	186	35.09	91
Father's age	36.85	2,531	36.91	1,998	35.60*	162	36.99	258	37.00	104
Number of siblings (including child)	2.36	2,528	2.40	1,998	2.35	162	2.03**	255	2.19	104
Mother's education	13.06	2,420	13.25	1,979	12.19***	158	11.29**	183	12.24**	91
Father's education	13.20	2,531	13.31	1,998	12.71*	162	12.38**	258	12.89	104
Mother's weekly work hours	24.77	2,437	24.27	1,992	33.99***	159	22.24	186	27.04	91
Father's weekly work hours	44.45	2,531	45.07	1,998	44.30	162	39.37**	258	40.74**	104
Mother's earnings (in 1000s of dollars)	1.36	2,437	1.39	1,992	1.49	159	0.91**	186	1.08	91
Father's earnings (in 1000s of dollars)	3.82	2,531	4.03	1,998	2.83**	162	2.62**	258	3.05†	104
Family income (in 1000s of dollars)	5.87	2,526	6.33	1,996	4.18***	162	3.21**	255	3.36***	104
Percent of months lived with father	94.38	2,531	99.30	1,998	45.62***	162	93.97**	258	47.96***	104
Father paying child support	0.03	2,531	0.03	1,998	0.03	162	0.08**	258	0.08**	104
No father identifier	0.02	2,531	0.00	1,998	0.10***	162	0.12**	258	0.22***	104
Married biological parents	0.83	2,522	0.99	1,998	0.00***	162	0.00**	258	0.00***	104
Biological father, stepmother	0.01	2,522	0.01	1,998	0.00	162	0.08**	258	0.00	104
Single father	0.02	2,522	0.00	1,998	0.00	162	0.23**	258	0.00	104
Biological mother, stepfather	0.05	2,522	0.00	1,998	1.00***	162	0.00	258	0.00	104
Unmarried biological parents	0.05	2,522	0.00	1,998	0.00	162	0.70**	258	0.00	104
Cohabiting partner of mother	0.04	2,522	0.00	1,998	0.00	162	0.00	258	1.00***	104
Stepchild has little contact with biological father	0.03	2,522	0.00	1,998	0.65***	162	0.00	258	0.00	104
Stepchild has frequent contact with biological father	0.02	2,522	0.00	1,998	0.35***	162	0.00	258	0.00	104

[a]Children in this category are compared with children living with a married biological father. All analyses are weighted: *n*s are unweighted.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

hours, and are the most likely to support nonresidential children. It is not being Black per se, but the lower average levels of education and income of Blacks that are associated with being an unmarried father. Nonbiological fathers also have the oldest children. This provides background for the four groups of fathers whose involvement with children we explore.

Mean Differences Between Involvement of Fathers by Relationship to Child and Partner

The mean levels of residential father involvement by whether the child lives with a married or unmarried biological father, a stepfather, or the mother's partner are shown in Table 3. This sample includes all children living with a father. As expected, children spend significantly more time with a married biological father than with a nonbiological father, either stepfather or mother's partner (15.6 hours vs. 9.1 and 10 hours per week, respectively; row 1). Biological fathers are available an additional 13.3 hours per week, compared with 9.5 hours for stepfathers and 15.2 hours for cohabiting father figures (row 3). The latter is significantly higher than stepfather available time, as it potentially includes other nonrelatives as well, but it is not significantly different from the figure for married biological fathers. Unmarried biological fathers spend no less time engaged with or available to children than married biological fathers.

Part of the explanation for the relatively low number of hours stepchildren spend with stepfathers appears to be that stepchildren receive time and attention from nonresidential fathers. In row 2 we show the *total* time stepchildren spend engaged with either their nonresidential biological father or their residential stepfather. Although the total engaged time spent by stepchildren with all fathers (11.6 hours) is still significantly lower than that spent by biological children with married residential biological fathers (15.6 hours), the difference is smaller (4 hours, rather than 6.5 hours). Time spent with nonresidential biological fathers makes up for part of the shortfall with residential stepfathers. Similarly, the additional time stepchildren have available from either their nonresidential biological father or residential stepfather (10.9 hours) is slightly higher than time with the latter alone (9.5 hours), although still significantly lower than the time biological children have available from residential biological fathers (13.3 hours; row 4).

TABLE 3. FATHERS' INVOLVEMENT, ALL CHILDREN LIVING WITH FATHERS, BY RELATIONSHIP TO FATHER

	All Families		Married Father						Unmarried Father					
			Biological Father			Stepfather[a]			Biological Father[a]			Mother's Partner[a]		
Variable	*M*	*N*	*M*	*n*		*M*	*n*		*M*	*n*		*M*	*n*	
Weekly hours engaged with residential father	15.07	2,061	15.63	1,661		9.15***	129		14.62	199		10.10***	72	
Weekly hours engaged with biological or stepfather	15.37	2,061	15.63	1,661		11.61***	129		14.62	199		15.51	72	
Weekly hours residential father available	13.23	2,061	13.35	1,661		9.54***	129		13.29	199		15.24	72	
Weekly hours biological or stepfather available	13.37	2,061	13.35	1,661		10.94*	129		13.29	199		17.24**	72	
Number of activities with father in last month	9.03	998	9.13	818		8.22*	59		8.94	101		7.43*	18	
Father's warmth	5.03	1,306	5.10	1,075		4.36***	61		4.91	139		3.69***	25	
Fathering motivation	26.07	1,236	26.06	1,037		25.28†	58		26.77	109		25.67	26	

[a]Children in this category are compared with children living with a married biological father.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 4. FATHER INVOLVEMENT, CHILDREN IN BLENDED FAMILIES, BY RELATIONSHIP TO FATHER

	All Families		Biological Father		Stepfather[a]	
Variable	*M*	*N*	*M*	*n*	*M*	*n*
Weekly hours engaged with residential father	11.67	72	13.58	34	11.25	31
Weekly hours engaged with biological or stepfather	13.40	72	13.58	34	13.49	31
Weekly hours residential father available	12.30	72	12.67	34	12.84	31
Weekly hours biological or stepfather available	13.78	72	12.67	34	15.52	31
Number of activities with father in last month	10.27	30	10.61	11	10.25	18
Father's warmth	4.96	39	5.21	19	4.73	18
Fathering motivation	25.48	34	25.29	17	25.45	15

[a]Children in this category are compared with children living with a biological father.

The story obtained from the two other measures of parenting is similar to that described above for parental time. Nonbiological stepfathers and mothers' cohabiting partners are similar and lower on measures of desirable parenting practices and investments than married biological fathers. In addition, no differences were found between the involvement of unmarried biological fathers and married biological fathers or between stepfathers and mothers' partners. For example, on our self-reported measure of activities done together in the past month, children were reported doing a similar number of activities with married biological fathers (9.1) and unmarried biological fathers (8.9). In contrast, the level of activities with stepfathers (8.2) and cohabiting father figures (7.4) was lower and not significantly different from each other. Similarly, children's biological fathers engaged in about five warm activities more than once a week compared with 4.3 for stepfathers and 3.7 for cohabiting father figures. Unmarried fathers' score of 4.9 on warmth did not differ from that of married biological fathers. Finally, stepfathers have significantly poorer fathering attitudes than married biological fathers. These results are consistent with evolutionary theory; biology matters and marriage does not.

The father involvement differences in the overall sample of biological and stepparent families can be attributed to between-family differences, whereas those between children in blended two-parent families are within-family differences in treatment. A comparison of average levels of involvement in blended families suggests that the differences between stepfathers and biological fathers disappear (Table 4). Unfortunately, with only 62 children in 31 blended biological father or stepfather families, we did not have sufficient sample size to analyze the blended family alone. Instead we turned to multivariate analysis in

TABLE 5. EFFECTS OF FAMILY TYPES ON FATHER INVESTMENTS IN CHILDREN. ALL FAMILIES AND TWO-PARENT, TWO-CHILD FAMILIES

	Engaged (Hours)			Available (Hours)		
	All Families	Two-Parent, Two-Child Families		All Families	Two-Parent, Two-Child Families	
Variable	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Biological father and stepmother	−3.57			0.34		
Single biological father	7.21***			3.20		
Biological father and stepmother	−3.57			0.34		
Stepfather and biological mother	−4.79**	−5.35**	−22.13†	−4.63**	−8.49***	−6.66
Unmarried biological father	−3.72**	−4.39**	−4.31**	−1.76	−2.00	−2.02
Partner of biological mother	−3.60*	−2.40	−1.96	0.80	−1.25	−0.77
Blended family		−3.42†	−3.44†		−3.77*	−3.78*
Stepchild in blended family		6.02†	4.31		11.42**	11.15**
N	2060	1289	1289	2060	1289	1289
R^2	0.10	0.09	0.09	0.04	0.05	0.06

Note: All models control for race, age of child, sex of child, age of father, number of children, percent of months lived with father, father pays child support, whether father identifier is missing, father's education, father's work hours, and father's earnings. Mother's hours and earnings are included in Model 2 as well. Model 3 also includes interactions shown in Table 7, Model 3.

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

which we can adjust statistically for the blendedness of a family.

Multivariate Analyses of Fathering Behavior

In our multivariate analyses, we first regress each fathering variable on family type and characteristics of fathers, children, and families to examine the factors explaining father involvement with children (Table 5). To test overall hypotheses regarding investments of fathers, we first used the full sample of children in all families in which there is a father. These results are shown in Table 5, Model 1. The results are virtually identical to the results for the two-parent, two-child subsample (Models 2 and 3). This suggests that our findings are generalizable to all children living with their father. Findings specific to Model 1 are that single fathers spent significantly more time engaged with the child than biological fathers living with the child's mother, as expected, but father investments do not differ in stepmother and married biological parent families.

Differences by biological and marital status are indicated by the significance and sign of the coefficients on each of the dummy variables for the three family types (stepfather, unmarried biological father, and mother's partner) compared with the married biological father family. Furthermore, by including indicators of whether the family is blended and the interaction between being a stepchild and being in a blended family, we can statistically test both whether there is positive or negative selection and whether paternal involvement is higher for stepchildren in blended families. A positive coefficient on blended family suggests positive selection and a negative coefficient negative selection because the sign indicates whether biological children do better or worse in blended families than in families in which all children are biological children. The coefficient on the interaction between stepchild and blendedness of the family tells us whether stepchildren benefit by being in a blended family. A positive coefficient means that stepchildren benefit. Finally we can also test whether stepchildren receive more or less attention among stepfathers with other characteristics by examining interactions between being a stepchild and these other characteristics of the child and father.

Controlling for background differences, children living with a stepfather spent 4.8 fewer hours, children living with an unmarried biological father spent 3.7 fewer hours, and children living with a cohabiting father spent 3.6 fewer hours engaged with their residential father than children living with two married biological parents. All three groups spent significantly less time with fathers than children of married biological fathers, and the latter three groups are not statistically different from each other. On available time, the difference in father time between children in married biological and married nonbiological (stepfather) families is a significant 4.6 hours, whereas neither

TABLE 5. EXTENDED

Activities			Warmth		
All Families	Two-Parent, Two-Child Families		All Families	Two-Parent, Two-Child Families	
Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
−0.58			−0.17		
−0.17			0.16		
−0.58			−0.17		
−1.54**	−4.35***	−1.87	−0.38	−1.11*	6.73***
0.39	−0.74	−0.90	−0.14	−0.63*	−0.66*
−2.41*	−5.79***	−5.30***	−1.16**	−1.27*	−1.14*
	0.97	0.98		−0.23	−0.22
	3.23*	2.13		1.35*	0.98
995	618	618	1299	778	778
0.05	0.12	0.15	0.17	0.18	0.22

TABLE 6. PREDICTED VALUES OF FATHER ENGAGEMENT, BY BLENDEDNESS AND RELATIONSHIP TO FATHER

Blendedness and Type of Engagement	Relationship of Father to Child and Partner			
	Married Father		Unmarried Father	
	Biological	Nonbiological	Biological	Nonbiological
Nonblended				
Engaged	14.8	9.5*	10.4*	12.4
Available	13.4	4.9*	11.4	12.1
Activities	9.2	4.9*	8.5	3.4*
Warmth	5.1	4.0*	4.4*	3.8*
Blended				
Engaged	11.4	12.0	7.0*	9.0
Available	9.6	21.0*	7.6	8.4
Activities	10.2	9.1	9.5	4.4*
Warmth	4.9	5.1	4.2*	3.6*

*Significantly different from married biological fathers at $p < .05$.

the unmarried biological or unmarried nonbiological father's time differs from that of the married biological father.

Examining other types of involvement, children participate in significantly fewer activities with stepfathers and partners of their mother than biological fathers. Similarly, stepfathers and mothers' cohabiting partners rate themselves lower on warmth. The warmth of unmarried biological fathers also differs from that of married bio-

TABLE 7. EFFECTS OF SOCIODEMOGRAPHIC BACKGROUND FACTORS ON FATHER'S INVESTMENTS IN CHILDREN

Variable	Engaged (Hours)			Available (Hours)
	All Families	Two-Parent, Two-Child Family		All Families
	Model 1	Model 2	Model 3	Model 1
Intercept	22.59***	19.20***	18.44***	18.83***
Black	−1.93*	−2.16†	−2.17†	−0.69
Hispanic	0.77	1.02	0.70	0.59
Other race	−0.45	0.47	0.44	−0.23
Child 3–5	−0.69	−0.33	−0.51	−1.46*
Child 6–8	−3.40***	−2.85**	−2.93**	−1.56*
Child 9–12	−3.48***	−2.57*	−2.60**	−0.35
Sex of child (1 = *female*, 0 = *male*)	−1.12*	−1.21*	−1.22*	−0.66
Age of father	−0.11**	−0.11*	−0.11*	−0.01
Number of children	−1.17***	−0.66*	−0.63*	0.52*
Percent of months lived w/father	0.02	0.04	0.05†	−0.02
Father pays child support	−2.06	−2.08	−1.85	2.81*
No father identifier	−1.44	0.69	0.46	0.23
Father's education	0.21*	0.17	0.16	0.16
Mother's work hours		0.01	0.01	
Father's work hours	−0.05*	−0.08**	−0.08***	−0.12***
Mother's earnings		0.56**	0.55**	
Father's earnings	−0.14†	0.03	0.02	−0.03
Stepchild × child support			1.51	
Stepchild × age 3–5			8.93	
Stepchild × age 6–8			6.09	
Stepchild × 9–12			4.97	
Stepchild × father's education			0.89	
Stepchild × Black			0.52	
Stepchild × Hispanic			7.22	
N	2060	1289	1289	2060
R^2	0.10	0.09	0.09	0.04

Note: All models include the variables in Table 5.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

logical fathers in the two-parent, two-child subsample (Model 2).

The results so far do not clearly support either the biological or sociological perspectives, although the results are most consistent with the argument that the biological relationship with the child determines fathering patterns. Married nonbiological fathers (stepfathers) spent less time with their stepchildren than married biological fathers on all the parenting measures. Unmarried nonbiological fathers spent less time with their residential children in activities and are less warm than unmarried biological fathers. The differences by marital status in the expected direction are, first, unmarried biological fathers spend significantly less time engaged than married biological fathers with their children, and, second, they are less warm. Surprisingly, married stepfathers are *less* available than unmarried partners to their partners' children. This may reflect the fact that cohabiting fathers' available time may be inflated by the inclusion of time of other nonrelatives.

Blended Family and Stepchild Status

In Model 2 of each type of paternal investment in Table 5 we include an indicator for whether the family is blended (1 = *blended*, 0 = *not blended*) and whether the child is a stepchild in a blended family (1 = *stepchild in a blended family*, 0 = *not a stepchild in a blended family*). The coefficient of blended is negative in three of the four measures and is statistically significant for two—engagement and availability. These results are consistent with a negative selectivity into blended families, even after controlling for many observed sources of difference. That is, biological children do slightly worse in blended than in nonblended families. Support for negative selection also comes from differences in fathering attitudes across family types. Stepfathers have significantly less positive fathering attitudes across fathers; this disappears within blended families, but stepfathers' attitudes do not become more positive than those of biological fathers.

TABLE 7. EXTENDED

Available (Hours)		Activities			Warmth		
Two-Parent, Two-Child Family		All Families	Two-Parent, Two-Child Family		All Families	Two-Parent, Two-Child Family	
Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
18.98***	17.28***	9.91***	10.89***	10.19***	5.61***	5.88***	5.38***
0.27	0.50	−0.17	−0.12	0.21	−0.45**	−0.29	−0.20
−0.64	−0.39	0.29	−0.05	−0.21	−0.11	−0.28	−0.14
−0.54	−0.37	0.16	0.16	0.11	−0.27	−0.38†	−0.35†
−2.00*	−2.36**	0.24	1.08	0.94	−0.11	0.00	0.01
−2.45**	−2.78**	0.85	1.79*	1.69†	−0.52***	−0.39**	−0.35*
−1.90*	−1.79†	0.44	0.98	0.74	−1.16***	−1.00***	−0.98***
0.06	0.01	−0.14	0.02	0.06	−0.04	0.00	0.04
0.04	0.04	−0.06***	−0.08***	−0.08***	−0.01†	−0.03**	−0.03**
0.48	0.52†	0.12	0.27*	0.26*	−0.03	0.00	−0.01
−0.01	0.00	−0.01	−0.02†	−0.01	0.00	0.01	0.01†
−2.44	−1.73	−1.17*	−2.06**	−1.50†	−0.13	−0.44	−0.22
4.11	4.19	0.49	2.09	2.40†	−0.01	0.23	0.23
0.00	0.03	0.15*	0.11†	0.10*	0.00	−0.02	−0.01
0.02	0.02		−0.01	−0.01		−0.01†	0.00
−0.13***	−0.14***	−0.01	0.01	0.01	0.00	0.00	0.00
−0.10	−0.12		0.32***	0.32***		0.09*	0.07†
0.01	0.00	−0.06*	−0.04	−0.04	0.03**	0.03*	0.03*
	−8.22			−6.95*			−6.10***
	14.09*			−0.21			−0.53
	8.73			0.23			−1.10
	0.90			2.20			−0.98
	−0.42			−0.15			−0.44***
	−4.18			−4.16†			−1.17
	−6.08			0.64			−2.97***
1289	1289	995	618	618	1299	778	778
0.05	0.06	0.05	0.12	0.15	0.17	0.18	0.22

The sign and significance of the coefficient on stepchild in a blended family indicate whether stepchildren are advantaged or disadvantaged in married blended families relative to stepchildren in married families that are not blended. Although being in a blended family does not improve parental time with biological children, considerable advantages accrue to the stepchild. Stepchildren in blended families enjoy greater time engaged with their father and greater available time. They also participate in more activities and benefit from more warmth compared with stepchildren in married parent families that are not blended. The sizes of the coefficients equal or exceed the coefficient for stepfather and are opposite in sign, which means that being in a blended family more than compensates stepchildren for the negative effect seen across families.

Although children may be of different biological relationships, parents in a blended family can have only one marital relationship. Unfortunately, there are too few cases of unmarried families with both biological and nonbiological children to examine the same type of interaction between marital status and blendedness for cohabiting partners. Therefore, our best test is in married parent families. To determine the full implications of these results for children requires summing across family type, blendedness, and whether a stepchild in a blended family. Father involvement, calculated adjusting for background factors, is described below.

Predicted Values of Father Involvement

Based on a set of simulations that set the control variables at their mean and vary only the relationship of child to residential father and blendedness, we calculated values for each of the measures of father involvement for each of our four family types in blended and in nonblended families. Stepchildren are better off in blended families, according to our estimates. In a nonblended stepfamily, stepchildren spend about 9.5 hours per week engaged in activities with their stepfather, compared with 14.8 hours for a biological child in a married two–biological parent family (Table 6, top panel, columns 1 and 2). However, stepchildren in a blended family spend 12 hours with their stepfather compared with about 11.4 hours for biological children in a blended family (Table 6, bottom panel, columns 1 and 2). The results are similar for activities. In a nonblended family a stepchild would engage in 4.9 activities with a stepfather, compared with the 9.2 activities that a biological child engages in with a biological father. However, if they live in a blended family, the number of activities a stepchild does with a stepfather (9.1) is similar to the number of activities biological children do with their biological fathers (10.2). The results for the other variables are similar, in that the advantage held by biological children over stepchildren in two married parent families disappears in blended families. Stepchildren in blended families also experience advantages over those in nonblended families on paternal warmth. Although stepchildren in nonblended families experience less warmth from stepfathers than do biological children (4 compared with 5.1), in a blended family the warmth level is similar to that of their half-sibling who is a biological child of both parents (5.1 compared with 4.9). Thus the difference in father involvement between biological and nonbiological resident children across all families disappears in married blended families.

We also compare paternal investments in biological and nonbiological children among the unmarried. In the top panel of Table 6, columns 3 and 4, the investments of fathers in nonbiological children are lower than those in biological children only on activities (3.4 compared with 8.5). Comparing married versus unmarried nonblended families we see that children living with an unmarried biological father enjoy less direct engaged time and also experience less warmth than children of a married biological father. When we compare the levels of father involvement with biological and nonbiological children in blended unmarried parent families, we see that the levels are distinctly lower in both unmarried parent family types (columns 3 and 4) compared with married families in (columns 1 and 2), and the levels of involvement of unmarried fathers do not differ from each other except in the case of activities, where nonbiological fathers continue to be less involved. This is not definitive, because sample sizes are small for blended families and interactions could not be included, but it supports the argument that marriage is more important than the biological relationship between father and child.

Other Influences on Stepfather Involvement

Next we examined the relationship between father involvement and characteristics of father and child (Table 7) and how the effects of these characteristics differ for stepfathers compared with married biological fathers. Only interactions that were sig-

nificant in at least one of the models were retained. Supporting the sociological argument, fathers' time with children declines as they grow. Stepfathers are especially likely to have time available for children ages 3–5 than similar married biological fathers (Available, Model 3, positive coefficient on stepchild × age 3–5). Although fathers spend less time engaged with girls than with boys, there is no difference by whether the father is a stepfather (not shown). There are no significant gender differences in father participation in activities or father warmth. As expected from the sociological perspective, fathers spend more time with children with whom they have lived longer, they do more activities together, and they are warmer.

Cultural differences show up in stepfathering. Consistent with previous research, Black fathers spend less time engaged with children. Although they participate in as many activities with children as White fathers, as stepfathers they participate significantly less (Activities, Model 3, negative coefficient on stepchild × Black). Hispanic fathers are neither more nor less warm than White fathers; however, as stepfathers they are significantly less warm (Warmth, Model 3, negative coefficient on stepchild × Hispanic).

Economic differences are partially as expected. Fathers who work more hours spend less time with children. Higher-income fathers are warmer although they spend less time engaged with children and in activities with them, even controlling for work hours. There is no interaction between income and stepfather relationship in influencing investments. Better-educated fathers participate in significantly more activities with their children, as expected. Although better-educated fathers are neither more nor less warm than less-educated fathers, as stepfathers they are significantly less warm (Warmth, Model 3, negative coefficient on stepchild × father's education). This is surprising but may reflect a high level of occupational involvement of highly-educated fathers, because both earnings and hours are controlled.

In contrast to predictions from the genetic model, fathers who support nonresidential children spend less time engaged in activities with residential children, and stepfather participation is particularly strongly and negatively influenced by having nonresidential children to support (Activities, Model 3, coefficient on stepchild × child support). Stepfathers who support nonresidential children also report lower levels of warmth (Warmth, Model 3, coefficient on stepchild × child support). These findings support the argument that, rather than freeing the father to invest in new children, having children means that fewer resources go to each. Consistent with this argument, the more children, the less time devoted to any one, although children in large families have more available time and do more activities with their fathers. Contrary to prediction, older fathers spend less time engaged with children than younger fathers.

Although it is not shown here, we examined whether the frequency of contact of a residential stepchild with a biological father has an influence on the stepfather's involvement. In none of the models was this ever statistically significant, and the variable was dropped from the final models.

The inclusion of interaction terms affects the relationship between family type and paternal involvement (Table 5). In Table 5, Model 3, we see that three of the four coefficients on stepfather are reduced to nonsignificance (although in the case of engagement time this results from increased standard errors) and one changes direction (warmth). The data suggest that stepfathers who do not support children in other households report themselves as *warmer* than married biological fathers. This suggests that these characteristics explain some of the reduced involvement of stepfathers with children. In particular, when we added interaction terms individually, the addition of age of child and support for nonresidential children were the variables that reduced the effect of being a stepfather. The fact that they are more likely to support nonresidential children and that they move into families with older children are the major reasons why stepfathers are not investing as much in children as biological fathers.

Discussion

This study has tested biological and marital explanations as to why the nonbiological children of married and cohabiting father figures may suffer emotionally and have lower school achievement than children of biological fathers. The former predicts that fathers will not invest as much cognitively or emotionally in nonbiological as in biological offspring. The sociological model predicts less involvement by stepfathers and by partners who are not married to the mother because either expectations are, in the former, that they will be less involved with children or, in the latter, the behavior is still so new that norms have

not developed to guide nonmarital partners in parenting children.

Selectivity is our third explanation. On the one hand, men who choose to enter the stepparent relationship may be negatively selected (lack of alternative opportunities, less attractive). Eliminating this selection should result in treating biological and nonbiological children equally, with the biological children worse off and the nonbiological children better off. On the other hand, men who choose to have children with a woman who has children from a former union may be positively selected for better relationship and fathering skills, in which case both stepchildren and biological children should be better off.

These hypotheses were tested on a sample of children living with a father or father figure. The initial results supported biology over marriage explanations, with larger differences by the biological than the marital relationship. However, differences in paternal involvement by biology declined when children were compared within the same family. Stepchildren received significantly more time and attention in blended than in nonblended families, making their overall interaction no different from that of a half-sibling who is the biological child of both parents. The differences in blended families favored children living with married parents, regardless of the biological relationship between child and father.

Negative selectivity seems the most promising explanation of the apparent differences across families. One of the reasons stepfathers invest less in stepchildren overall is that they differ from biological fathers in ways that lead to reduced investment and perhaps also to more problems for their children. Once this selectivity is eliminated by examining families with joint biological and nonbiological children, the differences in paternal investments are small and not statistically significant. Thus biology is not as important as posited by the evolutionary model. However, marriage becomes a more important distinguishing factor. In these blended families children of married parents consistently fare better than children of unmarried parents.

Several factors did not influence father involvement. We did not find any evidence that the involvement of a nonresidential father in the life of the stepchild reduced the involvement of the stepfather over what it would have been in the absence of this dad in his life. In fact, adding in that absent parent's time helps bring stepchildren's overall time with both fathers closer to that in two–biological parent families.

The father's history affects current family investment. Fathers who reported supporting nonresidential children were less involved with residential children. These obligations appear to interfere with investment in a new partner's children. Because the father is already investing in children, he does not need to invest as heavily in the current family to facilitate future reproduction. It is interesting that unmarried biological fathers and partners are the most likely to have these outside obligations. Such obligations may interfere with remarrying.

In this research we found evidence to support the view that marriage per se confers advantage in terms of father involvement above and beyond the characteristics of the fathers themselves, whereas biology does not. Although marriage clearly is associated with higher levels of investment, unmarried biological and nonbiological fathers still spend substantial amounts of time with nonbiological children, doing things with them, and acting warmly toward them. This suggests that unmarried partners *can* be involved fathers. Why, then, are they not as involved? First, these men often have responsibilities to other children. The results suggest that the financial support provided by the residential father to nonresidential children greatly reduces his involvement with residential children. Second, by the time the partners move in together, children are less likely to be of preschool age. Fathers, particularly stepfathers, are more involved with young children. Fathers are also more involved with children with whom they have lived longer. Forming new families is easier when children are young. When these factors and interactions with stepfather were controlled, the negative association between living with a stepfather and father involvement was reduced in size and statistical significance. In fact, stepfathers who did not provide support to other children rated themselves warmer than biological fathers.

Although our data are some of the best currently available in that they provide nationally representative information on key investments of fathers—the quantity and quality of time spent with young children—they are not perfect. Even with sample sizes of 3,600 children, the number of children living in families with half-siblings is small. In addition, the number of children living with unmarried fathers, whether biological or not, is also small. We can compare the parenting of

married biological and nonbiological fathers, but sample sizes are small for making this comparison among unmarried fathers. It is important that future data collection provide sufficient numbers for research, as children are more likely to be living with unmarried fathers. Although studying this phenomenon in other countries would be useful and might provide larger samples of unmarried parents, it would not be as relevant to U.S. policy.

Even with the above limitations we can conclude that in designing public or private policies to promote positive relationships among disadvantaged mothers and fathers, consideration should be given to assisting them in managing complex relationships. These include relationships with the child's other parent, former partners outside the family, and children from other relationships as well as those living with them. Programs that promote marriage without addressing the other complicated financial and relationship issues they face seem unrealistic and prone to failure.

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