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Parenting Practices of Resident Fathers: The Role of Marital and Biological Ties

This paper uses data from the Fragile Families and Child Wellbeing Study (N = 2,098) to examine differences in the parenting practices of four types of resident fathers, defined by their biological relationship to a focal child and their marital status with regard to the focal child's mother. Regression results suggest that biological fathers and social fathers (i.e., stepfathers or mothers' cohabiting partners) differ significantly, and in some unexpected ways, on most measures of parenting. A considerable portion of these differences, however, can be explained by variation in the background characteristics of the individuals and families in each group. Additionally, difference-in-difference analyses reveal a stronger link between marriage and

higher quality parenting practices among social fathers than among biological fathers.

Dramatic changes in U.S. family demography in the last half century have served to increasingly delink marriage from childrearing. Although annual divorce rates have been declining since the early 1980s, parental divorce continues to be common, and the majority of those who divorce will subsequently remarry—typically within about 4 years (Stevenson & Wolfers, 2007). In addition, about 37% of all births currently occur outside of marriage (Hamilton, Ventura, Martin, & Sutton, 2005), few unmarried parents will marry each other after their baby's birth (Carlson, McLanahan, & England, 2004; Osborne, 2005), and relationships between unmarried parents are highly unstable (Osborne & McLanahan, 2007). Together, these trends suggest that adults will likely enter and exit multiple unions and that children (especially those born outside of marriage) will likely spend time living with a *social parent*, defined here as a married or cohabiting partner of a child's biological parent (usually mother) to whom the child is not biologically related (Bumpass & Lu, 2000; Graefe & Lichter, 1999; Manning & Smock, 2000). Indeed, estimates from the mid-1990s show that approximately one third of children in the United States will spend time

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living with a social parent during childhood (Coleman, Ganong, & Fine, 2000). More recent evidence suggests that more than a fifth of children born to unwed mothers will live with a social father by age 5 (Bzostek, Carlson, & McLanahan, 2007). Compared to children living with their married biological parents, those living in stepfamilies (McLanahan & Sandefur, 1994) or with unmarried social fathers (Brown, 2004; Hofferth, 2006; Manning & Brown, 2006; Manning & Lamb, 2003) are, on average, disadvantaged on a range of outcomes.

Given that coresidence with a social father is a common experience for children and is also associated with childhood disadvantage, it is important to understand whether social fathers' parenting practices differ from those of biological fathers, both within and outside of marriage. Yet there has been limited research in this area (Hofferth & Anderson, 2003), largely because of a lack of available data (Hofferth et al., 2007; Seltzer, 2000). We use new data from the Fragile Families and Child Wellbeing Study (FFCWS) to describe differences in the parenting practices of four types of resident fathers, defined by their biological relationship to 5-year-old children and their marital status with regard to the children's mother. We then examine whether these differences can be explained by selection factors as well as whether associations between marriage and parenting practices differ for biological and social fathers.

Theoretical Perspectives and Prior Research

Demographic trends associated with the decoupling of marriage and childbearing have differentiated three aspects of family structure that promote parental investment in children: biological ties, coresidence, and marriage. Because our analyses evaluate the parenting practices of resident biological and social, married and unmarried fathers, we focus here on the role of biology and of marriage as a social institution in influencing men's investments in children. As such, our theoretical framework draws upon evolutionary and sociological perspectives on childrearing with regard to fathers; we also consider the role of social selection.

Evolutionary perspectives on childrearing (which are grounded in sociobiology, evolutionary biology, and evolutionary psychology) emphasize the importance of genetic links (or lack thereof) between fathers and children in

shaping fathers' parenting practices. Evolutionary theorists use the term *investment* to signal that fathers make a range of direct and indirect contributions to children across multiple domains of childrearing, such as providing material resources and direct caregiving, protecting children from harm, transferring knowledge, maintaining children's homes, preserving kin networks, and economically, socially, or emotionally supporting children's mothers (Hewlett, 2000). Lamb and colleagues posit that these domains represent three crucial dimensions of fathering—engagement, availability, and responsibility (Lamb, Pleck, Charnov, & Levine, 1987; Lamb, Pleck, & Levine, 2000). Evolutionary perspectives suggest that biological fathers will invest more time and resources (i.e., "parental effort") in children than social fathers because the former have an evolutionary interest in passing on their genes and assuring their children's success (Daly & Wilson, 2000; Emlen, 1997). This process is complex, however, and may be influenced by a host of demographic, ecological, and cultural factors (Hewlett). As such, a purely biologically based conception of fathering is likely to have limited utility for fully explicating the parenting practices of biological and social fathers. For instance, coresidence appears to be an important confounder in the association between genetic relatedness and father investment: Resident biological fathers and resident stepfathers have both been found to spend more time with children than nonresident biological fathers (Anderson, Kaplan, & Lancaster, 1999). Thus, resident social fathers may make considerable investments in nonbiological children, potentially as a form of "mating effort" (or, more broadly, "relationship effort") with regard to their mother (Anderson, Kaplan, & Lancaster, 1999); that is, social fathers may invest time and other resources in their partner's children in the hope of future childbearing (or other positive outcomes) with her.

With these caveats in mind, evolutionary perspectives imply that resident biological fathers (who likely invest in children as a form of both parental and mating/relationship effort) will engage in higher quality parenting practices than resident social fathers (who likely invest primarily as a form of mating/relationship effort). Additionally, although marital status is not typically a focus of evolutionary theory—which yields no clear predictions regarding the role of

marriage—it is plausible that marriage among biological parents signifies a greater willingness on the part of a father to make long-term investments in children, particularly if it also connotes a greater certainty of his paternity. As such, evolutionary perspectives may imply, albeit indirectly, that marriage should be positively associated with the quality of fathers' parenting practices (Anderson, Kaplan, & Lancaster, 2007), although this may reflect selection more than causation.

Theoretical work in family sociology also suggests that biological fathers will invest more in children than will social fathers, primarily because the former are both legally and socially obligated to do so, whereas social fathers' obligations to children are less fully institutionalized (Cherlin, 1978; Cherlin & Furstenberg, 1994; Furstenberg & Cherlin, 1991). Family sociology has long emphasized the importance of the family as an institution that regulates childbearing and child-rearing, promotes investment in children, and fosters the transmission of societal norms and rules (Davis & Warner, 1937; Parsons, 1955; Popenoe, 1988). Despite substantial demographic changes over the past four decades, biological parents retain primary responsibility for providing for children's material needs and socializing them to be productive citizens.

In addition, family sociological perspectives have direct implications regarding the role of marriage. The security of marriage via both a legal tie and a public commitment—what Cherlin (2004) calls “enforceable trust”—circumscribes the roles of parent and spouse, establishing a cohesive family unit intended to foster joint parental investment in children (England & Farkas, 1986). Particularly for men, marriage and childrearing may often constitute a “package deal,” with the role of spouse and parent being closely linked (Furstenberg & Cherlin, 1991; Townsend, 2002). Remarriage, however, has been deemed an “incomplete institution,” precisely because of a lack of clear norms, authority, and legally established relationships in stepfamilies (Cherlin, 1978). A new stepparent must negotiate an existing family system that is anchored in a shared history of norms and rules while having little authority and often an ambiguously prescribed parental role (Cherlin & Furstenberg, 1994; Furstenberg & Cherlin, 1991; Marsiglio, 2004). Similarly, sociologists have highlighted a lack of institutionalization within cohabiting relationships (Nock, 1995), which may be linked to

increased parental role ambiguity (and, for cohabiting social fathers, lack of a legally defined parental role) and relationship instability. Unstable relationships may expose children to multiple family transitions (Graefe & Lichter, 1999). Furthermore, fathers selecting into marriage may be more invested in the family unit (including children) than those selecting into cohabitation (Nock). Thus, family sociological perspectives suggest that biological fathers will exhibit higher quality parenting practices than social fathers and that, within each biological status, married fathers will engage in higher quality parenting than unmarried fathers, given the stronger institutional structure of marriage than cohabitation and/or positive selection into marriage.

Taken together, evolutionary and family sociological perspectives on parental investment in children lead to several empirical predictions regarding the parenting practices of biological and social, married and unmarried fathers. First, both perspectives suggest that biological fathers will engage in higher quality parenting than social fathers. Most prior studies in this area have compared the parenting practices of married biological fathers to those of married stepfathers; rarely have studies included unmarried biological and social fathers (three notable exceptions, Gibson-Davis, 2008, Hofferth & Anderson, 2003, and Hofferth et al., 2007, are discussed below). Existing empirical evidence suggests that married stepfathers tend to exhibit lower quality parenting practices with regard to stepchildren than married biological fathers with regard to biological children (Amato & Sobolewski, 2004; Coleman et al., 2000; Hetherington & Stanley-Hagan, 1999; Nelson, 2004). Married stepfathers are less likely than married biological fathers to participate in activities with (Cooksey & Fondell, 1996; Thomson, McLanahan, & Curtin, 1992), express positive feelings for (Thomson et al.), be supportive of (Amato, 1987), and exhibit monitoring and controlling behaviors toward resident children (Amato; Fisher, Leve, O'Leary, & Leve, 2003; Hetherington & Jodl, 1994). But maternal “gatekeeping” (i.e., regulation of fathers' access to and time with children) and nonresident biological father involvement are likely to influence the parenting practices of resident stepfathers (Marsiglio, 2004), further highlighting the complexity of these processes.

Second, family sociological perspectives suggest that, all else equal, married biological and

social fathers will exhibit higher quality parenting than their unmarried counterparts. Although relatively little empirical research has directly compared the parenting practices of resident married and cohabiting fathers (Hofferth & Anderson, 2003), one study of Puerto Rican biological fathers found that married fathers exhibited higher levels of financial investment and participation in caregiving for their children than cohabiting fathers (Landale & Oropesa, 2001).

Third, extrapolating from both of these perspectives, it is reasonable to expect that married biological fathers will engage in higher quality parenting practices than all other types of resident fathers, and that unmarried social fathers will display lower quality parenting practices than other resident fathers. To date, Hofferth and Anderson (2003) have most extensively examined fathers' parenting practices by both biological and marital status. They found that married and cohabiting social fathers generally engaged in lower quality parenting practices than married biological fathers (supporting the importance of biology). Their results provided little support for the importance of marriage: Unmarried biological fathers displayed lower quality parenting behaviors than married biological fathers on only one of four outcomes.

In an additional descriptive study (with no multivariate analyses), Hofferth and colleagues (2007) examined mean differences in the parenting practices of biological versus social, as well as married versus unmarried, fathers using five national data sets. They concluded that married biological fathers typically engaged in higher quality parenting practices than unmarried biological fathers and that biological fathers generally exhibited higher quality parenting than social fathers. They also noted many exceptions to this general pattern, however, and emphasized the complex nature of father involvement in diverse families (Hofferth et al.). Finally, in a recent study using FFCWS, Gibson-Davis (2008) found that mothers reported higher quality parenting practices by social fathers than married biological fathers (this study did not consider married social fathers). These results largely contradict those of Hofferth and colleagues as well as the expectations generated by both evolutionary and family sociological perspectives on fathering.

Despite the theoretical predictions and empirical evidence reviewed above, it is also possible that observed differences in the parenting practi-

ces of biological versus social and married versus unmarried fathers are partially or fully attributable to the characteristics of the individuals selecting into particular family configurations. For example, some research suggests that the background characteristics of stepparents largely account for the higher risk of marital dissolution in second marriages than in first marriages (Castro-Martin & Bumpass, 1989). Thus, in examining variation in parenting practices across family types, it is important to control for a wide range of factors that may be associated with selection into particular family types. Key paternal characteristics include father age, race/ethnicity, education, and earnings or income (Hofferth & Anderson, 2003; Manning & Brown, 2006), as well as whether a father has children from prior relationships (Jayakody & Kalil, 2002). Additional characteristics that may be related to family type and fathers' parenting practices, but that have rarely been available in large national studies, may include whether the father has a history of incarceration, substance abuse, or physical violence toward the mother (Carlson, McLanahan, & Brooks-Gunn, 2008). Maternal characteristics such as age, nativity, education, employment status, and number of previous children, as well as whether the pregnancy with a child was wanted, and whether the mother and child live with extended family (Landale & Oropesa, 2001) may also be correlated with both family type and fathers' parenting practices, as may child gender (Lundberg, McLanahan, & Rose, 2005), child health status (Reichman, Comman, & Noonan, 2004), and the number of residential moves experienced by a child, given that children in social father and unmarried families are likely to experience residential instability (Osborne & McLanahan, 2007). The inclusion of a rich set of background characteristics and detailed measures of fathers' parenting practices in FFCWS offers a considerable advantage over most data sets.

Finally, prior research has left several important questions unanswered. It is unclear whether biology or marriage is more closely linked to fathers' parenting practices, whether marriage plays a similar role vis-à-vis the parenting practices of biological and social fathers, and whether differences in the parenting practices of biological and social fathers are largely driven by selection factors. We test the relative importance of biology versus marriage by comparing the parenting practices of married social fathers to those of cohabiting biological fathers, net of a rich set of

potential selection factors. We also test whether marriage is associated with differences in parenting practices for social and biological fathers to the same degree. Although these analyses have implications regarding the utility of evolutionary and family sociological perspectives in understanding men's investments in children, our primary objective is not to test competing theories generated from these perspectives, but rather to draw from and integrate them in order to further our understanding of the unique aspects of biology and marriage in relation to particular parenting practices on the part of resident fathers.

METHOD

Data

We use data from FFCWS, a longitudinal birth cohort study of 4,898 children born between 1998 and 2000 in 20 U.S. cities with populations over 200,000. FFCWS includes a substantial oversample of unmarried births, such that sample children are more likely to be born to disadvantaged families than children in a nationally representative sample. In the first wave of data collection, mothers were interviewed in person in the hospital within 48 hours of the focal child's birth; approximately 75% of fathers were also interviewed (Reichman, Teitler, Garfinkel, & McLanahan, 2001). Follow-up interviews with both parents occurred by telephone when the focal child was approximately 1, 3, and 5 years of age. During each of these interviews, respondents provided extensive information about family/household resources, structure, and functioning, physical and mental health, and parenting behaviors.

We use data from interviews with mothers who were living with the focal child and were interviewed in all four survey waves. Although biological mothers and biological fathers were interviewed, social fathers were not. As such, we have only mother-reported data pertaining to social fathers' characteristics and behaviors. To preserve the consistency of our measures across biological and social fathers, we therefore use only mother-reported data (including that which pertains to biological fathers) in our analyses. This necessarily limits our analyses, given both that maternal perceptions of fathers' parenting practices may differ from fathers' actual parenting behaviors and that maternal reporting may systematically differ with regard to biological

and social fathers, but it is the best our data will allow.

To make useful comparisons across families, we further limit our sample to those families in which the mother was coresiding (either married or cohabiting) with the focal child's biological father or a social father to the focal child at the age-5 interview. We employ this strategy because we are able to observe a larger and (presumably) more representative group of social fathers at the age-5 interview than at earlier time points, given that nearly 60% of the social father families in our analysis sample did not include a social father at the age-3 interview. In light of these sample inclusion criteria, our findings pertain to children born in urban settings from 1998 to 2000 who lived with their biological mother during their first 5 years of life and resided with their biological father or a social father at age 5.

We exclude cases with missing data on the family structure and fathering variables from our analyses. Of the 4,898 cases included in the baseline FFCWS sample, we exclude 1,222 (25%) that were not interviewed at all waves, 89 (2%) in which the focal child did not reside with the mother at each wave, 1,436 (29%) in which the mother was not living with a biological or social father to the child at the age-5 interview, 4 (<1%) that had missing family structure data, and 49 (1%) that had missing data on fathers' parenting practices. We use indicator variables to control for missing data on the covariates. Our final sample consists of 2,098 observations (43% of the original sample). Descriptive analyses (results not shown) indicate that the baseline (i.e., birth) characteristics of the full sample in which children were living with a biological or social father at age 5 ($n = 2,437$) are quite consistent with those of the sample used in our analyses ($n = 2,098$).

Measures

Fathers' parenting practices. We assess the parenting practices of resident biological and social fathers using four measures, each of which was reported by the mother at the age-5 telephone interview. The first of these measures—engagement with the focal child—directly assesses biological/social father-child interactions. Engagement with the focal child is represented by the mean number of days per week that the biological/social father participates in eight activities with the child: singing songs or nursery rhymes,

reading stories, telling stories, playing inside with toys, telling the child he appreciated something the child did, playing outside in the yard with the child, taking the child on outings, and watching TV or a video with the child. Each item is measured on a scale of 0 to 7 (as is the total score on this measure, which reflects the mean of the eight items), representing the number of days per week that the biological/social father usually engages in each activity ($\alpha = 0.89$ and 0.83 for biological and social fathers, respectively).

The three additional measures—shared responsibility in parenting, cooperation in parenting, and whether the mother trusts the biological/social father to care for the focal child for 1 week in her absence—are more closely related to coparenting. Shared responsibility in parenting is assessed by the mean score on two items indicating the frequency with which the biological/social father shares responsibility with the mother for looking after the focal child and taking the child to appointments (e.g., day care or the doctor). Each item was measured on a 4-point scale, ranging from *never* to *often* ($r = 0.73$ for biological fathers and 0.41 for social fathers). Cooperation in parenting is comprised of the mean score on 6 items (each measured on a 3-point scale, from *rarely true* to *always true*) assessing mother reports of the extent to which the biological/social father acts like the kind of parent she would want for her child, can be trusted to take good care of the child, respects her schedules and rules for the child, supports her in the way she wants to raise the child, talks with her about problems related to raising the child, and can be counted on to look after the child for a few hours ($\alpha = 0.89$ for biological fathers and 0.74 for social fathers).

Our final fathering measure assesses the extent to which the mother trusts the biological/social father to take care of the focal child if she had to go away for 1 week; this measure is based on a single item measured on a 3-point scale (from *not at all* to *very much*). A similar item, whether the biological/social father can be trusted to take good care of the child, is included in the cooperation in parenting measure. We posit that the item representing the degree to which the mother trusts the biological/social father to care for the focal child for a week in her absence reflects a more stringent measure of a mother's degree of confidence in the father's willingness or ability to adequately provide for the child, because it specifies that such care will take

place over an extended period of time and without the mother's assistance. We consider this item to be an approximation of the mother's global level of trust in the biological/social father's parenting capacity. To ease the interpretation of our estimates, we standardize each of the fathering measures to have a mean of 0 and a standard deviation of 1.

Father type. We measure the type of father present in the household (biological or social, married or unmarried) with four indicator variables: whether the focal child's biological father lives in the household and is married to the child's mother, whether the child's biological father is cohabiting with (but not married to) the mother, whether a social father lives in the household and is married to the mother, and whether a social father is cohabiting with (but not married to) the mother. The focal child's biological father is both married to and living with the child's mother in about 53% of the families in our sample. The child's biological father is cohabiting with the mother in slightly under 22% of families. The remaining 25% of families include a social father who is either married to (just under 6%) or cohabiting with (19%) the mother.

Control variables. Our regression analyses make use of two sets of control variables. Mother, child, and household characteristics include the mother's age at the focal child's birth, the number of children and adults in the household, the logarithm of "permanent" (i.e., mean) income from the focal child's birth through the age-5 interview, the logarithm of maternal work hours per week, the number of residential moves the child experienced between birth and age 5, and indicators for child gender, whether the child was low birth weight, whether the child is disabled, mother's race/ethnicity, whether the mother is U.S. born, mother's education, whether the mother received Temporary Assistance for Needy Families in the year before the focal child's birth, whether there is a grandparent living in the household, and whether either of the child's parents considered having an abortion when they learned that the mother was pregnant with the focal child. Father characteristics (reported by mothers) include the biological/social father's current age, the number of months he has lived with the mother, and a set of indicators for his education and whether he has children (other than the focal

child) with the mother, has children with someone other than the mother, is currently working, has a drug or alcohol problem, has a work-limiting condition, has seriously injured the mother in a fight, and was ever in jail. Descriptive statistics for these variables, by father type, are available upon request.

We assign all continuous control variables with missing data the mean value of that variable in our sample and all dichotomous control variables with missing data a value of zero. We include missing data flags to indicate these substitutions in all of our regressions. Only five of the control variables have missing values in more than 1.0% of cases. These are the father's age (7.0%) and education (9.9%), whether the focal child was low birth weight (3.0%), whether the father has children with someone besides the focal child's mother (1.2%), and the duration that the mother and father have been living together (4.9%). The missing data flags are jointly statistically nonsignificant in all of our models.

Analytic Strategy

Mean differences. We first present bivariate (mean) differences in the parenting practices of biological and social fathers overall, as well as by marital status within each group.

OLS regressions. The second step in our analysis is to explore whether there are associations between the type of father present in the household and his parenting practices. To do so, we estimate a series of three Ordinary Least Squares (OLS) regressions. The first model includes only the father type indicators as predictors; the second adds mother, child, and household characteristics; the third adds father characteristics. Biological father living in the household and married to the mother is the reference category in all models. We also test whether there are differences in parenting practices between married social fathers and cohabiting biological fathers in order to gauge the relative influence of biology versus marriage on fathers' parenting practices. We utilize OLS regressions for ease of presentation and interpretation of the coefficients. Because our outcome variables are ordinal in nature, however, we also reestimated the models using ordered probits as a robustness check; all of these results (not shown) are substantively consistent with the OLS results presented here.

Difference-in-difference estimates. The third step in our analysis tests whether associations between marital status and fathers' parenting practices differ for biological and social fathers. Here, we examine whether there is a bigger (or smaller) gap in fathers' parenting scores by marital status for families with biological versus social fathers. To do so, we construct a difference-in-difference test using the coefficients produced by the full (third) OLS model described above. Specifically, we test whether differences in parenting practices between cohabiting and married biological fathers are equal to differences in parenting practices between cohabiting and married social fathers, adjusted for all correlates. A rejection of the null hypothesis (i.e., that there is zero difference in the differences) indicates that the association between marriage and parenting practices significantly differs for biological and social fathers.

RESULTS

Mean Differences

Descriptive statistics for the parenting practices of biological and social fathers (overall and by marital status) are shown in Table 1. Mothers report that social fathers exhibit significantly higher levels of cooperation in parenting than biological fathers. At the same time, biological fathers are more likely than social fathers to be trusted by the mother to care for the child for a week in her absence. The raw data reveal no biological-social father differences in engagement with the child or shared responsibility in parenting.

Married biological fathers are reported to have lower levels of engagement with the focal child and higher levels of cooperation in parenting than cohabiting biological fathers. There are no significant differences in shared responsibility or maternal trust. Among social father families, the pattern is quite different: Married social fathers have significantly higher scores than cohabiting social fathers on all of the measures. Thus, the raw data suggest that marriage is associated with higher quality parenting practices for social fathers, but not necessarily for biological fathers. Finally, additional analyses (results not shown) revealed significantly higher mean levels of shared responsibility and cooperation in parenting among married social fathers than among cohabiting biological fathers; there were

Table 1. Descriptive Statistics for Parenting Practices of Resident Fathers, Overall and by Father Type

Variables	All Fathers		All Biological Fathers		All Social Fathers		Biological Fathers				Social Fathers			
	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Engagement with child (range = 0 to 7)	3.69	1.40	3.67	1.36	3.75	1.48	3.62*	1.36	3.78	1.38	3.98*	1.40	3.67	1.50
Shared responsibility (range = 1 to 4)	3.53	0.62	3.53	0.60	3.52	0.68	3.52	0.60	3.56	0.60	3.67*	0.52	3.47	0.72
Cooperation in parenting (range = 1 to 3)	2.89	0.28	2.81**	0.28	2.85	0.26	2.82**	0.27	2.78	0.30	2.90*	0.20	2.83	0.28
Trust with child for a week (range = 1 to 3)	2.88	0.37	2.91***	0.28	2.80	0.46	2.91	0.31	2.89	0.36	2.90**	0.32	2.77	0.49
Observations	2,098		1,572		526		1,119		453		132		394	

Note: Means and standard deviations presented. Asterisks are for *t* statistics testing mean differences between all biological fathers and all social fathers (shown in column 2), between married and cohabiting biological fathers (shown in column 4), and between married and cohabiting social fathers (shown in column 6).

p* < .05. *p* < .01. ****p* < .001.

no significant mean differences between these groups on the engagement or maternal trust items.

OLS Regressions

To account for differences in the observed characteristics of the individuals selecting into the various family types, we next estimate a series of regression models that control for these background factors. In Panel A of Table 2, we see that without the inclusion of any of the control variables, there are a number of significant differences between married biological fathers and all three other types of fathers (shown in standard deviation units, denoted as *SD*).

The remainder of Table 2 presents results when mother, child, and household characteristics (Panel B) and father characteristics (Panel C) are added to the models. We find that differences in the parenting practices of married and cohabiting biological fathers are generally moderate in magnitude and tend to decrease in both magnitude and statistical significance once the full set of covariates is entered into the models. After the inclusion of the full set of covariates, cohabiting biological fathers exhibit approximately 0.10 *SD* less cooperation in parenting (marginally significant at *p* < .10) than married biological fathers. There are no other significant differences between married and cohabiting biological fathers once the full set of controls is included in the models. In contrast, differences in the parenting practices of married biological fathers and both married and cohabiting social fathers are fairly large and generally retain (at least marginal) statistical significance even after adjusting for the full set of covariates. Married social fathers exhibit about 0.20 *SD* more engagement with the focal child (*p* < .10), 0.21 *SD* more shared responsibility in parenting (*p* < .10), and 0.39 *SD* more cooperation in parenting than married biological fathers. The two groups do not differ on the trust item. Cohabiting social fathers exhibit more cooperation in parenting (0.17 *SD*; *p* < .05) than married biological fathers, but are less trusted by mothers to care for the child for a week in her absence (0.35 *SD* units lower; *p* < .01). The two groups do not differ in terms of engagement with the focal child or shared responsibility in parenting.

In the bottom panel of Table 2, we present *F* statistics (from a series of Wald tests) for whether the coefficients for each of the father type variables are statistically equivalent. These

Table 2. OLS Regression Results: Parenting Practices of Resident Fathers by Father Type

Variable	Engagement With Child		Shared Responsibility		Cooperation in Parenting		Trust With Child for a Week	
	β	SE β	β	SE β	β	SE β	β	SE β
Panel A: No controls								
Cohabiting biological fathers	0.11*	0.06	0.06	0.06	-0.15**	0.06	-0.07	0.06
Married social fathers	0.25**	0.09	0.25**	0.09	0.28**	0.09	-0.03	0.09
Cohabiting social fathers	0.04	0.06	-0.08	0.06	0.05	0.06	-0.38**	0.06
R ²	0.00		0.01		0.01		0.02	
Panel B: Add mother, child, and household characteristics								
Cohabiting biological fathers	0.01	0.06	-0.05	0.06	-0.15*	0.06	-0.05	0.06
Married social fathers	0.12	0.10	0.15	0.10	0.31**	0.10	-0.02	0.10
Cohabiting social fathers	-0.16*	0.07	-0.22**	0.07	0.06	0.07	-0.36**	0.07
R ²	0.06		0.05		0.03		0.04	
Panel C: Add father characteristics								
Cohabiting biological fathers	0.03	0.06	-0.02	0.06	-0.10†	0.06	-0.00	0.06
Married social fathers	0.20†	0.11	0.21†	0.11	0.39**	0.11	-0.04	0.11
Cohabiting social fathers	-0.08	0.09	-0.14	0.09	0.17*	0.09	-0.35**	0.09
R ²	0.08		0.07		0.09		0.09	
F statistics (and p values) for equality of coefficients in Panel C:								
Cohabiting biological fathers = Married social fathers	2.47 (0.117)		4.21* (0.040)		19.86*** (0.000)		0.15 (0.703)	
Cohabiting biological fathers = Cohabiting social fathers	1.51 (0.220)		1.68 (0.195)		10.46** (0.001)		16.46*** (0.000)	
Married social fathers = Cohabiting social fathers	7.82**(0.005)		11.48**(0.001)		4.57* (0.033)		9.48** (0.002)	

Note: N = 2,098 observations. Coefficients and standard errors from OLS regressions presented. The reference category for all models is married biological fathers. Mother, child, and, household characteristics include the mother's age at the focal child's birth, the number of children and adults in the household, the logarithm of "permanent" (i.e., mean) income from the focal child's birth through the age-5 interview, the logarithm of maternal work hours per week, the number of residential moves the child experienced between birth and age 5, and indicators for child gender, whether the child was low birth weight, whether the child is disabled, mother's race/ethnicity, whether the mother is U.S. born, mother's education, whether the mother received TANF in the year before the focal child's birth, whether there is a grandparent living in the household, and whether either of the child's parents considered having an abortion when they learned that the mother was pregnant with the focal child. Father characteristics include the biological or social father's current age, the number of months he has lived with the mother, and a set of indicators for his education and whether he has children (other than the focal child) with the mother, has children with someone other than the mother, is currently working, has a drug or alcohol problem, has a work-limiting condition, has seriously injured the mother in a fight, and was ever in jail.

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

estimates allow us to compare parenting practices among the other father-type categories, rather than simply comparing each to those of married biological fathers (the reference group in the OLS models). We find that cohabiting biological fathers and married social fathers significantly differ with regard to shared responsibility and cooperation in parenting, but not with regard to engagement or maternal trust (although the estimate for the former, $p = .117$,

falls just outside the conventional level of marginal statistical significance, $p < .10$); compared to cohabiting biological fathers, married social fathers exhibit higher levels of shared responsibility and cooperation in parenting. Cohabiting social fathers differ from cohabiting biological fathers on two of the four measures: The former engage in higher levels of cooperation in parenting but are less likely to be trusted to care for the focal child. Married social fathers

are reported to exhibit higher quality parenting practices than cohabiting social fathers on all four measures.

Difference-in-Difference Estimates

Our difference-in-difference analyses formally test whether associations between marital status and fathers' parenting practices differ for biological and social fathers (i.e., whether marriage moderates the association between fathers' biological status and their parenting practices). These estimates, which are based on the coefficients presented in Panel C of Table 2, are presented in Table 3.

The top two rows of Table 3 reveal that associations between marriage and fathers' parenting practices function in the same direction for biological and social fathers with regard to all of the measures except engagement with the focal child, suggesting that married social and biological fathers tend to demonstrate higher quality parenting behaviors than their cohabiting counterparts. Among biological fathers, however, these differences are statistically nonsignificant for the engagement, shared responsibility, and trust items, and only marginally significant ($p < .10$) for cooperation in parenting (favoring married fathers). Among social fathers, these differences are statistically significant for all four outcomes.

The final rows of Table 3 present our difference-in-difference estimates. We find that the null hypothesis—that marriage has the same association with parenting practices for biological and social fathers—is rejected for three of the four outcomes. Marriage is more strongly associated with higher

levels of engagement with the child, shared responsibility for parenting, and being trusted to care for the child for a week for social fathers than it is for biological fathers.

DISCUSSION

These analyses offer new information about the parenting practices of resident biological and social fathers. Drawing on evolutionary and family sociological perspectives, we examine differences by fathers' biological and marital status—and the intersection of the two—in the parenting practices of men living with young children in U.S. urban areas in the early 21st century. Overall, we find no uniform pattern by either a father's biological relationship to a child or his marital status with regard to the child's mother; this is consistent with the similarly mixed findings of Hofferth and colleagues (2007) across multiple national data sets. Moreover, we find that marriage matters differentially for biological and social fathers.

We expected that biological fathers would demonstrate higher quality parenting practices than social fathers. For the most part, however, we do not find this to be the case. Net of a host of covariates, our data indicate that married and cohabiting social fathers are reported by mothers to exhibit parenting practices that are equal to or of higher quality than those of their biological counterparts on most of our measures. Most notably, social fathers (overall) engage in higher levels of cooperation in parenting than biological fathers. Also, we find some (marginally significant) evidence that married social fathers are more engaged with children and take on more

Table 3. *Difference-in-Difference Estimates of Associations Between Marital Status and Parenting Behaviors for Biological and Social Fathers*

Comparison	Engagement With Child		Shared Responsibility		Cooperation in Parenting		Trust With Child for a Week	
	Difference	SE	Difference	SE	Difference	SE	Difference	SE
Cohabitation (vs. marriage) for biological fathers	0.03	0.06	-0.02	0.06	-0.10†	0.06	-0.00	0.06
Cohabitation (vs. marriage) for social fathers	-0.28**	0.10	-0.34**	0.10	-0.21*	0.10	-0.31**	0.10
Difference-in-difference estimate	0.31**		0.32**		0.11		0.31**	
F statistic (p value)	7.20 (0.007)		7.54 (0.006)		0.91 (0.340)		7.18 (0.007)	

Note: $N = 2,098$ observations. Estimates are computed from the coefficients presented in Panel C of Table 2. Parenting measures have been standardized to have means of 0 and standard deviations of 1.

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

shared responsibility in parenting than married biological fathers. Finally, although cohabiting biological fathers are more highly trusted by mothers to care for children than are cohabiting social fathers, maternal trust of married biological and social fathers does not differ. On the whole, these findings provide little support for theoretical perspectives linking biology to father involvement—at least at one cross-sectional observation point.

We also expected that marriage would be positively linked to fathers' parenting practices. Yet, we find that accounting for background characteristics explains most differences between the parenting practices of married and cohabiting biological fathers, with one exception: Cohabiting biological fathers exhibit (marginally significantly) less cooperation in parenting than married biological fathers. That we find limited variation in the parenting practices of married and unmarried biological fathers once we have controlled for background differences provides little support for family sociological perspectives on marriage, which suggest that married fathers should engage in higher quality parenting than cohabiting fathers. Among social father families, however, our results provide considerable support for such perspectives; we find that married social fathers display higher quality parenting than cohabiting social fathers with regard to all four measures. For social father families, these findings suggest that marriage is an institution linked to increased investment in children.

Although our study is in the vein of Hofferth and Anderson (2003), our results diverge, particularly in relation to the role of biology. This may reflect differences in the samples utilized. Because the children in our sample are younger, on average, than those in the Panel Study of Income Dynamics, their mothers' relationships with both biological and social fathers are likely to be newer than those observed by Hofferth and Anderson. This is particularly true with regard to social fathers: All mothers in FFCWS gave birth to the (biological father's) focal child just before the baseline interview, and mothers living with social fathers 5 years later have presumably repartnered only subsequent to the birth. As such, these coresidences have likely occurred for less than 5 years (on average, less than 2.5 years). The relatively short average duration of these relationships may partially explain higher quality parenting behaviors by social fathers, who may demonstrate better parenting in the

early stages of a relationship to try to "win" the mother's trust or affection; mothers may also perceive their partners as more involved during the "honeymoon" phase of a relationship. Our results are consistent with those of Gibson-Davis (2008), who, also using FFCWS data, found higher quality parenting by social fathers than by married biological fathers (married and cohabiting social fathers were not separately examined in her analyses).

To shed additional light on the role of biology and marriage in relation to fathers' parenting practices, we also compare the parenting of cohabiting biological and married social fathers. We find that married social fathers display higher quality parenting practices than cohabiting biological fathers with regard to shared responsibility and cooperation in parenting; we find no differences with regard to engagement with the child and maternal trust. Thus, married social fathers appear to exhibit equivalent or higher quality parenting practices than cohabiting biological fathers (and also higher quality parenting practices than their cohabiting social father counterparts). This provides support for theories linking marriage to fathering behaviors, suggesting that marriage may help to institutionalize relationships between social fathers and children and that it may thereby encourage social father investment in children. Of course, it is also possible that social father families select into marriage based upon factors that are associated with a father's parenting practices.

Several other interesting patterns emerge from our analyses. First, it is notable that we find fewer differences across father types with regard to engagement with children and shared responsibility in parenting than cooperation in parenting and maternal trust. This may indicate that the most "direct" or child-centered aspects of parenting—such as reading and playing with children and sharing responsibility for basic care—are demonstrated at relatively consistent levels across all types of resident fathers and depend little on biological or marital status. Parenting behaviors that reflect or require stronger relationships with mothers (e.g., cooperation and trust) may be more contingent on a father's connection to a child (biological status) or mother (marital status). As discussed above, our findings tend to suggest the latter.

Second, we see a clear pattern that mothers trust their husbands (biological or social) considerably more than their cohabiting partners to care

for their children. This may reflect both causation and selection with respect to marriage. With regard to causation, Cherlin (2000, 2004) has argued that the public nature of marriage creates “enforceable trust” between partners, enhancing the likelihood that agreements will be kept and providing security for relationship-specific investments (England & Farkas, 1986). Yet selection may also be operative such that mothers may be more likely to marry men whom they trust to care for their children, regardless of whether the couple has a common biological child. This does not, however, discount the role of biology: We also find that mothers trust cohabiting biological fathers to care for their children more than they trust cohabiting social fathers to do so.

Third, as discussed above, we find that married social fathers engage in higher quality parenting practices than married biological fathers on most measures. One potential explanation for this is that married social fathers may take on less traditionally “male” family roles than married biological fathers (i.e., may be more engaged in childrearing than breadwinning). It may also imply, however, that there is differential selection into marriage for biological and social father families. Mothers may be more selective in choosing whether or not to marry a new partner (social father) than the biological father of their child; indeed, research on repartnering in the FFCWS sample shows that, after a nonmarital birth, mothers typically choose a social father whose capacities surpass those of her child’s biological father (Bzostek et al., 2007). There may also be differential selection into marriage on the part of men such that those who marry women with children by prior partners have a greater “taste” for being actively involved as fathers than other men (Goldscheider & Kaufman, 2006; Goldscheider & Sassler, 2006).

Several limitations should be considered in relation to our findings. First, our outcome measures consist of mothers’ reports of fathers’ parenting practices. Mothers may be less aware of these practices than fathers themselves or may report on the same activities or events differently than fathers, or both. Indeed, mother and biological father reports of our engagement measure are only moderately correlated ($r = .40$). Furthermore, existing research on agreement between mother and father reports has produced somewhat mixed results. Some studies (McBride & Mills, 1993; Pleck & Masciadrelli, 2004) found relatively high rates of agreement in reports of

fathers’ parenting practices; at the same time, mothers tend to report lower overall levels of father involvement with children than fathers themselves (Coley & Morris, 2002). Also, it is possible that mothers may differentially report on the parenting practices of biological and social fathers (potentially giving more “credit” to social fathers), although we are aware of no existing research on this possibility. Future research would benefit by examining relationships between father type and fathers’ parenting practices using self-reports by biological and social fathers.

Second, our analyses likely include a select sample of cohabiting biological father families, given that almost half of those children born to cohabiting biological parents will experience the dissolution of their parents’ relationship by age 5 (Manning, Smock, & Majumdar, 2004; Osborne, Manning, & Smock, 2007). As such, the cohabiting biological fathers in our sample (whose relationship with the focal child’s mother has lasted until the child reached age 5) may not be representative of all cohabiting biological fathers after a child’s birth.

Third, we focus on only a subset of potential parenting practices; clearly, there are other contributions that fathers may make to children, including providing material resources, supplying moral guidance, and preserving kin networks, about which this study is silent. Future research should more fully examine the ways in which fathers may invest in children vis-à-vis interaction, availability, and responsibility (Lamb et al., 1987, 2000).

Fourth, although we control for a wider range of background characteristics than has been available in most prior studies, as with all observational studies, it is possible that our estimates are biased because of omitted variables (e.g., underlying values and attitudes).

A final caveat is that this study takes only a point-in-time approach to examining fathers’ parenting practices. Although we find that social fathers tend to display parenting practices with regard to 5-year-old children that are of equal or higher quality than those of biological fathers, it will be important for future research to take a longitudinal view of the social father role. Whereas a father’s parenting practices at any given time are important, their effects on children’s long-term well-being are ultimately more important and may differ by father type and over time. We know, for instance, that repartnered relationships

(particularly cohabitations) are likely to break up and that stable family relationships are important for children (Fomby & Cherlin, 2007; Osborne & McLanahan, 2007; Seltzer, 2000); if a mother's (and child's) relationship with a social father does not last, this instability could ultimately be more detrimental for a child than not having had an involved father figure in the first place.

CONCLUSION

Results from this study suggest that social fathers engage in parenting practices with 5-year-old children that are of equal, if not higher, quality to those of biological fathers and that marriage appears to be more closely linked to higher-quality parenting practices among social fathers than among biological fathers. Yet a considerable body of research suggests that children in married or cohabiting social father families, on average, fare no better than children in single-parent families on a host of developmental outcomes and considerably worse than those in married biological families (Brown, 2004; Hofferth, 2006; McLanahan & Sandefur, 1994). Thus, it will be important for future work to seek a more complete understanding of the ongoing role of social fathers in children's lives in order to inform policies that support families and enhance children's development and well-being.

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