Child Wellbeing in Two-Parent Families: How Do Characteristics and Relationships Matter?

Lonnie Berger
University of Wisconsin-Madison

Sara McLanahan
Princeton University

West Coast Poverty Center
May 16, 2011

The Fragile Families and Child Wellbeing Study is funded by NICHD grant numbers R01HD36916, R01HD39135, and R01HD40421, as well as a consortium of private foundations and other government agencies. This research supported by NICHD grant number K01HD054421.
Overview

• We use data from the Fragile Families and Child Wellbeing Study (FFCW) to examine differences in cognitive skills and externalizing behavior problems between 5-year old children living with their mother and biological father and those living with their mother and a social father.

• We focus on:
  1. examining which factors—mother, father, and child characteristics; mother-father relationship quality and co-parenting; mother-child relationships; and father-child relationships—are most important in accounting for differences in child outcomes by family type.
  2. decomposing gaps in child outcomes into the proportion explained by differences in the characteristics and behaviors of the individuals selecting into each family type and the proportion explained by differences in returns to (effects of) these characteristics and behaviors.
Background

• High rates of divorce, non-marital fertility, and multi-partnered fertility are associated with a decoupling of marriage and childbearing and a rise in ‘complex’ families

• Most children will not spend their entire childhood living with both of their married biological parents and many will experience maternal re-partnering
  – ‘Two-parent families’ are now a diverse group

• Children who reside with their mother and a social father tend to have poorer developmental outcomes than those living with both of their biological parents

• Children living with cohabiting parents tend to have poorer developmental outcomes than those living with married parents (at least among biological parent families)
Motivation

• Prior work has not fully elucidated the pathways through which associations of father type and child outcomes may operate

• Current hypotheses suggest that:
  – mothers who re-partner are less advantaged than those who remain in a relationship with the biological father of their children
  – men who become social fathers are less advantaged than those who partner with women who do not have existing children
  – co-residence with a social father is a marker of family instability
  – parent invest less in children in social- than in biological-father families
  – family characteristics and behaviors/relationships /investments in children may yield different returns in social- and biological-father families

• There has been inconsistent evidence regarding these hypotheses
• Most prior research has explored differences either between children living with (married) biological and (married) social fathers or between children living with married and cohabiting biological fathers
  – Fewer studies have focused on differences by family type as defined by both biological and marital relations (Hofferth, 2006, is the most notable exception)

• Few studies have examined the full range of family relationships—mother-father, mother-child, and father-child—particularly among young children and children from lower SES families
  – Child age may matter such that younger children are more likely to bond with social fathers (Bray, 1999)

• Little is known about whether marriage is associated with similar benefits for social children as for biological children
  – Evidence from FFCW suggests that marriage has a stronger association with high quality parenting behaviors among social father families
Why examine fathers’ behaviors?

• Norms and expectations with regard to fatherhood have changed over time

• Biological fathers are now expected to be caregivers as well as breadwinners and their involvement is generally thought to benefit children on a range of outcomes
  – both resident and non-resident biological fathers spend more time engaged with children than in the past
  – differences by SES may be important; “good dads” vs. “bad dads” (Furstenberg, 1988)
  – social selection issues
  – analyses of associations between father involvement and child outcomes have largely been based on biological fathers (for exceptions, see, Bzostek, 2008; Hofferth, 2006)

• Relatively little known about the social father investments and how they may influence child development
How do fathers invest?

- Provision of financial resources
- Interaction or engagement with child
  - Both quantity and quality are likely to matter
- Accessibility or availability to child
- Responsibility for/management of child
- Support of mother/co-parenting (indirect investment through mother)


How might investments differ by father type?

- In all domains, biological fathers are expected to invest more than social fathers; married fathers more than unmarried fathers
  (evolutionary, sociological, and economic perspectives as well as social selection)
Why might returns differ by father type?

- Differences in social capital (Coleman, 1988)
  - Social capital is necessary for productive transmission of human capital
  - Weaker social capital – *quality and meaning/importance of relationships* among the individuals in social-father families and the *processes through which human capital is created or transferred* – may limit productive facilitation of parents’ human capital to children (e.g., educational achievement)
  - With instability or residential moves, social relationships (social capital) may be strained or broken
  - Human capital may be differentially transferred by family type given differences in obligations and expectations, trust, family processes, information channels, social/kin networks, social norms, and social organization (e.g., social-father families more “open” social structures; less defined boundaries and multiple relationships that are less dedicated to same goals)

- Differences in children’s responses
  - Extent to which child accepts social father, feels “close,” or views as “family” (Furstenberg, 1987; Hetherington, 1988)
  - Social father role ambiguity and authority questioned; jealousy; competition; resentment; loyalty conflict/guilt; sense of “we-ness” (Marsiglio, 2004)
  - Social father efforts to establish closeness are often rebuffed (Hetherington, 1993)

- We cannot tease these mechanisms apart empirically
Prior Empirical Findings

• Social and cohabiting families (1) have fewer economic resources than biological and married families and (2) tend to invest a smaller proportion of resources in children (Case and colleagues; DeLeire & Kalil, 2005; Manning and colleagues; McLanahan & Sandefur, 1994)

• Results for father involvement and co-parenting are more mixed:
  – most evidence suggests that biological fathers are more involved with children and also that there is negative selection into social fatherhood
  – in contrast to prior work, recent evidence from FFCW suggests that social fathers have high quality characteristics in terms of education, employment, and incarceration (Bzostek et al., 2010) and are as involved as (or more than) *resident* biological fathers (Berger et al., 2008)
  – some evidence of positive associations between social father involvement and child outcomes (Bzosek, 2008; Yuan & Hamilton, 2006; White & Gilbreth, 2001)

• Most non-FFCW work on older children/adolescents from relatively advantaged and divorced rather than unmarried families
Our study

• The characteristics and behaviors of resident social fathers appear to be of relatively high quality compared to those of resident biological fathers in FFCW.

• Thus, we investigate how these factors and other family characteristics and relationships may influence associations of family type with child cognitive skills and behavior problems focusing on whether the ‘returns’ to these factors are similar for biological and social father families.
Empirical Goals

1. Document mean differences between biological- and social-father families in child outcomes and mother, father, and child characteristics and relationships

2. Examine whether controlling for differences in characteristics and relationships/behaviors explains gaps in outcomes between children in biological- and social-father families paying particular attention to the role of marital status as well as mother-father and parent-child relationship quality

3. Decompose the mean difference in each outcome into the proportion explained by differences in characteristics and relationships/behaviors associated with each family type versus differences between family types in returns to these factors
Contributions:

1. Include more extensive data on mother-father and parent-child relationships, as well as biological and social father characteristics and behaviors than prior studies (Bzostek, 2008, and Hofferth, 2006, are closest).

3. Address whether associations between marriage and child outcomes may be similar or different for biological and social father families.

4. Utilize a large sample of young children followed from birth to approximately age 5 (though analyses are cross-sectional).

5. Focus on a relatively disadvantaged sample of children who are most likely to spend time with a social father.
Data and Sample

- **Fragile Families and Child Wellbeing Study (FFCW)**
  - Oversample of births to unmarried mothers
  - Interviews at birth and ~ages 1, 3, and 5; in-home assessments at 3 and 5

- Our analysis sample is limited to children who were living with their mother and a biological or social father at approximately age 5

- We use family type from the age 5 core interview and outcomes from the age 5 in-home assessment

- All variables except the PPVT-R are reported by mothers

- Analysis samples are: ~1,340 children for cognitive skills and ~1,751 for behavior problems

- 13,420 and 17,505 observations across 10 imputed datasets

- Retain families with at least 1 non-missing outcome
Outcome Measures

Cognitive skills and behavior problems at age 5:

- **Peabody Picture Vocabulary Test-Revised (PPVT-R; Dunn & Dunn, 1981)**
  - Interviewer administered to child; must be done in person
  - Receptive vocabulary
  - Predictive of later cognitive skills and school achievement

  - Aggressive behaviors
  - Mother reported, can be administered by telephone
  - Predictive of later school achievement and crime (Duncan & Magnuson, in press)

- All outcomes are standardized to have means of 0 and standard deviations of 1
Family Structure
(at the age 5 core interview)

• Biological father family (73%)
  – Married biological father family (51%)
  – Cohabiting biological father family (22%)

• Social father family (27%)
  – Married social father family (6%)
  – Cohabiting social father family (21%)

• We also include marital status, number of children in HH, and number of adults in HH in all models
Mother Characteristics

- Race/ethnicity (white, Black, Hispanic, other)
- Age at child’s birth
- US born
- Education (<HS, HS, >HS)
- PPVT-R
- Her father’s mental health symptoms
- Her mother’s mental health symptoms
- Impulsivity
Bio/Soc Father Characteristics

- Age
- Education (<HS, HS, >HS)
- Limiting condition
- Ever incarcerated
Child Characteristics

- Child female
- Child low birth weight
- Child disabled
- “Permanent” (mean) family income from birth to age 5
Mother-Father Relationship Quality and Co-parenting

- **Mother trusts** bio/soc father to care for focal child for a week in her absence (1-3 points; *not at all* to *very much*)

- **Bio/soc father treatment of mother** (16 items; 1-3 points; *never* to *often*; e.g., expresses affection or love, fair and willing to compromise, insults or criticizes, slaps or kicks)

- **Bio/soc father shares responsibility for parenting** (2 items; 1-4 points; *never* to *often*; frequency looks after child and frequency takes to appointments)

- **Bio/soc father participates in HH chores** (2 items; 1-4 points; *never* to *often*; runs errands for mom and fixes things or makes home look nicer)

- **Bio/soc father cooperates in parenting** (6 items; 1-3 points; *rarely* to *always true*; e.g., respects schedules and rules, supports mom in way she wants to raise child, talks with mom about problems related to raising child, can be counted on to look after child for a few hours)
Mother-Child Relationship Quality

• Mother **spanking frequency** (0-4 points; never to every day or nearly every day)

• Mother **engagement** with child (8 items; 0-7 points; days per week; e.g., sings songs, reads, tells stories, plays with, takes on outings, watches TV/videos)
Father-Child Relationship

- Bio/soc father **spanking frequency** (0-4 points; never to every day or nearly every day)

- Bio/soc father **engagement** with child (8 items; 0-7 points; days per week; e.g., sings songs, reads, tells stories plays with, takes on outings, watches TV/videos)
Empirical Strategy

- **OLS regressions:**
  \[ Y_i = \beta_0 + \beta_{SSF} S_i + \beta_{MAR} M_i + \beta_{FSZ} F_i + \beta_{CHAR} C_i + \beta_{REL} R_i + \varepsilon_i \]  
  \[(1)\]

- **Difference-in-Difference test:**
  \[ (\beta_{BC} - \beta_{BM}) - (\beta_{SC} - \beta_{SM}) = 0 \]  
  \[(2)\]

- **Blinder-Oaxaca Decomposition** (Blinder, 1973; Neumark, 1988; Oaxaca, 1973; Oaxaca and Ransom, 1994; Elder, Goddeeris, & Haider, 2010)
  \[ Y_{ij} = X_{ij}\beta_j + \varepsilon_{ij} \]  
  \[(3)\]

\[
\overline{Y}_B - \overline{Y}_S = \overline{X}_B^\top \hat{\beta}_B - \overline{X}_S^\top \hat{\beta}_S \]  
\[(4)\]

\[
\overline{Y}_B - \overline{Y}_S = (\overline{X}_B - \overline{X}_S)^\top \hat{\beta}_B + \overline{X}_S^\top (\hat{\beta}_B - \hat{\beta}_S) \]  
\[(5)\]
Table 1: Descriptive statistics for cognitive skills and behavior problem, overall and by father type

<table>
<thead>
<tr>
<th></th>
<th>All Biological-Father Families</th>
<th>All Social-Father Families</th>
<th>Biological-Father Families</th>
<th>Social-Father Families</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Married</td>
<td>Cohabiting</td>
</tr>
<tr>
<td>PPVT-R</td>
<td>0.09</td>
<td>-0.24&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.26</td>
<td>-0.25&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>(1.01)</td>
<td>(0.94)</td>
<td>(0.98)</td>
<td>(0.97)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-0.02&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-0.29&lt;sup&gt;bd&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.87)</td>
<td>(0.95)</td>
</tr>
<tr>
<td>Externalizing behavior problems</td>
<td>-0.08</td>
<td>0.21&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-0.14</td>
<td>0.05&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>(0.95)</td>
<td>(1.10)</td>
<td>(0.90)</td>
<td>(1.04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.08&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.25&lt;sup&gt;bc&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.91)</td>
<td>(1.14)</td>
</tr>
</tbody>
</table>

Note: Means (and standard deviations) presented. All measures have been standardized to have a mean of 0 and standard deviation of 1 in the full sample. The total sample size for the PPVT-R is 13,420 observations across the 10 imputed datasets (1,341 to 1,343 observations per dataset); the total sample size for behavior problems is 17,505 observations across 10 imputed datasets (1,749 to 1,752 observations per dataset).

<sup>a</sup> Differs from biological father families at p<0.05.
<sup>b</sup> Differs from married biological father families at p<0.05.
<sup>c</sup> Differs from cohabiting biological father families at p<0.05.
<sup>d</sup> Differs from married social father families at p<0.05.
Summary of differences in characteristics

• Mothers living with a social father are less advantaged than those living with a biological father: less educated, lower PPVT-R, younger at FC birth, more impulsive; also, disproportionately black

• Few and inconsistent differences between social and biological fathers: social fathers are younger; much less likely to have <HS education; more likely to have a limiting condition; no different in terms of incarceration history

• Children in social father families are more likely to have been low birth weight and to be disabled; have experienced lower “permanent” income

• Married families are generally more advantaged than cohabiting; this is particularly true for biological father families
Summary of differences in relationship quality

- Biological fathers:
  - are more trusted to care for the focal child

- Social fathers:
  - treat the mother better
  - participate more in household chores
  - exhibit more cooperation in parenting
  - spank the child less

- Mothers in social father families
  - spank the child more

- No differences in:
  - father shared responsibility for parenting
  - mother or father engagement with child

- Married families tend to have higher quality relationships than cohabiting families; this is particularly true for social father families
Table 3: OLS regressions results

<table>
<thead>
<tr>
<th></th>
<th>PPVT-R</th>
<th></th>
<th>Externalizing Behavior Problems</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model 1: Family structure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social father family</td>
<td>-0.11+</td>
<td></td>
<td>0.21***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td></td>
<td>(0.06)</td>
<td></td>
</tr>
<tr>
<td>Married family</td>
<td>0.45***</td>
<td></td>
<td>-0.17***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td></td>
<td>(0.06)</td>
<td></td>
</tr>
<tr>
<td><strong>Model 2: Add characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social father family</td>
<td>-0.02</td>
<td></td>
<td>0.20**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td></td>
<td>(0.06)</td>
<td></td>
</tr>
<tr>
<td>Married family</td>
<td>0.13*</td>
<td></td>
<td>-0.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td></td>
<td>(0.05)</td>
<td></td>
</tr>
<tr>
<td><strong>Model 3: Add relationship quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social father family</td>
<td>-0.06</td>
<td></td>
<td>0.26***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
<td></td>
<td>(0.07)</td>
<td></td>
</tr>
<tr>
<td>Married family</td>
<td>0.13*</td>
<td></td>
<td>-0.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td></td>
<td>(0.05)</td>
<td></td>
</tr>
<tr>
<td>Total observations (10 datasets)</td>
<td>13420</td>
<td></td>
<td>17505</td>
<td></td>
</tr>
<tr>
<td>Observations per imputed dataset</td>
<td>1341-1343</td>
<td></td>
<td>1749-1752</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3E: OLS regression results - extensions

<table>
<thead>
<tr>
<th></th>
<th>PPVT-R</th>
<th>Externalizing Behavior Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Extension #1: Fully interacted with marriage (D-D estimates are nonsignificant)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohabitng biological father family</td>
<td>-0.15* (0.06)</td>
<td>0.01 (0.06)</td>
</tr>
<tr>
<td>Married social father family</td>
<td>-0.12 (0.11)</td>
<td>0.23*a (0.10)</td>
</tr>
<tr>
<td>Cohabitng social father family</td>
<td>-0.17* (0.08)</td>
<td>0.29***a (0.07)</td>
</tr>
<tr>
<td><strong>Extension #2: Add child health and temperament</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social father family</td>
<td>-0.06 (0.07)</td>
<td>0.26*** (0.07)</td>
</tr>
<tr>
<td>Married family</td>
<td>0.12* (0.06)</td>
<td>-0.00 (0.05)</td>
</tr>
<tr>
<td><strong>Extension #3: Add lagged dependent variable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social father family</td>
<td>-0.02 (0.06)</td>
<td>0.24*** (0.06)</td>
</tr>
<tr>
<td>Married family</td>
<td>0.11* (0.05)</td>
<td>-0.05 (0.05)</td>
</tr>
<tr>
<td><strong>Total observations (10 datasets)</strong></td>
<td>13420</td>
<td>17505</td>
</tr>
<tr>
<td><strong>Observations per imputed dataset</strong></td>
<td>1341-1343</td>
<td>1749-1752</td>
</tr>
</tbody>
</table>
Table 4: Contributions of explanatory variables to Adjusted $R^2$

<table>
<thead>
<tr>
<th></th>
<th>PPVT-R</th>
<th>Externalizing Behavior Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family structure</td>
<td>0.045***</td>
<td>0.066***</td>
</tr>
<tr>
<td>Characteristics</td>
<td>0.637***</td>
<td>0.231***</td>
</tr>
<tr>
<td>Mother-father relationship quality and co-parenting quality</td>
<td>0.008+</td>
<td>0.122***</td>
</tr>
<tr>
<td>Mother-child relationship quality</td>
<td>0.0002</td>
<td>0.110***</td>
</tr>
<tr>
<td>Father-child relationship quality</td>
<td>0.0003</td>
<td>0.024**</td>
</tr>
<tr>
<td>Total observations (10 datasets)</td>
<td>13420</td>
<td>17505</td>
</tr>
<tr>
<td>Observations per dataset</td>
<td>1341-1343</td>
<td>1749-1752</td>
</tr>
</tbody>
</table>

Note: Results are based on regressions presented in Model 3 of Table 3. The marginal contribution to Adjusted $R^2$ is assessed in each of the 10 imputed datasets by estimating the model without the set of variables indicated in the first column, but including all other variables, and calculating the percentage difference in the $R^2$ when the set of variables is not included in the model. The figures presented above represent the mean marginal contribution to Adjusted $R^2$ across the 10 imputed dataset. The $R^2$ for the full PPVT-R model ranges from .306 to .314 across the 10 datasets; the $R^2$ for the full externalizing behavior problems model ranges from .151 to .161. The variables included in each set are listed in Table 2. Joint significance of the set of variables in the full model: +p<0.10; *p<0.05; **p<0.01; ***p<0.001.
Table 7: Blinder-Oaxaca decompositions by father’s biological status

<table>
<thead>
<tr>
<th></th>
<th>PPVT-R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean differences:</td>
<td></td>
</tr>
<tr>
<td>Biological father family</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
</tr>
<tr>
<td>Social father family</td>
<td>-0.24</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
</tr>
<tr>
<td>Difference</td>
<td>0.33***</td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
</tr>
</tbody>
</table>

Decomposition:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference due to</td>
<td>0.24***</td>
<td>0.32***</td>
<td>0.31***</td>
</tr>
<tr>
<td>characteristics</td>
<td>(0.04)</td>
<td>(0.05)</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Percent</td>
<td>71.8%</td>
<td>98.5%</td>
<td>95.7%</td>
</tr>
<tr>
<td>Difference due to returns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to characteristics</td>
<td>0.09</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Percent</td>
<td>(0.06)</td>
<td>(0.05)</td>
<td>(0.08)</td>
</tr>
<tr>
<td></td>
<td>28.2%</td>
<td>1.5%</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

Total observations (10 datasets) 13420
Observations per dataset 1341-1343

Note: Results based on OLS regressions estimated across 10 imputed datasets. Percent figures may not sum to 100% due to rounding. The outcome variables have been standardized to have a mean of 0 and a standard deviation of 1. Model 2 controls characteristics; Model 3 adds relationship quality. The specific variables in each category are listed in Table 2. All models control for marital status and the number of children and adults in the household. +p<0.10; *p<0.05; **p<0.01; ***p<0.001.
Substantial differences in means and coefficients:

- **Means (BF; SF):**
  - Married (.67; .21)
  - Black (.37; .62)
  - Mother PPVT-R (.05; -.28)
  - Father <HS (.28; .09)
  - Father >HS (.26; .19)
  - Father trusted (.03; -.21)
  - Treatment of mother (-.15; .29)
  - Shared responsibility (-.02; -.04)
  - Chores (-.13; .25)
  - Cooperation (-.07; .11)
  - Mother spanking (-.02; .20)
  - Father spanking (.12; -.28)

- **Coefficients (BF; SF):**
  - Married (.12; .14)
  - Number of adults (-.04; .07)
  - Mother US born (.39; .90)
  - Mother >HS (.18; -.06)
  - Father <HS (-.10; .06)
  - Father >HS (-.03; .11)
  - “Permanent” income (.28; .11)
  - Father trusted (.03; -.08)
  - Cooperation (.10; .00)
  - Shared responsibility (.03; .06)
  - Chores (-.06; .02)
  - Cooperation (-.10; .11)
  - Father spanking (-.03; -.10)

Red = coefficient “favors” children in social father families
<table>
<thead>
<tr>
<th>Mean differences:</th>
<th>Externalizing Behavior Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological father family</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
</tr>
<tr>
<td>Social father family</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.29***</td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decomposition:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model:</td>
<td>(1)</td>
</tr>
<tr>
<td>Difference due to characteristics</td>
<td>-0.09***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
</tr>
<tr>
<td>Percent</td>
<td>30.4%</td>
</tr>
<tr>
<td>Difference due to returns to characteristics</td>
<td>-0.20***</td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
</tr>
<tr>
<td>Percent</td>
<td>69.6%</td>
</tr>
</tbody>
</table>

Total observations (10 datasets) 17505
Observations per dataset 1749-1752

Note: Results based on OLS regressions estimated across 10 imputed datasets. Percent figures may not sum to 100% due to rounding. The outcome variables have been standardized to have a mean of 0 and a standard deviation of 1. Model 2 controls characteristics; Model 3 adds relationship quality. The specific variables in each category are listed in Table 2. All models control for marital status and the number of children and adults in the household. +p<0.10; *p<0.05; **p<0.01; ***p<0.001.
Substantial differences in means and coefficients:

<table>
<thead>
<tr>
<th><strong>Means (BF; SF):</strong></th>
<th><strong>Coefficients (BF; SF):</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Married (.70; .24)</td>
<td>- Married (-.03; .00)</td>
</tr>
<tr>
<td>- Black (.34; .59)</td>
<td>- Number of adults in HH (.01; .16)</td>
</tr>
<tr>
<td>- Mother’s age at FC birth (27; 23)</td>
<td>- Mother US born (.06; .37)</td>
</tr>
<tr>
<td>- Mother &lt;HS (.27; .41)</td>
<td>- Mother &gt;HS (-.02; -.21)</td>
</tr>
<tr>
<td>- Mother PPVT-R (.11; -.27)</td>
<td>- Mother impulsivity (.17; .24)</td>
</tr>
<tr>
<td>- Father &lt;HS (.27; .08)</td>
<td>- Father &lt;HS (.16; .02)</td>
</tr>
<tr>
<td>- Child disabled (.01; .04)</td>
<td>- Father incarcerated (.22; .27)</td>
</tr>
<tr>
<td>- Father trusted (.06; -.18)</td>
<td>- Child disabled (-.04; .28)</td>
</tr>
<tr>
<td>- Treatment of mother (-.10; .28)</td>
<td>- Father trusted (.05; -.08)</td>
</tr>
<tr>
<td>- Chores (-.09; .26)</td>
<td>- Treatment of mother (-.05; -.15)</td>
</tr>
<tr>
<td>- Cooperation (-.04; .11)</td>
<td>- Shared responsibility (-.02; .03)</td>
</tr>
<tr>
<td>- Mother spanking (-.04; .14)</td>
<td>- Chores (.00; -.18)</td>
</tr>
<tr>
<td>- Mother engagement (-.02; .06)</td>
<td>- Cooperation (-.13; .00)</td>
</tr>
<tr>
<td>- Father spanking (.11; -.29)</td>
<td>- Mother engagement (-.03; .00)</td>
</tr>
<tr>
<td>- Father engagement (-.02; .05)</td>
<td>- Father spanking (.07; .11)</td>
</tr>
</tbody>
</table>

Red = coefficient “favors” children in social father families
Decomposition Extensions

• Using pooled model as “true”/reference model: larger portion of difference attributed to characteristics; consistent with Elder, Goddeeris, & Haider (2010)

• Three-way decompositions: conclusions unchanged; difference due to characteristics*coefficients interaction is never significant

• Included clearly endogenous and potentially mediating factors as covariates: maternal substance use, maternal depression, maternal parenting stress, duration of couple co-residence, number of family structure transitions, number of residential moves, father substance use, other shared biological children, and father payment of child support to other children; overall conclusions unchanged
Heterogeneity in effects (regressions):

- **Child gender**: larger association of social-father family with externalizing behavior problems for boys than girls (though present for both)

- **Race/ethnicity**: similar magnitude of association of social-father family with externalizing behavior problems for white and black children (though nonsignificant for whites); larger association for Hispanics

- **Maternal education**: association between social-father family and lower PPVT-R only among families with more highly educated mothers (>HS); association with externalizing behavior problems is larger among children with less educated mothers (<HS; HS)
Heterogeneity in effects (decompositions):

**Decompositions:**

- PPVT-R – differences in characteristics generally explain a larger portion of the gap between children in biological- and social-father families; however, this is less true for girls (59% explained by characteristics), black children (60%), and, especially, families with a mother with greater than a high school education (30%)

- Externalizing behavior problems – differences in returns to characteristics are substantially more important than differences in characteristics for all groups
Limitations

- Children only observed at age 5
- Static, short-term approach to these associations
- Maternal reports of child behavior
- Maternal reports of father attributes and behaviors
- Parent-child relationship measures reflect quantity of interactions more so than quality
- Omitted variables
- Additional potential heterogeneity in effects (child age)
- Potential for bi-directionality of relationships
Conclusions (1)

• Results are consistent with prior findings that children fare better in (married) two-biological-parent families than other family types, particularly for behavior; few differences among other family types.

• Marriage-cohabitation difference is similar for biological and social father families in all models.

• Differences in cognitive skills are almost completely explained by differences in characteristics and behaviors, rather than by differences in returns to (effects of) these factors.

• For cognitive skills, once characteristics are controlled, father attributes and mother-father and parent-child relationships make little difference.
Conclusions (2)

- For behavior problems, relatively high quality social father characteristics and behaviors in this sample seem to play a protective role
  - Results suggest that associations with behavior problems may be larger if it weren’t for these factors

- Differences in behavior problems are largely explained by differential returns characteristics and behaviors, rather than mean differences (differs somewhat from Bzostek, 2008)

- For behavior problems, relationships play a considerable role, with mother-child and mother-father relationships having most explanatory power

- Findings suggest that social father involvement has a largely different influence on behavior than biological father involvement

- Policy and programs: generally aimed at increasing marriage and involvement of biological fathers, how should we think about social fathers?