

# DEMOGRAPHIC RESEARCH

*A peer-reviewed, open-access journal of population sciences*

---

## ***DEMOGRAPHIC RESEARCH***

**VOLUME 30, ARTICLE 3, PAGES 71–110**

**PUBLISHED 15 JANUARY 2014**

<http://www.demographic-research.org/Volumes/Vol30/3/>

DOI: 10.4054/DemRes.2014.30.3

*Research Article*

### **Men's economic status and marital transitions of fragile families**

**Sharon Sassler**

**Soma Roy**

**Elizabeth Stasny**

© 2014 Sharon Sassler, Soma Roy & Elizabeth Stasny.

*This open-access work is published under the terms of the Creative Commons Attribution NonCommercial License 2.0 Germany, which permits use, reproduction & distribution in any medium for non-commercial purposes, provided the original author(s) and source are given credit. See <http://creativecommons.org/licenses/by-nc/2.0/de/>*

## Table of Contents

1	Introduction	72
2	Previous research on marital expectations, men's economic attributes, and marriage	74
2.1	Other factors shaping marriage	78
3	The current study	79
4	Data and methods	79
4.1	Data	79
4.2	Measures	81
4.2.1	Dependent variables	81
4.2.2	Independent variables	82
4.3	Methods	85
5	Findings	85
5.1	Bivariate results	85
5.2	Mothers' marital expectations	87
5.3	Mothers' transitions into marriage	90
6	Discussion	95
7	Acknowledgements	98
	References	99
	Appendix 1: Multiple imputations for race, education, age, and household relationship	107
	Appendix 2: Distribution of couples, by fathers' characteristics: Unrepaired and imputed data sets	109

## **Men's economic status and marital transitions of fragile families**

**Sharon Sassler<sup>1</sup>**

**Soma Roy<sup>2</sup>**

**Elizabeth Stasny<sup>3</sup>**

### **Abstract**

#### **BACKGROUND**

Men's ability to fill the provider role remains a consistent requirement for marriage across the class spectrum and cross-nationally. Fiscal concerns appear less salient for transitions to parenthood or to informal unions such as cohabitation.

#### **OBJECTIVE**

This paper evaluates whether marital expectations and marital transitions of new mothers are associated with the economic characteristics of father.

#### **METHODS**

Analyses are based on observed and imputed data on fathers from the first two waves of the Fragile Families and Child Well-Being Study. Logistic regression models assess factors predicting mothers' initial expectations of marrying their baby's father, and transitions into marital unions by the second interview.

#### **RESULTS**

Most women expect to marry their baby's father, although estimates are lower when men's data are repaired by imputation. Multivariate analyses find mother's marital expectations are most strongly associated with men's educational attainment, but not with men's earnings at the child's birth. Transitions to marriage are positively associated with men's earnings levels, although estimates are considerably lower than previously reported thresholds. Furthermore, the odds of marrying do not increase monotonically as men's income level rises once missing data are imputed.

---

<sup>1</sup> Department of Policy Analysis & Management, Cornell University, 297 MVR Hall, Ithaca, NY 14853. E-Mail: SS589@Cornell.Edu. Tel: 607-254-6551. Fax: 607-255-4071.

<sup>2</sup> Statistics Department, California Polytechnic State University, Building 25, Room 107D, San Luis Obispo, CA 93407-0405. E-Mail: Soroy@Calpoly.edu.

<sup>3</sup> Department of Statistics, The Ohio State University, 1958 Neil Avenue, Cockins Hall, Room 404, Columbus, OH 43210-1247. E-Mail: stasny.1@osu.edu.

## **CONCLUSIONS**

Theories regarding prerequisites for marriage must better account for growing heterogeneity in the unmarried population. Standard economic predictors of marriage for the overall population are less applicable for this sample of new parents. Ultimately, this study highlights the importance of including information on missing fathers. Excluding them may produce misleading statistical associations between men's economic measures and women's marriage.

## **1. Introduction**

The “retreat from marriage” has been observed in all developed countries, but in recent years commentators have noted an interesting social class change in marriage patterns. The marriage gap between the most advantaged (demonstrated by educational attainment and earnings) and those with fewer economic resources has reversed, so that the well-off are now more likely to be wed (Bracher and Santow 1998 [Sweden]; Goldstein and Kenney 2001 [United States]; Heard 2011 [Australia and New Zealand]; Kravdal [Norway] 1999; McLanahan 2004 [United States]). Explanations for declines in the proportion of adults who are married often reference men's deteriorating economic positions (Oppenheimer 2003), or note the increase in economically advantaged women's likelihood of being married (Goldstein and Kenney 2001; Heard 2011). Though weakening in importance, men's ability to fill the provider role remains a consistent requirement for marriage across the class spectrum (Gibson-Davis, Edin, and McLanahan 2005; Sassler and Goldscheider 2004; Smock, Manning, and Porter 2005), as well as across nations (Heard 2011; Kravdal 1999; Reneflot 2006; Wiik, Bernhardt, and Noack 2010).

While various measures of a “good living” are important prerequisites for marriage, fiscal concerns appear to be less salient for transitions to parenthood or for informal unions (Gibson-Davis 2009). At the dawn of the 21<sup>st</sup> century, a third of all births in the United States, and forty percent or more of births in Denmark, France, Sweden, and the U.K. occurred outside of marital unions (Martin and Kats 2003). The growing prevalence of non-marital childbearing has captured center stage in contemporary public policy debates in the U.S., taken to herald the rejection of the institution of marriage (Nock 2006; Murray 2012; for a European perspective, see Morgan 2000). It is also a concern because in liberal regimes where the role of the state in redistributing wealth is limited (Esping-Andersen 1990), non-marital parenting is associated with negative consequences for children (Brown 2010). Unmarried parents' unions are far less stable than marriages (McLanahan 2011; Perelli-Harris et al. 2012),

and fathers' likelihood of remaining involved with children when unions disrupt is considerably weaker when parents were unmarried at the birth (McLanahan 2011). In the United States, resources have been devoted to programs aimed at strengthening ties between men and their children, links that are often mediated by fathers' relationships with their child's mother (Carlson 2006; Carlson, McLanahan, and Brooks-Gunn 2008; Waller and Swisher 2006). A primary goal of these initiatives is to encourage unwed parents to marry, under the assumption that doing so will produce more positive child outcomes (Nock 2005).

Although low-income single mothers often express reservations about marriage (Edin 2000), the majority desires to wed (Lichter, Batson, and Brown 2004). A man's inability to provide economically, however, represents a considerable barrier to marriage; many single mothers are reluctant to wed a man who cannot find and hold stable, legal work (Edin 2000). The least-advantaged place particular emphasis on demonstrating various markers of financial stability, such as establishing an autonomous household, holding a steady job, or having the money to throw a "real" wedding, prior to getting married (Edin and Kefalas 2005; Sassler and Miller 2011; Smock et al. 2005). The difficulty of reaching such milestones is often proffered as one reason parents remain unmarried (Gibson-Davis et al. 2005; Smock et al. 2005).

A growing body of research has begun to document factors shaping marital intentions (Kravdal 1999; Renoflot 2006; Wiik et al. 2010), as well as whether or not intentions to marry are associated with transitions into marriage (Lichter et al. 2004; Sassler and McNally 2003; Waller and McLanahan 2005). Although many studies highlight the importance of men's economic attainment as important predictors of marital intentions, what level of economic attainment, on average, is adequate to tip the scale in favor of marriage remains an open question. In this paper, we integrate the disparate literature on marriage expectations, union transitions, and their association with men's economic attributes. Data are from the Fragile Families and Child Well-Being Study, a longitudinal survey of nearly 5,000 children born in the United States between 1998 and 2000. Roughly three-quarters of these children were born to unmarried parents, and the data includes information on both mothers and fathers of a newborn child. First, we focus on the relationship between men's economic characteristics and women's expectations regarding marriage to assess what kinds of fathers are seen as "marriage material." Multiple imputation techniques are used to account for non-response of fathers; this allows us to incorporate the most disadvantaged segment of the population of unmarried fathers (cf, Sassler and McNally 2003). Second, we explore transition into marital unions, and assess the role that men's economic attributes play, without the influence of women's marital expectations. Our results suggest that while non-economic factors shape mothers' expectations to marry their baby's father, factors that signify men's providing abilities elevate marriage odds.

Nonetheless, we find that the relationship between men's economic attributes and the likelihood that couples marry do not operate as expected.

## **2. Previous research on marital expectations, men's economic attributes, and marriage**

Changing links between sexual activity, childbearing, and marriage, particularly among low-income populations, suggest the weakening of normative expectations regarding marriage. The proportion of young adults living with partners outside of marriage has increased dramatically in the past few decades (Heard 2011; Kennedy and Bumpass 2008; Perelli-Harris et al. 2012). Non-marital childbearing has also become more common, and increasingly occurs within cohabiting unions (Lichter, Sassler, and Turner 2011; Perelli-Harris et al. 2012; Ventura et al. 2001). By the turn of the 21<sup>st</sup> century, about half of all non-marital births in the United States were to cohabiting mothers (Kennedy and Bumpass 2008; Manlove, Ryan, Wildsmith, and Franzetta 2010; Sigle-Rushton and McLanahan 2002), with similar patterns observed in Norway, and France, and among some cohorts from eastern Germany (Perelli-Harris et al. 2012). The increase in births to cohabiting women occurred in tandem with the decline in post-conception but pre-birth marriage (Graefe and Lichter 2002; Manning 2001; Musick 2007). Such developments have resulted in a burgeoning literature devoted to better understanding reasons for marital delay and non-marriage, particularly among unwed mothers and increasingly for cohabiting parents.

Notwithstanding these demographic trends, in the United States and elsewhere, many individuals anticipate that they will marry at some point in their life. Most young Americans have positive attitudes about marriage, believe they will marry in the future, and see it as an important life achievement (Crissey 2005; Manning, Longmore, and Giordano 2007). In one study of adolescents interviewed in 2000 for the Toledo Adolescent Relationship Study (TARS), only 5% of those interviewed did not expect to marry in the future (Manning et al. 2007). Sizable proportions of single mothers (Lichter, Batson, and Brown 2004), cohabitators (Brown 2000; Sassler and McNally 2003) and unmarried parents of newborn children (Waller and McLanahan 2004) also report strong expectations of marriage in their future. Even in countries where unmarried cohabitation and parenting have been common for decades, expectations for marriage remain high (Heard 2011; Moors and Bernhardt 2009; Wiik et al. 2010).

To date, theory regarding family behaviors (such as marriage) has relied heavily on neoclassical economic explanations (Becker 1981), which emphasize the perceived costs and benefits of marriage. Premised on expectations for role specialization, this perspective suggests that, because men have traditionally performed the role of family

provider, men's economic attributes play a larger role in determining both the likelihood and timing of marriage than do women's attributes. Research has largely born this out when it comes to transitions into marriage. The adequacy of this theory for explaining marital expectations is less clear, however. Do women involved with more economically attractive men have greater expectations that their relationship will transition to a marriage than women partnered with men who may be charming but penniless?

Suggesting that economic explanations may not be enough to explain marital expectations, Wiik and colleagues (2010) examine survey data from of a sample of cohabitators aged 25 to 35 from Norway and Sweden, to assess the factors that contribute to their marriage plans. They assert that in contemporary Western societies *love* is proffered as the main reason for getting married (see also Coontz 2005). To test this, they construct several measures of satisfaction and commitment to a current relationship and assess how socioeconomic characteristics, relationship assessments (commitment and relationship satisfaction), and other attributes that might proxy in selection (parental status, union duration) are associated with expectations to wed within the next two years. Although only 20 percent of the respondents planned to marry their current partners within the next two years, the most serious and satisfied cohabitators had more than twice the odds of intending to marry their partners as those who were less committed and satisfied, after removing the consideration of socioeconomic and socio-demographic variables. Even though both love and money measures mattered for men's and women's marital expectations, however, men placed significantly greater emphasis on their own educational attainment and earnings, as well as the amount their partner earned, than did women. Among women, both affective measures and relationship context – plans to have a child, social networks that included married friends, already having a child or living with a partner's child – were more strongly correlated with marital expectations than they were for men.

These results are consistent with the few other studies that have explored marital intentions, most of which utilized American data sets. While educational attainment is associated with marital expectations (Lichter et al. 2004; Sassler and Miller 2011), other indicators of fiscal readiness for marriage, such as working for pay or annual income, often are not (Lichter et al. 2004; McGinnis 2003). Furthermore, McGinnis (2003) uncovered gender distinctions in perceptions of the desirability of marriage; men perceived significantly more costs to marriage than did women, and fewer benefits. Taken together, these findings hint that economic explanations may not be strongly associated with marital expectations, but neither are affective measurements enough. Such studies, however, have largely focused on cohabitators. Little is known regarding whether or not economic predictors or relational factors are similarly associated with marital expectations among romantically involved adults who are not living together.

Whereas economic predictors may not help explain marital expectations, they do predict marriage. Individual-level studies find that men's employment, earnings, and educational attainment are significantly related to subsequent marriage (Lloyd and South 1996; Oppenheimer, Kalmijn, and Lim 1997; Sassler and Goldscheider 2004). Full-time employment also significantly increases men's odds of marrying versus remaining single (Oppenheimer 2003; Sassler and Goldscheider 2004). Oppenheimer's (2003) research finds a strong threshold effect for the impact of earnings on the formation of marital unions; not until men earned above \$20,000 (\$24,460 in 1999 dollars adjusted for inflation)<sup>4</sup> was the relationship with marriage positive, among both white and black men. Educational attainment also appears to be very important. College-educated men are significantly more likely to marry than to either to remain single or to cohabit, relative to their less educated counterparts (Oppenheimer 2003; Sassler and Goldscheider 2004). The same educational gradient has become evident among women as well (Goldstein and Kenney 2001).

Women's economic fortunes have generally not been found to have the same effect on transitions into marriage as have men's, in the United States (Clarkberg 1999; Sassler and Schoen 1999). Earnings have become an increasingly important predictor of marriage among recent cohorts, specifically for white and black women, and for unmarried mothers (Carlson, McLanahan, and England 2004; Sassler and Schoen 1999; Sweeney 2002). But employment is not associated with an increased likelihood of marriage, for either childless women or unmarried mothers (Carlson, McLanahan, and England 2004; Sweeney 2002). The association between women's socio-economic resources and marriage are clearer in European societies known for being more gender-egalitarian (Bracher and Santow 1998; Thomson and Bernhardt 2010); in Sweden and Finland, for example, income and employment have a positive effect on marriage entry for women and men alike (Bracher and Santow 1998; Jalovaara 2012). Women's economic contributions have increased income inequality across married couples (Sweeney and Cancian 2004; England 2004). Whether or not women's economic attributes play a role in men's assessments of their marriageability, or how that might vary by women's parental status, race, or other attributes are questions that remain unanswered (England 2004).

There has been little debate regarding whether or not relative-resource theory is the best approach for understanding union transitions among those who parent outside of marriage. This is surprising, for two reasons. First, a wealth of research shows that unwed parents differ in important ways from those who marry before bearing children,

---

<sup>4</sup> We adjust all dollar amounts to constant dollars, inflating or deflating dollar amounts to the amount they would have represented in 1999 (which corresponds to the 2000 CPS, and was the middle year during which the Fragile Families data were gathered). We utilize the approach to adjusting dollar amount values (CPI-U) constructed by the Integrated Public Use Microdata Series (IPUMS) Current Population Survey. For a description of this approach, see: <https://cps.ipums.org/cps/cpi99.shtml>.

and that cohabitators differ from those who marry directly (Acs and Nelson 2004; Clarkberg 1999; Graefe and Lichter 2002). Non-marital parenting and cohabitation in the United States are most prevalent among racial minorities and those with low levels of education, poor earnings, and unstable employment or marital histories (Blackwell and Lichter 2004; Manning 2001; Martin 2004; Musick 2002) – all factors that reduce marriages. Single parents and cohabitators also demonstrate lower levels of commitment to relationships, and express more alternative views about gender roles, religion, and family than do married individuals (Bernhardt 2002; Goldscheider and Sassler 2006; Kravdal 1997; Moors and Bernhardt 2009; Wiik, Keizer, and Lappegard 2012). Second, experiencing alternative family arrangements alters views about marriage (Axinn and Thornton 1996; Cunningham and Thornton 2006). Those who have cohabited express greater support for divorce (Axinn and Thornton 1996), and women who have had non-marital births assign less importance to marriage than do those who gave birth following marriage (Lichter et al. 2004).

In fact, the relationship between economic attributes and marriage is less strong among cohabitators and single parents. Studies relying on a range of data sources frequently find no significant relationship between cohabiting men's educational attainment and transitions into marital unions (Brown 2000; Oppenheimer 2003; Kalmijn and Luijkx 2005; Sassler and McNally 2003). Full-time employment also does not appear to predict marriage among cohabiting men – though men working full-time are less likely to dissolve their unions (Bracher and Santow 1998; Brown 2000; Jalovaara 2013; Manning and Smock 1995; Smock and Manning 1997). Nor do earnings predict marriage among men already living with a partner (Brown 2000; Oppenheimer 2003; Sassler and McNally 2003; Smock and Manning 1997).

A growing body of research has also begun to explore the effects of men's abilities as providers on the transition to marriage among couples who experience a non-marital birth. While this research emphasizes the connection between men's provider abilities and marriage, the results are not robust. Carlson, McLanahan, and England (2004) find no consistent effects of men's education, earnings, or employment on transitions into marriage in the years following the child's birth. Although men who reported earning \$25,000 or more in the year following the birth of the child are more than twice as likely to wed as men who report no earnings in the prior year, the effect is not statistically significant at conventional levels ( $p = .161$ ) upon controlling for cultural and interpersonal variables.<sup>5</sup> The coefficient for having any level of post-secondary schooling is also positive but non-significant.<sup>6</sup> Osborne (2005) also finds that

---

<sup>5</sup> We do not adjust this amount for inflation, as the analysis also utilizes data from the Fragile Families and Child Well-Being Study, which we use in this paper, and covers the identical time period.

<sup>6</sup> The authors also substituted fathers' employment in the week prior to the survey for the earnings dummy variable, but did not present these results. They report that employment showed positive effects on the

a father's earnings and education are not predictive of marriage among romantically involved couples with a child.

## **2.1 Other factors shaping marriage**

Race and ethnicity, parental status (whether couples share multiple children, or if parents have children from different partners), and attitudes also shape union transitions. In the United States, marriage rates among blacks are substantially lower than for whites, particularly following premarital conception (Graefe and Lichter 2002; Musick 2002). Hispanics are more likely than African-Americans to wed, but still demonstrate higher rates of non-marital births and are less likely to wed following a non-marital conception than are non-Hispanic Whites (Musick 2002). Yet another obstacle to marriage is the presence of children from prior partners (Beaujouan 2011). Research indicates that couples with shared children are more likely to wed (Jalovaara 2012; Ohlsson-Wijk 2011), though men's children from previous relationships are associated with lower likelihood of marriage (Carlson et al. 2004; Waller and McLanahan 2005). Men's responsibilities to other children, and their connection to the mothers of these children, are frequently mentioned by new partners as a source of tension and distrust (Reed 2006).

Finally, attitudes towards marriage, relationships, and divorce are frequently cited as important determinants of union transitions. Those with stronger intentions to wed and more positive views of the opposite sex are more likely to marry their partners (Bernhardt 2002; Brown 2000; Duvander 1999; Moors and Bernhardt 2009; Sassler and McNally 2003; Waller and McLanahan 2005; Wiik et al. 2010). Nonetheless, both cohabitators and parents of newborns substantially overstate their marital intentions when surveyed (Gibson-Davis et al. 2005; Sassler and McNally 2003). Far fewer couples subsequently wed than do the proportion reporting definite plans to marry. Furthermore, both partners are not always in agreement regarding marital plans (Sassler and McNally 2003; Waller and McLanahan 2005), a factor which substantially reduces the likelihood of marriage.

---

transition to cohabitation and marriage, but stated it was only sometimes significant and did not reveal whether that was for cohabitation or marriage.

### **3. The current study**

In this study we examine the role that men's economic attributes play in both women's assessment of the relationship's future, and whether or not women who recently gave birth marry the father of their child in the year and a half following the birth. We first explore whether or not new mothers' expectations about marriage to their baby's father vary by the father's economic characteristics. Drawing on the neoclassical economic framework, we hypothesize that the more earnings or education fathers have, the greater the mother's expectations of marriage to the baby's father. We next examine whether men's economic attributes are predictive of subsequent union transitions. Our working hypothesis is that greater earnings and educational attainment are associated with an increased likelihood of marriage. A unique contribution of our paper is that we account for data that are missing for a sizable proportion of fathers. Our findings suggest that prior analyses of Fragile Families data are likely to have produced misleading results with respect to the association between men's economic measures and transitions into marriage, and point to the need to pay greater attention to which fathers are underrepresented in existing surveys.

### **4. Data and methods**

#### **4.1 Data**

Data from the Fragile Families Study provide a unique opportunity to examine how a partner's attributes shape women's marital expectations. The study follows a sample of parents of children born between 1998 and 2000; the majority of the parents were not married at the time of the birth. Data for the Fragile Families Study were collected in 20 U.S. cities, stratified by policy environments and labor market conditions. Information was gathered from both mothers and fathers, allowing us to assess how men and women's characteristics shape relationship expectations and transitions.<sup>7</sup>

Our analysis focuses on parents who were not (yet) married to each other. The data are not representative of all unmarried men and women, as the event qualifying respondents for inclusion in our study was a child's birth. It is most representative of lower-income men and women, a group whose likelihood of experiencing non-marital births has increased substantially over the past few decades (Martin 2004; Lichter et al. 2011; Perelli-Harris, Sigle-Rushton, Kreyenfeld, Lappegard, Keizer, and Berghammer, 2010). The weighted sample of unmarried parents is representative of all non-marital

---

<sup>7</sup> For information on the survey, go to: <http://www.fragilefamilies.princeton.edu/index.asp>.

births to parents residing in cities with populations over 200,000. No other U.S. data source provides such detailed longitudinal information on romantic partners who do not cohabitat. This paper utilizes data from the initial data collection and the first follow up, conducted 12 to 18 months following the birth of the child. This time period, though limited, accounted for the largest proportion of parents of newborn children who wed (McLanahan 2011); the odds of marrying declined with the increasing duration from the child's birth (Rinelli 2010).

As with many studies of couples, missing partner responses were numerous. Corresponding father-data was unobtainable for 22% of the women who responded to the baseline interview. Fathers' data was not missing at random; among women not married to their child's father, cohabiting fathers had the greatest representation. Almost 90% participated in the baseline survey, compared with fathers who were not romantically involved with the baby's mother at the birth of the child, who had only a 38% response rate. On at least some variables, the missing fathers appear to be very different from the ones interviewed, based on the mother's reports (see Table 1). Almost two-thirds of mothers whose partners participated in the initial survey report having received financial assistance from their baby's father during their pregnancy, compared to less than half (48.6%) of women whose partners did not complete the survey. Non-respondent fathers were almost twice as likely to have suggested an abortion upon learning of the pregnancy as fathers who did take part in the survey. The largest discrepancies, not unexpectedly, can be seen upon examining the marital expectations of mothers. Among new mothers whose baby's father participated, the proportion reporting that their chances of marrying the birth father were almost certain or pretty good were over twice as great as when the father did not complete the survey, 63.3% compared to 29.4%, respectively. Relying only on responses of women whose partner participated in the interview, then, inflates marital expectations. We therefore utilize multiple imputation to approximate information for fathers with missing responses on key variables (Rubin 1987; Little and Rubin 2002), writing our own code to account for constraints in the data. Additional information is available in Appendices 1 and 2.

**Table 1: Comparison of interviewed fathers and missing fathers**

Mother's Reports (%)	Interviewed Fathers	Missing Fathers
Married to baby's father	28.1	12.8
Birth father gave money during pregnancy	64.4	48.6
Birth father suggested abortion	8.2	16.1
Chance that mother will marry baby's father <sup>1</sup>		
<i>Pretty good/almost certain</i>	63.3	29.4
<i>None/very little</i>	18.0	54.3
N	3,830	1,068

<sup>1</sup>Asked only of mothers who were not already married (N = 2,777 for interviewed fathers; N = 906 for missing fathers).

## 4.2 Measures

### 4.2.1 Dependent variables

We focus on two main outcomes for this analysis: women's expectations of marrying their baby's father, measured at the initial interview, and transitions into marriage occurring by the second interview. For the first analyses, we rely on maternal responses to the following question: "What do you think the chances are that you will marry [BABY'S FATHER] in the future?" Mothers could choose from one of 5 categories. We group responses into three categories. We combine those answering that they have an almost certain chance of marriage with those reporting a pretty good chance (Pretty Good Chance); our second category are women reporting they had a 50-50 chance; the third group consists of those who state they have little chance or no chance of marrying the father of their newborn. Combining the extreme responses with those to either side of the 50-50 chance response produces a less accurate measure of marriage intentions, and thereby attenuates associations between intentions and their predictors or marriage outcomes. The three-group measure has, however, been used in all previous research with these data, and therefore enables us to make direct comparison with that research (e.g., Gibson-Davis 2009; Gibson-Davis et al. 2005; Waller and McLanahan 2005). We then utilize multinomial logistic regression to assess which factors predict reporting a pretty good chance of marrying and a 50-50 chance of marrying, relative to assessing marital chances as poor. The second analysis makes use of both the first and second panel of data, to examine transitions into marital unions by the time of the second interview, utilizing logistic regression.

#### 4.2.2 Independent variables

Both analyses control for measures of stable respondent characteristics taken at the initial survey. We include several measures of fathers' attributes, such as his educational attainment, broken down by level: less than high school, high school or general equivalency degree (GED),<sup>8</sup> some college, or bachelors degree or more; earnings in the prior year, which were provided in categories; and race and ethnicity, distinguishing between men who were non-Hispanic white, non-Hispanic Black, Hispanic, or other.<sup>9</sup> In preliminary analyses we included a measure of the father's regular employment in the week prior to the survey, reported by the mother.<sup>10</sup> Earnings and employment status are highly correlated, however, and the coefficient for employment in the prior week never attained significance; we therefore do not include employment in our models. We also include a measure of relative education; couples where the man has higher levels of educational attainment serve as the reference category.<sup>11</sup> Preliminary analyses also included mother's income in the year prior to the birth,<sup>12</sup> as well as her receipt of public assistance in the 12 months prior to the survey; as neither measure ever attained significance, these variables were omitted.

Reports from the mother's responses are used to construct relationship type at the time of the child's birth, parenting status of both members of the couple, and two attitudinal measures. Maternal reports of the relationship at the birth of the child is used to distinguish among those living together, parents who were romantically involved but not living together, and women who were no longer in an intimate relationship with the father of their baby.<sup>13</sup> To measure the contribution of higher order and multiple partner fertility, a dummy variable indicates whether the couple has more than one child together. Additional parenting variables include whether mothers have children with another father or if the mother did not answer that question, as well as if the baby's father has children with another mother or the mother did not respond to that question. Gender distrust is measured by the mothers' response to a question about whether she believes men are out to take advantage of women. For our analysis of transitions into

---

<sup>8</sup> While results for men with a GED and a high school degree were initially imputed separately, we subsequently combined them for the multivariate analyses.

<sup>9</sup> We initially included an indicator of whether the couple was of the same race/ethnicity, but it never attained significance and was therefore dropped from the model.

<sup>10</sup> While a measure of employment regularity, or the type of employment, would better capture what might be designated as "good" jobs (Oppenheimer et al. 1997; Sassler and Goldscheider 2004), only limited information on father's employment was collected at the initial interview.

<sup>11</sup> This measure relies on the mother's reports, the father's reports, and our imputed results (when father's reports are missing).

<sup>12</sup> Following the model of previous researchers (Carlson et al. 2004; Osborne 2005) we examined four income categories for mothers: no reported income, \$1-\$9,999, \$10-\$24,999, and \$25,000 or more. We also included a category for mothers who either did not know or report their income.

<sup>13</sup> No information on union duration was available at the initial survey.

marriage we incorporate dummy variables to capture mothers' reported likelihood of marriage, distinguishing between those who say they have a pretty good chance, those who think their odds are about 50-50, and those who say their chances of marriage are poor or unknown. Sample frequencies for the independent variables used in the analysis are shown in Table 2.

**Table 2: Sample frequencies for independent variables**

Variables	Complete Data		Repaired Data	
	%	S.E.	%	S.E.
<i>Fathers' Attributes</i>				
<i>Educational Attainment</i>				
Less than high school	39.65	0.93	43.43	0.88
High school or GED	35.90	0.91	33.31	0.84
Some college	20.89	0.77	20.30	0.74
Bachelor's or more	3.31	0.34	2.71	0.27
Baby's mother has more education	27.08	0.84	30.41	0.81
Parents have same levels of schooling	46.42	0.95	43.64	0.85
Father has more education	26.50	0.84	25.95	0.81
<i>Earnings<sup>a</sup></i>				
Didn't Know/Refused	14.84	0.67	11.23	0.52
\$0 - \$4,999	15.20	0.68	16.74	0.68
\$5,000 - \$9,999	14.26	0.66	15.63	0.64
\$10,000 - \$14,999	14.76	0.67	15.25	0.67
\$15,000 - \$19,999	11.70	0.61	12.01	0.55
\$20,000 - \$24,999	9.97	0.57	10.03	0.61
\$25,000 - \$34,999	10.48	0.58	10.29	0.54
\$35,000 or more	8.79	0.54	8.82	0.54
<i>Race-Ethnicity</i>				
Non-Hispanic White	28.88	0.86	28.69	0.76
Hispanic	12.89	0.64	10.98	0.52
Non-Hispanic Black	54.92	0.94	55.46	0.83
Other	3.31	0.34	4.87	0.38
<i>Employment (Mother reported)</i>				
Father was at a regular job last week	72.09	0.71	67.72	0.89
<i>Relationship Type</i>				
Cohabiting	56.57	0.94	47.49	0.82
Romantically involved	24.56	0.82	23.92	0.70
Other	18.87	0.74	28.59	0.74

**Table 2: (Continued)**

Variables	Complete Data		Repaired Data	
	%	S.E.	%	S.E.
<i>Mother's Attributes</i>				
<i>Fertility Ties</i>				
More than one shared child <sup>b</sup>	32.48	0.93	31.38	0.81
Mother doesn't have children with other man	52.54	0.95	50.29	0.82
Mother has children with another man	38.53	0.92	36.98	0.80
Refused, Skipped	8.93	0.54	12.73	0.55
Father doesn't have children with other woman	54.09	0.95	47.38	0.82
Father has children with another mother	34.64	0.90	36.41	0.79
Refused, Skipped	11.27	0.60	16.21	0.61
<i>Attitudes</i>				
Believe men are out to take advantage of women (Gender Distrust)	16.71	0.71	17.70	0.63
<i>Chances of Marriage</i>				
Almost certain or pretty good	63.27	0.91	54.93	0.82
50-50 or less	18.08	0.73	17.32	0.62
Poor chance	18.65	0.74	27.75	0.74
<i>Mother's Earnings in Prior Year</i>				
No earnings	31.47	0.88	32.80	0.77
0 - \$9,999	36.33	0.91	35.16	0.79
\$10,000 - \$24,999	16.02	0.70	16.10	0.61
\$25,000 or more	4.65	0.40	4.45	0.34
Refused, skipped	11.52	0.61	11.49	0.53
<i>Public Assistance</i>				
Received public assistance (\$) in past year	43.43	0.94	43.12	0.82
<i>N</i>	2,777		3,683	

<sup>a</sup> The imputed frequencies for Father's income are based on a sample size of 3,670; Data on age, used to impute earnings, was missing for a small number of men.

<sup>b</sup> The imputed frequencies for whether couples have more than one child together is based on a sample size of 2,543 for the complete sample, and 3,257 for the Repaired sample, due to non-responses.

*Note:* The standard errors are computed assuming the data are a random sample, and do not take into account the complex sample design (for example, the clustering of births within hospital).

Substantial differences in the distributions of the “complete” versus the “repaired” data are evident. The largest discrepancies emerge for relationship type and perceived certainty of marriage; there are also notable differences in the proportions of fathers who have less than a high school degree, who worked at a regular job in the week prior to the interview, and mothers' reports of fathers having children with another mother.

As for variations in the distribution of father's earnings, the repaired data set appears to include more disadvantaged fathers, consistent with other studies of sample attrition and non-response (cf., Sassler and McNally 2003).

### **4.3 Methods**

We begin by presenting estimates of mothers' marital expectations, by fathers' economic characteristics (education and earnings). We present these outcomes for the data unadjusted for non-response ("complete" data); the imputed results for missing fathers ("imputed" data); and last, the data that incorporates the imputed estimates with the complete data for the full estimate ("repaired" data). Next, we conduct multivariate analyses, and present results for the imputed data alone. Differences in the coefficients for the analyses based on the complete and repaired data sets are more a matter of degree than of kind.<sup>14</sup> Our initial analysis examined whether maternal marital expectations were shaped by measures of their partner's economic status, relying on multinomial logistic regression to discern factors contributing to differential marital expectations. Next we explored the association of men's economic status with entrance into marriage in the period between the first and second interview, using logistic regression.

## **5. Findings**

### **5.1 Bivariate results**

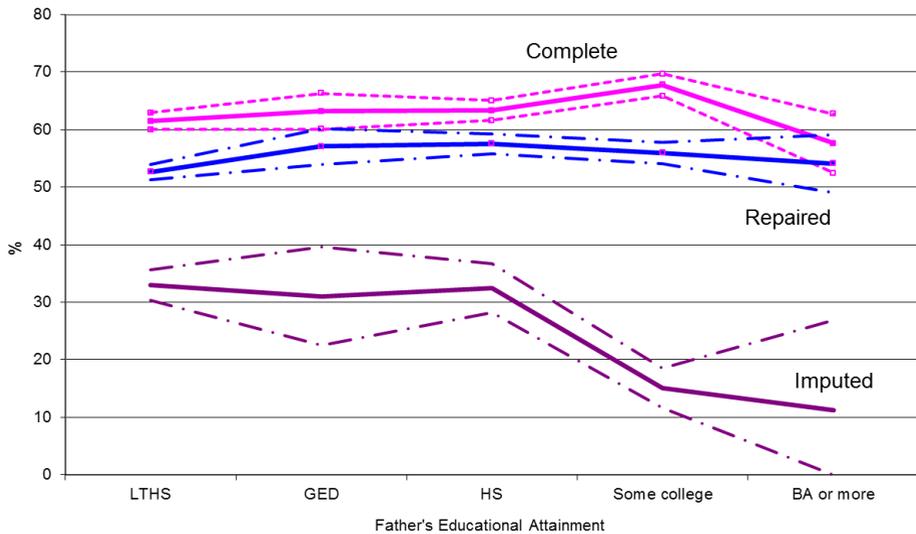
We first estimate the effect of men's economic attributes on women's expectations regarding marriage to their baby's father at their initial interview, presenting the proportion of mothers reporting their chances of marriage are almost certain or pretty good (see Figure 1). The differences between the imputed responses and the data not repaired for father non-response (represented by the solid line for "complete data") are shown to highlight the potential effect of omitting non-respondent fathers; confidence intervals are represented by dashed lines. In all instances, the proportion of affirmative responses among the imputed cases is substantially lower, effectively reducing the proportion of women with high hopes of marrying their baby's father (depicted in the "repaired" group). Nonetheless, the "repaired" data reveals that, regardless of birth

---

<sup>14</sup> There are few dramatic differences across data sets in the size of the coefficients, or their significance. Variation in the size and significance of variables is most evident for predictions of marital expectations.

fathers' educational attainment, over half of new mothers expect to marry their baby's father, and there is little variation across the father's level of schooling.<sup>15</sup> Women whose partners are high school drop-outs are no less likely to have high marital expectations than women whose partners have a college degree.

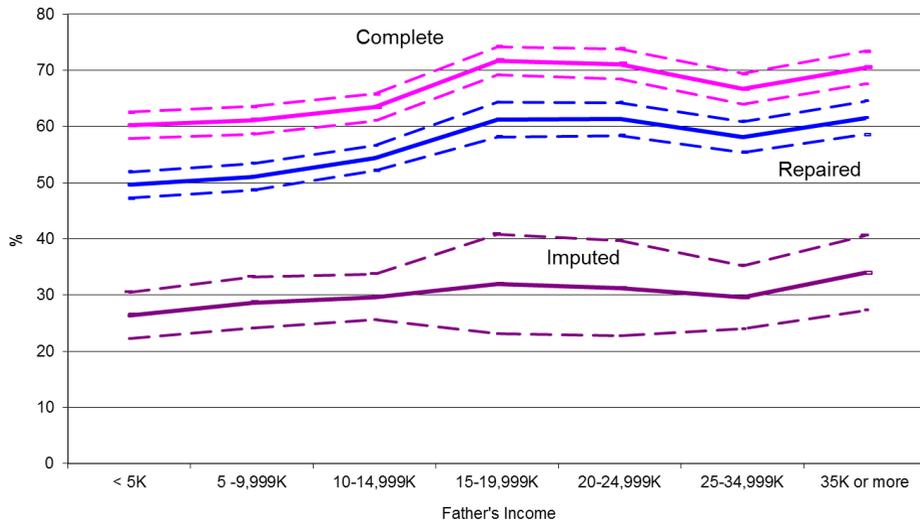
**Figure 1: Mothers reporting chance of marrying partner is 'Almost Certain' or 'Pretty Good'**



<sup>15</sup> The decline in positive assessments regarding the chance of marriage for men with a college degree or more may be the result of the selective nature of that group, or due to small cell size in this category. In fact, mothers reported the lowest marriage expectations when their baby's father had a college degree or more, though the sample size here was quite small (even for the imputed results, the sample size ranged only between 97 and 102), and over half of them (57.6%) were still quite positive that they would wed.

How do father's earnings shape mother's marital expectations? Again, marital expectations are lower among the "repaired" data than for the "complete" responses (Figure 2). Optimistic assessments of the chance of marriage to their baby's father increase as men's earnings rises, leveling off once men earned between \$15,000 and \$25,000, before decreasing slightly for men who made between \$25,000 and \$35,000. Expectations rise modestly when partners earned \$35,000 or more at the initial interview, though they do not surpass the optimism expressed by women whose partners earned between \$15,000 and \$25,000. In sum, women whose partners made \$35,000 or more a year have no higher expectations for marriage than women whose partners' earnings are at about the poverty level for a family of four (\$17,030 for a family of four in 1999) (U.S. Census Bureau, 1999).

**Figure 2: Mothers reporting chance of marrying partner is 'Almost Certain' or 'Pretty Good'**



## 5.2 Mothers' marital expectations

Although we do not observe sizable differences in marital expectations by father's educational attainment (Figure 1), women's marital expectations vary across men's

earnings levels (Figure 2). Women report higher expectations of marrying the father of their newborn child when their partner's earnings reach about what is required to keep a family of four above the poverty level. Are these relations attenuated after accounting for various background characteristics? We now turn to the results from our multivariate analysis of mother's marital expectations, based on the imputed data; in addition to the coefficients and standard errors, we present exponentiated coefficients (the odds ratios) for easier interpretation.

The results of Table 3 indicate that, minus other controls, father's educational attainment *is* significantly related to the mother's expectations of marrying her baby's father. When the father has a high school degree or some college, mothers' odds of reporting a very good chance of marrying are 1.61 times and 1.93 times greater than when the father is a high school drop-out (relative to a poor chance). For women whose partner has some college education, the odds of reporting a very good chance are also significantly greater than reporting only a 50-50 chance of getting married. Relative educational attainment also matters; when couples are educationally homogamous or if there is a maternal advantage, the likelihood of reporting a very good chance of marrying are significantly greater than when the father has more education than the mother. On the other hand, fathers' earnings levels are *not* significantly associated with mother's reported marital expectations. Mothers have high expectations of marrying their baby's father at some point in the future, regardless of how much he earns, after accounting for other attributes.

**Table 3: Multinomial logistic regression analysis for variables predicting chance of marrying baby's father**

Variables	Chance of Marriage to Baby's Father					
	Pretty Good/Almost Certain vs Poor Chance			50-50 vs. Poor Chance		
	$\beta$	SE $\beta$	$e^{\beta}$	$\beta$	s.e.	$e^{\beta}$
<b>FATHER'S ATTRIBUTES</b>						
<i>Educational Attainment (LTHS = REF)</i>						
High School or GED	0.476	0.162	1.609**	0.279	0.168	1.322+
Some College	<u>0.657</u>	0.235	1.928**	<u>0.283</u>	0.250	1.327
Bachelor's or more	0.713	0.453	2.039	0.821	0.447	2.273+
<i>Relative Education (Father has higher level = REF)</i>						
Baby's mother has more education	0.641	0.213	1.898**	0.409	0.219	1.505+
Parents have same levels of schooling	0.520	0.192	1.682**	0.403	0.189	1.497*

**Table 3: (Continued)**

Variables	Chance of Marriage to Baby's Father					
	Pretty Good/Almost Certain vs Poor Chance			50-50 vs. Poor Chance		
	$\beta$	SE $\beta$	$e^{\beta}$	$\beta$	s.e.	$e^{\beta}$
<b>FATHER'S ATTRIBUTES</b>						
<i>Earnings (\$0 - \$4,999 = REF)</i>						
Refused	-0.400	-0.238	0.670 +	-0.181	0.233	0.835
\$5,000 - \$9,999	-0.246	0.255	0.778	-0.327	0.272	0.721
\$10,000 - \$14,999	-0.338	0.237	0.713	-0.183	0.260	0.833
\$15,000 - \$19,999	0.013	0.254	1.013	-0.346	0.273	0.707
\$20,000 - \$24,999	0.028	0.273	1.028	-0.347	0.258	0.707
\$25,000 - \$34,999	-0.196	0.261	0.822	-0.121	0.333	0.886
\$35,000 or more	-0.125	0.317	0.882	-0.267	0.323	0.766
<i>Race-Ethnicity (Non-Hispanic Black = REF)</i>						
Non-Hispanic White	<u>0.263</u>	0.219	1.301	<u>-0.821</u>	0.267	0.440 **
Hispanic	<u>0.064</u>	0.149	1.066	<u>-0.308</u>	0.158	0.735 +
Other	-0.254	0.316	0.776	-0.182	0.300	0.833
<b>MOTHER REPORTED ATTRIBUTES</b>						
<i>Relationship Type (Romantically involved = REF)</i>						
Not romantically involved	<u>-0.370</u>	0.169	0.690 **	<u>-2.014</u>	0.157	0.133 **
Cohabiting	<u>0.882</u>	0.164	2.416 **	<u>0.301</u>	0.183	1.351
<i>Fertility Ties</i>						
Multiple children with baby's father (One child = REF)	0.309			0.283		
Mother has no other children (REF)		0.135	1.362 *		0.138	1.327 *
Mother has children with another father	-0.087	0.125	0.917	0.049	0.128	1.050
Mother refused, skipped this response	-0.676	0.562	0.508	-0.193	0.817	0.824 **
Father has no other children (REF)						
Father has children with another mother <sup>a</sup>	-0.820	0.127	0.441 **	-0.614	0.131	0.541 **
Refused/skipped question on father's children <sup>a</sup>	-1.036	0.296	0.355 **	-0.550	0.275	0.577 *
Mother's Gender Distrust	<u>-0.544</u>	0.155	0.580 **	<u>-0.156</u>	0.155	0.856
Constant	<u>1.564</u>	0.301	**	<u>0.833</u>	0.305	**
$\chi^2$	3,242.75 to 3,306.19					
Number of Cases	3,237 to 3,242					

Source: Fragile Families. Note: Missing father observations were imputed using multiple imputation.

\*\*  $p \leq .01$ ; \*  $p \leq .05$ ; +  $p \leq .10$  (two-tailed test). Underlining denotes significant difference between "Almost Certain" and "50-50" chance ( $p \leq$ ).

<sup>a</sup> This information is reported by the new baby's mother, regarding her partner's previous fertility.

Relationship status at the birth of the child had the largest observed effect on marital expectations. Cohabiting women are 2.42 times more likely to say they have an excellent chance (rather than a poor one) of marrying their baby's father, relative to mothers who are romantically involved with their baby's father but not living with him. Cohabiting mothers are also significantly more likely to report a pretty good chance of marrying their partner than a 50-50 chance, highlighting how optimistic they were at the time of the birth – often referred to as “the magic moment.” In contrast, women who were no longer romantically involved with their baby's father at the time the child was born are 69 percent as likely to feel they have a very good chance of marrying him as are those still romantically involved but not cohabiting.

Having multiple children together also increased women's odds of reporting a very good chance of marrying her baby's father. When fathers have children with other partners the reported chances of marrying are significantly reduced. Finally, mother's reports of gender distrust negatively affect her likelihood of reporting a very good chance of marriage relative to both other options (a 50-50 chance or no chance). We find that the outcomes from the bivariate and multivariate results differ substantially. In contrast to what was revealed in Figure 1, mother's marital expectations are most strongly shaped by men's educational attainment, minus other controls. We find little evidence that marital expectations are strongly associated with the level of men's earnings at the birth of the child.

### **5.3 Mothers' transitions into marriage**

Despite very high expectations regarding marriage in the future, only 8% of unmarried parents of newborns had wed by their second interview. Results of the logistic regression model of transitions into marriage are presented in Table 4, and are based on the imputed data. We present the coefficients, standard errors, and odds of entering into a marital union, in sequential models, first without expectations for marriage (Model A), and then including marital expectations (Model B), as expectations to marry should mediate the effects of the parents' characteristics and experiences on relationship progression into marriage. Our previous analysis indicated that mothers of newborns expressed much weaker beliefs that they would marry the father of their child if he had not completed high school, though maternal expectations for marriage were not significantly lower when men's earnings were inadequate to support a family. Comparing across Models A and B enables us to better assess how marital expectations moderate the association of observed variables and transitions into marriage.

**Table 4: Logistic regression analysis for variables predicting transitions to marriage**

Predictor	Model 1			Model 2		
	B	SE B	e <sup>B</sup>	B	SE B	e <sup>B</sup>
<i>Father's Educational Attainment (LTHS = REF)</i>						
High school or GED	0.172	0.174	1.188	0.129	0.174	1.138
Some college	0.760	0.204	2.138 **	0.696	0.206	2.006 **
Bachelor's or more	1.224	0.352	3.401 **	1.206	0.354	3.338 **
<i>Relative Education (Father has higher level = REF)</i>						
Baby's mother has more education	0.421	0.213	1.523 *	0.363	0.215	1.437 +
Parents have same levels of schooling	0.301	0.178	1.351 +	0.255	0.182	1.290
<i>Father's Earnings (\$0 - \$4,999 = REF)</i>						
Refused	0.378	0.301	1.460	0.441	0.303	1.554
\$5,000 - \$9,999	0.094	0.313	1.098	0.117	0.310	1.124
\$10,000 - \$14,999	0.450	0.286	1.569	0.502	0.286	1.652 +
\$15,000 - \$19,999	0.706	0.275	2.027 **	0.671	0.278	1,957 **
\$20,000 - \$24,999	0.433	0.309	1.541	0.399	0.315	1.490
\$25,000 - \$34,999	0.839	0.276	2.313 **	0.865	0.278	2.375 **
\$35,000 or more	0.476	0.297	1.610	0.481	0.298	1.618
<i>Father's Race-Ethnicity (Non-Hispanic Black = Ref)</i>						
Non-Hispanic White	0.608	0.193	1.837 **	0.566	0.194	1.762 **
Hispanic	0.665	0.154	1.944 **	0.653	0.155	1.921 **
Other	0.400	0.318	1.491	0.453	0.139	1.573
MOTHER REPORTED ATTRIBUTES						
<i>Relationship Type (Romantically involved = REF)</i>						
Not romantically involved	-1.299	0.295	0.273 **	-0.336	0.331	0.715
Cohabiting	0.608	0.169	1.837 **	0.504	0.170	1.655 **
<i>Fertility Ties</i>						
Multiple children with baby's father (One child = REF)	0.177	0.139	1.194	0.179	0.139	1.196
Mother has no other children (REF)						
Mother has children with another father	-0.045	0.137	0.956	-0.029	0.138	0.972
Mother refused, skipped this response	-0.318	1.143	0.728	-0.308	1.148	0.735
Father has no other children (REF)						
Father has children with another mother <sup>a</sup>	-0.496	0.146	0.609 **	-0.426	0.147	0.653 **
Refused/skipped question on father's children <sup>a</sup>	-1.337	0.628	0.263 *	-1.229	0.628	0.293 *

**Table 4: (Continued)**

Predictor	Model 1			Model 2		
	B	SE B	e <sup>B</sup>	B	SE B	e <sup>B</sup>
<b>MOTHER REPORTED ATTRIBUTES</b>						
<i>Mother's Gender Distrust</i>	-0.408	0.200	0.665 *	-0.338	0.202	0.713 *
<i>Chances of Marriage (Poor chance = REF)</i>						
Almost certain or pretty good chance				1.916	0.394	6.794 **
50-50				1.207	0.412	3.342 **
Constant	-3.571			-5.219		
X2	1,230.12 to 1,243.45			1,311.29 to 1,315.83		
df	2,143 to 2,156			2,481 to 2,487		
Number of Cases	3,237 to 3,242			3,237 to 3,242		

\*\*p ≤ .01; \* p ≤ .05; + p ≤ .10 (two-tailed test).

<sup>a</sup> Information reported by the mother, regarding partner's previous fertility.

Note: Missing father observations were imputed using multiple imputation.

Men's economic attributes clearly played an important role in transitions into marriage. Women whose partners had some post-secondary education were twice as likely to marry as those whose partners did not finish high school. Transitions to marriage were even greater for the few women whose partners had completed college, as they were over three times more likely to wed than the much larger share of women whose partner lacked a high school diploma or equivalent.<sup>16</sup> Such findings differ from results that emerge based on studies of the broader population, particularly those who have not yet become parents. Men with some post-secondary education but no degree are generally no more likely to marry than high school graduates (Oppenheimer 2003; Sassler and Schoen 1999).<sup>17</sup> Additional models (not shown) find significant differences in the effect of having some college schooling relative to only a high school or equivalency degree on marriage odds, though no significant difference is evident between those men with some post-secondary education but no degree and men who have completed a bachelor's degree.<sup>18</sup> Among disadvantaged populations, men who have some college education may stand out as the best prospects.

<sup>16</sup> These results are similar to those reported by Waller and McLanahan (2005).

<sup>17</sup> Oppenheimer (2003), however, does report that among black cohabiting men, those with between 13 and 15 years of schooling are significantly more likely to marry than remain cohabiting or break up, net of duration cohabiting, school enrollment, type of job, and earnings; she does not include controls for parental status, though.

<sup>18</sup> Men who have completed a bachelor's degree account for less than 3% of fathers in the repaired sample.

In contrast to the broader population, where educational homogamy is increasingly evident among the married (Schwartz and Mare 2005), relative educational attainment also emerges as important in our sample of parents of newborns. When the mother has more education than her male counterpart, couples are about one and a half times more likely to marry than when the father has more schooling, though this effect is only significant at the .10 level after accounting for marital expectations. Such results further substantiate the research showing that single mothers who marry often wed less advantaged mates than single childless women (Lichter, Graefe, and Brown 2003).

The relationship between men's earnings and marital transitions is in direct opposition to our working hypothesis. Whereas we had posited that greater earnings would be associated with an increased likelihood of marriage, our results reveal that the odds of marrying do not increase monotonically as income level rises. Previous research had also suggested the possibility of a threshold for marriage of around \$25,000 in 1999 dollars (e.g., Oppenheimer 2003). Our results indicate that the positive association between earnings and marriage begins at lower levels than has previously been reported, and also ends at lower levels than might be expected. Even among couples where the man earned between \$10,000 and \$14,999 dollars, couples were 1.6 times more likely to marry ( $p < .10$ ), after accounting for maternal reports of marriage expectations, relative to couples in which the male partner earned less than \$5,000. When men earned between \$15,000 and \$19,999, the association was even stronger, with couples being almost twice as likely to marry as mean earning the lowest amount. The odds of marrying are even higher among couples in which the man earned between \$25,000 and \$34,999; such couples were about 2.3 times more likely to wed than couples in which the man did not earn very much in the preceding year. It is notable that among this sample of new parents, the earnings levels associated with increased marriage odds are considerably lower than the threshold initially reported by Oppenheimer (2003).

Perhaps most noticeable is the fact that the highest earning men in this sample, those who brought home \$35,000 or more in the prior year, were *not* significantly more likely to have married the mother of their child. This group accounted for nearly 9 percent of all fathers. These findings challenge the notion that the relationship between men's earnings and marriage odds is a positive and steadily increasing one. Why men earning between fifteen and twenty thousand dollars believe they make enough to wed, while those reporting incomes in excess of \$35,000 are not significantly more likely to marry suggests there is more at work than simply "enough" money. Additional results (not shown) reveal that the highest earning men are less likely (at the .10 level) to move out of their cohabiting relationship than the lowest earning couples. Higher income, therefore, appears to deter dissolution to a greater extent than it facilitates marriage, a

finding consistent with other studies of cohabiting men (Sassler and McNally 2003; Wu and Pollard 2000) based on more economically and racially diverse samples.

Controls for men's employment in the prior week, mothers' earnings in the prior year, and her receipt of public assistance in the past 12 months were not significant, and were therefore dropped from the model. Nonetheless, the effect of these measures indicates that more than just any job is required for marriage. Furthermore, mothers' contributions do not substantially affect disadvantaged parents' marriage odds when entered in conjunction with their male partners. While the qualitative data suggest that many couples seek to establish a financial safety net prior to marrying, it is not clear from our results what that particular threshold of earnings might be.

The effects for race or ethnicity and relationship type on union transitions are largely consistent with reported results from other published studies (e.g., Waller and McLanahan 2005). Hispanic and non-Hispanic whites are substantially more likely to wed than their black counterparts. Parents of newborns who are cohabiting have a significantly higher likelihood of marriage than those who are romantically involved but not living together, as well as couples who share parenthood but are not romantically involved. There is no longer a statistically significant difference between being romantically involved versus not being romantically involved after adjusting for marriage expectations. Fertility ties within and across families shape marital transitions, particularly when the father has children with other women. Couples with multiple children together are no more likely to wed than those who have just had their first child together. Mothers' children from prior relationships also do not serve as a deterrent to marriage. When men have fathered children with other mothers, however, such couples are only 65 percent as likely to marry as those where the father does not have child support obligations that extend to multiple families. Marriage odds are even lower if the mother refused or skipped that particular question. Finally, mothers' gender distrust reduces the odds of marriage ( $p < .10$ ) upon controlling for marital expectations.

A mother's positive assessments of marriage increase the likelihood of getting married. Women who report an almost certain or pretty good chance of marrying their partners are 6.8 times more likely to wed than women who said their chances were poor. Women with high hopes for marriage whose partners have more attractive economic attributes are no more likely to marry, however, than optimistic women with less economically attractive partners (models not shown). Interactions between marital expectations, men's earnings, regular employment, and educational attainment never attain significance.

Do the associations between father's economic status, mother's marital expectations, and transitions into marriage vary across relationship types, which may proxy for relationship quality and commitment? To assess this, we ran additional models that included interactions between relationship status and other variables of

interest (results not shown). Prior to accounting for marital expectations, we find that women who cohabited with the baby's father and have other children with him are significantly less likely to transition into marriage than those who were romantically involved with no prior children together (union status = cohabiting x multiple children with baby's father). Once controls are included for marital expectations, however, this coefficient is no longer significant. Marital expectations, then, appear to be somewhat different among cohabiting parents with more than one shared child; for this group, living together may have become an alternative to marriage (cf., Musick 2007). Future work should determine whether women with the greatest expectations that marriage is in the cards differ from women who believe there is a pretty good chance that they will wed the father of their child, as combining these two response options may attenuate associations between intentions and marriage outcomes, particularly among those couples with multiple biological children.

## **6. Discussion**

Previous studies, based on populations in the United States and cohabitators in Europe, have demonstrated that expectations for marriage are often quite high (Lichter et al. 2004; Reneflot 2006). Despite theoretical presumptions regarding the association between economic status and marriage, relatively little is known about how women's marital views are shaped by their partners' economic circumstances. In this paper, we examined whether new mother's marital expectations are associated with the economic characteristics of their new baby's father, and how such expectations shaped subsequent entry into marriage. Regardless of their partner's economic characteristics, women's expectations for marriage to their child's father are generally high. Men's school attainment is more significantly associated with marital expectations than are their earnings after controlling for couples' background characteristics. Both men's educational attainment and earnings are significant predictors of subsequent marriage – though they appear to operate in somewhat different ways than for the general population of singles. These factors do not vary sizably after accounting for marital expectations at the baby's birth, nor do they differ significantly by relationship status (i.e. romantically involved, cohabiting) at the birth of the child.

A major contribution of this study is our assessment of how the omission of fathers who did not participate in the initial survey shaped results relating to marital expectations as well as union transitions of mothers. This sample omission is sizable, accounting for over one-fifth of the male partners of women who gave birth. Our results indicate that previous studies that utilized a more selective sample of Fragile Families new parents underestimate factors associated with marriage. Prior studies (Carlson et al.

2004; Osborne 2005) found no consistent effects of men's economic attributes (including their educational attainment, earnings, or employment) on transitions into marriage in the years following the child's birth. Our findings, in contrast, reveal that when men who refrained from participating in the initial survey – who are often the least economically attractive – are incorporated into the sample, the attributes of men in the middle of the earnings and education distribution of this “repaired” sample are better predictors of transitions into marriage. Men with some post-secondary schooling are more than twice as likely to wed as the least educated men, while men with moderate earnings are also significantly more likely to married than their counterparts with very low earnings. While men's economic attributes continue to hold great weight among these parents in their likelihood of progressing to marriage, the association is not strictly one of “more is better.” Perhaps most surprisingly, couples in which the man earned more than \$35,000 were no more likely to marry than are couples having a male partner earning less than \$5,000 per annum. These men appear to be rather different from the broader male population, both in not marrying prior to the birth of their children or in the ensuing year, notwithstanding their ability to provide for a family.

Our results further suggest that incomes that constitute positive economic attributes (or signals of marriageability) among less advantaged populations, such as unmarried parents who recently gave birth to a child, are lower than those for the general population, particularly non-parents. Among our sample of mothers, the level of paternal educational attainment associated with transitions into marriage is somewhat lower than what is generally found among more general unmarried populations, particularly among those who do *not* have children; some post-secondary education but no college degree appears to suffice as a marker of better long-range prospects. Unfortunately, men with some post-secondary schooling are not well represented among unmarried fathers with new babies, accounting for less than a quarter of this sample of parents. Improving the educational attainment of less advantaged men, and facilitating the pursuit of post-secondary education, may improve the marriage market options of single mothers. Nonetheless, expanding men's educational opportunities may not necessarily increase their likelihood of marrying the biological mother of their child; within five years of the birth, nearly two-thirds of unmarried women had ended their relationship with their child's biological father and over half entered into new partnerships, often with men who demonstrated better economic capabilities than their child's biological father (Bzostek, McLanahan, and Carlson 2012).

Our earnings results suggest the existence of various thresholds that either encourage or discourage marriage (Acs and Maag 2005; Steuerle and Carasso 2004). Whereas Oppenheimer (2003) found that among NLSY men, marital unions were not formed until they earned in excess of about \$25,000 (in adjusted 1999 dollars), among disadvantaged men the threshold appears to be quite a bit lower. This may be due, in

part, to tax policies designed to encourage marriage that were expanded as a result of the Welfare Reform Act. In 1999, low-income working families were eligible for the Earned Income Tax Credit (EITC) if they earned \$26,928 or less and had one qualifying child, or \$30,580 if they had more than one qualifying child. If a woman earned in the lower range of the modal amount that new mothers did in the year prior to their birth (\$10,000 to \$24,999) (Osborne 2005), then they could still qualify for the EITC were they to marry a man with earnings between \$15,000 and \$20,000. Qualifying for EITC would be more unlikely were men earning between \$20,000 to \$24,999, and even less likely among couples where the man earned between \$25,000 and \$35,000, unless the mother curtailed her work hours, which research focused on EITC benefits indicates they often do (Eissa and Hoynes 2004). Nonetheless, couples may have determined that earnings above \$25,000 were sufficient for marriage, given that the 1999 federal poverty guidelines for the 48 contiguous states and the District of Columbia was \$19,520 for a family of 5 (U.S. Department of Health and Human Services 1999). These results are consistent with other studies that also find modest effects of welfare on family formation (Eissa and Hoynes 2000; Moffitt 1998). Our results suggest that disadvantaged couples are increasingly aware of the point at which marriage might be more fiscally advantageous than other alternatives. Addressing common (mis)perceptions regarding the tax disadvantages of marriage, or removing tax deterrents at higher income levels could go a long way towards removing barriers to marriage among parents with young children.

In conclusion, our results highlight the need to go beyond assumptions that there is a linear relationship between economic prospects and marriage, or that the predictors of marriage among couples who bear children outside of marriage are similar to those who defer parenting. Theories regarding the prerequisites necessary for marriage need to better account for the growing heterogeneity in the unmarried population. The findings of this study suggest that facilitating post-secondary education may improve the marriage prospects of less advantaged men and women. Further attention to tax policies, such as changing levels of the Earned Income Tax Credit, are also warranted if we are to better understand the marriage decisions of unwed parents. Furthermore, our findings highlight the importance of better accounting for the broader range of fathers, including those who did not participate in the initial survey, but for whom ample information is available from maternal reports.

## **7. Acknowledgements**

An earlier version of this paper was presented at the 2005 annual meeting of the Population Association of America. We are grateful to Daniel Lichter for insightful comments on earlier paper drafts. This research was supported in part by the Cornell Population Center, which has core funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (5 R24 HD058488). Support was also provided by The Ohio State University's Initiative in Population Research (1 R21 HD047943-01) provided from the Eunice Kennedy Shriver National Institute of Child Health and Human Development. Additional support for this research was provided by The Ohio State University's Center for Survey Research, and from the Netherlands Interdisciplinary Demographic Institute (NIDI) during revisions.

## References

- Acs, G. and Nelson, S. (2004). Changes in living arrangements in the late 1990s: Do welfare policies matter? *Journal of Policy Analysis and Management* 23(2): 273–290. doi:10.1002/pam.20004.
- Acs, G. and Maag, E. (2005). Irreconcilable differences? The conflict between marriage promotion initiatives for cohabiting couples with children and marriage penalties in tax and transfer programs. *Assessing the New Federalism Policy Brief B-66*. Washington, DC: The Urban Institute.
- Axinn, W. and Thornton, A. (1996). The influence of parents' marital dissolutions on children's attitudes toward family formation. *Demography* 33: 66–81. doi:10.2307/2061714.
- Becker, G.S. (1981). *A Treatise on the Family*. Cambridge, MA: Harvard University Press.
- Bernhardt, E.M. (2002). Cohabitation and marriage among young adults in Sweden: Attitudes, expectations, and plans. *Scandinavian Population Studies* 13: 157–170.
- Beaujouan, E. (2011). Second union fertility in France: Partners' age and other factors. *Population* 66: 275–311.
- Blackwell, D.L. and Lichter, D.T. (2004). Homogamy among dating, cohabiting, and married couples. *The Sociological Quarterly* 45(4): 719–737. doi:10.1111/j.1533-8525.2004.tb02311.x.
- Bracher, M. and Santow, G. (1998). Economic independence and union formation in Sweden. *Population Studies* 52(3): 275–294. doi:10.1080/0032472031000150466.
- Brown, S.L. (2010). Marriage and child well-being: Research and policy perspectives. *Journal of Marriage and Family* 72(4): 1059–1077. doi:10.1111/j.1741-3737.2010.00750.x.
- Brown, S. (2000). Union transitions among cohabitators: The significance of relationship assessments and expectations. *Journal of Marriage and the Family* 62(3): 833–847. doi:10.1111/j.1741-3737.2000.00833.x.
- Bzostek, S.H., McLanahan, S.S., and Carlson, M.J. (2012). Mothers' repartnering after a nonmarital birth. *Social Forces* 90(3): 817–841. doi:10.1093/sf/sos005.

- Carlson, M., McLanahan, S., and Brooks-Gunn, J. (2008). Coparenting and nonresident fathers' involvement with children after a nonmarital birth. *Demography* 45(2): 461–488.
- Carlson, M. (2006). Family structure, father involvement, and adolescent behavioral outcomes. *Journal of Marriage and Family* 68: 137–154. doi:10.1111/j.1741-3737.2006.00239.x.
- Carlson, M., McLanahan, S., and England, P. (2004). Union formation in fragile families. *Demography* 41(2): 237–261. doi:10.1353/dem.2004.0012.
- Clarkberg, M. (1999). The price of partnering: The role of economic well-being in young adults' first union experiences. *Social Forces* 74: 609–632. doi:10.2307/3005967.
- Coontz, S. (2005). *Marriage, a history: How love conquered marriage*. Penguin Books.
- Crissey, S.R. (2005). Race/ethnic difference in marital expectation of adolescents: The role of romantic relationships. *Journal of Marriage and Family* 67(3): 697–709. doi:10.1111/j.1741-3737.2005.00163.x.
- Cunningham, M. and Thornton, A. (2006). The influence of parents' marital quality on adult children's attitudes toward marriage and its alternative: Main and moderating effects. *Demography* 43: 659–672. doi:10.1353/dem.2006.0031.
- Duvander, A. (1999). The transition from cohabitation to marriage: A longitudinal study of the propensity to marry in Sweden in the early 1990s. *Journal of Family Issues* 20: 698–717.
- Edin, K. (2000). How low-income single mothers talk about marriage. *Social Problems* 47: 112–133. doi:10.1111/0022-4537.00193.
- Edin, K. and Kefalas, M. (2005). *Promises I Can Keep*. Berkeley: University of California Press.
- Eissa, N. and Hoynes, H.W. (2000). Explaining the fall and rise in the tax cost of marriage: The effect of tax laws and demographic trends, 1984–97. *National Tax Journal* 53: 683–711.
- Eissa, N. and Hoynes, H.W. (2004). Taxes and the labor market participation of married couples: The earned income tax credit. *Journal of Public Economics* 88: 1931–1958. doi:10.1016/j.jpubeco.2003.09.009.

- England, P. (2004). More mercenary mate selection? Comment on Sweeney and Cancian (2004) and Press (2004). *Journal of Marriage and Family* 66(4): 1034–1037. doi:10.1111/j.0022-2445.2004.0075.x.
- Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Cambridge: Polity Press.
- Freedman, V. and Wolf, D. (1995). A case study in multiple imputation. *Demography* 32: 459–470. doi:10.2307/2061691.
- Gibson-Davis, C., Edin, K., and McLanahan, S. (2005). High hopes, but even higher expectations: The retreat from marriage among low-income couples. *Journal of Marriage and Family* 67: 1301–1313. doi:10.1111/j.1741-3737.2005.00218.x.
- Gibson-Davis, C.M. (2009). Money, marriage, and children: Testing the financial expectations and family formation theory. *Journal of Marriage and Family* 71(1): 146–160. doi:10.1111/j.1741-3737.2008.00586.x.
- Goldscheider, F.K. and Sassler, S. (2006). Creating step-families: Integrating children into the study of step-family formation. *Journal of Marriage and Family* 68: 1–17. doi:10.1111/j.1741-3737.2006.00252.x.
- Goldstein, J.R. and Kenney, C.T. (2001). Marriage delayed or marriage foregone? New cohort forecasts of first marriage for U.S. women. *American Sociological Review* 66(4): 506–519. doi:10.2307/3088920.
- Graefe, D.R. and Lichter, D.T. (2002). Marriage among unwed mothers: Whites, blacks, and Hispanics compared. *Perspectives on Sexual and Reproductive Health* 34(November/December): 286–293. doi:10.2307/3097747.
- Heard, G. (2011). Socioeconomic Marriage Differentials in Australia and New Zealand. *Population and Development Review* 37(1): 125–160. doi:10.1111/j.1728-4457.2011.00392.x.
- Jalovaara, M. (2012). Socio-economic resources and first-union formation in Finland, cohorts born 1969–81. *Population Studies* 66: 69–85. doi:10.1080/00324728.2011.641720.
- Jalovaara, M. (2013). Socio-economic resources and the dissolution of cohabitations and marriages. *European Journal of Population* 29: 167–193. doi:10.1007/s10680-012-9280-3.

- Kalmijn, M. and Luijkx, R. (2005). Has the reciprocal relationships between employment and marriage changed for men? An analysis of the life histories of men born in the Netherlands between 1930 and 1970. *Population Studies* 59: 211–231.
- Kennedy, S. and Bumpass, L. (2008). Cohabitation and children's living arrangements: New estimates from the United States. *Demographic Research* 19(47): 1663–1692. doi:10.4054/DemRes.2008.19.47.
- Kravdal, O. (1999). Does marriage require a stronger economic underpinning than informal cohabitation? *Population Studies* 53(1): 63–80. doi:10.1080/00324720308067.
- Kravdal, O. (1997). Wanting a child without a firm commitment to the partner: Interpretations and implications of a common behavior pattern among Norwegian cohabitants. *European Journal of Population* 13: 269–298.
- Lichter, D.T., Batson, C., and Brown, J.B. (2004). Welfare reform and marriage promotion: The marital expectations and desires of single and cohabiting mothers. *Social Service Review* 38: 2–25. doi:10.1086/380652.
- Lichter, D.T., Graefe, D.R., and Brown, J.B. (2003). Is marriage a panacea? Union formation among economically disadvantaged unwed mothers. *Social Problems* 50(1): 60–86. doi:10.1525/sp.2003.50.1.60.
- Lichter, D.T., Sassler, S., and Turner, R. (2011). *Childbearing among Cohabiting Women: Union Transitions and the Family Context of Nonmarital Fertility*. Las Vegas, NV: American Sociological Association.
- Little, R.J.A. and Rubin, D.R. (2002). *Statistical Analysis with Missing Data*. Hoboken, NJ: Wiley-Interscience.
- Lloyd, K.L. and South, S.J. (1996). Contextual influences on young men's transition to first marriage. *Social Forces* 74: 1097–1119. doi:10.2307/2580394.
- Manlove, J., Ryan, S., Wildsmith, E., and Franzetta, K. (2010). The Relationship Context of Nonmarital Childbearing in the U.S.. *Demographic Research* 23: 615–653. doi:10.4054/DemRes.2010.23.22.
- Manning, W.D. (2001). Childbearing in cohabiting unions: Racial and ethnic differences. *Family Planning Perspectives* 33: 217–223. doi:10.2307/2673785.
- Manning, W.D., Longmore, M.A., and Giordano, P.C. (2007). The changing institution of marriage: Adolescents' expectations to cohabit and to marry. *Journal of Marriage and Family* 69(3): 559–575. doi:10.1111/j.1741-3737.2007.00392.x.

- Manning, W.D. and Smock, P.J. (1995). Why marry? Race and the transition to marriage among cohabitators. *Demography* 32: 509–520. doi:10.2307/2061671.
- Martin, S.P. (2004). Delayed marriage and childbearing: Implications and measurement of diverging trends in family timing. In: Neckerman, K. (ed.). *Social Inequality*. New York: Russell Sage Foundation.
- Martin, G. and Kats, V. (2003). Families and work in transition in 12 countries, 1980–2001. *Monthly Labor Review*, Bureau of Labor Statistics.
- McGinnis, S.L. (2003). Cohabiting, dating, and perceived costs of marriage: A model of marriage entry. *Journal of Marriage and Family* 65(1): 105–116. doi:10.1111/j.1741-3737.2003.00105.x.
- McLanahan, S. (2004). Diverging destinies: How children are faring under the second demographic transition. *Demography* 41(4): 607–627. doi:10.1353/dem.2004.0033.
- McLanahan, S. (2011). Family instability and complexity after a nonmarital birth: Outcomes for children in fragile families. In: Carlson, M.-J. and England, P. (eds.). *Social Class and Changing Families in an Unequal America*. Stanford: Stanford University Press.
- Moffitt, R. (1998). The effect of welfare on marriage and fertility. In: Moffitt, R. (ed.). *Welfare, the family, and reproductive behavior*. Washington, D.C.: National Academy Press: 50–97.
- Moors, G. and Bernhardt, E. (2009). Splitting up or getting married: Competing risk analysis of transitions among cohabiting couples in Sweden. *Acta Sociologica* 52(3): 227–247. doi:10.1177/0001699309339800.
- Morgan, P. (2000). *Marriage-Lite: The Rise of Cohabitation and its Consequences*. London: Institute for Civil Society.
- Murray, C. (2012). *Coming Apart: The State of White America, 1960–2010*. New York: Crown Forum. doi:10.1002/pam.21671.
- Musick, K. (2007). Cohabitation, non-marital childbearing, and the marriage process. *Demographic Research* 16(9): 249–286. doi:10.4054/DemRes.2007.16.9.
- Musick, K. (2002). Planned and unplanned childbearing among unmarried women. *Journal of Marriage and the Family* 64: 915–929. doi:10.1111/j.1741-3737.2002.00915.x.

- Nock, S.L. (2005). Marriage as a public issue. *The Future of Children* 15(2): 13–32. doi:10.1353/foc.2005.0019.
- Ohlsson-Wijk, S. (2011). Sweden's marriage revival: An analysis of the new-millennium switch from long-term decline to increasing popularity. *Population Studies* 65: 183–200. doi:10.1080/00324728.2011.574724.
- Oppenheimer, V.K. (2003). Cohabiting and marriage during young men's career development. *Demography* 40: 127–149. doi:10.2307/3180815.
- Oppenheimer, V., Kalmijn, M., and Lim, N. (1997). Men's career development and marriage timing in a period of rising inequality. *Demography* 34: 311–330. doi:10.2307/3038286.
- Osborne, C. (2005). Marriage following the birth of a child among cohabiting and visiting parents. *Journal of Marriage and Family* 67: 14–26. doi:10.1111/j.0022-2445.2005.00002.x.
- Perelli-Harris, B., Kreyenfeld, M., Sigle-Rushton, W., Keizer, R., Lappegård, T., Jasilioniene, A., Berghammer, C., and Di Giulio, P. (2012). Changes in union status during the transition to parenthood in eleven European countries, 1970s to early 2000s. *Population Studies* 66(2): 167–182. doi:10.1080/00324728.2012.673004.
- Perelli-Harris, B., Sigle-Rushton, W., Kreyenfeld, M., Lappegard, T., Keizer, R., and Berghammer, C. (2010). The educational gradient of childbearing within cohabitation in Europe. *Population and Development Review* 36: 775–801.
- Reed, J.M. (2006). Not crossing the 'Extra Line': How cohabitators with children view their unions. *Journal of Marriage and Family* 68: 1117–1131. doi:10.1111/j.1741-3737.2006.00318.x.
- Reneflot, A. (2006). A gender perspective on preferences for marriage among cohabiting couples. *Demographic Research* 15: 311–327. doi:10.4054/DemRes.2006.15.10.
- Rinelli, L. (2010). Better parents, more stable partners: Union transitions among cohabiting parents. Working paper series, WP-10-14, National Center for Marriage and Family Research, Bowling Green State University.
- Rubin, D. (1987). *Multiple Imputation for Nonresponse in Surveys*. New York: J. Wiley and Sons.

- Sassler, S. and Goldscheider, F.K. (2004). Revisiting Jane Austen's theory of marriage timing: Changes in union formation among American men in the late 20th century. *Journal of Family Issues* 25: 139–166. doi:10.1111/j.1741-3737.2006.00252.x.
- Sassler, S. and McNally, J. (2003). Cohabiting couple's economic circumstances and union transitions: A re-examination using multiple imputation techniques. *Social Science Research* 32: 553–578. doi:10.1016/S0049-089X(03)00016-4.
- Sassler, S. and Miller, A.J. (2011). Class differences in cohabitation processes. *Family Relations* 60(2): 163–177. doi:10.1111/j.1741-3729.2010.00640.x.
- Sassler, S. and Schoen, R. (1999). The effect of attitudes and economic activity on marriage. *Journal of Marriage and the Family* 61: 147–159. doi:10.2307/353890.
- Schwartz, C.R. and Mare, R.D. (2005). Trends in educational assortative marriage from 1940 to 2003. *Demography* 42(4): 621–646. doi:10.1353/dem.2005.0036.
- Sigle-Rushton, W. and McLanahan, S.S. (2002). The living arrangements of new unmarried mothers. *Demography* 39: 415–433. doi:10.2307/3088324.
- Smock, P.J. and Manning, W.D. (1997). Cohabiting partners' economic circumstances and marriage. *Demography* 34: 331–341. doi:10.2307/3038287.
- Smock, P.J., Manning, W.D., and Porter, M. (2005). Everything's There Except Money: How money shapes decisions to marry among cohabitators. *Journal of Marriage and Family* 67: 680–696. doi:10.1111/j.1741-3737.2005.00162.x.
- Steuerle, C.E. and Carasso, A. (2004). *The hefty tax on marriage vows facing most households with children*. The Future of Children's Conference on Marriage and Child Well-Being, Princeton, NJ.
- Sweeney, M.M. and Cancian, M. (2004). Placing patterns of economic assortative mating in context: A reply to Press and England. *Journal of Marriage and Family* 66: 1038–1041.
- Sweeney, M.M. (2002). Two decades of family change: The shifting economic foundations of marriage. *American Sociological Review* 67(1): 132–147. doi:10.2307/3088937.
- Thomson, E. and Bernhardt, E. (2010). Education, values, and cohabitation in Sweden. *Marriage & Family Review* 46: 1–21. doi:10.1080/01494921003648431.

- U.S. Census Bureau (1999). *Poverty Thresholds 1999*. U.S. Department of Commerce. <http://www.census.gov/hhes/www/poverty/data/threshld/thresh99.html>.
- U.S. Department of Health and Human Services (1999). *The 1999 HHS Poverty Guidelines*. Federal Register 64(52): 13428–13430. <http://aspe.hhs.gov/poverty/99poverty.htm>.
- Ventura, S.J., Martin, J.A., Curtin, S.C., Menacker, F., and Hamilton, B.E. (2001). Births: Final Data for 1999. National Vital Statistics Reports 49(1). Hyattsville, MD: National Center for Health Statistics.
- Waller, M.R. and McLanahan, S.S. (2005). “His” and “Her” marriage expectations: Determinants and consequences. *Journal of Marriage and Family* 67: 53–67. [doi:10.1111/j.0022-2445.2005.00005.x](https://doi.org/10.1111/j.0022-2445.2005.00005.x).
- Waller, M.R. and Swisher, R. (2006). Fathers' risk factors in Fragile Families: Implications for "healthy" relationships and father involvement. *Social Problems* 53(3): 392–420. [doi:10.1525/sp.2006.53.3.392](https://doi.org/10.1525/sp.2006.53.3.392).
- Wiik, K.A., Bernhardt, E., and Noack, T. (2010). Love or money? Marriage intentions among young cohabitators in Norway and Sweden. *Acta Sociologica* 53(3): 269–287. [doi:10.1177/0001699310374488](https://doi.org/10.1177/0001699310374488).
- Wiik, K.A., Keizer, R., and Lappegård, T. (2012). Relationship quality in marital and cohabiting unions across Europe. *Journal of Marriage and Family* 47: 389–398. [doi:10.1111/j.1751-3737.2012.00967x](https://doi.org/10.1111/j.1751-3737.2012.00967x).
- Wu, Z. and Pollard, M. (2000). Economic circumstances and the stability of nonmarital cohabitation. *Journal of Family Issues* 21(3): 303–328. [doi:10.1177/019251300021003002](https://doi.org/10.1177/019251300021003002).

## **Appendix 1: Multiple imputations for race, education, age, and household relationship**

Information on the father's age, race, race-ethnicity, household relationship, and education was collected from both mothers and fathers; father's earnings were asked only of fathers. Imputations for the first five variables were performed separately from those for the income variable, using data from the variables included in the analysis. When both mothers and fathers reported an answer to the above questions, responses were compared to determine the goodness of the match. Responses for these 3,830 cases were then used to find the conditional probability of a father being in a certain category given the mother's report. Multiple imputation was carried out for the 1,068 fathers who were not interviewed by generating a random number between 0 and 1 to represent a cumulative probability. This random number, as well as the observed conditional probability of the father being in a certain category given the mother's response, was used to impute possible categories that might include the missing father; this procedure was repeated five times. The point estimates from the five completed data sets are then averaged to produce the multiple imputation estimate (Rubin 1987). The variance following multiple imputation reflects both average variance within each completed data set and adjusted variance between data sets, thereby accounting for the additional variability introduced by the uncertainty in our imputed values, and resulting in more conservative estimates compared to those from single-imputation data sets (Freedman and Wolf 1995; Rubin 1987).

When imputing for education, we had to be careful that the age and level of education were compatible. Age was imputed first and then each time level of education was imputed, we checked if the imputed level of education was possible for the imputed age. For example, if the imputed age of the baby's father turned out to be 16, he could not possibly have a bachelor's degree. In such cases, we re-imputed level of education. To be more specific, we set the following limits: a 16-year old could only have less than high school for his level of education, a 17-year old could have less than high school, high school or post high school or some college, an 18 or 19-year old could have any of the previous or GED, a 20-year old could have any of the previous or refuse or skip or not know, and anyone 21 or older could have any of the previous or have a bachelor's degree or more. In addition, the minimum acceptable age for the baby's fathers was set at 16 years, because that was age of the youngest fathers among those interviewed. When imputing age for the missing fathers, we assumed that the mothers could not have been more than 10 years off the fathers' right ages, when reporting the fathers' ages.

Note that for age, there were forty cases where the mother's report on father's age was missing. For these forty cases, instead of imputing from mother-reported age of the father, we imputed based on the mother's age, such that the acceptable difference

between mother's and father's ages was set to lie between -11 and 20, i.e. the mother could be between eleven years older and twenty years younger than the baby's father. We arrived at this range for the difference by plotting a histogram for the age differences, using the 3,830 complete cases.

Because mothers did not report the baby's fathers' income levels, we needed a different method for imputation to create income of non-respondent fathers. We relied on multi-category response logistic regression, with nine response categories: Under \$5,000; \$5,000-9,999; \$10,000-\$14,999; \$15,000-\$19,999; \$20,000-\$24,999; \$25,000-\$34,999; \$35,000-\$49,999; \$50,000-\$74,999; and \$75,000 or more. Previous studies have shown that income level of baby's father could be dependent on (among other things) his age, race-ethnicity and level of education and household relationship as reported by the father. We are interested in the household relationship as reported by the father, because this may affect his sense of responsibility towards his partner and children as well as his income level. Whether or not the father did regular work in the last week or had a mental/physical condition that prevented him from regular work also turned out to be important explanatory variables when we ran a stepwise logistic regression procedure. The interaction effects that turned out to be important were the age and race interaction, the education and race interaction, and the age, race and education interaction. Age is the only continuous variable among the explanatory variables; all the others are categorical variables. The income levels of the 40 (missing) fathers whose age was not reported by the mothers could not be imputed.

## Appendix 2: Distribution of couples, by fathers' characteristics: Unrepaired and imputed data sets

CHARACTERISTICS:	Complete Data (N = 2,777)	'Repaired' Data (N = 3,683)	Imputed Responses	
<b>Race of Birth Father</b>				
White or Asian	604	776 - 803	172 -	199
Black	1,587	2,125 - 2,154	538 -	567
American-Indian or Other	527	665 - 688	138 -	161
Refuse, Skip, etc.	59	71 - 84	12 -	25
<b>Race-Ethnicity of Birth Father</b>				
Hispanic	802	1,052 - 1,063	250 -	261
Non-Hispanic White or Asian	323	400 - 408	77 -	85
Non-Hispanic Black	1,525	2,035 - 2,048	510 -	523
Other	127	172 - 184	45 -	57
<b>Household Relationship, as reported by Birth Father</b>				
Cohabiting	1,650	1,905 - 1,939	255 -	289
Romantically involved (not cohabiting)	600	832 - 872	232 -	272
Other	489	838 - 880	349 -	391
<b>Birth Father's Educational Attainment</b>				
Less than high school	1,101	1,584 - 1,611	483 -	510
High school	758	920 - 948	162 -	190
General Equivalency Degree (GED)	239	293 - 298	54 -	59
Post high school or some college	580	736 - 764	156 -	184
Bachelor's degree or more	92	97 - 102	5 -	10
<b>Baby's Father's Income</b>				
Under \$5,000	422	607 - 631	185 -	209
\$5,000 - \$9,999	396	565 - 586	169 -	190
\$10,000 - \$14,999	410	547 - 568	137 -	158
\$15,000 - \$19,999	325	434 - 446	109 -	121
\$20,000 - \$24,999	277	354 - 384	77 -	107
\$25,000 - \$34,999	291	367 - 384	76 -	93
\$35,000 and above	244	315 - 334	71 -	90
<b>N</b>	<b>2,777</b>	<b>3,683</b>		

Note: There are ranges of counts of fathers for the 'repaired' data and the imputed values because the 5 imputations may place the missing men in different categories.

