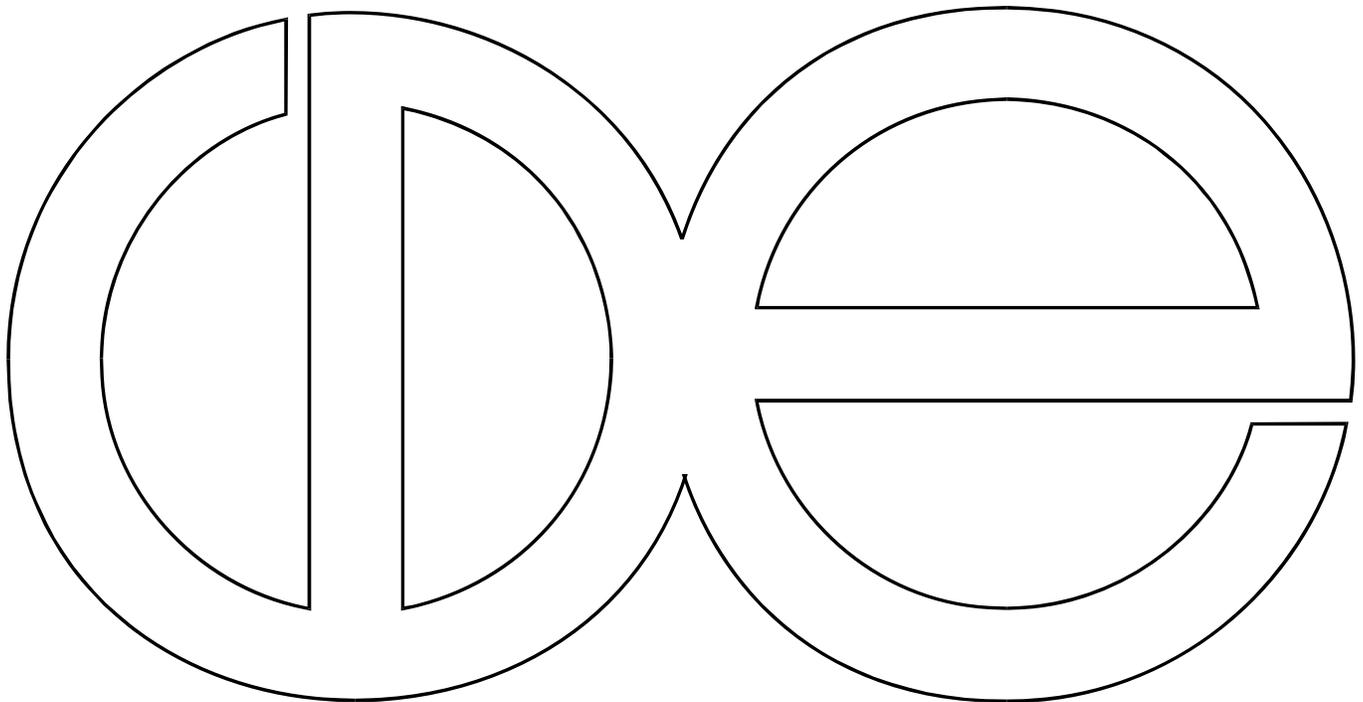


**Center for Demography and Ecology
University of Wisconsin-Madison**

Examining the Antecedents of U.S. Nonmarital Fatherhood

**Marcia J. Carlson
Alicia G. VanOrman
Natasha V. Pilkauskas**

CDE Working Paper No. 2010-12



“Examining the Antecedents of U.S. Nonmarital Fatherhood”*

Marcia J. Carlson
University of Wisconsin-Madison

Alicia G. VanOrman
University of Wisconsin-Madison

Natasha V. Pilkauskas
Columbia University

October 6, 2010

* Marcia Carlson (carlson@ssc.wisc.edu) is Associate Professor of Sociology, and Affiliate at the Center for Demography and Ecology and the Institute for Research on Poverty, at the University of Wisconsin-Madison. Alicia VanOrman (avanorma@ssc.wisc.edu) is a doctoral student in the Department of Sociology and the Center for Demography and Ecology at the University of Wisconsin-Madison. Natasha Pilkauskas (np2247@columbia.edu) is a doctoral student in the School of Social Work at Columbia University. The authors appreciate funding for this research provided by the Eunice Kennedy Shriver National Institute of Child Health and Human Development through a grant to the first author (R01HD57894) and through core funding to the Center for Demography and Ecology (R24HD047873), as well as additional funding by the Research Committee of the Graduate School of the University of Wisconsin-Madison. We thank David Ribar, Professor of Economics at the University of North Carolina-Greensboro, who is a consultant on the overall project, for excellent methodological advice and guidance, and we thank Brad Wilcox for helpful comments on a prior version.

Abstract

Despite the dramatic rise in nonmarital childbearing in recent decades, there has been limited attention to factors affecting nonmarital fatherhood (beyond studies of young fathers). In this paper, we use data from the 2002 National Survey of Family Growth and the National Longitudinal Survey of Youth 1979 cohort to examine the antecedents of nonmarital fatherhood. Overall, we find the strongest support across both datasets for education and race/ethnicity as key predictors of having a nonmarital birth, consistent with prior literature about women's nonmarital childbearing and about men's early/teenage fatherhood: Education is inversely related to the risk of nonmarital childbearing, and Hispanic—and especially black—men are much more likely to have a child outside of marriage than white men. By contrast, we find little evidence that employment and earnings predict nonmarital fertility—although they do predict marital fertility. Given the high and rising fraction of births outside of marriage, this research suggests that nonmarital fatherhood may contribute to growing U.S. inequality and stratification both within and across generations.

The dramatic rise in U.S. nonmarital childbearing in recent decades has generated considerable attention from both researchers and policymakers alike, particularly with respect to the implications for women and children. In turn, an extensive literature (summarized below) has examined the factors that predict women’s nonmarital childbearing and found that low socioeconomic resources (measured by income, education or welfare benefit receipt) predict a greater likelihood of women having an unwed and/or teenage birth. Far less is known about the antecedents of nonmarital fatherhood, largely because data about men, especially low-income men who are disproportionately unmarried fathers, have been much less readily available (Nelson 2004). Men—particularly non-resident fathers—are under-represented in national surveys because most surveys are household-based, and fathers are less strongly attached to households than mothers, as a result of divorce, the military, or incarceration (Garfinkel, McLanahan, and Hanson 1998). Even when interviewed, fathers may not report having children with whom they are not living and may under-estimate their previous fertility, particularly when reporting retrospectively (Lerman and Sorenson 2000; Rendall, Clarke, Peters, Ranjit, and Verropoulou 1999). Information obtained from women about men’s fertility history has at times been used, but women may not have complete information about all the children men have fathered. To obtain a complete portrait of male fertility, it is important to ask men independently about their fertility (Goldscheider and Kaufman 1996; Greene and Biddlecom 2000).

In this paper, we use data from two U.S. national datasets—the National Survey of Family Growth (NSFG) and the National Longitudinal Survey of Youth 1979 cohort (NLSY79)—to examine the antecedents of contemporary U.S. nonmarital fatherhood.¹ The NSFG, a retrospective survey, provides a contemporary portrait of all potential fathers, while the

¹ We use the term ‘father’ throughout the paper to indicate biological fatherhood. The social role of fathers in family life is also an important topic, but we do not address it here.

NLSY79, a prospective longitudinal survey of the 1957-1964 birth cohort, allows direct observation of antecedent factors over time, including rich information about men's socioeconomic trajectories. Taken together, these datasets provide a complementary perspective on the factors that affect recent male nonmarital fertility in the U.S. Beyond analyzing the full datasets, a direct comparison can be made with the oldest NSFG men (born 1957-1964) who are ages 38-44 in 2002 ($n=1,000$) to the men in the NLSY79 (also born 1957-1964). We extend the literature to provide new information about the factors that predict which men overall will have a child outside of marriage—the first paper to do so, to our knowledge. To the extent that men's nonmarital childbearing is shown to diminish their socioeconomic attainment and their likelihood of marriage (Nock 1998), this research has important implications for how contemporary fertility patterns may be linked to growing social stratification and economic inequality for men—and the women and children in their lives.

Theoretical Perspectives and Empirical Research

We draw on several theoretical perspectives about factors that affect decisions and behaviors related to nonmarital childbearing. Nonmarital childbearing is not a single event but results from a chain of events which involve some measure of 'choice' (intentional or not), or behaviors, at each stage. Sexual activity, the use (or misuse) of contraception, the decision to abort or carry a baby to term, and the decision to marry before or after conception are all steps along the way to bearing a child outside of marriage. Various factors may affect any stage along the causal chain, although our review here emphasizes factors that affect the ultimate outcome and our focus—having a nonmarital birth. As much of the literature on the antecedents of nonmarital fertility has focused on women, we first describe each theoretical perspective and

summarize the more extensive research about women, and then we describe what has been learned from the smaller body of work about (mostly young) men.

Research about Women

Dating from Becker's groundbreaking work in the 1960s, the economic, rational-choice theory of fertility suggests that children can be viewed as durable goods, that couples' decisions about childbearing are rational, and that higher income will increase the demand for children, although both child quantity and quality must be considered (Becker 1960). Amidst major changes in family demography in the latter third of the 20th century, scholars increasingly recognized that fertility decisions may not involve a single household utility function and that the economic interests between men and women may diverge (Willis 2000). Specifically for nonmarital childbearing, the likelihood of having a nonmarital birth will be higher when the opportunity cost is lower – or when the gains to marriage are few (Willis 1999). According to this perspective, individuals born to higher-SES families—and who attain higher SES themselves—will be less likely to have a nonmarital birth because they have higher forgone earnings, income and economic opportunities generally. By contrast, for those at the lower end of the income distribution, childbearing may be an alternative pathway along the transition to adulthood to the extent that their economic opportunities—and incentives to defer childbearing—are limited (Geronimus and Korenman 1992; Upchurch and McCarthy 1990). We would, therefore, expect socioeconomic resources both in the family of origin and for the individual to be important factors predicting nonmarital childbearing.

The empirical literature shows that net of family structure, lower parental human capital and socioeconomic resources predict a higher likelihood of women's nonmarital fertility. Women with parents who had low education (Brien, Lillard, and Waite 1999; Cooksey 1990;

Upchurch, Lillard, and Panis 2002) or low income (Aassve 2003; Barber 2001) have a higher likelihood of nonmarital births. According to South (1999), the importance of family income may diminish as women get older, while maternal education (and family structure) retains its importance.

Among adolescents and young women, their own educational attainment and enrollment also become important predictors of nonmarital fertility. Descriptively, women who have marital births tend to have more years of completed education than women who have nonmarital births (Driscoll, Hearn, Evans, Moore, Sugland, and Call 1999). Obtaining a high school degree—and even more so a college degree—lowers the risk of a nonmarital birth among women (Musick 2002; Rindfuss, Morgan, and Offutt 1996; Ventura, Bachrach, Hill, Kaye, Holcomb, and Koff 1995). The effect of educational attainment partly operates through school enrollment, as students may have less time to engage in activities that lead to a nonmarital birth (Coverdill and Kraft 1996; Upchurch, Lillard, and Panis 2002). Remaining enrolled in school decreases the likelihood of a nonmarital birth particularly for white and Hispanic women (Glick, Ruf, White, and Goldscheider 2006; South 1996; Upchurch, Lillard, and Panis 2002). High educational expectations also decrease the chance of nonmarital childbearing (Driscoll, Sugland, Manlove, and Papillo 2005; Glick, Ruf, White, and Goldscheider 2006; Kalil and Kunz 1999; Kirby 2002).

Greater labor force attachment also tends to decrease the occurrence of nonmarital childbearing for women (Coverdill and Kraft 1996). Higher wages and consistent employment lower the risk of conception among women and in the event of a premarital pregnancy, increase the likelihood of choosing an abortion, though this is less true for black women (Coverdill and Kraft 1996). Likewise, higher predicted wages or expected income decrease the likelihood of premarital childbearing among young women (Aassve 2003; Wolfe, Wilson and Haveman 2001)

and among black adolescent women (Duncan and Hoffman 1990); in these cases, children are perceived as having a high opportunity cost, potentially limiting career and financial attainment.

Sociological arguments point to the role of cultural values and social institutions as key factors expected to affect nonmarital childbearing. The prevalence of nonmarital births has increased dramatically in recent decades, with the fraction of births occurring outside of marriage rising six-fold in the latter half of the 20th century (Ventura and Bachrach 2000). Today, fully 41% of all U.S. births occur to unmarried parents, with higher proportions among racial and ethnic minorities—53% of Hispanic births and 72% of black births (Hamilton, Martin, and Ventura 2010). Along with this change has come a notable change in attitudes toward sex outside of marriage and toward nonmarital childbearing itself, including both an increase in social acceptance and a decline in social stigma (Axinn and Thornton 2000).

Family background and religious upbringing are key social factors relevant to family formation behaviors. We would expect those who grow up in an intact family to have a lower likelihood of having a nonmarital birth because of both the higher economic resources and the socialization/parenting that occur in two-parent families compared to single-parent families (Thomson, Hanson, and McLanahan 1994). Non-intact family structure has been consistently associated in the literature with a higher likelihood of women's nonmarital childbearing, including both direct and indirect effects: Residing in a non-intact family structure or experiencing family instability during childhood increases the risk for both early and nonmarital childbearing among women (Aassve 2003; Cooksey 1990; Hill, Yeung, and Duncan 2001; Hofferth and Goldscheider 2010; Upchurch, Lillard, and Panis 2002; Wu and Martinson 1993). The effect of living with a single parent operates partly through low parental income

(McLanahan and Sandefur 1994; Wu 1996), while the effect of experiencing family disruption operates partly through unstable family income (Hill, Yeung, and Duncan 2001; Wu 1996).

Given the more traditional views about family life typically associated with religion, we would expect individuals with a strong religious background, particularly conservative Protestants, to be less likely to have sex outside of marriage and more likely to marry before (or after) having a birth (Thornton and Camburn 1989; Wilcox and Wolfinger 2007). Having a Catholic upbringing may decrease the likelihood of a nonmarital birth (Barber 2001), although some research shows no or marginally significant effects of being Catholic (Barber 2000; Brien, Lillard, and Waite 1999; Upchurch, Lillard, and Panis 2002). Attending religious services frequently is shown to decrease the likelihood of women's nonmarital conception but does not decrease the likelihood of having a nonmarital birth (relative to a marital birth) given a nonmarital conception (Coverdill and Kraft 1996); attendance may be a more salient religious factor for family behaviors than religious background (Call and Heaton 1997).

Other salient family background factors for nonmarital childbearing include the number of siblings, strictness of the household and parental age and marital status at (first) birth. Growing up in a large family with many siblings increases the likelihood of both early and unwed childbearing (Barber 2001; Kahn and Anderson 1992; Manlove 1997). Growing up in a stricter household decreases the risk of adolescent nonmarital fertility for women (Hogan and Kitagawa 1985). Older parental age at first birth decreases the likelihood of a nonmarital birth for women (An, Haveman, and Wolfe 1993), while being born to unmarried parents increases the likelihood that women will themselves have a nonmarital birth (Högnäs and Carlson 2010).

Racial/ethnic background is also a key factor for nonmarital childbearing. Black women (and in some studies Hispanic women), regardless of age, have higher rates of nonmarital

fertility than whites (Aassve 2003; Brien, Lillard, and Waite 1999; Cooksey 1990; Upchurch, Lillard, and Panis 2002; Wu and Martinson 1993). However, racial differences are mostly due to differences in union formation patterns—not to differences in overall fertility rates (Cooksey 1990). Also, the effects of background factors may operate differently by race. For example, non-intact family structure (Cooksey 1990) and family instability (Wu 1996; Wu and Martinson 1993; Wu and Thomson 2001) tend to be more salient for fertility outcomes among whites than other race/ethnic groups. Also, the effect of higher educational attainment and continued school enrollment has a larger protective effect for white women (Musick 2002; South 1996), and educational expectations play a larger protective role against adolescent fertility for low-income white and Latina women than for blacks (Driscoll, Sugland, Manlove, and Papillo 2005).

Research about Men

Existing research related to the antecedents of unwed fatherhood has mostly focused on teenage fatherhood or on the characteristics of men as partners of teenage women who become pregnant. Some studies include both married and unmarried teen/young fathers (e.g., Hanson, Morrison and Ginsburg 1989), and some focus solely on young unwed fathers (e.g., Lerman 1993). Yet, in 2008, only 22% of unwed births occurred to teenage women (i.e., under age 20) (Hamilton, Martin, and Ventura 2010), down from 52% in 1975 (Ventura and Bachrach 2000). An even smaller proportion of unwed births occur to teen fathers, because men are typically a few years older than their partners (Elo, King, and Furstenberg 1999). Therefore, teen births represent a small sub-set of contemporary nonmarital childbearing, especially for men.

The research on early childbearing among men suggests that the antecedent factors for births to young men may be similar to those for young or unmarried women (Hynes, Joyner, Peters, and DeLeone 2008). Socioeconomic factors are particularly important: Young men with

higher family incomes have a lower risk of teenage fathering (Ku, Sonenstein, and Pleck 1993; Lerman 1993), as do young men with higher-SES parents (defined by education and occupation) (Pears, Pierce, Kim, Capaldi, and Owen 2005). Men whose parents have low education (especially not having graduated from high school) are more likely to have a teen birth (Hanson, Morrison, and Ginsburg 1989; Hynes, Joyner, Peters, and DeLeone 2008; Marsiglio 1987; Thornberry, Smith, and Howard 1997). There is some evidence that low family socioeconomic status has a bigger effect on early male fertility for white men than for black or Hispanic men (Hynes, Joyner, Peters, and DeLeone 2008; Rindfuss, Morgan, and Swicegood 1988).

Young men's own socioeconomic trajectories also affect the likelihood of having an early birth, as higher levels of completed education and remaining enrolled in school are shown to decrease the risk of teen unwed childbearing (Lerman 1993; Marsiglio 1987). Having lower academic skills, measured as being behind in school or having low test scores, also contributes to an increased likelihood of young fathering (Glick, Ruf, White, and Goldscheider 2006; Ku, Sonenstein, and Pleck 1993; Pears et al. 2005; Thornberry, Smith, and Howard 1997). Among young men, unemployment appears to increase nonmarital fertility, although unemployment and lower completed education may have larger effects on childbearing for whites than blacks (Lerman 1993). There is some evidence that higher individual earnings or more work hours may increase nonmarital childbearing (Anderson 1989; Ku, Sonenstein, and Pleck 1993); it is likely that young men with higher earnings can afford to go on dates and have romantic relationships, which increases their exposure to the risk of pregnancy (Ku, Sonenstein, and Pleck 1993).

Social factors are also salient to men's early childbearing, but the evidence is not entirely consistent. Some studies find that young men who did not reside with both biological parents at age 14 were more likely to have an early birth (Hynes, Joyner, Peters, and DeLeone 2008; Ku,

Sonenstein, and Pleck 1993; Marsiglio 1987), while other studies find no association with father absence once socioeconomic factors are controlled (Hanson, Morrison, and Ginsburg 1989; Hofferth and Goldscheider 2010; Thornberry, Smith, and Howard 1997). There is limited evidence about the role of religion. Race has consistently been identified as a key factor: Black men have an increased risk of young/nonmarital fathering compared to other race/ethnic groups (Hanson, Morrison, and Ginsburg 1989; Hynes, Joyner, Peters, and DeLeone 2008; Lerman 1993; Lerman and Sorensen 2000; Marsiglio 1987; Thornberry, Smith, and Howard 1997).

In this paper, we extend the literature by analyzing the antecedents of nonmarital childbearing for men using two large national datasets. We focus on nonmarital childbearing—a growing demographic phenomenon—because having a child outside of marriage has been linked to diminished wellbeing for men (Nock 1998), women (Wu and Wolfe 2001), and children (McLanahan 2009). We focus on men because there has been little attention to the processes and pathways that lead to men having a child outside of marriage, even though men are important actors in family formation patterns. Our study moves beyond teen or young fathers to look at unmarried fatherhood overall—the first study to do so, to our knowledge. Since early/teen fatherhood is a rare event, it’s possible that the processes leading up to it are different from the processes predicting nonmarital fatherhood more generally.

Data and Methods

We use data from two major national data sources about U.S. men. First, we use data from the National Survey of Family Growth (NSFG), which was historically a study of women ages 15-44 with six repeated cross-sections interviewed between 1973 and 2002; the surveys included detailed questions about women’s sexual activity, contraception, pregnancy and birth,

marriage, cohabitation, and divorce. For the first time in 2002, the NSFG conducted in-person interviews with 4,928 men ages 15-44 (born between 1957 and 1987), providing information on a recent cross-section of men with retrospective data about family background, and sexual and relationship histories, as well as current socioeconomic variables; approximately one-third of the NSFG male respondents reported having had a child at the 2002 survey.

Second, we use data from the National Longitudinal Survey of Youth 1979 cohort (NLSY79), which provides information about a cohort of 6,403 men born between 1957 and 1964. The men were first interviewed in 1979 (ages 14-21) and have been followed through 2006 (ages 41-48); interviews occurred annually through 1994 and biennially since that time ($n=3,738$ in 2006), and the survey is ongoing (Center for Human Resource Research 2006). These men have been followed over their transition to adulthood, as they finished school, entered the labor market, got married and proceeded through their prime childbearing years. Hence, the data capture the first birth for nearly all men.

Analytic Strategy

We use multinomial logistic regression models within a discrete-time hazard framework to examine the factors that affect men having a first birth outside of marriage versus within marriage, as compared to not having had a birth by the observation period. These models allow us to incorporate time-varying covariates and account for right-censoring, since many men (particularly in the NSFG) have not yet had children at the time of the survey. A number of identical variables with respect to demographic, socioeconomic, and family background characteristics are constructed across the NSFG and the NLSY79 to allow for direct comparison of the antecedent factors, adjusting for necessary differences in period and age as a result of study design; we also include some additional measures available only in the NLSY79. All

multivariate analyses are conducted with the primary samples (and sub-samples) described below, after excluding cases due to missing data. Following guidance in the survey documentation (Center for Human Resource Research 2008; National Center for Health Statistics 2004), we weight the descriptive statistics but not the multivariate results.²

Dependent Variable

For this paper we are interested in the timing of men's first birth and whether the transition to fatherhood occurred within or outside of marriage. We obtain data on the timing of the first birth, specified as age (in years) at first birth, from fertility histories in both the NSFG and NLSY79, primarily using reported dates of first birth. Marital status at first birth is obtained through marital histories. Given concerns about male under-reporting of fertility, some research has focused on the quality of male fertility data in the NLSY79 (Mott and Gryn 2001), leading to the development of an augmented male fertility file. We use this file to resolve inconsistencies and ambiguous data regarding fatherhood and marital status in the main file. This method should limit the extent of under-reporting of male fertility in the NLSY79. Analysis comparing birth estimates in the NSFG to vital statistics suggests that there may only be minor under-reporting of men's fertility in the NSFG (Martinez, Chandra, Abma, Jones, and Mosher 2006).

Independent Variables

Time-invariant variables. We use a range of time-invariant variables to examine important demographic and background factors leading to a nonmarital birth among men. Given our comparative approach, we focus on variables that can be measured similarly across both the NSFG and the NLSY79. Race is specified as non-Hispanic white and 'other' (reference), non-

² The NSFG suggests weighting regressions but also says it is fine to use unweighted regressions. The NLSY79 recommends not weighting the regressions. To be consistent across datasets, we estimate both sets of regression without weights.

Hispanic black, and Hispanic. Foreign born is measured by a dummy variable indicating that the respondent was born outside the U.S. In the NLSY79, the respondent's father's education is measured by highest grade completed, which we then convert into highest degree received (to match the NSFG)—less than high school (reference), high school degree, some college, college degree or more. To reduce multicollinearity and conserve degrees of freedom, we specify the respondent's mother's education as a single dummy variable indicating that the mother has more education (by degree) than the respondent's father. Family structure in adolescence is measured with a dummy variable indicating whether the respondent lived with both biological parents at age 14. A dummy variable indicates whether the respondent had an adult female in the household who worked when he was age 14 (age 15 in the NSFG). The religion in which the respondent was raised is specified as Catholic, Protestant, or Jewish/other/none (reference). Frequency of youth religious attendance—only available in the NLSY79 and measured in 1979—ranges from 'never' (1) to 'more than once a week' (6).

In some models, we use an additional set of time-invariant variables from the NLSY79 in order to explicate the role of education as it affects nonmarital childbearing; all of these items were asked in the 1979 survey unless otherwise indicated. We create a measure of the respondent's traditional family attitudes by averaging responses to the following five items about whether: 1) a women's place is in the home, 2) a wife with a family has no time for other employment, 3) employment of wives leads to juvenile delinquency, 4) traditional husband and wife roles are best, and 5) women are happier in traditional roles ($\alpha=.77$). The scale ranges from 1 (strongly disagree) to 4 (strongly agree), with higher scores indicating more traditional family attitudes. The respondent's educational goals are measured by the highest grade he would like to complete, which we convert to degrees (e.g., 12 years to high school degree). Expected

ability to achieve one's desired occupation is reflected in four response categories: poor, fair, good, and excellent. Expected age at marriage is measured as younger than 20, 20-24, 25-29, 30 or older, or never. Finally, two composite variables, the Rotter locus-of-control scale and the Rosenberg self-esteem scale (measured in 1980), constructed according to NLSY79 specifications, are included. The Rotter scale consists of four paired statements selected as a subset of the original 60-item scale (Rotter 1966). Responses to each pair are scored ranging from 1 (internal control) to 4 (external control); the final scale sums across the four pairs and has scores ranging from 4 to 16 ($\alpha=.36$).³ Higher scores indicate a more external locus of control. The Rosenberg self-esteem scale (Rosenberg 1965) sums across 10 items, each of which is on a scale from 1 (lower self-esteem) to 4 (higher self-esteem); the final scale ranges from 10 to 40, with higher scores indicating higher self-esteem ($\alpha=.83$).

Time-varying variables. Respondent's initiation of sexual activity is included in both the NSFG and NLSY79. Those who initiated sexual activity prior to age 16 (more than a year before the start of the risk period for first birth) are coded as 1 on a time-invariant measure of early initiation. For those who delayed sexual initiation to age 16 or later, at each age, a time-variant measure indicates whether sexual activity was initiated in the preceding year. The NLSY79 dropped the question regarding age of sexual initiation after 1985; however, very few men had not had sex by that time, and their inclusion in the analysis does not appear to bias the results.

Taking advantage of the longitudinal design of the NLSY79, we include annual time-varying measures of respondent's education, employment and earnings (comparable time-varying variables are not available in the NSFG). Education is measured by the highest grade completed at the time of the interview and converted into normative schooling transitions: less

³ The *NLSY79 Users' Guide* notes the low reliability of this measure but indicates that it correlates well with self-esteem, education and measures of social class (CHRR 2006).

than high school (reference), high school, some college, college or more. School enrollment and employment status are measured as dummy variables as of May 1 each year for school enrollment and at the time of the interview for employment status. Annual earnings refer to individual earnings during the previous calendar year and are specified in constant 2005 dollars, categorized as: no earnings (reference), \$1-\$3,000, \$3,001-\$10,000, \$10,001-\$25,000, and \$25,000 or more. All time-varying covariates are lagged one year prior to the observation of birth/marital status. Since we had complete fertility and marital histories through 2006, but the survey began biennial interviewing in 1994, an imputation strategy is used to fill in data for the time-varying covariates during non-interview (i.e., odd) years from 1994-2006. For all time-varying covariates, we assign the missing year value to the previous year's reported values (adjusting annual earnings for inflation).⁴

Sample

To examine the transition to first birth, we create person-year (by age) files where we specify the risk period for a first birth starting at age 17 and follow men in both the NSFG and NLSY79 samples until the first birth or the end of the observation period. The cross-sectional nature of the NSFG means that not all men are observed through the end of their reproductive period; using person-years lessens the effect of right-censoring caused by the survey design. Likewise, the longitudinal design of the NLSY79 leads to right-censoring due to attrition and left-censoring due to the age of first observation.

⁴ In additional analyses (not shown), we estimated models using data only through 1994 – and hence not imputing the 1994-2006 odd-numbered years using the biennial survey data. The results are nearly identical to our main results that go through 2006, so we present results for the full 1979-to-2006 waves in order to capture a greater proportion of all births that occurred to this cohort of men.

Of the initial sample of 4,928 men in the NSFG, we exclude respondents who had a birth prior to age 17 ($n=42$) and those under age 17 at the interview ($n=432$). There are no missing data regarding the date of—or marital status at—first birth, so we begin with 4,454 men who are at risk for a first birth at age 17. We then construct a person-year (by age) file; men contribute person-years from age 17 until they are censored at first birth or the date of the interview. This first analytic sample is used to evaluate the (unadjusted) baseline risk of a first birth by age. For our multivariate analyses, we exclude respondents (all person-years) who are missing data on any covariate. Our final NSFG analytic sample includes 4,017 men (1,495 that had a first birth), which represents 39,589 person-years.

We follow a similar strategy for constructing the data file for the NLSY79. Of the 6,403 men in the NLSY79, we exclude men who had a birth prior to 1980 ($n=636$) and those who had a birth prior to age 17 ($n=17$). Excluding men who had a birth prior to 1980 allows us to lag the time-varying covariates one year. We then drop men whose date of first birth ($n=68$) or marital status at first birth ($n=9$) cannot be ascertained, resulting in a sample size of 5,673. From this initial analytic sample, we construct a person-year (by age) file, using data from the start of the risk period age through the year 2006, when the men were ages 41-48. For men age 17 and younger in 1980, we start the risk period at age 17. For men age 18 and older in 1980, we start the risk period at their 1980 age. This method does introduce the potential for left-censoring bias, which appears to be minimal (discussed below). Men are censored after having a first birth, after attrition from the survey, or in 2006 if they had not had a first birth.⁵ This initial analytic sample is used to construct (unadjusted) baseline estimates of the hazard of having a first birth by age.

⁵ We do not censor at marriage, since we are interested in the outcome of nonmarital birth per se, and while not common, men could be married and divorced and then have a child outside of marriage.

For our multivariate analyses, we exclude respondents (all person-years) who are missing data on any time-invariant covariate, and we exclude any person-year missing a time-varying covariate; we use all person-years with complete, valid data. Our final NLSY79 analytic sample includes 3,361 cases (2,241 that had a first birth), which represents 35,884 person-years.

To evaluate bias due to left-censoring, we also construct a sub-sample of men who were between the ages of 14 and 16 at the initial NLSY interview, when few men had had a nonmarital birth ($n= 2,021$, or 1,238 after listwise deletion). We conduct additional analyses with this sub-sample to compare to our full sample. To directly compare the NLSY79 and NSFG samples, we also select a sub-sample of men with the same birth years as the total NLSY79 sample (1957-1964) from the NSFG sample ($n= 909$). Analyses for this sub-group provide a direct comparison across the two data sets of the antecedents of nonmarital fathering among men born in the same time period.

Table 1 provides descriptive information on the demographic and background characteristics of men in both the NSFG and the NLSY79 data by their birth status (nonmarital, marital, no birth). We apply sampling weights to both datasets for the descriptive statistics in order to ensure that the samples are nationally representative. We present information about the total NSFG sample (column 1) and sub-groups by birth and marital status (columns 2-4); for the ‘NSFG comparable’ sub-sample of the NLSY79 (column 5); for the total NLSY79 sample (column 6) and sub-groups by birth and marital status (columns 7-9); and for the NLSY79 sub-sample for ages 14-16 in 1979 (column 10).

Comparing the total samples of men in the NSFG and the NLSY79 (columns 1 and 6), we see that the majority of men in both datasets are of white or ‘other’ race (73% in the NSFG and 84% in the NLSY79), about 11% in each are black non-Hispanic, and 16% in the NSFG and

5% in the NLSY79 are Hispanic. A much higher proportion of men in the NSFG were foreign born (16%) than in the NLSY79 (4%), which is not surprising given that the NLSY79 cohort was drawn before the recent waves of U.S. immigration. Respondents' fathers' education was higher for the NSFG men, compared to the NLSY79 men—27% of the fathers of NSFG men had a college degree or higher, compared to 21% of the NLSY79 men. At the low end, 24% of the fathers of NSFG men had less than a high school degree, compared to 30% of the NLSY79 men. Overall, 66% of the fathers of NLSY79 men had a high school degree or less, compared to 55% of the fathers of NSFG men. Similarly, a slightly higher fraction of men in the NSFG had mothers with a higher category of education than fathers (21%) compared to the NLSY79 (19%).

About four-fifths of men in both samples lived with both parents at age 14 (79% in the NSFG and 82% in the NLSY79). Mothers of the NSFG men were more likely to be working during respondents' young adolescence (66%) than mothers of the NLSY79 men (54%). The pattern of religious background is very similar across the two datasets—about one-third of men were raised Catholic, about half Protestant, and about 15% with another/no religion. The average age of sexual initiation was comparable across both datasets (17 years), with similar fractions having initiated sexual activity prior to age 16 in the NSFG (29%) as the NLSY79 (27%).

Comparing men who had nonmarital, marital, and no births in the NSFG (columns 2-4) and the NLSY79 (columns 7-9), we find that the patterns are similar across both datasets. Men who had a nonmarital birth are disproportionately black and Hispanic, were more likely to have fathers with less than a high school degree, and were less likely to live with both parents at age 14, compared to men that had a marital birth or no birth. There was little difference in whether their mothers worked during adolescence by birth status. In both datasets, men who had a nonmarital birth initiated sexual activity roughly a year earlier than the sample as a whole.

Comparing the men in the NSFG sample that were born in the same years as the NLSY79 cohort (column 5) to the full NLSY79 sample (column 6), we see that the men in the NSFG sub-sample are less likely to be white (77% versus 84%) and more likely to be foreign born (14% versus 4%) than the men in the NLSY79. This is to be expected, given the more recent timeframe of the NSFG survey; respondents in the NSFG could have arrived in the U.S. any time before 2002 (when they were ages 38-44), whereas the NLSY79 respondents had to be in the U.S. by ages 14-21 to be included in the survey. Men in the NSFG have fathers who are slightly more likely to have some college or higher than the men in the NLSY79. The two groups are similar with respect to mothers' employment in adolescence and religious background, but men in the NSFG sub-sample had a mean age at first sex about a year later than the NLSY79 men.

Turning to the additional background measures available in the NLSY79 (shown in Table 2), nearly half of the men reported (1979) attending religious services infrequently or never, while 31% attended weekly or more often; those who later had a nonmarital birth reported less frequent attendance than those with a marital or no birth. Family attitudes were moderately traditional. Over half of the men in the total sample wanted to obtain at least a college degree, but this varied by subsequent birth status; those with no birth were more likely to want a college degree (61%) than those with a nonmarital birth (39%). Expected ability to achieve one's desired occupation was similar across groups, with about three-fourths stating they had a "good" or "excellent" chance of achieving their occupational goal. The expected age at marriage varied slightly across the groups, although nearly all men expected to marry during their 20s. Men who later had a nonmarital birth had a slightly more external locus of control than other groups; all of the men had fairly high self-esteem, which did not vary much across the groups.

Table 3 describes the time-varying characteristics of men in the NLSY79 sample. In 1979 when the survey began, the majority of men had less than a high school degree, and almost none had a college degree. Most were currently enrolled in school (75%), and 59% were currently employed. Earnings were generally low, with about half earning less than \$3,000/year (in 2005 dollars). As the men aged from 1979 to 1990 to 2000, their educational attainment, annual earnings and likelihood of being employed increased, while their likelihood of being in school decreased. In 2000 (when the men were ages 35-42), 7% had less than a high school degree, 31% had a college degree or higher, and only 2% were enrolled in school. Over 90% of men that year were employed, and most men (80%) had earnings of more than \$25,000 per year (2005 dollars). The final column shows the average proportions in each category across all person-years; as we would expect, these figures fall in the mid-range of the figures across the years shown.

Results

Descriptive Hazard Ratios

Figures 1 and 2 show the unadjusted hazard ratios for the risk of having a nonmarital birth, a marital birth, and a birth generally (combination of the prior two). As shown in Figure 1, within the NSFG, the hazard of having a nonmarital birth starts quite high around age 17 and rises steadily until about age 22, when it begins a gradual decline. The hazard of having a marital birth starts at a lower level but rises quite steadily until around age 30 and then declines at the same rate at which it rose, revealing an overall normal curve. Note that the risk of having a nonmarital and marital birth crosses around age 24—as the nonmarital birth line is falling, and the marital birth line is rising—and the lines do not converge again until the early 40s. The overall birth line at the top shows that the hazard of any birth follows a relatively normal curve

(minus a dip around age 26 when the risk of a marital birth declines briefly and the risk of a nonmarital birth is declining)—but with a slightly longer tail at older ages than at younger ages. Among men in the NSFG sub-sample born in the same years as the NLSY men, the hazard ratios are similar to the total sample (results not shown).

As shown in Figure 2, the hazard ratios of births in the NLSY79 follow a generally similar pattern to the NSFG, but the nonmarital birth hazard has a more gradual peak. Also, the hazard of marital birth is much higher (and at younger ages) for the NLSY79, which would be expected, since marital childbearing was common for this older cohort, and births (and marriage) happened at younger ages. The hazard of having a nonmarital versus marital birth also crosses at a much younger age as compared to the NSFG—around age 19. The overall hazard of having a birth is higher in the NLSY79 because this cohort of men has mostly completed their fertility by the last survey wave (ages 41-48 in 2006). It is striking that the same ‘notch’ in the overall birth hazard is visible around age 26 as in the NSFG figure.

Multivariate Results

Turning to our multivariate analyses, we first compare results for the total samples of the NSFG and the NLSY79 that use the same time-invariant background characteristics (columns 1-2 versus 5-6 in Table 4). We find that across both datasets, black men are much more likely to have a nonmarital birth (3-4 times higher risk)—and much less likely to have a marital birth—than men of white or ‘other’ race/ethnic background. Hispanic men are much more likely to have a nonmarital birth across both datasets—about twice the risk; there is no difference by Hispanic ethnicity in the risk of having a marital birth in the NLSY79, but the NSFG data suggest that Hispanic men are significantly more likely to have a marital birth as well. Across both datasets,

there is no significant difference between foreign-born and native-born men in their risk of having either a nonmarital or a marital birth (compared to no birth).

With respect to family socioeconomic background, across both datasets, respondents' fathers' higher education is associated with a lower risk of having a nonmarital birth, and the patterns seem to be quite linear – men whose fathers had a college degree are least likely to have a nonmarital birth, followed by men whose fathers had some college, followed by men whose fathers had a high school degree (as compared to less than high school). In both datasets, fathers' education is also associated with a somewhat lower risk of having a marital birth (although the coefficients for high school degree and some college in the NSFG do not reach statistical significance). Also, respondents' mothers' having higher education than fathers is associated with a lower risk of having a nonmarital birth in the NSFG (but not the NLSY79).

As to the family background factors, we find that family structure during adolescence is related to the likelihood of having a nonmarital birth in the NSFG: The hazard of nonmarital fatherhood is about 38% lower among men who lived as teenagers with both of their biological parents than among men who lived in another family structure. (Family structure is also significant in the NLSY79 if the age-at-first-sex variables are excluded.) In the NLSY79, those whose mothers worked are at a lower risk of having a nonmarital birth but not a marital birth, but there is no difference for either birth in the NSFG. Religious background is linked to the birth outcomes but only in the NSFG – those who were raised Catholic or Protestant have a greater hazard of a nonmarital birth (than no birth), and those raised Protestant are at a greater risk of having a marital birth (than no birth). In both datasets, men who initiated sexual activity before age 16 have about twice the risk of having a nonmarital birth, and NSFG men also have a higher

risk of a marital birth. Across both datasets, among men who delayed sexual activity until age 16 or later, those who initiated sexual activity in the prior year have a higher risk of a marital birth.

Turning to respondents' time-varying socioeconomic characteristics (only available in the NLSY79 and shown in columns 7-8 of Table 4), we find a strong relationship between respondents' higher educational attainment and nonmarital childbearing (slightly less so with marital childbearing.) As with fathers' education, there seems to be a linear relationship between respondents' higher education and a lower likelihood of having a nonmarital birth; having a college education is associated with an 83% lower hazard of nonmarital childbearing, some college is associated with a 51% lower hazard, and a high school degree with a 45% lower hazard (as compared to having less than a high school degree). Also, adding respondents' education reduces the magnitude and significance of the coefficients on fathers' education for having a nonmarital birth, suggesting that the effects of fathers' education partly operate through youth's own educational attainment. This is less true for having a marital birth – adding respondents' education does little to change the coefficients for fathers' education, even though respondents' having a high school degree or having some college (as compared to less than high school) is significantly associated with a lower risk of having a marital birth. Current school enrollment is strongly negatively related to childbearing—both within and outside of marriage; for men currently enrolled in school, the hazard of a nonmarital birth is 63% lower and the hazard of a marital birth is 36% lower (compared to no birth).

Respondents' employment characteristics are also salient to men's birth outcomes—but only for marital births. Being employed increases the hazard of a marital birth by 79% as compared to men who are not employed. Annual earnings above \$25,000 per year are also strongly linked to an increased hazard of having a marital birth, by 48%. There appears to be no

relationship between current employment status or annual earnings and whether men have a nonmarital birth. Also in this model, we find that attending religious services weekly or more than once a week (reported in 1979) increases the risk of a marital birth by 23% and 51%, respectively, though there is no effect on nonmarital births.

Given the strong relationship between education and nonmarital childbearing, we were interested to examine factors that may account for the relationship between educational attainment and enrollment and nonmarital childbearing by selecting individuals into different educational pathways. These results are shown in Model 3 of Table 4. Overall, we find that these variables do not diminish the importance of the educational variables for men's nonmarital fertility, nor do they directly affect the risk of having a nonmarital birth. Interestingly, higher expected age at marriage (or reporting 'never') lowers the hazard of a marital birth in a linear fashion as compared to expecting to marry before age 20. Likewise, the effect of educational attainment among men who have marital births is very slightly weakened; this suggests that part of why education (for those with high school or some college) is negatively related to marital childbearing (net of covariates) is because these men had expected to marry at older ages.

Next, we turn to results from the model using the NSFG sub-sample (columns 3-4) that is directly comparable to the NLSY79 data (columns 5-6), since the men in these samples were born in the same birth years (1957-1964). This oldest sub-set of men interviewed in the NSFG (ages 38-44 in 2002) is likely to have mostly completed their childbearing (particularly given the younger ages at birth that prevailed when these men were in their prime childbearing years). The NSFG results show a similar pattern to the NLSY79 results, with several key differences. In the NSFG sub-sample, only fathers' having college or more is associated with a lower risk of a nonmarital birth, while the NLSY79 shows a significant negative relationship between fathers'

education at all levels and the hazard of a nonmarital birth. Also, in the NSFG sub-sample, there is no significant relationship between fathers' education and marital childbearing, while the NLSY79 shows a significant negative relationship. By contrast, respondents' mothers' having more education than fathers is associated with a lower risk of a nonmarital birth in the NSFG, but there is no such relationship in the NSLY79.

With respect to family structure at age 14, living with both parents is significantly associated with a lower hazard of a nonmarital birth in the NSFG sub-sample (49% lower), but this is not the case in the NLSY79. With respect to mothers' working during the respondent's adolescence, the point estimates are similar in size and direction across datasets, suggesting that mothers' employment diminishes the hazard of a nonmarital birth. The estimates for religious background are not significant in either dataset for either outcome. Initiation of sexual activity has similar effects across both datasets, with earlier initiation significantly related to nonmarital childbearing, while initiating sex in the preceding year (among those who delayed) is associated with a higher risk of marital childbearing.

Our final set of results for the age 14-16 sub-sample of the NLSY79 are shown in columns 11-12 of Table 4 (we show only Model 3 with all covariates). These results are similar to those for the total NLSY79 sample, suggesting that left-censoring is not a major source of bias in our analyses. As with the overall sample, black and Hispanic men have a higher risk of having a nonmarital birth. The respondents' fathers' education diminishes the risk of having a nonmarital birth but more so before respondents' own education is controlled. Respondents' educational attainment and school enrollment are all strongly linked with a lower hazard of having a nonmarital child. Also, employment and high earnings do not predict having a nonmarital birth—but do predict having a marital birth, as in the full sample.

In results not shown, we divided the NSFG sample into three cohorts of approximately ten birth years (1957-1964, 1965-1974, 1975-1988) to examine possible changes in the predictors of nonmarital childbearing over time. This supplemental analysis was motivated by the secular increase in average age at first birth among men and women over the past 30 years. (We focus our comparisons on the oldest and middle cohorts, since the youngest cohort has not had sufficient time to have births.) We find that across the oldest and middle cohorts, the average age at first birth increased by one year on average, and cohort interactions reveal several changes in the effects of the predictors across cohorts. Education has become more strongly linked with nonmarital childbearing at both the low and high ends of the educational spectrum over time – those with less than high school education in the middle cohort have a greater hazard of a nonmarital birth than their counterparts in the oldest cohort, while those with some college or higher in the middle cohort are slightly less at risk of having a nonmarital birth than those in the oldest cohort. Also, Hispanics in the middle cohort have a greater hazard of a nonmarital birth than Hispanics in the oldest cohort. With respect to family structure, living with both parents at age 14 appears to be less protective against having a nonmarital birth for the middle cohort compared to the oldest cohort.

Finally, to provide more intuitive information about the differences in the hazard of having a birth by race/ethnicity and education—two of the primary predictors of nonmarital childbearing, we estimated predicted cumulative birth probabilities to age 40 by sub-group,⁶ shown in Table 5, based on Model 2 in Table 4 (holding all covariates at their means). These estimates show that by age 40, men overall in this cohort have a 28% chance of having a

⁶ We include only births to age 40, since few births occur after that age, and the estimates become unreliable due to small cell sizes.

nonmarital birth—15% for white men, 32% for Hispanic men, and 59% for black men. There is less variation by race in the probability of having a marital birth, ranging from .50 for black men to about .70 for white and Hispanic men. A clear gradient by education emerges in the chances of having a nonmarital birth, from a 10% chance for men with a college degree to a 54% chance for men with less than high school education. By contrast, there is little gradient by education for marital births, where the chances of having a marital birth range from 62% to 68% across all education groups. Similar patterns are observed when fathers' education is used (not shown) instead of respondent's education.

We find a strong educational gradient for nonmarital childbearing within each race/ethnic group, although the levels vary. For example, the highest probability of having a nonmarital birth among white men is .35—for those with less than high school education, which is only slightly above the lowest probability for black men—.29 for those with a college degree or more. As such, we find the biggest differences in the probabilities of having a nonmarital birth at the intersection of race/ethnicity and education; these figures range from a 6% chance for white men with a college degree to an 82% chance for black men with less than high school education. For marital births, the probabilities range from .47 for black men with some college to .72 for white men with less than high school.

Discussion

In this paper, we have presented estimates using two national datasets of the antecedents of nonmarital childbearing for two contemporary samples of U.S. men. We extend the literature that has mostly focused on young/early/teen childbearing among men to consider the phenomenon of nonmarital childbearing more broadly. To the extent that nonmarital

childbearing has consequences for men's future socioeconomic trajectories and wellbeing (Nock 1998) and is linked to disadvantaged outcomes for children (McLanahan 2009), this is an important topic with both research and policy implications.

Overall, we find the strongest support for the role of socioeconomic factors (particularly education) and race/ethnicity as key predictors of nonmarital fatherhood across both the NSFG and the NLSY79 data; this is consistent with the prior literature about women's nonmarital childbearing (e.g., Aassve 2003; Musick 2002; Upchurch, Lillard, and Panis 2002) and about men's young fatherhood (e.g., Lerman 1993; Pears et al. 2005). Respondents' fathers' education is shown to have a rather linear relationship with the risk of men's nonmarital birth: each higher level of education (from high school degree to some college to college degree) is associated with an even lower risk of having a child outside of marriage. Yet, the effect of parental education appears to operate largely through sons' own educational attainment, consistent with a long line of literature in status attainment (Blau and Duncan 1967).

Respondents' own education appears to be a very strong predictor of having a nonmarital birth (but is somewhat less strongly associated with having a marital birth), and current school enrollment is a significant deterrent to nonmarital (and marital) childbearing. These findings provide support for economic theories about the opportunity cost of nonmarital childbearing (Willis 1999) and are particularly striking in light of the *lack* of significant findings with respect to the employment-related variables (current employment and level of earnings). This suggests that education is not simply a proxy for earnings capacity but rather reflects a different set of values and preferences (that were either caused by education or were what selected individuals into educational attainment in the first place) that appear to discourage one from having a child outside of marriage. In an effort to account for the selection factors that may differentiate those

who obtain higher education, we estimated models that included measures obtained during young adulthood about family attitudes, educational and occupational aspirations, expected age at marriage, external locus of control, and self-esteem. Yet, none of these factors notably reduced the effect of education on—nor was significantly related to—nonmarital childbearing. Consistent with the opportunity cost argument (Willis 1999), we suspect that education itself may alter individuals' tastes, values and career goals, promoting greater vigilance in avoiding a nonmarital birth, but we cannot test that hypothesis here. Understanding *how* educational attainment affects nonmarital fertility for men would be a useful topic for future research.

Respondents' education is somewhat less strongly related to having a marital birth, whereas being employed and having annual earnings above \$25,000 are strong predictors of marital childbearing. This suggests that economic resources are an important prerequisite to marital—but not nonmarital—childbearing, consistent with recent literature about the economic 'bar' to marriage (which may be followed by childbearing) and the lack of such for fertility outside of marriage (Edin and Kefalas 2005; Gibson-Davis 2009; Gibson-Davis, Edin, and McLanahan 2005).

Race/ethnicity is an important characteristic related to nonmarital childbearing, as black men have three to four times higher risk—and Hispanic men about two times higher risk—of having a nonmarital birth than men of white or 'other' race. The estimates for black men persist (and become even larger) when time-varying respondent characteristics are controlled (in the NLSY79 sample). This indicates that the black-white differences in nonmarital fertility are not only (or primarily) due to the low socioeconomic status of black men, consistent with prior literature (Hanson, Morrison and Ginsburg 1989; Thornberry, Smith, and Howard 1997)—although SES may indeed be part of the story (Wilson 1987). Instead, these results underscore

the distinctive family patterns among black Americans, including greater separation between marriage and childbearing and greater acceptance of a diversity of family forms where partner and parent roles do not often occur within the same union or ‘package deal’ (Mincy and Pouncy 1999; Mincy and Pouncy 2007; Tach, Mincy, and Edin 2010).

The mixed findings about other social factors (such as family structure and religiosity) across the two datasets are in accord with some studies that also find inconsistent evidence of such variables on teen fatherhood (Hanson, Morrison and Ginsburg 1989). Yet, young age at sexual initiation is a strong predictor of nonmarital childbearing, consistent with work about the predictors of early parenthood (Hofferth and Goldscheider 2010). Across both the NSFG and the NLSY, men who had sex before age 16 had 1.5-2 times higher risk of having had a nonmarital birth, net of the socioeconomic factors with which it is correlated. This suggests that getting teens to delay sex (and hence reduce their exposure to the risk of fertility) may be a useful programmatic approach to reducing nonmarital childbearing, consistent with some recent experimental evidence (Jemmott, Jemmott, and Fong 2010).

There are several limitations of this research that should be noted. First, as with all survey data, one must be aware of concerns about response rates, attrition, and missing data. The response rate for the men in the 2002 NSFG was 78%. While this is higher than many surveys of men, this still leaves over one-fifth of all men ages 15-44 excluded. We expect that the omitted group may include some of the least advantaged men who may be more likely than the included sample to have had a nonmarital birth. Thus, the NSFG figures may under-estimate the true number of men who have fathered children. The fact that the NSFG numbers appear to match the vital statistics data except for ages 15-19 is encouraging (Martinez et al. 2006), and we partially avoid under-reporting during these ages by starting our observation period at age 17. In the

NLSY79, response rates for such a lengthy panel have been very good. As of the 2006 survey, fully half of the men who began in 1979 had completed all 22 interviews (CHRR 2006). Within both surveys, item-missing data are relatively rare, so we do not believe that missing data are notably biasing our results.

Second, given the data available – and particularly the available across both data sets in light of our comparative focus, we were not able to include all of the variables that might be salient to men’s nonmarital fathering, such as parents’ attitudes, values and parental involvement, as well as the respondent’s social-psychological wellbeing and behaviors. Future research with more nuanced data could usefully examine these factors.

In sum, this research sheds new light on the social and economic processes by which men become unmarried fathers. Despite some limitations, our findings are quite consistent across the two data sets, providing greater confidence in the results. Given the high and rising fraction of births outside of marriage, the instability and low economic resources in nonmarital unions, and the importance of fathers for children’s development and wellbeing, this research suggests that nonmarital fatherhood may contribute to growing U.S. inequality and stratification both within and across generations.

References

- Aassve, A. 2003. "The Impact of Economic Resources on Premarital Childbearing and Subsequent Marriage Among Young American Women." *Demography* 40:105-126.
- An, C-B., R. Haveman, and B. Wolfe. 1993. "Teen Out-of-Wedlock Births and Welfare Receipt: The Role of Childhood Events and Economic Circumstances." *The Review of Economics and Statistics* 75:195-208.
- Anderson, E. 1989. "Sex Codes and Family Life among Poor Inner-City Youths." *Annals of the American Academy of Political and Social Sciences* 501:59-78.
- Axinn, W. G. and A. Thornton. 2000. "The Transformation in the Meaning of Marriage." Pp. 147-165 in *The Ties that Bind*, edited by L. J. Waite. New York: Aldine de Gruyter.
- Barber, J. S. 2000. "Intergenerational Influences on the Entry into Parenthood: Mothers' Preferences for Family and Nonfamily Behavior." *Social Forces* 79:319-348.
- . 2001. "The Intergenerational Transmission of Age at First Birth among Married and Unmarried Men and Women." *Social Science Research* 30:219-247.
- Becker, G. S. 1960. "An Economic Analysis of Fertility." Pp. 209-231 in *Demographic and Economic Change in Developed Countries*, edited by NBER. Princeton, NJ: Princeton University Press.
- Blau, P. M. and O. Dudley Duncan. 1967. *The American Occupational Structure*. New York: John Wiley & Sons.
- Brien, M. J., L. A. Lillard, and L. J. Waite. 1999. "Interrelated Family-Building Behaviors: Cohabitation, Marriage, and Nonmarital Conception." *Demography* 36:535-551.
- Call, V.R. A. and T. B. Heaton. 1997. "Religious Influence on Marital Stability." *Journal for the Scientific Study of Religion* 36:382-392.

- Center for Human Resource Research. 2006. *NLSY79 Users Guide: A Guide to the 1979 National Longitudinal Survey of Youth*. Columbus, OH: Center for Human Resource Research, The Ohio State University.
- . 2008. *NLSY79 Users Guide: A Guide to the 1979-2006 National Longitudinal Survey of Youth Data*. Columbus, OH: Center for Human Resource Research, The Ohio State University.
- Cooksey, E. C. 1990. "Factors in the Resolution of Adolescent Premarital Pregnancies." *Demography* 27:207-218.
- Coverdill, J. E. and J. M. Kraft. 1996. "Enrollment, Employment, and the Risk and Resolution of a First Premarital Pregnancy." *Social Science Quarterly* 77:43-59.
- Driscoll, A. K., B. W. Sugland, J. Manlove, and A. R. Papillo. 2005. "Community Opportunity, Perceptions of Opportunity, and the Odds of an Adolescent Birth." *Youth & Society* 37:33-61.
- Driscoll, A. K., G. K. Hearn, V. J. Evans, K. A. Moore, B. W. Sugland, and V. Call. 1999. "Nonmarital Childbearing Among Adult Women." *Journal of Marriage and the Family* 61.
- Duncan, G. J. and S. D. Hoffman. 1990. "Welfare Benefits, Economic Opportunities and the Incidence of Out-of-Wedlock Births among Black Teenage Girls." *Demography* 27:519-557.
- Edin, K. and M. Kefalas. 2005. *Promises I Can Keep: Why Poor Women Put Motherhood before Marriage*. Berkeley, CA: University of California Press.

- Elo, I. T., R. Berkowitz King, and F. F. Furstenberg, Jr. 1999. "Adolescent Females: Their Sexual Partners and the Fathers of Their Children." *Journal of Marriage and the Family* 61:74-84.
- Garfinkel, I., S. S. McLanahan, and T. L. Hanson. 1998. "A Patchwork Portrait of Nonresident Fathers." in *Fathers under Fire: The Revolution in Child Support Enforcement*, edited by I. Garfinkel, S. S. McLanahan, D. R. Meyer, and J. A. Seltzer. New York: Russell Sage Foundation.
- Geronimus, A. T. and S. Korenman. 1992. "The Socioeconomic Consequences of Teen Childbearing Reconsidered." *Quarterly Journal of Economics* 107:1187-1214.
- Gibson-Davis, C. 2009. "Money, Marriage, and Children: Testing the Financial Expectations and Family Formations Theory." *Journal of Marriage and Family* 71:146-160.
- Gibson-Davis, C., K. Edin, and S. S. McLanahan. 2005. "High Hopes but Even Higher Expectations: The Retreat from Marriage among Low-Income Couples." *Journal of Marriage and Family* 67:1301-1312.
- Glick, J. E., S. D. Ruf, M. J. White, and F. Goldscheider. 2006. "Educational Engagement and Early Family Formation: Differences by Ethnicity and Generation." *Social Forces* 84:1391-1415.
- Goldscheider, F. K. and G. Kaufman. 1996. "Fertility and Commitment: Bringing Men Back In." *Population and Development Review* 22:87-99.
- Greene, M. E. and A. E. Biddlecom. 2000. "Absent and Problematic Men: Demographic Accounts of Male Reproductive Roles." *Population and Development Review* 26:81-115.

- Hamilton, B. E., J. A. Martin, and S. J. Ventura. 2010. *Births: Preliminary Data for 2008*, *National Vital Statistics Reports*, vol. 58, No. 16. Hyattsville, MD: National Center for Health Statistics.
- Hanson, S. L., D. Ruane Morrison, and A. L. Ginsburg. 1989. "The Antecedents of Teenage Fatherhood." *Demography* 26:579-596.
- Hill, M. S., W-J. J. Yeung, and G. J. Duncan. 2001. "Childhood Family Structure and Young Adult Behaviors." *Journal of Population Economics* 14:271-299.
- Hofferth, S. L. and F. Goldscheider. 2010. "Family Structure and the Transition to Early Parenthood." *Demography* 47:415-437.
- Hogan, D. P. and E. M. Kitagawa. 1985. "The Impact of Social Status, Family Structure, and Neighborhood on the Fertility of Black Adolescents." *American Journal of Sociology* 90:825-855.
- Högnäs, R. S. and M. J. Carlson. 2010. "'Like Parent, Like Child?': The Intergenerational Transmission of Nonmarital Fertility for Men and Women." CDE working paper #2010-10, University of Wisconsin-Madison.
- Hynes, K., K. Joyner, H. E. Peters, and F. Yang DeLeone. 2008. "The Transition to Early Fatherhood: National Estimates Based on Multiple Surveys." *Demographic Research* 18:337-376.
- Jemmott, J. B., L. Sweet Jemmott, and G. T. Fong. 2010. "Efficacy of a Theory-Based Abstinence-Only Intervention Over 24 Months : A Randomized Controlled Trial With Young Adolescents " *Archives of Pediatric & Adolescent Medicine* 164:152-159.
- Kahn, J. R. and K. E. Anderson. 1992. "Intergenerational Patterns of Teenage Fertility." *Demography* 29:39-57.

- Kalil, A. and J. Kunz. 1999. "First Births among Unmarried Adolescent Girls: Risk and Protective Factors." *Social Work Research*.
- Kirby, D.. 2002. "The Impact of Schools and School Programs upon Adolescent Sexual Behavior" *Journal of Sex Research* 39:27-33.
- Ku, L., F. L. Sonenstein, and J. H. Pleck. 1993. "Neighborhood, Family, and Work: Influences on the Premarital Behaviors of Adolescent Males." *Social Forces* 72:479-503.
- Lerman, R. I. 1993. "A National Profile of Young Unwed Fathers." Pp. 27-51 in *Young Unwed Fathers: Changing Roles and Emerging Policies*, edited by R. I. Lerman and T. J. Ooms. Philadelphia: Temple University Press.
- Lerman, R. I. and E. Sorensen. 2000. "Father Involvement with Their Nonmarital Children: Patterns, Determinants, and Effects on Their Earnings." Pp. 137-158 in *Fatherhood: Research, Interventions and Policies*, edited by H. E. Peters and R. D. Day: Haworth Press.
- Lerman, Robert and Elaine Sorenson. 2000. "Father Involvement with Their Nonmarital Children: Patterns, Determinants, and Effects on Their Earnings." *Marriage and Family Review* 29:137-158.
- Manlove, J. 1997. "Early Motherhood in an Intergenerational Perspective: The Experiences of a British Cohort." *Journal of Marriage and the Family* 59:263-279.
- Marsiglio, W. 1987. "Adolescent Fathers in the United States: Their Initial Living Arrangements, Marital Experience and Educational Outcomes." *Family Planning Perspectives* 19:240-251.
- Martinez, G. M., A. Chandra, J. C. Abma, J. Jones, and W. D. Mosher. 2006. "Fertility, Contraception, and Fatherhood: Data on Men and Women from Cycle 6 of the 2002

- National Survey of Family Growth." in *National Vital and Health Statistics*. Series 54, No. 2. Hyattsville, MD: National Center for Health Statistics.
- McLanahan, S. S. 2009. "Children in Fragile Families." Working paper #09-16-FF, Center for Research on Child Wellbeing, Princeton University.
- McLanahan, S. S. and G. Sandefur. 1994. *Growing Up with a Single Parent: What Hurts, What Helps*. Cambridge, MA: Harvard University Press.
- Mincy, R. B. and H. Pouncy. 1999. "There Must Be Fifty Ways to Start a Family: Public Policy and the Fragile Families of Low Income Non-Custodial Fathers." in *The Fatherhood Movement: A Call to Action*, edited by W. Horn, D. Blankenhorn, and M. B. Pearlstein. New York: Lexington Books.
- . 2007. *Baby Fathers and American Family Formation: Low-Income, Never-Married Parents in Louisiana before Katrina*. New York, NY: Center for Marriage and Families, Institute for American Values.
- Mott, F. L. and T. A. Gryn. 2001. "Evaluating Male Fertility Data: Who Reports Consistently and What are the Analytical Implications?" paper presented at *Population Association of America Annual Meeting*, Washington, DC.
- Musick, K. 2002. "Planned and Unplanned Childbearing among Unmarried Women." *Journal of Marriage and Family* 64:915-929.
- National Center for Health Statistics. 2004. "Public Use Data File Documentation National Survey of Family Growth Cycle 6: 2002, USER'S GUIDE." U. S. Dept. of Health and Human Services. Hyattsville, Maryland.
- Nelson, T. J. 2004. "Low-Income Fathers." *Annual Review of Sociology* 30:427-451.

- Nock, S. L. 1998. "The Consequences of Premarital Fatherhood." *American Sociological Review* 63:259-263.
- Pears, K. C., S. L. Pierce, H. K. Kim, D. M. Capaldi, and L. D. Owen. 2005. "The Timing of Entry into Fatherhood in Young, At-Risk Men." *Journal of Marriage and Family* 67:429-447.
- Rendall, M. S., L. Clarke, H. E. Peters, N. Ranjit, and G. Verropoulou. 1999. "Incomplete Reporting of Men's Fertility in the United States and Britain: A Research Note." *Demography* 36:135-144.
- Rindfuss, R. R., S. P. Morgan, and K. Offutt. 1996. "Education and the Changing Age Pattern of American Fertility." *Demography* 33:277-290.
- Rindfuss, R. R., S. P. Morgan, and G. Swicegood. 1988. *First Births in America: Changes in the Timing of Parenthood*. Berkeley, CA: University of California Press.
- Rosenberg, M. 1965. *Society and the Adolescent Self-Image*. Princeton: Princeton University Press.
- Rotter, J. B. 1966. "Generalized Expectancies for Internal versus External Control of Reinforcements." *Psychological Monographs* 80.
- South, S. J. 1996. "Mate Availability and the Transition to Unwed Motherhood: A Paradox of Population Structure." *Journal of Marriage and the Family* 58:265-279.
- . 1999. "Historical Changes and Life Course Variation in the Determinants of Premarital Childbearing." *Journal of Marriage and the Family* 61:752-763.
- Tach, L., R. Mincy, and K. Edin. 2010. "Parenting as a Package Deal: Relationships, Fertility, and Nonresident Father Involvement among Unmarried Parents." *Demography* 47:181-204.

- Thomson, E., T. L. Hanson, and S. S. McLanahan. 1994. "Family Structure and Child Well-Being: Economic Resources vs. Parental Behaviors." *Social Forces* 73:221-242.
- Thornberry, T. P., C. A. Smith, and G. J. Howard. 1997. "Risk Factors for Teenage Fatherhood." *Journal of Marriage and the Family* 59:505-522.
- Thornton, A. and D. Camburn. 1989. "Religious Participation and Adolescent Sexual Behavior and Attitudes." *Journal of Marriage and the Family* 51:641-653.
- Upchurch, D. M., L. A. Lillard, and C. W.A. Panis. 2002. "Nonmarital Childbearing: Influences of Education, Marriage, and Fertility." *Demography* 39:311-329.
- Upchurch, D. M. and J. McCarthy. 1990. "The Timing of a First Birth and High School Completion." *American Sociological Review* 55:224-234.
- Ventura, S. J. and C. Bachrach. 2000. *Nonmarital Childbearing in the United States, 1949-99. National Vital Statistics Report 48(6)*, vol. 48. Hyattsville, MD: National Center for Health Statistics.
- Ventura, S. J., Christine A. Bachrach, L. Hill, K. Kaye, P. Holcomb, and E. Koff. 1995. "The Demography of Out-of-Wedlock Childbearing." in *Report to Congress on Out-of-Wedlock Childbearing*. DHHS Pub. No. (PHS)95-1257. Washington, D.C.: U.S. Department of Health and Human Services.
- Wilcox, W. B. and N. H. Wolfinger. 2007. "Then Comes Marriage? Religion, Race, and Marriage in Urban America." *Social Science Research* 36:569-589.
- Willis, R. J. 1999. "A Theory of Out-of-Wedlock Childbearing." *The Journal of Political Economy* 107:S33-S64.
- . 2000. "The Economics of Fatherhood." *The American Economic Review* 90:378-382.

- Wilson, W. J. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. Chicago: University of Chicago Press.
- Wolfe, B. W., K. Wilson, and R. Haveman. 2001. "The Role of Economic Incentives in Teenage Nonmarital Childbearing Choices." *Journal of Public Economics* 81(3):473-511.
- Wu, L. L. 1996. "Effects of Family Instability, Income, and Income Instability on the Risk of a Premarital Birth." *American Sociological Review* 61:386-406.
- Wu, L. L. and B. C. Martinson. 1993. "Family Structure and the Risk of Premarital Birth." *American Sociological Review* 58:210-232.
- Wu, L. L. and E. Thomson. 2001. "Race Differences in Family Experiences and Early Sexual Initiation: Dynamic Models of Family Structure and Family Change." *Journal of Marriage and Family* 63:682-696.
- Wu, L. L. and B. Wolfe (eds). 2001. *Out of Wedlock: Causes and Consequences of Nonmarital Fertility*. New York: Russell Sage Foundation.

Figure 1. NSFG Total Sample: Risk of First Birth Hazard Function

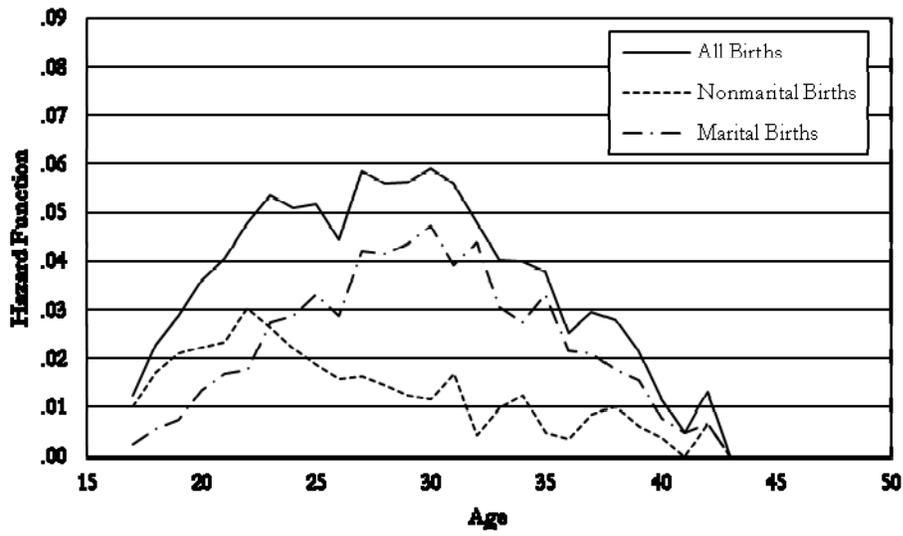


Figure 2. NLSY79 Total Sample: Risk of First Birth Hazard Function

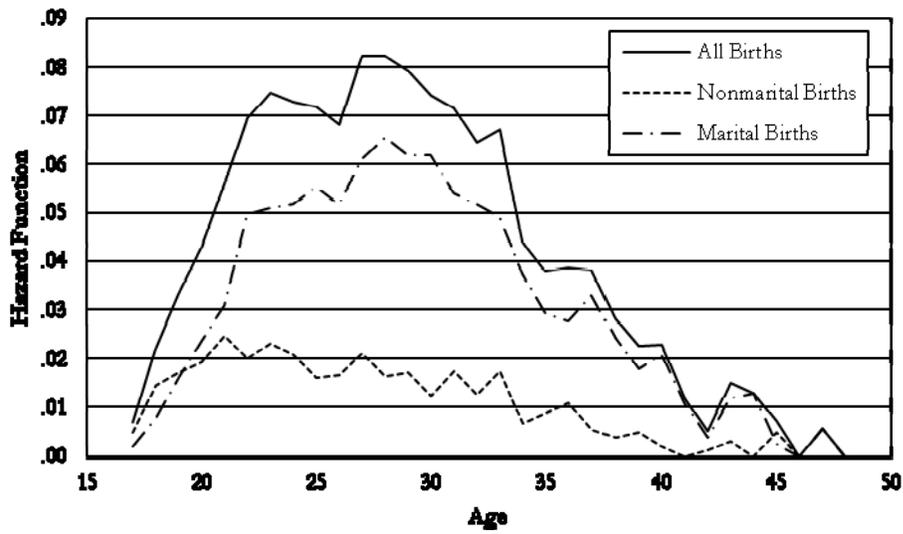


Table 1. Background Characteristics for Men in the NSFG and NLSY

	NSFG Full Sample				NSFG Comparable to NLSY Cohort	NLSY Full Sample				NLSY Ages 14-16
	Total	Nonmarital Birth	Marital Birth	No Birth		Total	Nonmarital Birth	Marital Birth	No Birth	
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	
	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %
Race										
White, non-Hispanic	73.4	51.4	78.8	77.4	77.2	83.9	55.2	89.0	86.8	82.7
Black, non-Hispanic	10.5	22.5	5.7	9.6	10.7	10.9	36.8	6.0	8.9	11.6
Hispanic	16.0	26.1	15.5	13.0	12.1	5.2	8.0	5.0	4.3	5.7
Foreign born	15.9	20.7	17.3	13.3	13.8	4.3	4.2	4.4	4.2	3.3
Father's education										
Less than high school	24.3	42.1	25.8	17.5	30.4	29.5	45.0	27.2	27.1	32.2
High school degree	30.5	32.7	31.8	28.9	31.3	36.6	35.7	36.3	37.5	36.6
Some college	18.6	14.6	17.9	20.3	15.3	13.0	11.6	12.8	13.9	12.4
Bachelor's degree or higher	26.6	10.6	24.5	33.3	23.0	21.0	7.7	23.7	21.5	18.9
Mother has more educ. than father	21.2	23.3	21.2	20.5	21.2	18.8	20.0	18.5	18.8	20.0
Lived with both parents at age 14	79.2	72.9	83.5	78.6	84.5	81.6	71.6	84.5	80.7	78.4
Mother worked at age 14/15	66.3	65.4	57.6	72.1	53.8	53.5	55.1	53.4	52.9	57.0
Religion raised										
Catholic	35.7	42.9	34.0	34.4	34.6	33.6	25.7	35.3	33.9	33.3
Protestant	49.4	48.5	53.1	47.4	51.4	50.1	59.2	48.7	48.8	50.9
Other/none	14.9	8.6	12.9	18.2	14.0	16.3	15.1	16.0	17.3	15.8
Age at first sex (mean)	17.1	16.0	17.6	17.3	17.5	16.6	15.2	16.8	16.7	16.2
(SD)	3.61	3.3	3.8	3.5	4.1	2.4	2.3	2.3	2.3	2.0
Never had sex/missing	8.9	.0	.0	17.4	2.1	6.0	.9	5.7	8.8	9.0
First sex before age 16	28.5	45.1	28.2	23.2	26.9	27.4	51.6	23.6	23.5	30.8
Unweighted number of cases (<i>n</i>)	4,017	655	840	2,522	909	3,361	608	1,633	1,120	1,238

Note: In percent unless otherwise indicated. All figures are weighted by national sampling weights. SD = standard deviation.

Table 2. Background Characteristics for Men in the NLSY

	NLSY Full Sample				NLSY
	Total	Nonmarital Birth	Marital Birth	No Birth	Ages 14-16
	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %	<i>M</i> or %
Frequency of religious attendance (1979)					
Never	20.1	24.8	17.9	22.2	17.1
Infrequently	27.8	29.4	26.8	28.9	22.9
Once a month	9.7	11.4	9.2	9.8	7.7
2-3 times a month	11.1	12.9	10.7	11.0	13.1
Once a week	23.0	16.8	25.8	20.6	29.0
More than once a week	8.4	4.7	9.7	7.5	10.3
Traditional family attitudes (mean, range=1-4)	2.3	2.4	2.3	2.3	2.3
(<i>SD</i>)	.5	.5	.5	.5	.5
Highest grade would like to complete (1979)					
Less than high school	1.1	2.4	.7	1.2	1.5
High school	31.5	48.8	29.1	28.6	36.6
Some college	11.5	10.3	13.1	9.1	10.3
College or more	55.9	38.5	57.1	61.1	51.7
Expected ability to achieve desired occupation (1979)					
Poor	4.2	6.0	3.7	4.4	3.0
Fair	21.7	23.4	21.3	21.9	25.5
Good	49.3	47.8	49.5	49.7	51.7
Excellent	24.7	22.8	25.5	24.1	19.9
Expected age of marriage (1979)					
Less than 20 years	2.4	3.0	2.7	1.6	3.6
20-24 years	43.0	40.8	47.4	36.0	51.2
25-29 years	41.9	38.1	41.7	43.9	35.6
30 or older	9.6	12.3	6.2	14.4	6.4
Never	3.2	5.9	2.0	4.2	3.2
Rotter locus-of-control scale (1980; mean, range=4-16)	8.4	8.9	8.2	8.3	8.8
(<i>SD</i>)	2.3	2.3	2.3	2.3	2.2
Rosenberg self-esteem scale (1980; mean, range=10-40)	32.9	32.1	33.0	33.0	32.0
(<i>SD</i>)	4.0	3.9	3.9	4.1	3.7
Unweighted number of cases (<i>n</i>)	3,361	608	1,633	1,120	1,238

Note: In percent unless otherwise indicated. All figures are weighted by national sampling weights. SD = standard deviation.

Table 3. Time-Varying Characteristics in the NLSY

	1979	1990	2000	Person-Year Avg.
	%	%	%	%
Respondent's education				
Less than high school	63.5	8.4	7.1	15.7
High school degree	22.1	41.2	39.6	37.0
Some college	14.1	22.1	21.9	24.5
Bachelor's degree or higher	.3	28.2	31.4	22.7
Enrolled in school	75.2	7.4	2.0	25.9
Employed	58.9	91.4	92.4	79.8
Annual Earnings				
None	17.4	8.5	7.2	10.7
\$1-\$3,000	36.4	1.6	1.2	10.3
\$3,000-\$10,000	23.6	3.9	2.1	15.6
\$10,001-\$25,000	16.2	19.3	9.6	22.8
\$25,001 or higher	6.4	66.7	79.9	40.6
Unweighted number of cases (<i>n</i>)	3,361	2,782	2,164	35,884

Note: In percent. All figures are weighted by sampling weights.

Table 4. Odds Ratios from Discrete-Time Hazard Models for the Risk of a First Birth for Men in the NSFG and NLSY

	NSFG Full Sample		NSFG Comparable to NLSY Cohort		NLSY Full Sample						NLSY: Ages 14-16	
					Model 1		Model 2		Model 3		Model 3	
	Nonmarital (1)	Marital (2)	Nonmarital (3)	Marital (4)	Nonmarital (5)	Marital (6)	Nonmarital (7)	Marital (8)	Nonmarital (9)	Marital (10)	Nonmarital (11)	Marital (12)
<i>Background Characteristics</i>												
Race (ref=White/Other)												
Black, non-Hispanic	2.97 ***	.59 ***	3.84 ***	.63 *	3.64 ***	0.57 ***	4.16 ***	.63 ***	4.44 ***	.68 ***	3.82 ***	.61 **
Hispanic	2.32 ***	1.35 **	2.14 **	1.28	1.87 ***	1.00	1.90 ***	1.05	1.90 ***	1.05	2.40 ***	1.38 *
Foreign born	.84	1.17	.76	1.29	.85	1.07	.93	1.10	.92	1.10	1.19	1.26
Father's education (ref=less than high school)												
High school degree	.85	.92	.92	.99	.69 ***	.88 +	.85	.86 *	.89	.87 *	.91	.89
Some college	.63 ***	.83	.80	.99	.61 **	.76 **	.92	.74 **	1.00	.75 **	1.51 +	.74 +
Bachelor's degree or higher	.41 ***	.64 ***	.49 **	.88	.32 ***	.84 *	.57 **	.85 +	.65 *	.90	.59	.98
Mother has more educ. than father	.80 *	.94	.63 *	1.08	.86	.93	1.01	.91	1.08	.92	1.00	.82
Lived with both parents at age 14	.62 ***	1.08	.51 ***	1.24	.87	1.10	.97	1.04	.97	1.05	.95	1.05
Mother worked at age 14/15	.98	.89	.75 +	.93	.81 *	1.00	.84 +	.99	.85 +	.99	.81	1.05
Religion raised (ref=other/none)												
Catholic	1.55 **	1.19	1.49	.95	1.01	1.01	1.11	.96	1.20	.98	.94	.89
Protestant	1.41 *	1.52 ***	1.27	1.19	.98	1.04	1.05	1.01	1.09	1.01	1.06	.91
Initiated sexual activity before age 16	2.14 ***	1.37 ***	1.78 ***	1.16	2.08 ***	1.10	1.76 ***	1.12 +	1.77 ***	1.12 +	1.65 ***	1.23 +
Initiated sexual activity during the previous year	1.34	2.75 ***	1.84 +	2.37 **	0.94	1.46 *	.95	1.58 **	.97	1.59 **	.94	1.89 *
<i>Time-varying Characteristics</i>												
Respondent's education (ref=less than high school)												
High school degree							.55 ***	.81 *	.61 ***	.85 +	.65 *	.98
Some college							.49 ***	.73 **	.61 **	.79 *	.50 **	.88
Bachelor's degree or higher							.17 ***	.98	.22 ***	1.08	.25 **	1.14
Enrolled in school							.37 ***	.64 ***	.40 ***	.65 ***	.39 ***	.49 ***
Employed							.86	1.79 ***	.88	1.78 ***	.83	1.82 ***
Annual Earnings (ref=none)												
\$1-\$3,000							1.16	.84	1.18	.87	1.20	.80
\$3,000-\$10,000							1.06	.83 +	1.08	.85	1.08	.85
\$10,001-\$25,000							1.17	.88	1.20	.89	1.06	.92
\$25,001 or higher							1.09	1.48 ***	1.13	1.47 ***	1.17	1.47 *

Background Characteristics (NLSY only)

Frequency of religious attendance 1979 (ref=never)								
Infrequently			1.04	1.14	1.02	1.13	.79	1.13
Once a month			1.02	1.15	.94	1.11	.83	.91
2-3 times a month			.94	1.12	.91	1.06	.64 *	.88
Once a week			.95	1.23 *	.89	1.15	.69 +	1.12
More than once a week			.72	1.51 ***	.68 +	1.36 **	.49 *	1.69 **
Traditional family attitudes					1.17 +	1.05	1.18	0.93
Highest grade would like to complete (ref=lt hs)								
High school					1.07	1.14	2.74 +	0.89
Some college					0.81	1.24	2.66	0.93
College or more					0.82	1.03	2.22	0.78
Expected ability to achieve desired occupation (ref=poor)								
Fair					0.86	1.00	0.93	0.76
Good					0.97	0.95	1.23	0.77
Excellent					1.19	1.06	1.44	0.83
Expected age of marriage (ref=less than 20 years)								
20-24 years					0.82	0.68 *	0.69	0.62 *
25-29 years					0.73	0.55 ***	0.75	0.55 *
30 or older					0.74	0.45 ***	0.59	0.77
Never					1.02	0.34 ***	0.86	0.53 +
Rotter locus-of-control scale					1.01	1.00	1.03	1.03
Rosenberg self-esteem scale					0.99	1.01	1.00	1.01
Number of cases (<i>n</i>)	39,589	14,518	35,884	35,884	35,884	14,121		

Note: Exponentiated coefficients

+ p<.1, * p<0.05, ** p<0.01, *** p<0.001

Table 5. Predicted Cumulative Birth Probabilities to Age 40 by Race/Ethnicity and Education among Men in the NLSY79 Full Sample ($N=3,361$)

	Nonmarital Birth				Marital Birth			
	Total	White	Black	Hispanic	Total	White	Black	Hispanic
Total	.28	.15	.59	.32	.66	.69	.50	.70
Respondent's education								
Less than high school	.54	.35	.82	.55	.67	.72	.49	.70
High school degree	.34	.18	.66	.36	.66	.69	.49	.71
Some college	.27	.14	.54	.28	.62	.65	.47	.67
Bachelor's degree or higher	.10	.06	.29	.13	.68	.70	.54	.70

Note: Race/ethnicity-by-education cell sizes range from 62 (black less than high school) to 993 (white high school). Predicted probabilities based on estimates from Model 2 in Table 4.

Center for Demography and Ecology
University of Wisconsin
1180 Observatory Drive Rm. 4412
Madison, WI 53706-1393
U.S.A.
608/262-2182
FAX 608/262-8400
comments to: carlson@ssc.wisc.edu
requests to: cdepubs@ssc.wisc.edu