Lonely Workers, Students, and Others: The Backgrounds and Life Histories of Delayed Fathers

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Abstract: Over the past few decades, growing numbers of men in the U.S. have become biological fathers for the first time after 30. In this paper, I use a combination of descriptive and event history methods to assess competing hypotheses that explain delayed fatherhood in the NLSY79 in terms of a) sociodemographic background characteristics, and b) work and intimacy during early adulthood. Early adult behavior proves to be more important. Men who spend their twenties living without a spouse or cohabiting partner, and subsequently marry or cohabit, are likely to become fathers after 30, as are those who spend a significant portion of their twenties in school and then enter the full-time paid workforce. Men who delay fatherhood today are more demographically diverse than one might expect, but early adult behavior explains more of the variance in the odds of becoming a delayed father among those who are college educated and non-Hispanic White.

The timing of becoming a parent for the first time increasingly differentiates fathers in the United States. As recently as the 1970s, half of men who became fathers did so within the six-year interval between ages 22 and 27. In the 1990s, half of men became fathers between 23 and 32 – a ten year range.[1] In other words, many more men are delaying fatherhood until what would have been, in the recent past, unusually late ages.

The timing of the transition to parenthood has been shown to relate to behaviors that affect child well-being. Those who become fathers during the teenage years are less likely than others to live with their children, to be involved parents, and to maintain continuous employment (Brien and Willis 1997; Furstenberg and Harris 1993; Jaffee, Caspi, Moffitt, Taylor, and Dickson 2001). At the other end of the spectrum, those who delay fatherhood to older ages than average tend to spend more time than others with their co-resident children, and to be involved in their lives in ways that promote healthy development (Coltrane 1996; Cooney, Pedersen, Indelicato, and Palkovitz 1993; Daniels and Weingarten 1982; Heath 1994). However, I found that in time diary data, as opposed to retrospective survey reports, this was true primarily when children were five and under (Weinshenker 2005).

While a concern with child well-being has motivated research on the consequences of delayed fatherhood, those with interests in fertility or the modern American male life course might ask a different question: why do some men wait longer than others to become fathers? Scholars have paid considerable attention to the

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[1] Author's calculations based on the Panel Study of Income Dynamics' 1985-2001 Childbirth and Adoption History File.

determinants of adolescent fatherhood (Jaffee et al. 2001; Pears, Pierce, Kim, Capaldi, and Owen 2005; Thornberry, Smith, and Howard 1997), but there has been little research on the factors that predict fertility timing among men who reach their twenties in a childless state. There seem to be two reasons for this. The first is that survey data on men's fertility are often of poor quality (Garfinkel, McLanahan, and Hanson 1998). However, data providers have made efforts to improve the information available in several major national data sets. This paper uses the National Longitudinal Survey of Youth, 1979 Cohort (NLSY79), where men's fertility reports have been retrospectively evaluated and assigned codes on the basis of their trustworthiness.

The second probable reason why the timing of adult male fertility is rarely studied is that the characteristics of adult men's partners and of their relationships affect timing more than their own individual characteristics do. True as this may be, a complete understanding of men's timing outcomes requires attention to their own attributes and life histories. Using a combination of descriptive statistics and multivariate event history techniques, this paper assesses two hypotheses about the timing of becoming a father for the first time: that those who delay fatherhood until 30 or later achieve stable careers and romantic intimacy later than others, and that they tend to share socioeconomically advantaged backgrounds and high educational attainment. I pay particular attention to the ways in which these two explanations interact and condition one another.

BACKGROUND

Theoretical Perspectives on Fertility Timing and Men's Life Histories

Two theoretical streams suggest that men's life histories, with respect to career and relationship, play an important role in determining when (and if) they make the

transition to fatherhood. One of these is the Ericksonian tradition in developmental psychology. According to Erikson's epigenetic stage model of human development (1968), the major developmental task of prime-age adulthood is generativity, which may roughly be defined as care for the next generation, and especially one's own offspring. While not all healthy adults produce and raise children, they at least have an inborn drive to do so.

According to the theory, the generative impulse becomes much more salient when previous developmental challenges have been successfully met. The two developmental tasks prior to generativity are the achievement of identity and intimacy. Identity is a complex and multi-faceted concept, but men have typically achieved their identity in large part by establishing themselves in the world of work. Therefore, extended education or unemployment represent difficulty in achieving a stable identity, and the theory predicts these experiences will tend to suppress the desire to be generative while they last. Delayed marriage or the failure of an early marriage translate into difficulty in achieving intimacy, and they are similarly expected to postpone the generative drive (Daniels and Weingarten 1982).

Eriksonian theory explains the association of delayed fatherhood with men's career and marriage timing in terms of internal developmental needs. The same associations can also be explained in cultural terms. Ryder (1973) may have been the first to note that the American norm that all adults marry and have children is qualified by the requirement that they be able to afford them. In other words, couples are allowed to wait until they are economically self-sufficient. Given that men have traditionally been assigned primary responsibility for families' economic well-being, there is cultural

sanction for delaying fatherhood until they find stable employment. Qualitative interviews with recent (Townsend 2002) and past (Nydegger 1986) cohorts of middle-class American men have confirmed that economic support of the family is integrated with fatherhood in what Townsend (2002) has called the "package deal" of a man's life. Dramatically greater employment by women does not appear to have altered the belief that male providership is a prerequisite for parenthood (Nydegger 1986). Furthermore, marriage is also part of the package, and interviewees felt that fatherhood would be deviant until it has been achieved.

Notice that the sequence that places career and romantic stability prior to fatherhood, which Eriksonian developmentalists claim to originate within the individual, are believed by cultural scholars to be a matter of social norms. Thus, the two traditions make similar predictions about the reasons for fatherhood at older ages, with the crucial caveat that the latter theory only applies to those who accept mainstream family timing norms. However, it is quite consistent with the developmental theory to predict that culturally mainstream men who have not achieved stable career and intimacy will delay fatherhood, while others will have children but will not act as generative, responsible fathers (Doherty, Kouneski, and Erickson 1998). It hardly needs to be said that a good deal of evidence supports these contentions. The links between marriage or employment and fatherhood are relatively weak among some low-income and minority subgroups (Gibson-Davis, Edin, and McLanahan 2005; Waller 2002). At the same time, male inability to play the economic provider role (Conger, Reuter, and Conger 2000) and the lack of a romantic relationship with the mother (Carlson and McLanahan 2002) each tend to interfere with father involvement.

Empirical Evidence

In this section, I briefly review the empirical evidence on two topics: the relationships that young adult life history and background factors bear to delayed fatherhood timing, and the relative roles life history and background play in shaping delayed fatherhood. Since adult male fertility timing is rarely studied, some of the evidence is indirect. In the most relevant pair of studies, published during the late 1980s, Rindfuss and co-authors actually looked at life history and background effects on male fertility timing during the twenties (Rindfuss, Morgan, and Swicegood 1989; Rindfuss, Swicegood, and Rosenfeld 1987). I rely heavily on their ideas and methods, although I go beyond the previous work in several ways, including by studying the precursors of fatherhood after 30 and by explicitly modeling marriage and cohabitation as part of the fertility process.

The evidence confirms that, in general, the transition to fatherhood becomes more likely when men are established in the full-time workforce. Rindfuss and co-authors (Rindfuss, Morgan, and Swicegood 1989; Rindfuss, Swicegood, and Rosenfeld 1987) found that the odds of making the transition to fatherhood were much more likely for 18 to 25-year-old, non-Hispanic White men in the full-time workforce than for those who were employed part-time, or who were continuing their education straight from high school through college and graduate work. Returning to school after a period away did not have the same effect. Those who were neither employed nor in school were also unlikely to become fathers, increasingly so as they aged through their twenties. The latter finding corroborates other evidence that men's unemployment discourages parenthood (Miller and Pasta 1994), as well as marriage (Oppenheimer, Kalmijn, and Lim 1997).

The relationship between marriage and fertility has varied over time. Census figures show that the long-range trend over the second half of the twentieth century was towards an increasing proportion of children born outside of wedlock (Ventura and Bachrach 2000). In the 1990s, a substantial decline in the birthrate within marriage contributed to this trend (Hamilton, Sutton, and Ventura 2003). Nevertheless, birth rates for women remain much higher within marriage than outside. Comparable census data are not available for men, but Coltrane (1996) and Daniels and Weingarten (1982) each reported that many of the men in their interview-based studies who made delayed transitions to fatherhood cited difficulty in finding a suitable marriage partner as a primary reason. Overall, there can be little doubt that marriage facilitates the transition to fatherhood in the general population.

There is no easy answer to the question of whether cohabitation may be thought of as the kind of stable romantic partnership that the generative and cultural theories posit to be a prerequisite for the transition to fatherhood. What is known is that cohabitation is an increasingly common context for childbearing. According to a recent study, the majority of unmarried White and Hispanic fathers were living with the mother at the time of a child's birth (Carlson and McLanahan 2002). Furthermore, there is increasing acceptance of childbearing outside of marriage in the general population (Axinn and Thornton 2000). On the other hand, the studies cited in the previous paragraph show that marriage remains the only legitimate context for fertility in the minds of many individual men. Whether cohabitation provides social sanction for parenthood and a satisfactory resolution of the Eriksonian intimacy crisis, as opposed to merely offering regular

opportunities for intercourse, certainly varies on the basis on men's (and women's) individual attributes.

Although the focus here is on men's behavior, it must be noted that the characteristics of potential partners in the marriage market affect men's likelihood of marriage at each age. Although they eventually marry at high rates, educated and work-committed women tend to delay marriage (Raley 2000). For very similar reasons, they also tend to delay fertility (Martin 2000). Given the high degree of educational homogamy in the modern United States (Kalmijn 1998), one would expect highly educated men to be more likely to marry at older ages as well.

These observations about educational homogamy and varying acceptance of cohabitation suggests the importance of not ignoring the relationship between fertility timing and background factors such as race, family of origin characteristics, and educational attainment. To take race first, the fact that men who delay fertility are likely to be non-Hispanic White, rather than Hispanic or Black, was demonstrated by Rindfuss and colleagues (Rindfuss, Morgan, and Swicegood 1989). In survey-based studies of the effect of fatherhood timing on men's parenting as well (Cooney, Pedersen, Indelicato, and Palkovitz 1993; Weinshenker 2005), delayed fathers are usually disproportionately White.

There is very little direct evidence about the effects of family of origin characteristics on delayed fatherhood. However, studies about the predictors of younger men's fertility timing are relevant because factors that encourage adolescent fertility reduce the population of childless men available to become delayed fathers, while factors that make fatherhood less likely increase the pool of childless men at older ages. Studies

about the effects of family background on women's fertility timing may also be relevant, to the extent that background factors have similar effects on both genders. This, however, is not always the case (Goldscheider and Waite 1991). What seems clear is that many of the family background factors that are known to predict women's fertility timing - including parental socioeconomic status, urban vs. rural upbringing, Southern vs. non-Southern upbringing, and family size and structure – also predict adolescent male fertility (Jaffee et al. 2001; Pears et al. 2005; Thornberry, Smith, and Howard 1997). In addition, religious affiliation is commonly found to predict women's and couple's fertility timing decisions. By encouraging fertility but strictly forbidding it outside marriage, Catholicism particularly appears to delay early fertility and encourage on-time childbearing (Thomson 1997). Rindfuss and co-authors (Rindfuss, Morgan, and Swicegood 1989) reported confirmatory results about the effects of some of these aspects of family background on men's first birth timing in the twenties.

There is no need to resort to drawing inferences from indirect evidence about the relationship between education and fertility timing, because there is a great deal of evidence that men with high educational attainment wait longer than others to become fathers (Coltrane 1996; Cooney, Pedersen, Indelicato, and Palkovitz 1993; Corijn, Liefbroer, and Gierveld 1996; Daniels and Weingarten 1982; Weinshenker 2005). The literature identifies many reasons why this is so. Men who eventually achieve high status obviously tend finish school and enter the workforce later than others. The role of educational homogamy in matching educated men with women who prefer to delay fertility has been reviewed above. In addition, the parents and peers of educated men are more likely to support or even encourage delay (Soloway and Smith 1987). Finally, the

theory of new home economics suggests that educated men will be in less hurry than others to become fathers because they prefer to have few, but "high quality" children (Becker 1991).

It is important to understand that background factors and young adult life history could bear several different relationships to one another in explaining the timing of fatherhood. Background factors such as race and family of origin characteristics could shape the opportunities young adults are offered; in other words, young adult life history could mediate the effects of background. Alternatively, background factors could be markers of socialization into different preferences about the appropriate time to start a family. In this case, one would expect background and life history to have independent effects. Rindfuss and colleagues (Rindfuss, Morgan, and Swicegood 1989) reported that the effects of parental socioeconomic status were mediated by young men's schooling and work, in line with the mediating hypothesis, but that the effects of other background characteristics such as region of residence were not, which suggests that they may represent socialization.

A third possibility, which is suggested by the theoretical perspectives reviewed here, is that men's backgrounds could *moderate* the effects of life history. Specifically, it seems likely that delay in achieving stable work and romantic intimacy impel men to postpone fatherhood primarily if they are predisposed to accept mainstream family timing norms because they are educated, or non-Hispanic White, or share other background characteristics. This does not mean that other types of men never delay fatherhood until 30 or above, but only that such delay is less likely to be a result of their employment,

schooling, and relationship histories than of a variety of other factors ranging from infecundity to their partners' preferences.

Hypotheses

Here is a summary of the predictions derived from the preceding literature review.

1. Men's backgrounds and young adult life histories with respect to school, work, marriage, and cohabitation will explain a modest part of the variation in the odds of becoming a delayed father, that is, of making the transition to fatherhood at 30 or above.
2. Delayed fatherhood will be associated with delay in establishing employment and romantic intimacy.
3. Those who come from backgrounds where mainstream family timing norms are more salient (for example, those who are non-Hispanic White and enrolled in higher education) will be more likely to become delayed fathers.
4. Young adult life history will affect the odds of becoming a delayed father more strongly among men whose backgrounds pre-dispose them towards accepting mainstream family timing norms.

Data and Methods

Data Source

The data for this paper come from the National Longitudinal Survey of Youth, 1979 Cohort (NLSY79), produced by the Bureau of Labor Statistics (BLS). The NLSY79 is a longitudinal survey focused on the labor market behavior and demographic experiences of individuals of both genders born between 1957 and 1964. The sample is

large and well represents the broader population. Understudied groups (Hispanics, Blacks, economically disadvantaged but non-Hispanic and non-Black youth, and those who were in the military) were oversampled. The descriptive results below have been made nationally representative by applying sampling weights, but in keeping with the BLS' own recommendations (Research 2004), regression results reported here have not been adjusted for differential probability of selection.

The NLSY79 is an excellent source for studying the timing of parenthood because it covers several decades of respondents' lives. At this point, 20 interview waves have been released, spanning 24 years from 1979 to 2002, and the survey is still active. This makes it possible to relate respondents' young adult behavior to later outcomes such as fertility at older ages. Since respondents are questioned only about the recent past, recall bias is less of a problem than in surveys the retrospectively collect life histories.

Moreover, the NLSY79 is one of the best sources for information on male fertility timing in the United States. Male fertility self-reports are known to be unreliable, particularly in the case when men no longer live with their children, both because men with non-resident children are relatively unlikely to participate in surveys and because they sometimes under-report their fertility (Garfinkel, McLanahan, and Hanson 1998; Rendall, Clarke, Peters, Ranjat, and Verropoulou 1999). In particular, Brien and Willis (1997) discuss unpublished work claiming that 15% of biological children were not reported by NLSY79 respondents aged 20 to 24.

To counteract these problems, a group of researchers reviewed the NLSY79 male fertility information for the years from 1979 to 1998 and assigned confidence ratings regarding the paternity of each child who had ever been claimed as a respondent's

biological offspring (Mott 2002). In this paper, I count a biological birth only if the father's paternity has been rated as "virtually certain" or "reasonably certain".[2] While this decision appears as if it should lead to even more serious underestimation of male fertility than if I had used men's original reports, it does not. Although the evaluators rejected some claims of paternity, they also identified many children who were not claimed for several years after the birth as being "reasonably certain" to be respondents' biological offspring.

As is inevitable with any research employing public-use data, the NLSY79 is imperfect for the purposes of this chapter, although it is certainly the best data source available. Despite the long time frame covered by the survey, it does not contain prospective data about respondents' entire lives. Because the oldest respondents were already 21 in 1979, I cannot study the predictors of fertility prior to age 22. (Luckily, the determinants of adolescent and young adult male fertility have been extensively addressed elsewhere.) Conversely, there is presumably a small amount of right censoring in the measurement of whether male NLSY79 respondents became delayed fathers, considering that the youngest were only 37 in 2002. Another drawback is that the interviews have not collected information about adoption dates. Until recently, adopted children were not even distinguished from step-children. Although I would prefer to define fatherhood timing as the age at which a man became a biological or adoptive

[2] Although confidence ratings are not available for children born between 1998 and 2002, this is not likely to impact the results very much. Men report the births of co-resident children fairly accurately, and first births in the sample after 1998 were overwhelmingly to men who subsequently lived with their children.

father, I am forced to define it solely as the age at biological birth. The implications of ignoring adoption are discussed further below.

Methods and Sample Size

The empirical portion of the paper is divided into three sections with different methods and sample sizes (but with the same measures, for the most part). The purpose of having several sets of results is to provide a more complete and holistic picture of the antecedents of delayed fatherhood than would be possible using only one method. The first two sections are purely descriptive. First I provide bivariate correlations between the timing of fatherhood and a variety of covariates that might be expected to predict timing. Associations are shown for all men, and separately for several racial and educational groups. I have chosen to focus on racial and educational variation in fatherhood timing, rather than on variation in other background factors such as religious affiliation or whether the respondent grew up in an intact family, for a number of reasons. For one thing, race and education have been shown to impact life chances in myriad profound ways (although the same is true of childhood family structure and other elements of individuals' backgrounds). Also, there is good reason to believe race and education shape men's likelihood of acting according to what I have called mainstream family timing norms. Finally, as will be seen below, race and education are each strongly associated with delayed fatherhood in the population at the bivariate level, although some other characteristics are not.

Next I report the results of a cluster analysis (Aldenderfer and Blashfield 1984) that was performed in an attempt to identify typical life histories, or sets of work, school, and relationship behavior, experienced by men between the ages of 21 and 28. The

variables used in the cluster analysis are described below. I first utilized Ward's method with a squared Euclidean distance metric. After employing two stopping rules (Calinski-Harabasz pseudo-F and Duda & Hart pseudo-T^2) to identify the optimal number of clusters, I re-clustered the data with the k-means method. This two-step procedure is commonly employed in cluster analyses. Ward's method and similar procedures indicate the number of groups in the data, but are not optimal for identifying which group each case should belong to; the k-means algorithm assigns cases to groups accurately because it is not sensitive to the order of the cases within the data file, but requires the number of groups as an input.

In the third empirical section, I present the results of discrete-time event history models (Yamaguchi 1991) predicting the yearly hazard, or odds, of becoming a father. I estimated separate models for ages 22 to 29 and ages 30 and above, because I expected the process leading to fatherhood to vary between the "on-time" ages and the "delayed" ages. To explain the existence of delayed fatherhood, I was particularly interested in identifying factors that predict *not* becoming a father in the twenties, and factors that predict doing so in the thirties or early 40s. The hazard was regressed on measures of background, school enrollment, occupational status, marital status, cohabitation, and (in models predicting fatherhood at 30 and over) life history during the twenties. Because the outcome measure is dichotomous, these models could be fit using standard logistic regression procedures. I report unweighted results, as there was no need to weight the data based on the number of observations per case (Petersen 1991). I accounted for the changing relationship between age and the likelihood of making the transition to fatherhood non-parametrically, by controlling for a set of age indicators. As in the

descriptive section, I present results for all men, and I then address the question of whether the process varies on the basis of race or education.

In the NLSY79, questions about respondents' school enrollment are asked with reference to May 1 of the survey year, and detailed weekly work histories are collected. Following the procedure employed by Rindfuss and co-authors (Rindfuss, Morgan, and Swicegood 1989; Rindfuss, Swicegood, and Rosenfeld 1987), I estimated the effects of men's schooling and work as of May 1 on the odds of becoming a father six to seventeen months later. For example, school enrollment and employment on May 1, 1990 were used to predict the hazard of making the transition to fatherhood between November 1990 and October 1991. This was done in recognition of the fact that men can sometimes anticipate future changes in status, such as an impending graduation from school. The upcoming change in status may impel them to become fathers even though the baby is born before or shortly after they graduate. Unfortunately, questions about men's marital status and cohabitation are asked with reference to the week of the interview, rather than May 1. As a result, marital status and cohabitation were used to predict the transition to fatherhood a varying number of months in the future.

Rindfuss and colleagues (Rindfuss, Swicegood, and Rosenfeld 1987) did not use marital status to predict the timing of men's fertility, arguing that the model would be mis-specified because some men make joint decisions to wed and become fathers. Although this is unquestionably true, my theoretical concerns emphasize that marriage is often a *pre-requisite* to fatherhood, meaning that a model that fails to control for marriage is radically incomplete. However, it seemed likely that controlling for marital status and

cohabitation would suppress some of the other relationships in the model, so I also estimated models without these factors.

The sample for the descriptive analyses consisted of all men who participated in the 2002 interview wave and who provided complete data, in the manner defined below, about their life histories during their twenties *(N = 3628)*. It was necessary to restrict the sample to those who responded in a given year in order to be able to use sampling weights. The sample for the event history analysis included all respondents in the NLSY79 who were at risk of becoming fathers and who provided complete data about their life histories during their twenties. For the model predicting fatherhood between 22 and 29, there were 25,185 person-year observations contributed by 4707 respondents. For the model predicting fatherhood at 30 or over, there were 12,950 person-years derived from interviews with 2776 respondents. Note that the two samples were different in several respects. The descriptive sample contained men who became fathers before age 22, although they could not be included in the event history models because they were no longer at risk of becoming fathers for the first time. By contrast, the event history sample included men who participated in the NLSY79 at any time, regardless of whether they had ceased responding by 2002.

Among the sample who participated in the 2002 interview, 8.7 percent (317 individuals) had either lived with step or adopted children prior to becoming biological fathers, or else had lived with such children and had never become biological fathers. It was difficult to judge whether to treat men as having become fathers once they live with step-children, to continue to treat them as childless men, or to place them in some intermediate category. I would certainly like to have treated a man who adopts as having

become a father, but as already noted, precise adoption dates were not available. (Neither were the dates that men began to live with adopted or step-children.) Further, adopted and step-children were not distinguished from one another in the older interviews.

To explore how to deal with this problem, I compared two sets of cluster analysis results and event history results. First I excluded men who had lived with non-biological children prior to becoming biological fathers, or had lived with such children and had never become fathers. Then I included these men, ignoring the fact that they had lived with non-biological children. There were no important differences between results using the two samples. This suggests that the process of becoming a biological father *in the total sample* is not much affected by the fact that a small percentage of men live with non-biological children first. In order to have the largest and most representative sample possible, all the results in this paper include the men who lived with non-biological children. A more thorough consideration of whether the factors that promote biological fatherhood differ based on whether men previously lived with non-biological children is beyond the scope of this paper.

Measures

The central measure of interest was whether, and at what age, the respondent became a biological father. In the event history models, the outcome variable was whether a man became a father between November 1 of a given year and October 31 of the following year. For the purposes of the descriptive analyses, men were grouped into four categories: early fathers (those who became fathers prior to turning 22), on-time fathers (ages 22 to 29), delayed fathers (30 and over), and men who had remained childless at the time of most recent interview. Intuitively speaking, some people may not

be inclined to think of men who had a first biological child at 30 as "delayed," but only 27 percent of the weighted sample who ever had a child, and 20 percent of the total weighted sample, fell in this category. Since most of them became fathers before 35, it was not advisable to define a threshold much higher than 30 for delay.

For the cluster analysis of life histories, I used four measures of men's school, work, and relationship histories during their twenties: school enrollment, idleness, marital status, and cohabitation. The first measure was the proportion of time over the eight year period between the ages of 21 and 28 that the respondent was enrolled in school on May 1 of the interview year. To allow for respondents to have missed the occasional interview, I used the proportion of times the respondent was in school relative to the total number of times he was interviewed, rather than a simple count. For example, if an NLSY79 respondent missed one of the eight interviews, then his measure of school enrollment was equal to the number of times he reported enrollment during the seven years he was interviewed. Two missing observations were allowed.

The other life history measures were similarly constructed. The second variable indicated the proportion of time that men were neither working full-time nor enrolled in school on May 1.[3] Borrowing from McLanahan and Sandefur (1994), I termed this state being "idle". The other two measures represented the proportion of time between ages 21 and 28 that men were married and cohabiting, respectively, at the time of the NLSY79 interview.

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[3] I used idleness rather than its opposite, employment, because idleness and school enrollment were expected to have the same effect on fertility timing (i.e. to postpone it).

In the event history models, I used similar but not identical point-in-time measures of respondents' schooling, employment, and relationship statuses. I controlled for whether the respondent was enrolled in school, employed part-time, or not working at all on May 1 of each year. (As described in the previous section, these measures were used to predict the hazard of becoming a father six to seventeen months later.) I also controlled for whether the respondent was married or cohabiting at the time of the survey.

A number of measures of respondents' backgrounds were used as covariates in the event history analysis, and their correlations with fatherhood timing are reported in the descriptive section. First, indicators of whether the respondent was Black or Hispanic were used (non-Hispanic White was the omitted category). Measures of family background included whether the respondent lived in the Southern US, in an urban area, and in an intact family (two birth parents) at age 14, the highest grade completed by the respondent's mother, whether the respondent was raised Catholic, and the number of siblings the respondent reported having in 1979. The respondent's educational attainment was coded into several categories: less than high school, some college, and college graduate or higher (high school diploma was the omitted category). Although race and all the family background measures were treated as fixed in the event history models, educational attainment was time-varying. Finally, a measure of the respondent's employment earnings at age 29 was used in the descriptive section of the paper. Earnings were not used in the event history models, however.

Results

Associations between Background, Young Adult Status, and Fatherhood Timing

Table 1 compares the population-weighted mean characteristics of men who remained childless as of 2002 and early, on-time, and delayed fathers. The findings pertaining to race, family of origin and socioeconomic status at age 29 mirror the literature on women's fertility timing and on adolescent male fertility. Early fathers are more likely than all others to be Black or Hispanic, and delayed fathers are also less likely than childless men to be Black. Early fathers are more likely than all others to have lived in the South at age 14, and less likely to have lived with two biological parents at that age. Living in an urban environment at age 14 is not related to fertility timing, probably because the BLS uses a very generous definition of what constitutes an urban area. Being raised as a Catholic does not predict fatherhood timing, but early fathers tend to have had more siblings in 1979 than all others, and on-time fathers also had more siblings than delayed fathers and childless men.

In accord with past reports, delayed fathers are very likely to have graduated from college by age 29, and are unlikely to have a high school education or less. In most cases, the opposite is true for early fathers. Delayed fathers also enjoy the highest average employment earnings at age 29, although on-time fathers are not far behind.

Delayed fathers spent a greater share of the time between ages 21 and 28 as students. On average, they were enrolled in school about 24 percent of the time. Early fathers were likely to spend less of this period in school than all others (4 percent on average). Childless men and early fathers were each likely to have spent more of their twenties in an idle state – neither enrolled in school nor working full-time – than on-time

and delayed fathers. When it comes to marital status, however, the major dividing line may be drawn between early and on-time fathers on one side, and delayed fathers and childless men on the other. Early fathers were married, on average, for 61 percent of the period between 21 and 28, and on-time fathers for 52 percent of the time, while delayed fathers and childless men were married 17 and 11 percent of the time, respectively. Group differences in the proportion of time spent in a cohabiting relationship are mostly negligible, although there is a small but significant difference between the time early fathers and childless men spent cohabiting.

The reader may wonder whether men who become fathers in their mid-thirties and after differ from those who did so in their early thirties. It has already been mentioned that most of the sample who became fathers at or above 30 did so by 35, rendering it impractical to set the cutoff for "delay" higher than 30. Nevertheless, I compared the characteristics of those men who made the transition to fatherhood between 30 and 33 (unweighted $N = 476$) and those who did so at 34 or above ($N = 272$). Although I do not show the results in a table, they can be briefly described. The two groups do not differ significantly in terms of race or family background, but the most delayed fathers have slightly higher average educational attainment, spent more of their twenties in school, spent less of their twenties in an idle state, and spent less of their twenties married. In short, the most delayed fathers were very likely not to have met the requirements for fertility prescribed by mainstream norms, namely leaving school for the workforce and marrying, until well into their twenties at the earliest.

Although delayed fathers are motr likely than other men to be non-Hispanic White and well educated, some are Black and Hispanic, or to have no more than a high

school education. Do the other distinguishing features of delayed fathers hold true across racial and educational categories? Table 2 answers this question with respect to race. There are many similarities between Black, White, and Hispanic men, but a few interesting differences as well. Children of relatively well-educated mothers are more likely to become delayed fathers if they are Black or White, but not if they are Hispanic, which probably reflects a greater likelihood that Hispanic respondents' mothers grew up outside the United States. Having been raised in an urban area increases the likelihood of non-Hispanic White men becoming delayed fathers. This factor has no effect on Blacks or Hispanics, but there is a non-significant tendency for delayed fathers to have been raised outside urban areas. This difference may reflect the relative socioeoconomic disadvantage of White, but not minority youth raised in rural areas. None of the other family background factors is correlated with being a delayed father in any racial group.

There are no substantial racial differences in the strong association between educational attainment and delayed fatherhood. Nor are there differences in the effects of time spent in school and time spent married during the twenties. In several other respects, Hispanics differ from White and Black men. Among Whites and Blacks, delayed fatherhood is associated with high employment earnings at age 29 and not having spent much of one's twenties in an idle state. Among Hispanics, these effects are smaller and non-significant. Only among Hispanics, by contrast, are delayed fathers less likely than other men to have spent much of their twenties cohabiting.

Table 3 compares delayed fathers and other men in two crudely defined educational categories: those who had attended at least one year of college by age 29, and those who had not. With certain obvious exceptions, the factors associated with being a

delayed father are the same in these two categories. Spending a large share of one's twenties in school is only associated with delayed fatherhood in the more educated group, because men with no more than a high school diploma were generally not enrolled in school from age 21 onward. It is not very surprising that mothers' educational attainment is only correlated with delay among more educated men. Idleness and marriage during the twenties, by contrast, have similar correlations with delay regardless of educational attainment, as do the background variables other than mothers' education.

Tables 2 and 3 provide partial and qualified support, at best, for the prediction that life history has more to do with delayed fatherhood among those likely to accept mainstream family timing norms. School enrollment is not a pathway to delay among the less educated. Idleness does not discourage delay among Hispanics, but living with a cohabiting partner does. Other than that, the same life history factors are correlated with delay regardless of race and educational attainment. It may be that race and educational attainment are poor proxies of men's family timing preferences, but before deciding this, the original prediction should be assessed in a multivariate framework, as I do later.

Life Pathways Through the Twenties

Tables 4 and 5 present results derived from a cluster analysis that was designed to identify typical life histories of NLSY79 respondents from ages 21 to 28 with respect to school, employment, marriage and cohabitation. After clustering the cases with Ward's method, the Calinski-Harabasz pseudo-F statistics indicated that the data contained five groups, while the Duda & Hart pseudo-T^2 statistics suggested that either a five or a six group solution fit the data. These stopping rules are merely suggestive; indeed, there is no definitive test of how many groups a cluster solution "should" contain (Aldenderfer

and Blashfield 1984). Nevertheless, the fact that both sets of statistics indicated an acceptable fit for a five-cluster solution gave me confidence in fitting a model for five groups using the k-means method, which requires one to specify the number of clusters in advance.

Table 4 profiles the five clusters. The algorithm assigned the largest number of cases (about one-third of the total) to a cluster I call the "married workers". Those assigned to this group were married for an average of 77% of the period between age 21 and 28, but were not likely to have been enrolled in school, idle, or cohabiting. Nearly as many cases were assigned to the group of "lonely workers", who tended to have been working full-time, not enrolled in school, and not living with an opposite-sex partner.

The other three clusters contain far fewer cases. The "students" were enrolled in school for an average of 56% of the period between 21 and 28. Like both the lonely workers and the married workers, they were unlikely to have spent much time idle or cohabiting. They fall somewhat between the other two groups, however, in the average percent of time they were married. Next, the "unsettled" group are distinguished by having spent a significant fraction of their twenties (an average of 61%) neither working full-time nor enrolled in school. They resemble the lonely workers and married workers in not having spent time enrolled in school or cohabiting, and they additionally mirror the lonely workers in not having been married. Members of the smallest group, the "cohabiting workers", resemble the married workers with the exception that they spent a good deal of their twenties cohabiting, and correspondingly little time married.

One interesting result of this analysis is that the four dimensions of life history I have chosen to analyze – school enrollment, idleness, marriage, and cohabitation – do not

covary positively. Instead, there is one group of men (the lonely workers) who are low on all four measures, and four groups who are high on one measure and low on the other three. The only partial exception is the student group, who were married for more of their twenties, on average, than the men in the lonely worker, cohabiting worker, and unsettled groups.

Table 5 shows the weighted distributions of early, on-time, and delayed fathers and childless men across the five life history groups. The important point for the purposes of this paper is that while the largest total number of respondents were lonely workers or married workers during their twenties, those who became delayed fathers were not very likely to have been married workers. Instead, they tend to have been lonely workers or students. This is consistent with the prediction that men are likely to delay fertility until they leave school and establish stable romantic intimacy. However, those who spent a substantial fraction of their twenties idle in an economic sense are not likely to have become delayed fathers. Instead, members of the unsettled group tend to have become fathers before age 22 or, if they reached this age without children, to have remained childless. Finally, cohabiting workers are equally likely to have become fathers early, on-time, late, or not at all.

Models of Adult Male Fertility

Baseline Models

My hypothesis about the effect of life history on fatherhood timing not only states that delayed fathers did not achieve employment and intimacy in their twenties, but also that they did so prior to becoming parents. Furthermore, I expected life history to be more important for non-Hispanic White and well-educated men. In this section, I test

these hypotheses within an event history framework. But first, I present baseline results about the predictors of fatherhood timing among all NLSY79 respondents.

Table 6 presents the results of models predicting the hazard of becoming a father between ages 22 and 29. They closely resemble findings that Rindfuss and colleagues reported in the 1980s. The first model controls for race, family background, and education. Although a number of the regression coefficients are significant in the expected ways, the model explains a very small percentage of the variance in the likelihood of fatherhood *(pseudo $R^2 = 0.019$)*.

The second model adds time-varying measures of educational, work, and relationship status. This model explains considerably more of the variance in the independent variable; a likelihood ratio test for the difference between models is highly significant *($p < .001$)*. In this model, being married has the strongest effect on the odds of becoming a father in the near future, although the effects of cohabitation and school enrollment are also very large. Being employed less than full-time, and not working at all, have very little effect on the odds of fatherhood six to seventeen months later.[4]

Table 7 presents models predicting the hazard of becoming a father among those childless at age 30. Once again, the first model, which controls for background factors, explains a very small share of the variance in the outcome, but the few significant

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[4] If I omit the controls for marital status and cohabitation, the effects of employment status become larger (father from 1.0) and statistically significant. The effect of part-time work (relative to full-time employment) on the odds of fatherhood drops from .95 to .69, and the effect of not working drops from .98 to .69. The other coefficients do not change in important ways when I exclude marriage and cohabitation. (These results are not shown.)

coefficients are in the expected directions. The second model adds respondents' young adult life histories, in the form of indicators for the group to which each respondent was assigned in the cluster analysis. (Married workers are the omitted category.) The life history measures significantly improve model fit *($p < .001$)*, but the overall variance explained remains modest. The coefficients for the life history measures show that those who were married workers during their twenties are the most likely to become fathers if they reach age 30 childless, while members of the unsettled group are the least likely.

The third model adds time-varying education, work, and relationship statuses. As in the results for ages 22-29, adding these measures to the model produces a large improvement in model fit and a big increase in variance explained according to the pseudo R^2 statistic. The results show that, with marital status controlled, married workers who reach age 30 childless are less, not more, likely than lonely workers to become delayed fathers. This implies that lonely workers during their twenties are very likely to become fathers if they marry after 30, a hypothesis I directly test shortly. The unsettled remain less likely than lonely workers to become fathers. As at ages 22 to 29, marital status and cohabitation remain very important predictors of fatherhood, but working part-time or not working are not significant.[5] School enrollment is no longer significant, primarily because so few respondents attend any kind of school after reaching age 30.

Earlier, I raised the question of whether men's behavior mediates the relationship between background factors and fatherhood timing, whether background moderates the

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[5] As before, the coefficients for work status are significant if I omit marriage and cohabitation from the model. The effect of part-time work (relative to full-time employment) on the odds of fatherhood drops from.84 to .55. The effect of not working drops from .74 to .42.

effects of behavior, or whether the two sets of factors have independent effects. Based on the result reported in Tables 6 and 7, there is little evidence for the first proposition, namely that background factors affect fatherhood timing by altering the opportunity structure within which young men make choices about school, work, and relationships. Past studies have suggested that parental socioeconomic status does the most to shape young adults' opportunities and constraints, but the measure of mother's education used here may be an inadequate proxy for parental socioeconomic status. Instead, most of the background factors that are significant remain so when current status is controlled. Notably, indicators of the respondent's race *become* significant in the model for fertility at 22 to 29 only when current status is controlled. This could be a symptom of a situation where the effect of current status on the hazard of fatherhood varies by race, a proposition I will test shortly.

Effects of Delayed Transitions to Employment and Romantic Partnership

Does life history during the twenties condition the factors that predict fatherhood in the thirties? To answer this question, Table 8 presents a separate model for the hazard of becoming a father between ages 30 and 33 for men in three of the five groups that were defined by the cluster analysis. These models were restricted to ages 30 to 33 for two reasons. First, men's histories during the twenties might be expected to affect the odds of fertility more in the early thirties than subsequently. Second, fewer individuals became fathers annually after their early thirties, rendering it impractical to split the sample and still accurately model the hazard.

Because most respondents who were childless at age 30 were lonely workers or students, the number of observations in the models for the other groups is very small. In

addition, the models for the unsettled and for cohabiting workers are not significantly better than a null model at the 95% confidence level, according to the chi-squared likelihood ratio statistics. Accordingly, I do not show the findings for these two groups. As a further concession to the small sample sizes, I had to combine the variables indicating whether men were working part-time or not working at all into a single measure. Finally, in the model predicting the hazard of fatherhood after 30 among those who were in the student group in their twenties, I contrast those with a college education to all others regardless of educational attainment because virtually everyone in the student group had at least some college by age 30.

In the model for those who were lonely workers in their twenties, marriage has a very large effect on the hazard of becoming a father after 30, and the effect of cohabitation is significant as well. This confirms that delayed achievement of romantic intimacy, and especially delayed marriage, leads to delayed fatherhood. Further evidence is provided by the effect of marriage upon men who were scholars during their twenties. Establishing a co-residential romantic relationship after 30 is clearly a prime explanation for becoming a delayed father.

The results in Table 8 show that men who spend a large fraction of their twenties in school are especially likely to become fathers after they graduate. This confirms the prediction that men will tend to behave in ways consistent with the norm that leaving school and establishing a career should precede fatherhood. Note, however, that working

part-time and not working do not suppress the odds of fatherhood among the student group, as might have been expected on the basis of the same considerations.[6]

A final point about the results reported in Table 8 is that high educational attainment increases the odds of becoming a father after turning 30 only among married workers. While it is indirect evidence, this is consistent with the argument that the reason why some men who are married during their twenties do not become fathers until after thirty is that their wives are educated and prefer to postpone motherhood in order to concentrate on their careers.

Racial and Educational Variation

To determine whether race and educational attainment moderate the effects of current status on becoming a delayed father, I estimated models with interaction terms. First, I interacted the variables indicating whether the respondent was Black or Hispanic with the five measures of current status and with the four indicators of life history during the twenties. I added these interaction terms to my most complete models of the hazard of fatherhood (Model 2 in Table 6 and Model 3 in Table 7). Next, I recoded time-varying educational attainment into two categories: high school diploma or less, and at least one year of college. I then interacted low education with current status and life history. Likelihood ratio tests showed that including the interaction terms always improved model fit at the 99% confidence level or better.

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[6] This is not due to the fact that marital status and cohabitation are controlled. The effect of not working full-time remains non-significant for those who were students in their twenties if these controls are omitted, although it becomes significant among those who were lonely workers.

Because the interaction models contain so many coefficients, and because interaction terms are somewhat difficult to grasp intuitively, I do not show the full results from these models. Instead, Tables 9 and 10 report the predicted effects of current status and life history within each racial and education group.

The findings in Tables 9 and 10 support my earlier prediction: life history better explains why men become delayed fathers if they are non-Hispanic White and highly educated. In the models with racial interactions (Table 9), marital status and cohabitation have weaker effects on Black men's hazard of fatherhood than on non-Hispanic Whites', which is hardly surprising given what is known about the racial differences in fertility by marital status (Ventura and Bachrach 2000) and by whether the father co-resides with the mother at birth (Carlson and McLanahan 2002). Marital status also has weaker effects on Hispanics' odds of fatherhood, particularly prior to age 30. In addition, having spent one's twenties as a married worker or in the unsettled group only reduces the odds of becoming a delayed father for White men. On the other hand, some of the processes leading to delayed fatherhood do not vary across racial groups. School enrollment during the twenties renders fatherhood less likely regardless of race. (I do not discuss the effect of school enrollment after 30 because it is a rare occurrence.) Also, even if the coefficients are significantly smaller for Black men than for others, marriage and cohabitation significantly increase the likelihood of becoming a father for all men.

When educational groups are compared, marital status has less of an effect on the hazard of fatherhood among men with a high school diploma or less than among those with at least some college. Cohabitation, on the other hand, has about the same effect regardless of educational attainment. Surprisingly, school enrollment suppresses the odds

of becoming a father during the twenties among both the less and the more educated. However, this finding is not very meaningful, as only a small percentage of those who had not gone beyond high school were ever enrolled in school during their twenties (about 1%). Practically speaking, school enrollment during the twenties is a pathway to delayed fatherhood only for those who are relatively well educated.

In addition, having been a married worker during one's twenties renders one likely to become a father after 30 only among those who attended college. I have already noted that men who marry young but become fathers late probably have wives who prefer to build their careers before becoming mothers; because of homogamy, such men are likely to be well-educated. Among the less educated, marriage in the twenties without children presumably indicates some other social or biological process, such as medical fertility problems or a lack of interest in children on the part of one or both spouses, that may not change as men age.

Discussion

Although it is commonly observed that men who become fathers at relatively late ages tend also to be non-Hispanic White, to be educated and to have spent part of their twenties in school or otherwise not working for pay full-time, and to marry late, there has not been a rigorous assessment of all these claims and their relative roles in delayed fatherhood timing outcomes using nationally representative data. Such an assessment is what I have endeavored to provide. By combining descriptive analysis with event history models, I have elucidated the individual-level characteristics of men that are most closely associated with delayed fatherhood, described the amount of socioeconomic and demographic diversity among delayed fathers, identified the life pathways most

correlated with delay, and also assessed hypotheses about the predictors of delay in a multivariate framework.

The analyses have confirmed many of my predictions. Men's backgrounds (in terms of race, family of origin characteristics, and education) and their school, employment and relationship statuses explain a significant but modest share of the variance in the hazard of becoming a delayed father. More exactly, they help account for why some men remain childless until age 30 and subsequently make the transition to fatherhood. The cluster analysis shows that most men were either lonely workers or students during their twenties, meaning they were employed but not usually married or cohabiting, or else they spent much of the time enrolled in school. Moreover, the event history models confirm the prediction that establishing a romantic partnership and leaving school are typically pre-conditions for fatherhood. Finally, life history better explains delayed fatherhood among non-Hispanic Whites and those with high educational attainment.

Before discussing the results further, it is important to acknowledge some limitations of this study. The drawbacks of the data with respect to coverage of the life course and adoption have already been mentioned. An additional issue that has emerged in the course of the analysis is that small numbers inhibit investigation into fertility timing among the cohabiting workers and the unsettled group. In addition, data quality problems cannot be dismissed, particularly where the unsettled group are concerned. Men who become fathers before 22 are more likely than others to be idle in their twenties (Brien and Willis 1997; Jaffee et al. 2001). What is more remarkable is that men who reach adulthood childless and are subsequently prone to idleness appear likely never to

become fathers – at least not by their late thirties or early forties. Following family timing norms, do they avoid parenthood because of their poor employment records? Do their potential partners see them as inferior prospective parents? How much of the problem is actually in the data; do these men simply refuse to admit having children? Although the male fertility data in the NLSY79 have been re-evaluated in an effort to identify as many true biological children as possible, there is no way to know if a man has a child who he consistently fails to claim during the interviews. Because men in the unsettled group seem relatively likely not to admit paternity (and also because they are a small group), I have avoided making inferences about their fertility timing.

Racial and educational diversity in delayed fatherhood have been a particular focus of this paper. The descriptive results confirm that men who are educated and non-Hispanic White are the most likely to become delayed fathers. Race and educational attainment, even when combined with a number of measures of family background, explain little of the variance in who becomes a father from age 22 onward, but this does not mean they are unimportant! Rather, race and early school exits have a large part of their effect on fertility timing during the adolescent and young adult years (Hanson, Morrison, and Ginsburg 1989; Jaffee et al. 2001; Thornberry, Smith, and Howard 1997).

Although delayed fathers tend to have stereotypical demographic characteristics, there is actually quite a lot of diversity among them. 13.7% of the population-weighted sample who became delayed fathers are men of color, and 35.8% had no more than a high school diploma at age 29. As I have shown, race and education do not just alter the odds of becoming a delayed father. They also condition the pathways to this outcome. As I had expected, a wider variety of life histories are associated with delayed fatherhood for

men who are educated and non-Hispanic White. For obvious reasons, it is only among educated men that school enrollment during the twenties leads to postponement of fatherhood. Also, it is mainly educated men married during their twenties who are likely to become fathers after thirty. Among the less educated, the primary pathway to delayed fatherhood involves not living with a spouse or cohabiting partner during the twenties, and finding one subsequently.

Despite the fact that Black and non-Hispanic White delayed fathers differ from early, on-time, and childless men of their own racial group in similar ways, the event history models do not do a good job of explaining why some Black men become delayed fathers. In accord with past work, marriage is considerably less of a pre-requisite for fatherhood among Blacks than among others. For some Black respondents, continuing their education during their twenties was a path to delayed fatherhood, but as I had expected, more delay among Black men than among non-Hispanic Whites needs to be attributed to explanations not evaluated here.

The results of this study suggest several questions that would be valuable to pursue in future research. Although men who become fathers after 30 tend to fit a stereotypical demographic profile, some readers may be surprised by just how diverse they are. Given that larger numbers of men are delaying paternity to the thirties or after, are delayed fathers becoming more like the general population? To my knowledge, high quality historical data about men's fertility timing are not available to help answer this question, but it would be very interesting to compare the NLSY79 cohort to younger men (such as the NLSY97 respondents) when they reach the appropriate age.

An intriguing issue that could be addressed with current data is whether race, educational attainment, or life history during the twenties shape the consequences of becoming a delayed father for men and their families. This general question could be approached in a number of ways, but one promising avenue relies on the theory of generativity. Men are obviously more likely to live with their children, to spend time with them, and to financially support them if they are married to the mother and stably employed. Once factors such as marriage and employment status are taken into account, does the timing of parenthood affect how generative men are? Does timing particularly matter for men with certain backgrounds or life histories? I have provided some evidence on how race and education condition delayed fathers' involvement in children's activities (Weinshenker 2005), but research on the other areas is needed.

Sources Cited

Aldenderfer, Mark S. and Roger K. Blashfield. 1984. *Cluster Analysis*. Beverly Hills, CA: Sage Publications.

Axinn, William G. and Arland Thornton. 2000. "The Transformation in the Meaning of Marriage." Pp. 147-165 in *The Ties that Bind: Perspectives on Marriage and Cohabitation*, edited by L. J. Waite. New York: Aldine de Gruyter.

Becker, Gary S. 1991. *A Treatise on the Family*. Cambridge, MA: Harvard University Press.

Brien, Michael J. and Robert J. Willis. 1997. "Costs and Consequences for the Fathers." Pp. 95-143 in *Kids Having Kids: Economic Costs and Social Consequences of Teen Pregnancy.*, edited by R. A. Maynard. Washington, DC: Urban Institute Press.

Carlson, Marcia J. and Sara S. McLanahan. 2002. "Fragile Families, Father Involvement, and Public Policy." Pp. 461-488 in *Handbook of Father Involvement: Multidisciplinary Perspectives*, edited by C. S. Tamis-LeMonda and N. Cabrera. Mahwah, NJ: Lawrence Erlbaum Associates.

Coltrane, Scott. 1996. *Family Man: Fatherhood, Housework, and Gender Equity*. New York: Oxford University Press.

Conger, Katherine J., Martha A. Reuter, and Rand D. Conger. 2000. "The Role of Economic Pressure in the Lives of Parents and Their Adolescents: The Family Stress Model." Pp. 201-233 in *Negotiating Adolescence in Times of Social Change*, edited by L. Crockett and R. Silbereisen. New York: Cambridge University Press.

Cooney, Teresa M., Frank A. Pedersen, Samuel Indelicato, and Rob Palkovitz. 1993. "Timing of Fatherhood: Is "On-Time" Optimal?" *Journal of Marriage and Family* 55:205-215.

Corijn, Martine, Aart C. Liefbroer, and Jenny de Jong Gierveld. 1996. "It Takes Two to Tango, Doesn't It? The Influence of Couple Characteristics on the Timing of the Birth of the First Child." *Journal of Marriage and Family* 58:117-126.

Daniels, Pamela and Kathy Weingarten. 1982. *Sooner or Later: The Timing of Parenthood in Adult Lives*. New York: W.W. Norton & Company.

Doherty, William J., Edward F. Kouneski, and Martha F. Erickson. 1998. "Responsible Fathering: An Overview and Conceptual Framework." *Journal of Marriage and Family* 60:277-292.

Erikson, Erik H. 1968. *Identity: Youth and Crisis*. New York: W.W. Norton & Company.

Furstenberg, Frank F., Jr. and Kathleen Mullan Harris. 1993. "When and Why Fathers Matter: Impacts of Father Involvement on the Children of Adolescent Mothers." Pp. 117-140 in *Young Unwed Fathers: Changing Roles and Emerging Policies*, edited by R. I. Lerman and T. J. Ooms. Philadelphia: Temple University Press.

Garfinkel, Irwin, Sara McLanahan, and Thomas Hanson. 1998. "A Patchwork Portrait of Nonresident Fathers." Pp. 31-59 in *Fathers Under Fire: The Revolution in Child Support Enforcement*, edited by I. Garfinkel, S. McLanahan, D. Meyer, and J. Seltzer. New York: Russell Sage Foundation.

Gibson-Davis, Christina M., Kathryn Edin, and Sara McLanahan. 2005. "High Hopes but Even Higher Expectations: The Retreat from Marriage among Low-income Couples." *Journal of Marriage and Family* 67:1301-1312.

Goldscheider, Frances K. and Linda J. Waite. 1991. *New Families, No Families?: The Transformation of the American Home*. Berkeley, CA: University of California Press.

Hamilton, Brady E., Paul D. Sutton, and Stephanie J. Ventura. 2003. "Revised Birth and Fertility Rates for the 1990s and New Rates for Hispanic Populations, 2000 and 2001: United States." *National Vital Statistics Reports* 51.

Hanson, Sandra L., Donna R. Morrison, and Alan L. Ginsburg. 1989. "The Antecedents of Teenage Fatherhood." *Demography* 26:579-596.

Heath, D. Terri. 1994. "The Impact of Delayed Fatherhood on the Father-Child Relationship." *Journal of Genetic Psychology* 155:511-530.

Jaffee, Sara R., Avshalom Caspi, Terrie E. Moffitt, Alan Taylor, and Nigel Dickson. 2001. "Predicting Early Fatherhood and Whether Young Fathers Live with Their

Children: Prospective Findings and Policy Recommendations." *Journal of Child Psychology and Psychiatry* 42:803-815.

Kalmijn, Matthijs. 1998. "Intermarriage and Homogamy: Causes, Patterns, Trends." *Annual Review of Sociology* 24:395-421.

Martin, Steven P. 2000. "Diverging Fertility among U.S. Women Who Delay Childbearing Past Age 30." *Demography* 37:523-533.

McLanahan, Sara and Gary Sandefur. 1994. *Growing Up with a Single Parent: What Hurts, What Helps*. Cambridge: Harvard University Press.

Miller, Warren B. and David J. Pasta. 1994. "The Psychology of Child Timing: A Measurement Instrument and a Model." *Journal of Applied Social Psychology* 24:218-250.

Mott, Frank L. 2002. "Augmented Male Fertility Variables for All NLSY79 Male Respondents, 1979-1998: User's Guide."

Nydegger, Corinne N. 1986. "Timetables and Implicit Theory." *American Behavioral Scientist* 29:710-729.

Oppenheimer, Valerie Kinkade, Matthijs Kalmijn, and Nelson Lim. 1997. "Men's Career Development and Marriage Timing During a Period of Rising Inequality." *Demography* 34:311-330.

Pears, Katherine C., Susan L. Pierce, Hyoun K. Kim, Deborah M. Capaldi, and Lee D. Owen. 2005. "The Timing of Entry into Fatherhood in Young, At-risk Men." *Journal of Marriage and Family* 67:429-447.

Petersen, Trond. 1991. "The Statistical Analysis of Event Histories." *Sociological Methods and Research* 19:270-323.

Raley, R. Kelly. 2000. "Recent Trends and Differentials in Marriage and Cohabitation: The United States." Pp. 19-39 in *The Ties that Bind: Perspectives on Marriage and Cohabitation*, edited by L. J. Waite, C. Bachrach, M. Hindin, E. Thomson, and A. Thornton. New York: Aldine de Gruyter.

Rendall, Michael S., Lynda Clarke, H. Elizabeth Peters, Nalini Ranjat, and Georgia Verropoulou. 1999. "Incomplete Reporting of Men's Fertility in the United States and Britain: A Research Note." *Demography* 36:135-144.

Research, Center for Human Resource. 2004. *NLSY79 User's Guide: A Guide to the 1979-2002 National Longitudinal Survey of Youth Data*. Columbus, OH: The Ohio State University.

Rindfuss, Ronald R., S. Philip Morgan, and Gray Swicegood. 1989. *First Births in America: Changes in the Timing of Parenthood*. Berkeley, CA: University of California Press.

Rindfuss, Ronald R., C. Gray Swicegood, and Rachel A. Rosenfeld. 1987. "Disorder in the Life Course: How Common and Does It Matter?" *American Sociological Review* 52:785-801.

Ryder, Norman B. 1973. "Recent Trends and Group Differences in Fertility." Pp. 57-68 in *Toward the End of Growth: Population in America*. Englewood Cliffs, NJ: Prentice-Hall.

Soloway, N. Maxine and Rebecca M. Smith. 1987. "Antecedents of Late Birthtiming Decisions of Men and Women in Dual-career Marriages." *Family Relations*:258-262.

Thomson, Elizabeth. 1997. "Couple Childbearing Desires, Intentions, and Births." *Demography* 34:343-354.

Thornberry, Terence P., Carolyn A. Smith, and Gregory J. Howard. 1997. "Risk Factors for Teenage Fatherhood." *Journal of Marriage and Family* 59:505-522.

Townsend, Nicholas W. 2002. *The Package Deal: Marriage, Work, and Fatherhood in Men's Lives*. Philadelphia: Temple University Press.

Ventura, Stephanie J. and Christine A. Bachrach. 2000. "Nonmarital Childbearing in the United States: 1940-1999." *National Vital Statistics Reports* 48.

Waller, Maureen R. 2002. *My Baby's Father: Unmarried Parents and Paternal Responsibility*. Ithaca, NY: Cornell University Press.

Weinshenker, Matthew N. 2005. "A Matter of Timing: Age at Transition to Parenthood and Father Involvement." in *American Sociological Association Annual Meeting*. Philadelphia.

Yamaguchi, Kazuo. 1991. *Event History Analysis*. Newbury Park, CA: Sage.

Table 1: Weighted Average Respondent Characteristics Overall and by Fatherhood Timing

	Non-fathers	Early fathers	On-time fathers	Delayed fathers	All respondents
Race					
Black (%)	13.2 d	25.1 a,c,d	11.8	8.9	13.5
Hispanic (%)	5.1	10.1 a,c,d	6.7	4.8	6.0
Lived in South at age 14 (%)	28.8	39.2 a,c,d	31.6	25.7	30.5
Urban at age 14 (%)	76.7	75.9	77.4	81.4	77.7
Intact family at age 14 (%)	74.8 b	66.2	78.6 b	80.7 b	77.2
Mother's highest grade completed	11.9 b	10.6	11.7 b	12.4 a,b,c	11.7
Catholic upbringing (%)	32.9	29.5	33.0	34.8	32.5
Number of siblings	3.0	4.1 a,c,d	3.3 a,d	3.0	3.3
Education at age 29					
Less than high school (%)	11.6 d	25.6 a,c,d	9.7 d	5.6	11.6
High school diploma (%)	41.4 d	58.2 a,c,d	46.1 d	30.2	43.8
Some college (%)	22.9 b	13.3	22.9 b	22.6 b	21.2
College graduate or more (%)	24.1 b	2.8	21.4 b	41.5 a,b,c	23.4
Earnings at age 29 (2001 dollars)	29220.9	28612.8	37589.3 a,b	40654.3 a,b	34337.8
% of 20s enrolled in school	16.2 b	4.2	13.3 b	23.7 a,b,c	14.3
% of 20s idle	14.6 c,d	16.3 c,d	8.4	6.7	11.2
% of 20s married	11.2	61.9 a,c,d	52.3 a,d	17.2 a	36.8
% of 20s cohabiting	4.7	7.9 a	6.0	6.7	6.2
% of sample	25.1	20.3	34.1	20.5	100.0
Unweighted N	854	941	1193	640	3628

Note: All results are based on the National Longitudinal Survey of Youth, 1979 Cohort
a = Significantly greater than non-fathers at the 95% confidence level
b = Significantly greater than early fathers at the 95% confidence level
c = Significantly greater than on-time fathers at the 95% confidence level
d = Significantly greater than delayed fathers at the 95% confidence level

Table 2: Weighted Average Characteristics of Delayed Fathers and Others by Race

	White		Black		Hispanic	
	Delayed fathers	All others	Delayed fathers	All others	Delayed fathers	All others
Lived in South at age 14 (%)	22.5	27.7	54.6	59.3	29.3	27.8
Urban at age 14 (%)	81.5	74.0 *	78.4	85.0	85.7	89.4
Intact family at age 14 (%)	84.1	79.4	55.0	53.0	66.3	64.7
Mother's highest grade completed	12.6	11.8 *	11.9	10.9 *	8.4	8.3
Catholic upbringing (%)	35.1	32.3	7.8	6.4	79.1	85.7
Number of siblings	2.8	3.0	4.2	4.6	3.9	4.7
Education at age 29						
Less than high school (%)	4.5	12.6 *	11.5	18.5	15.8	25.4
High school diploma (%)	29.4	46.8 *	40.0	53.2 *	27.7	45.7 *
Some college (%)	22.3	20.4	20.3	20.6	32.5	19.8
College graduate or more (%)	43.8	20.2 *	28.2	7.7 *	24.0	9.1 *
Earnings at age 29 (2001 dollars)	42180.9	35278.1 *	30539.1	21502.5 *	30627.7	28542.7
% of 20s enrolled in school	24.4	12.9 *	17.7	7.9 *	22.7	10.0 *
% of 20s idle	5.6	10.1 *	14.6	22.5 *	11.6	15.8
% of 20s married	17.7	45.3 *	13.7	24.5 *	15.0	41.9 *
% of 20s cohabiting	6.8	5.5	6.8	7.8	4.3	9.3 *
Unweighted N	479	2422	163	1217	106	758

* = significant difference between delayed fathers and all others, $p < .05$

Table 3: Weighted Average Characteristics of Delayed Fathers and Others by Educational Attainment at 29

	12 or fewer years			13 or more years		
	Delayed fathers	All others		Delayed fathers	All others	
Race						
Black (%)	12.6	18.1	*	6.6	11.7	*
Hispanic (%)	5.8	8.0		4.2	5.3	
Lived in South at age 14 (%)	30.0	34.2		22.9	30.0	
Urban at age 14 (%)	77.1	74.5		83.3	84.0	
Intact family at age 14 (%)	73.2	70.9		85.0	80.8	
Mother's highest grade completed	11.0	10.8		13.1	12.6	*
Catholic upbringing (%)	35.8	30.7		34.7	33.7	
Number of siblings	3.5	3.7		2.7	2.8	
Earnings at age 29 (2001 dollars)	31306.9	27852.1		45314.1	40561.2	
% of 20s enrolled in school	1.8	1.4		35.7	28.8	*
% of 20s idle	11.6	16.1	*	3.8	6.2	*
% of 20s married	17.6	44.6	*	17.6	37.7	*
% of 20s cohabiting	8.5	7.2		5.7	4.2	
Unweighted N	296	2653		434	1383	

* = significant difference between delayed fathers and all others, $p < .05$

Table 4: Unweighted Indicator Means for Life History Clusters

	Married Workers	Lonely Workers	Students	Unsettled	Cohabiting Workers	Total
% of 20s enrolled in school	4.7	5.6	56.0	2.4	6.0	
% of 20s idle	6.2	7.9	4.2	60.7	16.7	
% of 20s married	77.1	10.2	22.3	11.6	10.5	
% of 20s cohabiting	2.2	4.5	3.2	4.8	50.5	
Unweighted N	1182	1165	532	475	274	3628

Table 5: Weighted Cluster Membership (in %) by Fatherhood Timing (N = 3628)											
	Married Workers		Lonely Workers		Students		Unsettled		Cohabiting Workers		Total
Non-fathers	8.8		49.6	b,c	21.7	b,c	15.3	c,d	4.6		100.0
Early fathers	62.3	a,c,d	13.7		2.7		13.9	c,d	8.0		100.0
On-time fathers	54.1	a,d	19.5		14.9	b,c	5.5		6.0		100.0
Delayed fathers	9.8		47.7	b,c	31.0	a,b,c	4.0		7.4		100.0
All respondents	35.3		31.7		17.3		9.4		6.4		100.0
a = Significantly greater than non-fathers at the 95% confidence level											
b = Significantly greater than early fathers at the 95% confidence level											
c = Significantly greater than on-time fathers at the 95% confidence level											
d = Significantly greater than delayed fathers at the 95% confidence level											

Table 6: Discrete-Time Logistic Event History Analysis for Variables Predicting the Transition to Fatherhood at Ages 22 to 29

	Model 1		Model 2	
Predictor	Odds ratio		Odds ratio	
Black	1.05		1.71	***
Hispanic	1.12		1.27	**
Lived in South at age 14	1.13	*	1.03	
Urban at age 14	0.93		1.03	
Intact family at age 14	1.01		1.03	
Mother's highest grade completed	0.98	**	0.97	***
Catholic upbringing	0.99		1.10	
Number of siblings	1.03	**	1.03	**
Less than high school	0.95		1.00	
Some college	0.60	***	0.75	***
College graduate or more	0.72	***	0.78	**
School enrollment			0.61	***
Part-time employment			0.95	
Not employed			0.98	
Married			8.83	***
Cohabiting			3.18	***
$\chi 2$	235.09 (18)		1910.13 (23)	
Prob. > $\chi 2$	0.00		0.00	
Pseudo R^2	0.017		0.136	

Note: These models also contain indicator variables for the respondent's age (22 is the omitted category).
N = 25,185 person-years.
*p < .05. **p < .01. ***p < .001.

Table 7: Discrete-Time Logistic Event History Analysis for Variables Predicting the Transition to Fatherhood at Age 30 and Above

Predictor	Model 1 Odds ratio	Model 2 Odds ratio	Model 3 Odds ratio
Black	0.84	0.94	1.22
Hispanic	0.95	0.95	1.09
Lived in South at age 14	0.86	0.84	0.77 **
Urban at age 14	1.10	1.15	1.15
Intact family at age 14	1.13	1.11	0.92
Mother's highest grade completed	1.01	1.00	1.00
Catholic upbringing	0.93	0.92	0.99
Number of siblings	1.04 *	1.04 *	1.05 **
Less than high school	1.01	1.11	1.38
Some college	1.21	1.13	1.14
College graduate or more	1.84 ***	1.67 ***	1.36 *
Married worker		1.34 *	0.52 ***
Cohabiting worker		1.26	0.99
Student		1.06	1.02
Unsettled		0.48 ***	0.67 *
School enrollment			0.68
Part-time employment			0.83
Not employed			0.74
Married			8.75 ***
Cohabiting			2.71 ***
$\chi 2$	186.80 (24)	214.92 (28)	726.11 (33)
Prob. > $\chi 2$	0.00	0.00	0.00
Pseudo R^2	0.037	0.043	0.144

Note: These models also contain indicator variables for the respondent's age (30 is the omitted category).
N = 12,950 person-years.
*p < .05. **p < .01. ***p < .001.

Table 8: Discrete-Time Logistic Event History Analysis for Variables Predicting the Transition to Fatherhood between Ages 30 and 33

	Lonely workers	Students	Married workers
Predictor	Odds ratio	Odds ratio	Odds ratio
Black	1.53 *	1.19	2.37
Hispanic	0.98	1.66	1.90
Lived in South at age 14	0.59 **	0.90	0.76
Urban at age 14	1.01	0.84	1.29
Intact family at age 14	0.92	0.58 *	2.01
Mother's highest grade completed	1.03	0.96	1.05
Catholic upbringing	0.75	1.56	1.43
Number of siblings	1.10 **	0.94	0.98
Less than high school	1.62	-	2.72
Some college	1.05	-	1.23
College graduate or more	1.11	1.43	2.78 *
School enrollment	0.72	0.45 *	2.53
Part-time or not employed	0.93	1.27	0.56
Married	10.32 ***	24.41 ***	9.77 *
Cohabiting	2.88 ***	3.84 *	7.58
$\chi 2$	218.70 (16)	167.34 (14)	33.53 (16)
Prob. > $\chi 2$	0.00	0.00	0.01
Pseudo R^2	0.150	0.211	0.110
N (person-years)	2931	1514	516

Note: These models also contain indicator variables for the respondent's age (30 - 31 is the omitted category).
*p < .05. **p < .01. ***p < .001.

Table 9: Predicted Effects of Current Status and Life History on the Hazard of Fatherhood, by Race

	Age 22 - 29			Age 30 and Above		
	White	Black	Hispanic	White	Black	Hispanic
Predictor	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio	Odds ratio
School enrollment	0.63 ***	0.62 ***	0.53 **	0.59 *	0.51	1.43
Part-time employment	1.12	0.85	0.61	0.78	0.13	0.29
Not employed	1.10	0.80	0.93	0.88	0.53	0.80
Married	11.83 ***	3.97 *** a	7.95 *** a	12.50 ***	4.62 *** a	8.52 ***
Cohabiting	4.16 ***	1.69 *** a	4.02 ***	3.10 ***	1.90 a	5.63 ***
Married worker				0.46 ***	0.71	0.68
Cohabiting worker				1.19	0.76	0.53
Student				0.96	1.06	1.54
Unsettled				0.48 *	0.61	1.50 a
$\chi 2$	1982.14 (33)			762.29 (51)		
Prob. > $\chi 2$	0.00			0.00		
Pseudo R^2	0.142			0.151		
N (person-years)	25185			12950		

Note: These coefficients are dervied from models that also control for background measures and the respondent's age.
*p < .05. **p < .01. ***p < .001.
a = significantly different from non-Hispanic White at the 95% confidence level

Table 10: Predicted Effects of Current Status and Life History on the Hazard of Fatherhood, by Educational Attainment

	Age 22 - 29			Age 30 and Above		
	HS or less	Some college		HS or less	Some college	
Predictor	Odds ratio	Odds ratio		Odds ratio	Odds ratio	
School enrollment	0.59 **	0.65 ***		0.75	0.66	
Part-time employment	0.91	1.09		0.71	0.95	
Not employed	1.01	0.67		0.63	0.92	
Married	7.21 ***	13.40 ***	a	5.59 ***	13.16 ***	a
Cohabiting	3.09 ***	3.42 ***		2.08 **	3.55 ***	
Married worker				0.40 ***	0.74	a
Cohabiting worker				1.16	0.83	
Student					1.11	
Unsettled				0.66	0.69	
$\chi 2$	1947.38 (26)			752.91 (40)		
Prob. > $\chi 2$	0.00			0.00		
Pseudo R^2	0.139			0.149		
N (person-years)	25185			12950		

Note: These coefficients are dervied from models that also control for background measures and the respondent's age.
*p < .05. **p < .01. ***p < .001.
a = significantly different at the 95% confidence level