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Early Fatherhood Trajectories: A Latent Class Growth Analysis

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Abstract

Using the NLSY79 we confirm that young fatherhood results in men's subsequent disadvantage and establish that young fathers are a heterogeneous group regarding economic and social outcomes in young and middle adulthood. We describe early fatherhood trajectories (EFTs) in terms of fatherhood timing and its relationship to first marriage and holding fulltime employment. Using Latent Class Growth Analysis (LCGA) with 10 observations between age 18 and 37, we empirically derived four latent classes representing different EFTs: (A) Married Fully-Employed Young Fathers (19.1% of all males in the sample), (B) Married Fully-Employed Teen Fathers (9.2%), (C) Married Partially-Employed Teen/Young Fathers (5.2%), and (D) Unmarried Partially-Employed Teen/Young Fathers (4.4%). Men who become fathers around age 24 (cohort average) are our comparison group rather than all men or all fathers. We make three discoveries: 1) some young fathers are far more disadvantaged than others; 2) in contrast to motherhood, the disadvantage associated with young fatherhood increases with age, and 3) the relationship context and fulltime employment status surrounding a birth matter. With sociodemographic factors controlled, we find differences among EFTs in terms of marital and fertility behaviors, income, educational attainment, and incarceration. These findings have implications for understanding the heterogeneity among young fathers.

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INTRODUCTION

Policy makers and others are concerned that many young men today are only loosely attached to their children, their children's mothers, and the workforce.¹ This concern has been fueled by rising rates of non-marital childbearing, delays in the age of marriage, an indefinite retreat from marriage, increases in the share of children being raised in impoverished female-headed families, and the failure of some biological fathers to provide economic support to their children.

These trends are a cause of concern because accumulating evidence suggests that children living in a single parent household, especially one headed by a never-married mother, can experience substantial negative consequences, including poverty, problems with school, delinquency, dropping out, failure to go to college, having babies as teenagers, and having difficulty finding employment (Cherlin & Furstenberg 1994; McLanahan & Sandefur 1994). There is recognition that these shifts in family life are linked to shifts in the labor force participation of men and women. For example, several analysts have suggested that the observed phenomena can be partially explained by declines in young men's ability to establish and maintain stable career trajectories (Anderson 1990; Oppenheimer et al. 1997).

There are significant gaps in our knowledge about men's roles in childbearing and marriage decisions, and the links between family and work for men. Sorting out the interconnections between employment and family patterns is complex because individuals typically make a number of transitions as they move out of their teen years into their twenties. These transitions are often packaged or occur together and include school completion and entry into the labor market, entry

¹ Welfare reform legislation in 1996 aimed to increase relationship stability by encouraging marriage and discouraging nonmarital childbearing. Research suggests that from 1997 to 2002, the share of children under 5 who live with single mothers declined, the share of children living with married parents increased and the share of children living with unmarried parents increased (Acs and Nelson 2003). Now the bills passed by both the House

into romantic unions of various kinds, and the occurrence of pregnancies and births.

Surprisingly little descriptive work has been done since Rindfuss (1991) documented the complexity and density of the transitions that occur as teenagers grow up in the U.S.

What We Know about Early Motherhood

In contrast to early fatherhood, an extensive body of research has focused on mothers who are young (Geronimus, 1994; Jaffee, 2002), unmarried (Wu & Wolfe, 2003), or both (Furstenberg, 1991; Moore, Manlove, Gleib, & Morrison, 1998). These indicators of at-risk motherhood are moderately correlated, although decreasingly so. In addition, children of mothers who first gave birth as teens also experience poor life outcomes (Coley & Chase-Lansdale, 1998).

Although many teenage mothers experience compromised socioeconomic conditions prior to motherhood, these disadvantages are exacerbated by youthful childbearing. In terms of economic outcomes, teenage mothers report more employment instability, lower incomes, and greater reliance on welfare assistance (due to poverty) than their peers who delay motherhood. These outcomes are, in part, attributable to the lower likelihood of adolescent mothers earning a High School diploma, especially if they have subsequent children in close succession. Young mothers are more likely to report lower psychological functioning (for example, greater depression) and greater psychological distress. Youthful mothers spend many years raising their children as single-mothers; their motherhood status may, in part, lower their marital attractiveness. Those who do marry tend to marry young and experience high divorce rates (for various reasons including limited resources and immaturity).

Finally, recent research on the sequelae at-risk motherhood has found that although many young, unmarried mothers experience decrements in earnings, union stability, and welfare in the years when their children are young, later in life differences between these mothers and other

and the Senate include funding (\$200 or \$300 million per year) for marriage incentive programs and additional funds for fatherhood programs.

mothers become much smaller (Furstenberg et al., Geronimus). These negative effects of youthful motherhood have declined in recent years as women work to earn their GED and enter the workforce once their children enter school. Welfare reform has created opportunities and expectations for both school completion and employment.

What We Know about Early Fatherhood

Paralleling this literature on at-risk motherhood, a much smaller but growing set of studies has also investigated young and/or unmarried fatherhood. This literature has particularly addressed factors associated with teen fatherhood, and the service needs of teen and young married fatherhood (Lamb & Elster book, 1986; Lerman & Ooms, 1993; Marsiglio & Cohan, 1997; McLanahan & Carlson, 2004). In addition to negative consequences for the mother and child, young and/or unmarried fatherhood are generally assumed to have negative consequences for the male himself in later life. This assumption provides part of the rationale for programs designed to delay males' transition to fatherhood, and for interventions fostering marriage among young unmarried males whose partners become pregnant. Several studies have empirically examined the consequences of teen and/or unmarried fatherhood (Marsiglio, 1986; Nock, 1998; Sigle-Rushton, 2003); this empirical literature is small, however. In addition, Cooney et al. (1993) investigated psychosocial outcomes with "young" fatherhood (defined as earliest quartile of age at first fatherhood).

Research on the consequences of young and/or unmarried fatherhood has to address several issues. First, these studies typically look at the joint effect of being young and being unmarried (but see Nock, 1998), risk factors that are positively correlated for fathers as they are for mothers (Marsiglio, 1986). In 2000, 79 percent of all adolescent births were non-marital (AGI, 2002). This is a positive design feature, given the sequelae of either risk factor for men

have been found to be contingent on the context of the other (Marsiglio, 1986; Sigle-Rushton, 2003). Other aspects of the context of studies, however, have not generally been included. Particularly likely to be important is the father's employment status. Although employment status has been examined as an outcome influenced by early and/or unmarried fatherhood immediately following the birth (Marsiglio, 1986), it has not been considered as a factor to take into account when investigating the effects of early fatherhood on other outcomes [such as education, earnings, and incarceration].

Second, selection effects need to be taken into account, in that men who become fathers early and/or outside of marriage may differ markedly from those who do not in their sociodemographic background characteristics. Prior studies suggest that selection factors account for much of the poorer later life outcomes experienced by who become fathers when young and/or unmarried compared to those who do not, although some differences remain. For example, Sigle-Rushton (2003), using a U.K. sample of men who become fathers prior to age 22 and a matched sample of older men who had children or did not become fathers, found that by age 30 early fathers only differed on three outcomes: public housing subsidies, welfare receipt, and malaise. Men did not differ on unemployment/ low occupational status. According to Sigle-Rushton childhood disadvantages are in large part attributable to early fatherhood and its associated negative outcomes. One other important pattern pertained to relationship context of a birth. Men who were not in a union with their female partners at the time of the birth evidenced outcomes, especially pertaining to employment, poorer than men in unions. In Nock's analysis of later life outcomes associated with unmarried fatherhood in the NLSY 1979, a deficit in earnings of decreased yearly employment, and increased poverty status of men under age 20 and between 20 and 25 relative to men over age 26, decrease in their association after controlling for

race, family background, and individual characteristics. When men's relationship history (ever-married or ever-cohabited) is further added to the models, most of the relationships between early fatherhood and earnings, employment, and poverty are no longer significant. The one outcome variable robust against these selection variables is educational attainment.

Research Questions

The impetus of this study is to reveal the heterogeneous patterns of men's timing, ordering, and outcomes of transitions into worker, spouse, and parent roles. This study simultaneously examines how early fatherhood transitions, marital status, and fulltime work status relate to men's income earnings at ages 26 and 37, the number of marriages men report at ages 26 and 37, the number of children men have by ages 26 and 37, men's incarceration history by age 26, and men's highest educational attainment by age 37. Three research questions guide the analyses of this study. First, *do all young fathers have similar early life trajectories and if not, how do trajectories vary in terms of their first marital union formation, and their full-time employment status across time?*

Second, assuming a small number of trajectories are identified, *what sociodemographic background characteristics are associated with these varying early fatherhood trajectories (EFTs)?* We identify men's characteristics associated with different classes of early fatherhood.

And, third, again assuming a small number of trajectories are identified, *how are EFTs associated with life outcomes in young adulthood (age 26), and in later adulthood (age 37), with sociodemographic background characteristics controlled?*

This study documents and describes how young men appear to sequence and interconnect work, marriage, and fatherhood roles, and how these patterns vary across subgroups of the population. Specifically, we employ latent variable analyses to jointly model these processes

and we use early fatherhood transitions as a substantive example of why we need to appreciate and assess the heterogeneity of men who transition into fatherhood at roughly the same time.

DATA AND METHODS

Sample

The 1979 Cohort of the National Longitudinal Survey of Youth (NLSY79), a nationally representative sample of youth aged 14 to 21 in 1979, is the data source for this study. These youth were interviewed annually until 1992 and biennially since then. These analyses are limited to the cross-sectional sample representative of the non-institutionalized civilian population of young people born from 1957 to 1964. Furthermore, we excluded female respondents and over-samples of poor respondents. This resulted in a sample size of 2800 men who were either African American, European American, or Latino. As described below, we examine men's role trajectories from age 18 through 37, spanning nearly 20 years of development. To ensure all men contributed data on variables of interest from age 18 through 37, we included men's data for these ages only². Given the complexity and statistical limitations of analyzing 19 times of measurement, data from ten approximately evenly spaced ages (18, 20, 22, 24, 26, 28, 30, 32, 34, 35, and 37) were used. The full-data inclusion criterion of the analytic strategy restricted the study sample to men with complete data for these ten ages; the final study sample size is 1,992 men.

Variables for Latent Class Analysis

Three binary variables were created for each of the ten ages: ever fatherhood, ever married, and full-time work status (30 hours per week or more).

Ever fatherhood status. We used birth date information from the respondents' oldest

² For example, respondents aged 14 in 1979 were age 18 in 1983 and we used data from that time through age 37 for these analyses.

child and his own birth date to calculate the respondents' age at first biological fatherhood. This enabled us to code whether or not each respondent was a father by each year of age and beyond. Respondents who never transitioned into fatherhood were coded 0 on this variable for all ages up to 37. Men who became fathers were coded 1 for the age at first fatherhood and for each subsequent year of age up to age 37. For example, if we calculated that a respondent became a father for the first time at age 19, he was also coded as being a father for ages 19 through 37 (ever a father by age 37: N= 1429; 71.7%). We did not permit men to reverse this transition; that is, men whose only child died retained a code of 1 after the death.

Ever married status. We use a similar strategy for calculating fatherhood status. We pooled across all survey years to calculate the date of first marriage for each respondent and used his birth date to generate his age at first marriage. Respondents who never married were coded 0 for marital status at all ages up to age 37. Respondents who ever married were coded 1 for ever married marital status beginning at the age of first marriage and beyond up to age 37 (ever married by age 37: N= 1581; 79.4%). Given the construct was ever married, men who separated or divorced were still coded as 1.

Fulltime work status. The NLSY79 provides data on each respondent's labor force activity for each week of the calendar year prior to the interview, including the total number of hours worked at each job. We aggregated this weekly data to calculate each man's median yearly work hours. Men who worked 1,440 hours or more a year (consistent with working 30 hours per week for 52 weeks) were classified as working fulltime for that year. For each age, we coded 0 for men who did not meet or exceed this criterion for hours worked in the past year and coded 1 for men who met or exceeded this criterion. Unlike the marital and fatherhood status variables, fulltime work status is allowed to vary (0 to 1 or 1 to 0) over time from age 18 to 37. So a man who received a code of 1 (working full time) at age 26, might receive a 0 at age 28.

Background Demographic Variables and Covariates

Race/ Ethnicity. Our analyses include men of four racial/ ethnic backgrounds: Whites/ other (non-Hispanic whites, Asian Americans, missing ethnicity), Blacks (non-Hispanic blacks), and Latinos. The sample consisted of approximately 81.1 percent white, 12.4 percent black, and 6.5 percent Latino male youth.

Highest educational attainment. During each survey year respondents were asked their highest year of education completed to date. The sample average is 13.3 years of education (some college).

Youth poverty. We used youth poverty status variables from 1978 and 1979 (1= in poverty; 0 = not in poverty). These variables were created based on measures of family income at the time each youth entered the study (ages 14-21). Approximately 10.4 percent of the sample experienced youth poverty.

Family structure at age 14. In 1979 respondents reported with whom they lived at age 14. For these analyses, we recoded living arrangements at age 14 into four categories: with both biological parents, with one biological parent only, with one biological parent and a stepparent, and no biological parents. Both biological parents households were the predominant living arrangement at age 14 (77.6%) followed by biological and stepparent (8.4%), single biological parent (11.9%), and last no biological parents (2.1%).

Mother's characteristics. Mother's highest level of educational attainment, a continuous variable, was collected in 1979 and is used as a control variable in these analyses. Given the NLSY79 does not report whether a man's mother was a teen-mom at the birth of her first child, we use mother's age at the time of the respondent's birth as a control variable.

Limited work. Beginning in 1979, men reported whether their health limits the kind of

work they can do. If a man reported his work was limited by his health by age 26 and by age 37, he was coded as being limited in work. he was disabled or unable to work during any wave, he was coded as ever being disabled (N=332; 16.7% by age 26; N=488; 24.5% by age 37).

Outcomes – Age 26, Age 37, and Lifetime

Respondents' income at ages 26 and 37. Annual incomes for each survey year were calculated based on wage data for each respondent. The sample average of income was \$17210.08 at age 26 and nearly \$39781.38 at age 37.

Respondents' highest educational attainment by age 37. Respondents reported their highest grade of educational attainment over time. The sample average was 13.5 years of education (1.5 years beyond high school).

Number of marriages at age 26 and 37. Men reported the total number of marriages reported closest to ages 26 and 37 were calculated. By age 26, nearly half (46.8%) of the sample had never married, 47 percent were married once, and 5.9 percent were married two time or more. More than one-fifth of the sample did not report ever being married by age 37 (20.6%). Over half of the men reported being married once (56.5%) and 22.9 percent of the sample reported higher-order marriages.

Number of biological children at ages 26 and 37. Men reported the number of biological children they had and we coded the number at ages 26 and 37. By age 26 about two-thirds (62.7%) of the sample did not have any children, 20.9 percent had one child, 12 percent had two children and 4.4 percent had three or more children. By age 37 over one-fourth had no children (28.3%), 18.9 percent reported one child, 30.6 percent reported having two children, and 22.2 percent reported having three or more children.

Incarceration: By age 26. Given that the NLSY79 does not contain an item that directly asks men if they have ever spent time in prison or jail, incarceration by age 26 was created using residence

items from age 18 to 26³. If a man ever reported he was currently residing in jail or prison, he was coded as having a history of incarceration (N=121; 6.1%). This by necessity is an underestimate given it is likely that many inmates attrited, at least while they were in prison.

Analytic Strategy – Latent Classes

Given the dichotomous nature of status variables and the need to assess trajectories overtime, we chose a longitudinal categorical data analysis strategy to address our primary research question - what trajectories emerge with respect to the interplay of fatherhood, marital, and work behavior patterns?

Overview of latent class approaches. In principle, Latent Class Analysis (LCA) is akin to factor analysis with categorical variables (Lanza & Collins, 2006); how classes of individuals respond to various items can be thought of as equivalent to factors of items. Traditionally, LCA has been limited to single points in time and Latent Transition Analysis (LTA) is used to model the transitions among classes across adjacent time points. One limitation of LTA is that the class structure at one time point may not be the same as at latter time points even if the same number of classes is specified. This is also true of factor analysis; three factors may emerge at time 1 and time 2, but the loadings of specific items may be different for the two time points, resulting in different definitions and meanings over time. Although LTA has the added advantage of modeling across time, one may be comparing apples to oranges over time even though the same overall number of classes is generated for each time point. Furthermore, software for modeling LTA is capable of handling a maximum of five time points and the computational intensity of doing so is overwhelming. To avoid both limitations – so we can model as many time points as possible in the same model to ensure equivalent meaning – we ran Latent Class Analysis for

³ Very few men reported being incarcerated for the very first time after age 26 and the number of men incarcerated between ages 27 and 37 was too small for statistical analyses. Hence, we limit our analyses to incarceration prior to and including age 26.

repeated measures, also known as Latent Class Growth Analysis (LCGA) (Lanza & Collins, 2006; Muthén, 2004).

Latent Class Growth Analysis (LCGA). In this study we use a new and advanced statistical method, LCGA, to *empirically* derive the set of life course contextual patterns in which employment, marriage, and fatherhood occur. This method derives varying patterns of the acquisition of roles over the life course, taking into account the sequencing and the timing of fatherhood and other roles (in our application, marriage and fulltime employment). Although our sample is restricted to men with complete data, we derive early fatherhood pathways in an LCGA analysis of a variety of men rather than just within the subsample of men who are early fathers. Why is this useful? First, we want to identify classes/pathways of early fathers in the context of all classes of patterning/sequencing of these roles. Part of the idea of different pathways is that pathways are defined relative to each other. By deriving latent classes in a broad sample, early father pathways are defined relative to non-early-father pathways. Second, rather than we defining some arbitrary age cutoff for early fatherhood a priori (a controversial issue, which has become even more so in light of the “emerging adulthood” concept and the difference in defining “early” for different cohorts of people), we used LCGA to inform us how early fatherhood should be defined. In other words, this strategy yields a set of early fatherhood classes/pathways in the context of other classes/pathways. Third, empirically derived (rather than a priori established) non-early-father classes serve as comparisons for the early father classes/pathways.

Latent class growth analyses (LCGA) is the equivalent of Latent Class Analysis for repeated measures (Lanza & Collins, 2006). Each class represents a pattern of behaviors across the times of measurement specified in the model (ten times of measurement for this study). In

these analyses, we use fatherhood transition patterns, marital transition patterns, and fulltime employment status over time to represent distinct trajectories. As a result of LCGA, multiple classes are empirically generated and these classes (or subgroups) of men are homogeneous with respect to how they respond to these three items over time. In other words, men in the same class are assumed to have, at each age, equal probabilities of fatherhood, marriage, and employment in the way defined by the class. The major advantage of this strategy over LTA is that rather than defining classes at each of multiple points in time, where there is the risk of different class interpretation at the different time points, classes in LCGA are themselves defined as patterns over time. That is, each LCGA class represents a configuration of both the *ordering* of the three transitions and the *age* at which each transition occurs.. For example, two classes may emerge characterized by the same transition sequencing (e.g., fulltime work followed by marriage and then fatherhood) but different life-stage timing and/ or different spacing: one during the mid-20s that spans 10 years and the other during the mid-30s that spans five years.

Model estimation. The current analyses were generated using Proc LCA for SAS 9.1. Given the difficulty of handling missing data in LCGA models, listwise deletion was used based on the three variables of interest over time (marital, fatherhood, and fulltime work status). This reduced the overall sample size from 2800 to 1992 (a 29% reduction). The demographic characteristics of the analytical sample and the attrited sample are reported in Table 1.

Analytic Strategy – Linear and Logistic Regression

For continuous outcome measures, we use linear regression to determine whether EFTs predict each outcome after controlling for the other covariates in the model. For the dichotomous outcome (incarceration) we use logistic regression. Hence, the results are the unique and independent contribution of each variable in predicting each outcome measure of interest at ages

26 and 37 (where applicable).

On-Time On-Sequence fathers serve as the referent class for EFTs. We chose this comparison group to avoid a common problem in studies of the consequences of parenthood timing. That is, if people who delay parenthood substantially, who may achieve very high levels of attainment, are included in the comparison group with those who become parents at average ages, one may easily mistake positive effects of delaying parenthood substantially with negative effects of becoming parents early.

RESULTS

According to Table 1, the reduced sample used in these analyses (n=1992) does differ on some demographic variables and not on others relative to the sample of respondents who lacked at least one observation from the 10 used in these analyses (n=808). The analytic sample is more advantaged in terms of youth poverty, highest educational attainment, living with both parents at age 14 and less likely to live with step parents, and less likely to have mothers with less than a high school education. Although the two samples do not differ with respect to proportion of Black men, they do differ on the proportion of white and Hispanic men with the analytic sample having more white men and fewer Hispanic men. As described below, these variables are controlled in our analyses.

Insert Table 1 about here

Research Question 1: Do all young fathers have similar early life trajectories and if not, can a small number of distinct trajectories be identified?

Using Latent Class Growth Analysis (LCGA) for ten points of measurement with three variables at each point, there are eight possible classes at each time point (no transitions, fulltime work only, marriage only, fatherhood only, work and marriage, work and fatherhood, marriage

and fatherhood, and all three statuses). The total number of possible combinations across all ten time points is 8^{10} . Backward transitions (such as having a positive value for having made the transition to fatherhood at 20 but scored negatively for having made the fatherhood transition at later ages) can be excluded. Even with these backward transitions excluded, however, the number of theoretically possible combinations unmanageably large. LCGA reduces these combinations into a smaller number of latent classes representing trajectories of first fatherhood, first marriage, and fulltime employment over the period from age 18 to age 37.

The Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) for models with different numbers of classes were used to determine the best fitting model. The model with 12 classes had the best fit (AIC = 10518.66, BIC = 12595.11 compared to values of 10713.68 and 12616.62 for the 11 class model, and of 10719.32 and 12969.27 for the 13 class model), and was the most interpretable.

In four of these latent classes, the median age at first fatherhood was lower than the median age of first fatherhood (26.4) in the National Survey of Family Growth (NSFG) 2002 for men of this same age (author calculation) and thus became the groups of interest. These four classes comprise 37% of the sample,. Given these latent classes represent patterns of the sequencing of marriage and fulltime employment in relation to early fatherhood over the lifecourse to age 37, they are hereafter referred to as early fatherhood *trajectories* (EFTs).

For each early fatherhood trajectory, proportions are reported in Table 2 and graphically depicted in Figure 1 with positive values for first fatherhood, first marriage, and fulltime employment at each age observation. Data for a fifth class derived from the LCGA, a large single class (17.0%) and termed here On-Time On-Sequence Fathers, are also provided.

Insert Table 2 & Figure 1 about here

A. Married Fully-Employed Young Fathers (19.1%). Nearly one in five males in the entire sample evince the Married Fully-Employed Young Fathers trajectory. The age by which half of men transition into first fatherhood for this early fatherhood trajectory is 23.5, about 4.5 years younger than On-Time On-Sequence fathers. In this trajectory, early fatherhood occurs in the context of working fulltime given that half of men in this class work fulltime from age 19.6 onward. On average these men begin working fulltime about four years prior to first birth, followed by marriage several years later (approximately age 21.5) which is, in turn, followed by fatherhood two years later. Although their age at first fatherhood is somewhat younger than average, these men are well into their 20s at first birth, with very few having any children prior to age 20. The age at which half of these men transition into first fatherhood is considerably higher than the age of the other three early fatherhood trajectories. Further, for these young fathers, fatherhood occurs as the last stage of the socially normative sequencing of work preceding marriage, and marriage preceding fatherhood. What is non-normative about their sequencing is that they 1) start these role transitions (beginning with fulltime employment) early relative to the average, and 2) proceed through the role transitions relatively quickly, i.e., have shorter intervals between role transitions. Compared to the On-Time On-Sequence Fathers in Figure 1, the lines in the Married Fully-Employed Young Fathers' chart are both offset to the left (denoting earlier ages), and the intervals between them compressed.

B. Married Fully-Employed Teen Fathers (9.2%). Men in this second most frequent early fatherhood trajectory have their first children at the earliest of any of the four early fatherhood classes. Given that half of men in this class transition into fatherhood by age 19.2

and about 70 percent have a birth prior to their 20th birthday, we characterize this class as *teen* fathers. Married Fully-Employed Teen Fathers typically marry prior to the first birth, but the interval between marriage and birth is quite short (ages differing by 0.6). In addition, these fathers engage in fulltime employment coincident with first birth, rather than prior to it as in class A. To summarize, in contrast to A/Married Fully-Employed Young Fathers, B/Married Fully-Employed Teen Fathers 1) have children earlier, 2) have marriages preceding birth by a shorter interval, and 3) undertake fulltime employment simultaneously with birth rather than years before.

C. Married Partially-Employed Teen/Young Fathers (5.2%). Half of men in this early fatherhood trajectory have their first child by age 21.2. As 30% have their child before age 20 and 70% do so after, we characterize them as a mixed *teen/young* father class. This class marries nearly simultaneously with their first birth which suggests that for some, marriage might be inspired or timed by the pregnancy. A distinctive feature of this trajectory in contrast to the two earlier ones is the low rates of fulltime employment. This rate does not rise above 20 percent through their early 20s, and only slowly rises from 30 to 50 percent from their age 29 to age 37. Even though all men in this trajectory are married and have children by age 27, fewer than one third have fulltime employment by age 29 and only half have fulltime employment at age 37.

D. Unmarried Partially-Employed Teen/Young Fathers (4.4%). This final early fatherhood trajectory likewise straddles 20 as the age at which half report a first birth; about 45% report first birth prior to age 20. The first distinctive features of this early fatherhood trajectory is that members show higher rates of fulltime employment at earlier ages, reaching 50 percent by age 23 and remaining stable at nearly 60 percent through their 30s. Second, this class has the lowest rate of marriage of any EFT class, with no members reporting a marriage until after age

28, with less than 30 percent marrying by age 37. It is likely that many of these marriages are to a woman other than the first child's mother.

On-Time On-Sequence Fathers. The On-Time On-Sequence Father trajectory is the second largest latent class of the 12 we derived⁴, and evinces median ages of first fatherhood, first marriage, and rates of fulltime work close to the medians observed in the NSFG 2002 (author calculations). Focusing specifically on On-Time On-Sequence fathers, the age by which half of men have entered fatherhood is approximately 28; similarly the age by which half of men have married for the first time is nearly 25 and the age by which half are currently employed fulltime is slightly older than age 21. Men in this class serve as our comparison group rather than all men or all fathers. This strategy protects us from mistaking very high levels of attainment by men who delay fatherhood for disadvantage among young fathers.

Research Question 2: What sociodemographic background characteristics are associated with these varying early fatherhood trajectories?

We assessed the bivariate associations between early fatherhood trajectory and four sociodemographic background characteristics (race-ethnicity, youth poverty status, living arrangements at age 14, mother's education). The results are reported in Table 3.

Insert Table 3 about here

All Early Fathers versus On-Time On-Sequence Fathers. Table 3 shows that when the men in all EFTs are pooled, and contrasted with the reference group (top panel of the table), they are more likely to be ethnic minorities (although the percent Hispanic does not reach statistical significance) and more likely to be disadvantaged (in terms of youth poverty, family constellation at age 14, maternal

education). These differences are apparent whether the comparison is with all men or with the On-Time, On-Sequence men.

Individual EFTs and On-Time On-Sequence Fathers. Turning to specific EFTs and their association with these demographic characteristics, we find heterogeneity⁵ among EFTs. EFT classes C and D each fare worse than On-Time On-Sequence fathers with respect to the SES indicators. They are also more likely to be black (but not more likely to be Hispanic).

With respect to race-ethnicity, EFT classes C and D have high proportions of racial-ethnic minorities (i.e., significantly different from On-Time On-Sequence Fathers, and from EFT classes A and B). EFT class C consists of 22 percent black men and over half of EFT class D are black men.

In terms of youth poverty, the same two EFTs also have high rates (over one-third of EFT class D and one-sixth of class C). Similar to the findings for youth poverty, the lowest percent of men who lived with both parents at age 14 are reported by EFT class D (58%) and class C (60%). Mother's education is the only sociodemographic variable reported in Table 3 whereby all four EFTs report significantly lower values relative to On-Time On-Sequence fathers with men in class A reporting nearly one year less and other classes reporting 1.5 years less of maternal education. On average, men from all four EFTs report their mothers earned less than a high school education with three reporting less than eleventh grade attainment for their mothers.

In contrast to the findings for combined EFTs, the differences among EFTs are notable with classes C and D faring worse than On-Time On-Sequence fathers on all of the variables except Hispanic ethnicity. These findings also reveal that class D differs significantly from EFT classes A, B, and C with respect to race and youth poverty and differ from EFTs A and B in

⁴ This paper does not discuss the seven other latent classes in the LCGA.

⁵ Multiple group comparisons with Tukey adjustments were used for these bivariate analyses. Classes that do not share any common superscripts are statistically significantly different from each other.

terms of living arrangements at age 14.

Research Question 3: How are varying early fatherhood trajectories associated with life outcomes in young adulthood (age 26), and in later adulthood (age 37)?

Given EFTs C and D include significant higher proportions of racial-ethnic minorities, those experiencing youth poverty, those not living with both parents at age 14, and men reporting lower levels of maternal education attainment than do trajectories A and B, it is evident that there are important selection differences among the trajectories. Thus, in comparing the four trajectories on later life outcomes, it is essential to control for differences in socioeconomic background. For each outcome we report three regression models. Model 1 depicts the relationship between each EFT and the outcome of interest with no other variables. Only sociodemographic variables are used to predict the outcome in Model 2. Both EFTs and sociodemographic variables predict the outcome in Model 3, thereby representing the unique contribution of each variable above and beyond the other variables in the model. Differences in R-squares from Model 2 and Model 3 for continuous variables denote whether the addition of EFTs to the model significantly improves the model.

Early Fathers' Income – Ages 26 and 37. Both log-income and income were modeled. Analyses determined that log-income models did not fit the data any better than income in dollars models. For ease of interpretation, only income in dollars for both ages 26 and 37 are presented in Table 4. According to Model 3 in Table 4 (Column 3) for income at age 26 men in EFTs C and D report significantly lower incomes than On-Time On-Sequence fathers. To put this in perspective, after controlling for sociodemographic variables including work limitations and region, EFT class C earns nearly \$14,000 less a year and class D earns over \$9,000 less a year relative to On-Time On-Sequence fathers. In addition to EFTs, experience of youth poverty (at start of study; decreased income) and living in the northeast (at age 26; increased income)

predicted income at age 26. The addition of EFTs to Model 2 significantly improves the fit of the model (change in adjusted R-square from 0.08 to 0.21; $F= 42.41 (4, 914), p < 0.001$). Hence, EFTs independently and uniquely influence income at age 26 above and beyond sociodemographic variables.

Insert Table 4 about here

Contrary to our hypothesis, early fathers seem to do worse as time goes on with respect to income. By age 37 all four EFTs earn significantly less per year than On-Time On-Sequence fathers, ranging from \$6000 to \$28,000 less a year depending on EFT (Table 4, Model 3, Column 6). Although the estimates decrease with the addition of demographics (comparing Models 1 and 3), EFTs predict income at age 37 above and beyond other explanatory variables. Other variables predicting income at age 37 include being black, experience of youth poverty, maternal education, work limitation experience (by age 37), and living in the west (at age 37) which were associated with a decrease in income at age 37, and living in the northeast (at age 37; associated with increased income). Just as with income at age 26, the addition of EFTs to Model 2 significantly improves the fit of the model (change in adjusted R-square from 0.11 to 0.16; $F= 14.19 (4, 900), p < 0.001$).

According to bivariate analyses (not shown), both C and D differ from A and B on income at age 26 and age 37 but C and D do not differ significantly from each other. By age 37 EFTs C and D are faring at least four times as worse as A and twice as worse as B in terms of earnings. These findings suggest cumulative consequences of early fatherhood for men that vary

in gravity by the context of early fatherhood. Disparities in earnings among these men have implications for the type of resources they can provide for their children.

Highest Educational Attainment – Lifetime. By age 37 all four EFTs are characterized by at least one year lower educational attainment than On-Time On-Sequence fathers (average = 14.2). Two EFTs in particular, classes B and D, report nearly two years less attainment (Table 4, Column 9). On average, these classes earn less than a high school degree (11.9 and 11.5, respectively). In addition to EFTs, living with both parents at age 14 and mother's education were associated with higher levels and work limitation experience (by age 37) was associated with lower levels of educational attainment at age 37. The addition of EFTs to Model 2 significantly improves the fit of the model (change in adjusted R-square from 0.20 to 0.27; $F=27.05(4, 915), p < 0.001$).

Number of Marriages – Ages 26 and 37. Men in EFT class D do not marry by age 26 (Figure 1). The three remaining classes have at least one marriage, with class B averaging 1.2 marriages by age 26 and class C averaging 1.13 marriages by age 26. On-Time On-Sequence Fathers average 0.75 marriages by age 26, which is statistically significantly lower than three of the four early fatherhood classes. In other words, barring widowhood, EFTs characterized by marriage (A, B, C) experience greater marital dissolution than On-Time On-Sequence Fathers by age 26.

After controlling for sociodemographic variables (Table 5, Column 3), EFTs significantly predicted the number of marriages at age 26 whereby EFT classes A, B, and C predicted higher numbers of marriages and class D predicted a lower number of marriages relative to On-Time On-Sequence Fathers. In addition to EFTs, being black was associated with decreased number of marriages and having experienced work limitations by age 26 was

associated with higher numbers of marriages. The addition of EFTs (Table 5, Column 3) to the model with demographic characteristics only (Table 5, Column 2) significantly improves the fit of the model (change in adjusted R-square from 0.05 to 0.32; $F= 100.4 (4, 915), p < 0.001$).

Insert Table 5 about here

Nearly 80 percent of the total sample transitioned into marriage by age 37. Not surprisingly class D reports the smallest percent ever marrying (26%) and the fewest number of marriages (0.4) of the four EFTs, On-Time On-Sequence fathers, and all males in the sample. Given the unstable nature of teenage marriages, it is not surprising that class B leads the other classes in average number of marriages (1.66) followed by class C (1.62). The risk of divorce among teenagers and marriage within close timing to childbirth has been well established in the literature. Although class A reports higher numbers of marriage by age 37 (1.35) and are statistically significantly different from the other three EFTs (Table 5, Column 6), they do not significantly differ from On-Time On-Sequence Fathers (1.25). After controlling for other covariates (Table 5, Column 6), EFT classes B, C, and D predict the number of marriages at age 37 relative to On-Time On-Sequence Fathers. Other notable variables predicting the number of marriages at age 37 include youth poverty which was associated with a decreased number of marriages and work limitation experience by age 37 and living in the West at age 37 both were associated with increased number of marriages at age 37. The addition of EFTs (Table 5, Column 6) to the model with demographic characteristics only (Table 5, Column 2) significantly improves the fit of the model (change in adjusted R-square from 0.02 to 0.16; $F= 41.6 (4, 915), p < 0.001$). Hence at both ages 26 and 37 EFTs (with the exception of A at age 37) experience

significantly higher or lower numbers of marriages speaking to the off-time nature and number of these transitions.

Number of Biological Children – Ages 26 and 37. All four early fatherhood classes are characterized by at least one child, on average, by age 28. All men of class B transition into fatherhood by age 22, and all men of class D transition into fatherhood by age 23 (Figure 1). Very few (1%) of On-Time On-Sequence fathers have children by age 26 and report an average of 0.09 children by age 26. Men of class B have 1.9 children on average and those in class C have 1.7 children, on average, by age 26. Men of class D have 1.5 children and men of class A report the fewest number of children (1.3) by age 26. According to Table 5 (Columns 7 & 9), all four EFTs report significantly higher numbers of children at age 26 compared to On-Time On-Sequence fathers and this holds after controlling for sociodemographic variables. Aside from EFTs, other variables predicting higher numbers of children by age 26 include being Black or Hispanic. Variables that predict lower number of children include youth poverty, mother's education, and mother's age when the respondent was born. The addition of EFTs (Table 5, Column 9) to the model with demographic characteristics only (Table 5, Column 8) significantly improves the fit of the model (change in adjusted R-square from 0.09 to 0.54; $F = 242.6 (4, 915)$, $p < 0.001$).

With respect to the number of biological children by age 37, three of the four EFTs report statistically significantly higher number of children relative to On-Time On-Sequence Fathers (2.1). The average number of children for all men in the sample is 1.6 children (which also takes into account men who have not transitioned into fatherhood). By age 37, EFTs B and C have 2.6 children and EFT A reports 2.4 children on average. Men of class D report 2.3 children by age 37, similar to On-Time On-Sequence Fathers. After controlling for sociodemographic variables,

EFT classes A, B, and C continue to predict higher numbers of biological children at age 37. Similar to age 26, other variables predicting a higher number of children at age 37 include being black or Hispanic. Additionally, living in the Northcentral region of the United States also predicts higher numbers of children by age 37. Adding EFTs (Table 5, Column 12) to the model with demographic characteristics only (Table 5, Column 11) significantly improves the fit of the model (change in adjusted R-square from 0.05 to 0.07; $F= 10.4 (4, 915), p < 0.001$).

Incarceration experience – By age 26⁶. Two of the four early fatherhood classes have notably high incarceration histories by age 26. Approximately one-fourth (23.9%) of men in class D and one-tenth (8.7%) of men in class C have experienced incarceration by age 26. Given the NLSY79 did not directly ask about incarceration, these are mostly likely underestimates of incarceration history. But, these two classes are statistically significantly more likely to have been incarcerated relative to each other, the other two EFTs, and On-Time On-Sequence Fathers, all of which have less than 2 percent incarceration by age 26. As seen in Model 3 of Table 6, men in class C are nearly two times as likely and men in class D are 3.2 times as likely to have experience incarceration by age 26 relative to On-Time On-Sequence Fathers. This relationship is statistically significant after controlling for other sociodemographic variables (of which only two reached statistical significance: mothers age at the birth of the respondent – lower ages predicting greater likelihood, and work limitation by age 26 – predicting greater likelihood of incarceration).

Putting It Together

Age 26 outcomes. By age 26 our multivariate regression analyses reveal that in terms of income and incarceration experience, EFT classes A and B do not differ significantly from On-

⁶ The number of men experiencing incarceration for the first time by age 37 was so small that the results for age 26 were nearly identical to those by age 37. Hence, we only report results for age 26.

Time On-Sequence Fathers. These two EFTs, however, do differ with respect to number of marriages and number of children by age 26 whereby EFT class A reports 0.3 higher number of marriages and 1.2 higher number of children relative to On-Time On-Sequence Fathers. EFT B reports 0.45 and 1.8, respectively. Hence, of these two classes, EFT class A appears more resilient, earning income comparable to On-Time On-Sequence Fathers, having to support fewer children, and experiencing less marital dissolution. Class B, however, reports the highest number of marriages and children by age 26 of all EFTs.

Now, turning to the more disadvantaged EFTs at age 26, classes C and D differ from On-Time On-Sequence Fathers significantly on all four outcome variables (with the exception of EFT D on number of biological children). Both EFTs earn less income (\$13,700 and \$9,000 less), are two and 3.2 times more likely to have experienced jail. EFT class C reports 0.37 more marriages and 1.6 more children whereas and EFT class D reports .69 fewer marriages. It appears that EFT class C fares worst in terms of earning the least amount of money on which to support a relatively high number of children in the context of experiencing moderate marital dissolution. EFT class D is not far behind in their lower earnings and a higher incarceration history.

Age 37 outcomes. By age 37 all EFTs earn less income than On-Time On-Sequence Fathers. EFT class A, however, experiences the smallest difference (\$6,000) and EFT class B experiences twice the decrease as EFT class A (\$13,300). EFT classes C and D report a four-fold loss in income relative to EFT A. Similar to findings for age 26, class A appears most resilient of the EFTs. These men earn more than the other EFTs, experience the least educational differential, the lowest number of marriages among the EFTs characterized by marriage, and a moderate number of children. Of the remaining three classes, EFT classes B and C experience

similarly high numbers of children, but EFT class B reports a greater deficiency in educational attainment and greater marital dissolution relative to On-Time On-Sequence Fathers than EFT class C. But, class C has other problems with less income and employment and just as many children to support (in addition to an incarceration history). Although class D has the fewest number of children by age 37 of the EFTs, they also make the least amount of money, have the lowest level of educational attainment, and tend to marry quite less than other men (perhaps attributable, in part, to incarceration history and employment difficulties).

DISCUSSION

Summary of Findings

If we measure a successful transition into adulthood by “on-time and on-sequence” marriage, fatherhood, and fulltime employment in order to support one’s self and one’s dependents, the four latent classes of early fathers vary substantially on how successful its members are at completing these developmental tasks and fulfilling socially prescribed roles (e.g., provider). The stereotype is that all men who become fathers at a very young age “fail.” But, the results of this study suggest otherwise. Differences among the four classes of early fathers provide insight into how and why some classes manage the transition into adulthood more ‘successfully’ than others.

What is the ‘success’ story? Men classified as class A/ *Married Fully-Employed Young Fathers* evidence the greatest resilience of the four early fatherhood classes. These men begin working fulltime for quite some time before transitioning into marriage and report a lag in time between marrying and becoming fathers. Hence, their *sequencing* of events is ‘normative’ even though the timing is not. Furthermore, these men report low levels of incarceration and marital dissolution similar to their On-Time On-Sequence Fathers counterparts and moderately similar

personal income levels. Despite having higher levels of youth poverty, lower levels of educational attainment, and higher average number of children, Married Fully-Employed Young Fathers manage their worker, husband, and fatherhood roles similarly to On-Time On-Sequence Fathers.

Although they follow a different transitional sequence – marriage, fatherhood, then fulltime work – class B resembles class A in terms of low reports of incarceration and disability, larger number of biological children, high levels of fulltime work, and low youth poverty. These two classes depart, however, in terms of educational attainment, marital instability, and lower personal income with class B faring worse.

The two early fatherhood classes that appear at great risk of negative consequences are classes C and D. Yet, these men constitute only 25 percent (9.6% of 37.9%) of all early fathers in this sample.

Patterns and Implications

What does all of this mean? Each EFT has its own difficulties. At different ages some EFTs share similar problems and at other ages they differ from one another. There does not appear to be one solution to help these men. Some may need more educational attainment, others may need employment training, still others may benefit from relationship skills building, and yet others may need alternatives to illegal activities.

So, what patterns emerged and wherein lies the potential for intervention? First, some young fathers are far more disadvantaged than others. As discussed above, men of class D appear the least resilient and men of class A fare the best of the four EFTs. Second, in contrast to early motherhood, the disadvantage associated with young fatherhood increases with age. It appears that the outcomes experienced at age 37 are worse than those outcomes at age 26. The

effects of early fatherhood are cumulative and men do not recover over time.

Third, the relationship context and fulltime employment status surrounding a birth matter. Both classes of men who fare better were, on average, married at the time of the birth. Furthermore, having stable employment or being in route to fulltime employment prior to or at the time of transitioning into fatherhood makes a difference. Over half of men in class A and class B reported fulltime employment by age 20. Both partially employed classes of men, however, experienced difficulties with employment beginning early in life and these difficulties persisted across adulthood. Additionally, educational attainment plays a role in whether men are more likely to be early fathers or On-Time On-Sequence Fathers. Men who attain higher than high school levels of education are less likely to become fathers early. What are the implications of these findings? Employment training and educational opportunities may be effective in helping men manage early fatherhood in resilient ways and for some men such programs may contribute to preventing early fatherhood. Understanding what it is about marriage at the time of a birth that matters – regardless of whether the marriage persists – warrants further investigation.

Limitations and Contributions

This study captures the heterogeneity of men's role transitions. We examine fatherhood among numerous subgroups rather than isolating groups (e.g., married men only or unmarried men only). Although 12 latent classes of men may be overwhelming at first, we were open to examining more classes than within the typical comfort zone. As a result we modeled the complexity of men's role transitions. In order to make comparisons manageable, we focused our attention on four early fatherhood, latent classes and used the On-Time On-Sequence Fathers as a benchmark. This left little space for exploring the remaining seven classes.

Longitudinal data has both its advantages and disadvantages. We examined men's role

transitions over time and this enabled us to contribute to the field. But, given the limitations of statistical computations and programs, there is such a thing as too much data. We were unable to examine transitions year by year; but using two-year intervals was far superior to five-year intervals in terms of capturing change and stability over time.

The take-home message of these findings is that not all men who become fathers early are destined to “unsuccessful” adult lives. On the contrary, the vast majority of these men appear resilient, living successful – albeit modest – lives. A lower – yet equally noteworthy – proportion of the sample are members of the most alarming classes. For those who do experience “unsuccessful” transitions, assistance and interventions need to take into account the heterogeneity among different classes of men.

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Table 1: Demographic Characteristics for Analytic and Attrited Samples

<i>Demographic Characteristics</i>	Analytic Sample (N=1992)	Attrited Sample (N=808)	p
<i>Respondent Characteristics</i>			
Youth poverty (% yes)	10.4	14.2	0.006
Age at Study Start (mean years)	17.5	17.4	ns
Highest Education (mean years)	13.5	13	0.0001
<i>Respondent's Race/ Ethnicity</i>			
Black (%)	12.4	12.3	ns
White (%)	81.1	76.7	0.009
Hispanic (%)	6.5	11	0.0001
<i>Family Structure at age 14</i>			
Live with Both Parents (%)	77.5	72.3	0.004
Live with Only One Parent (%)	8.4	7.7	ns
Live with Parent and Step Parent (%)	11.9	17.2	0.0002
Live on Own/ Other (%)	2.1	2.6	ns
<i>Mother's Characteristics</i>			
Mother age at birth of respondent (mean years)	44.1	43.9	ns
Mother education less than HS (%)	32.2	36.6	0.02
Mother education HS (%)	47.4	44.4	ns
Mother education more than HS (%)	20.4	18.9	ns
Mother's highest educational attainment (mean years)	11.8	11.5	ns

Table 2: Proportions with first fatherhood, first marriage, and fulltime work at each age, for four Early Fatherhood Trajectories, and for On-Time On-Sequence Fathers

		Proportion in Each Role										Sample Percent (N)
<i>age</i>		18	20	22	24	26	28	30	32	35	37	
A. Married fully- employed young fathers	father	0.00	0.02	0.19	0.61	0.93	1.00	1.00	1.00	1.00	1.00	Class 3
	marriage	0.01	0.16	0.62	0.91	0.97	1.00	1.00	1.00	1.00	1.00	19.1 (380)
	work	0.22	0.59	0.79	0.92	0.93	0.94	0.95	0.94	0.95	0.94	
B. Married fully- employed teen fathers	father	0.23	0.70	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Class 7
	marriage	0.35	0.95	0.98	0.99	1.00	1.00	1.00	1.00	1.00	1.00	9.2 (184)
	work	0.26	0.67	0.86	0.85	0.92	0.90	0.88	0.91	0.88	0.88	
C. Married partially- employed teen/young fathers	father	0.12	0.30	0.63	0.86	1.00	1.00	1.00	1.00	1.00	1.00	Class 11
	marriage	0.09	0.33	0.69	0.90	0.97	1.00	1.00	1.00	1.00	1.00	5.2 (104)
	work	0.13	0.18	0.20	0.18	0.27	0.23	0.37	0.45	0.53	0.51	
D. Unmarried partially-employed teen/young fathers	father	0.22	0.44	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Class 1
	marriage	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.14	0.22	0.27	4.4 (88)
	work	0.22	0.34	0.48	0.52	0.57	0.56	0.59	0.59	0.59	0.58	
On-time on-sequence fathers	father	0.00	0.00	0.00	0.00	0.01	0.54	0.89	1.00	1.00	1.00	Class 6
	marriage	0.00	0.01	0.08	0.36	0.76	0.98	1.00	1.00	1.00	1.00	17.0 (339)
	work	0.14	0.34	0.56	0.75	0.89	0.89	0.94	0.90	0.92	0.92	

Table 3: Demographic Background Characteristics by Early Fatherhood Trajectory

Sample		White	Black	Hispanic	Youth Poverty	Live with Both Parents Age 14	Mother's Education
Label	N	%	%	%	%	%	Mean
All males (including non-fathers)	1992	81.1	12.4	6.5	10.4	77.6	11.7
On-time On-sequence fathers	331	89.4	^a 4.7	^a 5.9	6.8	^a 83.8	^a 12.3
All EFTs Combined	756	73.9	^b 17.6	^b 8.5	12.8	^b 74.9	^b 11.2

* Note: Cells with different superscripts within each column are statistically significantly different from each other after Tukey adjustments.

Fatherhood Trajectory		White	Black	Hispanic	Youth Poverty	Live with Both Parents Age 14	Mother's Education
Label	N	%	%	%	%	%	Mean
A. Married fully-employed young fathers	380	84.5	^a 10	^{ad} 5.5	7.9	^{ac} 82.4	^a 11.5
B. Married fully-employed teen fathers	184	77.2	^{ac} 12.5	^{cd} 10.3	7.9	^{ac} 76.1	^a 10.9
C. Married partially-employed teen/young fathers	104	66.4	^c 22.1	^c 11.5	18	^a 59.6	^b 10.8
D. Unmarried partially-employed teen/young fathers	88	30.7	^b 55.7	^b 13.6	37.4	^b 58	^b 10.7
On-time On-sequence fathers	339	89.4	^a 4.7	^d 5.9	6.8	^c 83.8	^a 12.3

* Note: Cells with different superscripts within each column are statistically significantly different from each other after Tukey adjustments.

Table 4: Linear Regression Models of Early Fatherhood Trajectories and Income and Educational Attainment with and without Covariates

	R's Income at age 26						R's Income at age 37						Highest Education age 37					
	<i>Model 1</i> <i>(EFT Only)</i>		<i>Model 2</i> <i>(demog only)</i>		<i>Model 3</i>		<i>Model 1</i> <i>(EFT Only)</i>		<i>Model 2</i> <i>(demog only)</i>		<i>Model 3</i>		<i>Model 1</i> <i>(EFT Only)</i>		<i>Model 2</i> <i>(demog only)</i>		<i>Model 3</i>	
	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p
<i>Early Fatherhood Trajectories</i>																		
A. Married fully-employed young fathers	-236.1	0.76			141.2	0.86	-7670.0	0.00			-6048.0	0.03	-1.3	<.001			-1.1	<.001
B. Married fully-employed teen fathers	-1970.7	0.04			-1228.6	0.23	-17461.0	<.001			-13355.0	<.001	-2.3	<.001			-1.8	<.001
C. Married partially-employed teen/young fathers	-15268.0	<.001			-13738.0	<.001	-33840.0	<.001			-25290.0	<.001	-1.9	<.001			-1.2	<.001
D. Unmarried partially-employed teen/young fathers	-11937.0	<.001			-9167.2	<.001	-37649.0	<.001			-28064.0	<.001	-2.7	<.001			-1.8	<.001
<i>Demographics</i>																		
Black			-3329.6	0.01	-665.8	0.57			-8844.0	0.02	-1517.2	0.70			-0.3	0.17	0.1	0.64
Hispanic			-1579.9	0.31	-1199.1	0.40			1265.1	0.80	2072.9	0.67			0.0	0.98	0.0	0.91
Youth Poverty			-5306.4	<.001	-4754.5	0.00			-9460.9	0.03	-9099.8	0.03			-0.1	0.57	-0.2	0.44
Live with Both Parents			1207.5	0.20	-101.4	0.91			2498.0	0.40	113.8	0.97			0.5	0.01	0.4	0.01
Mom's Education			397.4	0.01	214.2	0.13			3003.9	<.001	2479.6	<.001			0.3	<.001	0.3	<.001
Mom's Age when R was born			-25.0	0.63	-41.9	0.39			-159.9	0.33	-209.8	0.19			0.0	0.43	0.0	0.73
Work Limitation*			-1084.0	0.26	123.7	0.89			-11678.0	<.001	-9194.1	0.00			-0.4	0.00	-0.4	0.01
Northeast*			3630.5	0.00	3616.8	0.00			8099.8	0.02	8022.9	0.02			0.2	0.36	0.1	0.46
Northcentral*			1350.3	0.14	1339.5	0.11			3142.1	0.27	3307.6	0.23			0.2	0.15	0.3	0.11
West*			-16.8	0.99	787.0	0.44			-7218.0	0.05	-5751.1	0.10			0.1	0.75	0.1	0.58
R-sq - adj	0.19		0.08		0.21		0.11		0.11		0.16		0.16		0.20		0.27	

* Variable value at age of the outcome variable for income and value in 1979 for educational attainment.

Table 5: Linear Regression Models of Early Fatherhood Trajectories and Number of Marriages and Biological Children with and without Covariates

	Number of Marriage at age 26						Number of Marriage at age 37						Number of Children at age 26						Number of Children at age 37					
	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>	
	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>	<i>(EFT Only)</i>	<i>(demog only)</i>
<i>Early Fatherhood Trajectories</i>	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p	Beta	p
A. Married fully-employed young fathers	0.33	<.001			0.32	<.001	0.10	0.07			0.09	0.12	1.17	<.001			1.16	<.001	0.30	<.001			0.35	<.001
B. Married fully-employed teen fathers	0.45	<.001			0.45	<.001	0.41	<.001			0.40	<.001	1.79	<.001			1.76	<.001	0.53	<.001			0.53	<.001
C. Married partially-employed teen/young fathers	0.38	<.001			0.37	<.001	0.36	<.001			0.26	0.00	1.59	<.001			1.58	<.001	0.51	<.001			0.50	<.001
D. Unmarried partially-employed teen/young fathers	-0.75	<.001			-0.69	<.001	-0.86	<.001			-0.90	<.001	1.37	<.001			1.18	<.001	0.16	0.20			-0.04	0.00
<i>Demographics</i>																								
Black			-0.37	<.001	-0.18	<.001			-0.23	0.00	-0.01	0.89			0.67	<.001	0.42	<.001			0.64	<.001	0.66	<.001
Hispanic			-0.17	0.02	-0.12	0.06			-0.14	0.19	-0.10	0.30			0.24	0.07	0.24	0.01			0.67	<.001	0.69	<.001
Youth			-0.08	0.22	0.02	0.71			-0.06	0.52	0.04	0.61			-0.30	0.01	-0.21	0.01			-0.15	0.23	-0.09	0.00
Poverty																								
Live with Both Parents			-0.01	0.87	-0.02	0.58			-0.11	0.09	-0.12	0.04			-0.09	0.27	-0.02	0.68			0.11	0.20	0.12	0.00
Mom's Education			-0.01	0.19	0.00	0.93			-0.02	0.13	-0.01	0.31			-0.07	<.0001	-0.02	0.04			0.01	0.53	0.02	0.00
Mom's Age when R was born			0.00	0.23	0.00	0.19			0.00	0.98	0.00	0.98			-0.01	0.00	-0.01	0.00			0.01	0.27	0.01	0.00
Work Limitation*			0.07	0.11	0.10	0.01			0.12	0.04	0.13	0.02			0.05	0.52	0.01	0.88			0.05	0.52	0.04	0.00
Northeast*			-0.07	0.16	0.03	0.53			-0.14	0.06	-0.04	0.60			-0.04	0.65	0.08	0.26			0.00	0.97	0.06	0.00
Northcentral*			-0.10	0.03	-0.05	0.15			-0.12	0.05	-0.08	0.16			0.06	0.40	0.09	0.11			0.24	0.01	0.26	0.00
West*			-0.02	0.65	0.02	0.63			0.12	0.11	0.17	0.01			0.09	0.34	0.08	0.23			0.20	0.06	0.21	0.00
R-sq - adj	0.34		0.05		0.32		0.16		0.02		0.16		0.50		0.09		0.54		0.03		0.05		0.07	

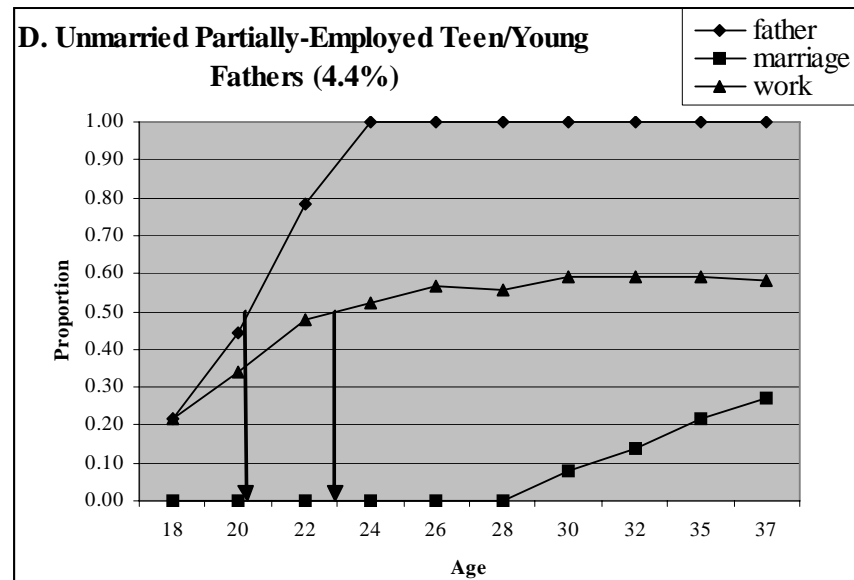
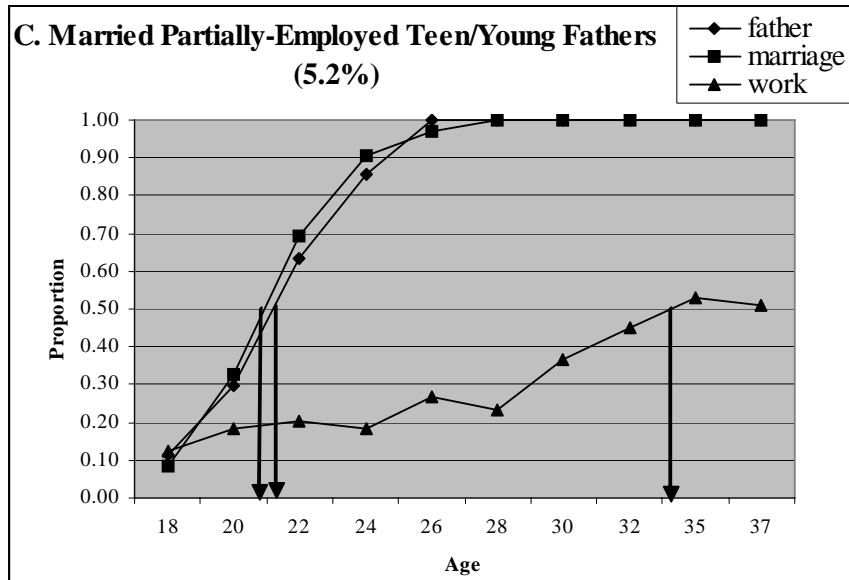
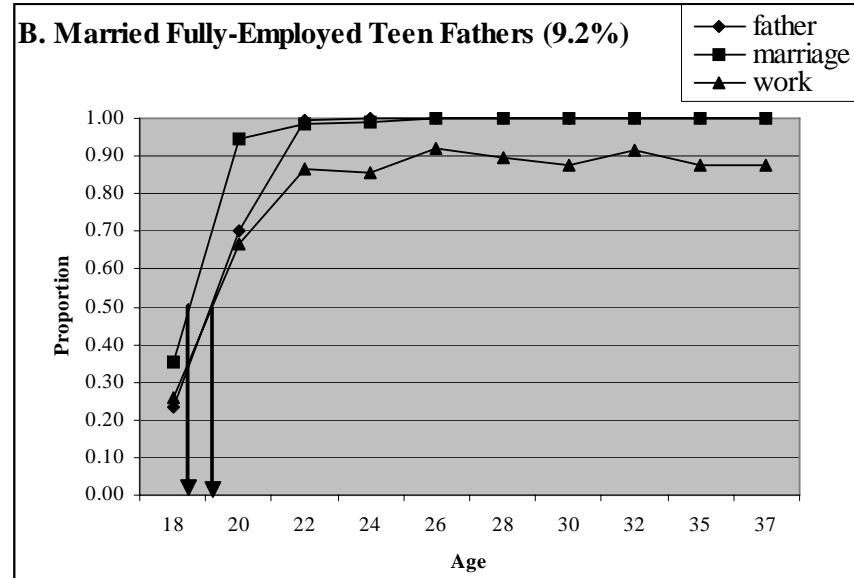
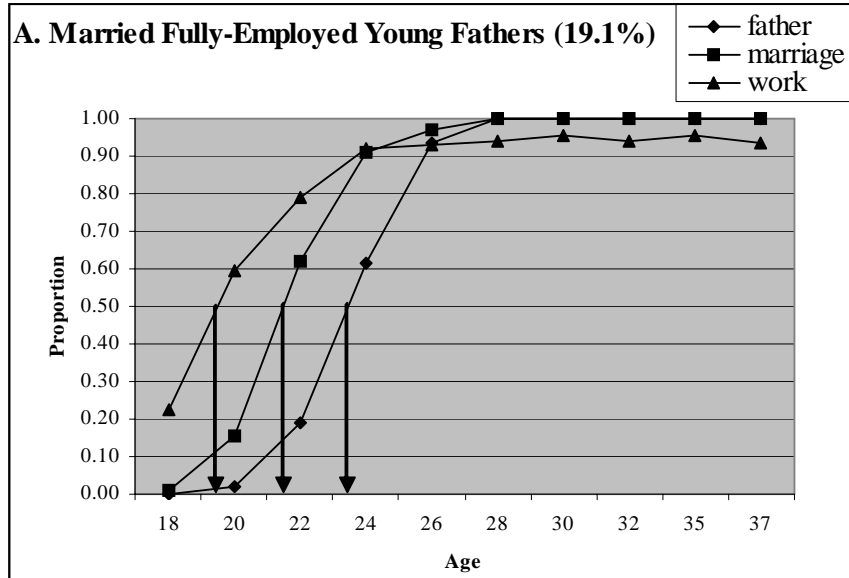
* Variable value at age of the outcome variable.

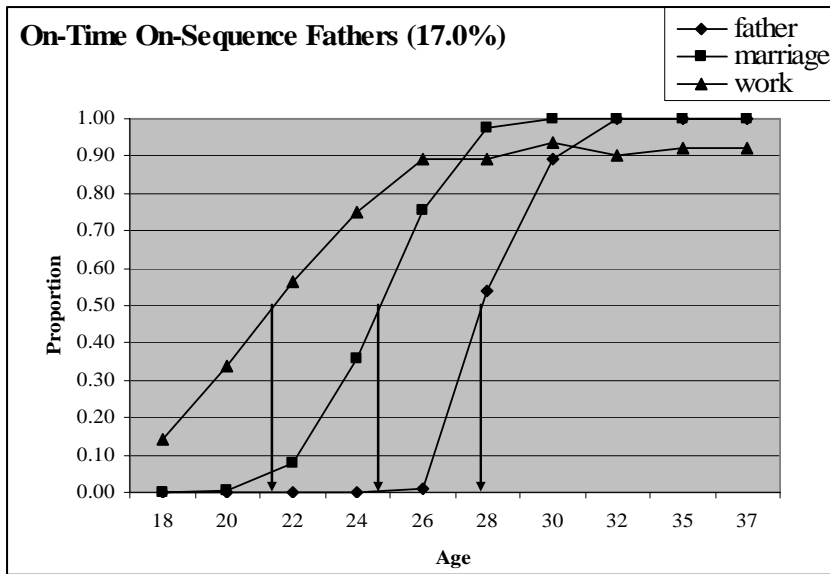
Table 6: Logistic Regression Models of Early Fatherhood Trajectories and Incarceration with and without Covariates

	<u>Model 1 (EFT only)</u>			Incarcerated by age 26 <u>Model 2 (Demog only)</u>			<u>Model 3</u>		
	Estimate	Odds ratio	p-value	Estimate	Odds ratio	p-value	Estimate	Odds ratio	p-value
<i>Early Fatherhood Trajectories</i>									
A. Married fully-employed young Fathers	-0.06	0.94	0.86				-0.17	0.84	0.61
B. Married fully-employed teen fathers	-0.15	0.86	0.71				-0.27	0.76	0.53
C. Married partially-employed teen/young fathers	0.92	2.52	0.00				0.69	1.98	0.02
D. Unmarried partially-employed teen/young fathers	1.52	4.58	<.001				1.17	3.23	0.00
<i>Demographics</i>									
Black				0.63	1.88	0.01	0.19	1.21	0.48
Hispanic				0.11	1.12	0.74	-0.03	0.97	0.92
Youth Poverty				0.43	1.54	0.06	0.34	1.40	0.17
Live with Both Parents				0.01	1.01	0.96	0.12	1.13	0.59
Mother's Education				-0.07	0.94	0.39	-0.05	0.96	0.57
Mother's Age at R's birth				-0.09	0.92	0.00	-0.10	0.91	0.00
Work Limitation by age 26				0.58	1.78	0.00	0.46	1.59	0.03
Northeast*				0.01	1.01	0.97	-0.14	0.87	0.65
Northcentral*				-0.12	0.89	0.65	-0.27	0.77	0.32
West*				0.15	1.16	0.60	-0.05	0.95	0.87

* Variable value at age of the outcome variable.

Figure 1: Four Early Fatherhood and On-Time On-Sequence Trajectories





Appendix A
Demographic Explanatory Covariates by Latent Class (Age 26, Age 37, and Lifetime)

		Age 26 Covariates							Age 37 Covariates		Lifetime Covariates						
		Respondent's Income at Age 26		Biological Children by Age 26		Marriages by Age 26		Incarceration by Age 26		Respondent's Income at Age 37		Highest Education		Biological Children by age 37		Marriages by Age 37	
Label	N	\$		N		N		%		\$		mean		N		N	
A. Working, Young Married Dads	380	20897.26	<i>ac</i>	1.26	<i>a</i>	1.08	<i>b</i>	1.32	<i>c</i>	45401.27	<i>c</i>	12.96	<i>b</i>	2.41	<i>a</i>	1.35	<i>bd</i>
B. Married, Teen- Dads	184	19162.60	<i>c</i>	1.88	<i>b</i>	1.20	<i>c</i>	1.09	<i>c</i>	35609.7	<i>b</i>	11.93	<i>a</i>	2.64	<i>b</i>	1.66	<i>c</i>
C. Shotgun Wedding Dads	104	5864.97	<i>b</i>	1.68	<i>bc</i>	1.13	<i>bc</i>	8.65	<i>b</i>	19230.81	<i>a</i>	12.34	<i>ab</i>	2.62	<i>ab</i>	1.62	<i>c</i>
D. Young, Single Dads	88	9196.41	<i>b</i>	1.45	<i>ac</i>	0.00	<i>a</i>	23.86	<i>a</i>	15422.7	<i>a</i>	11.52	<i>a</i>	2.26	<i>acd</i>	0.4	<i>a</i>
On-Time On- Sequence Fathers	339	21133.37	<i>c</i>	0.09	<i>d</i>	0.75	<i>d</i>	1.47	<i>c</i>	53071.2	<i>d</i>	14.24	<i>c</i>	2.1	<i>d</i>	1.25	<i>d</i>
Sample Average	1992	17210.08		0.59		0.60		3.71		39781.38		13.5		1.57		1.09	