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The Effect of Fatherhood on Employment Hours:
Variation by Birth Timing, Marriage and Coresidence

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ABSTRACT

Drawing on the life course paradigm, I assess how the effect of fatherhood on employment hours varies by age of becoming a parent and time elapsed since the birth. Using the National Longitudinal Survey of Youth – 1979 Cohort from 1979 to 2002 (N = 28,514 observations), separate effects are estimated based on fathers' marital status and co-residence with own children. Only unmarried men who became fathers before 24 work longer hours immediately after a first birth, but in the long run, most early fathers work fewer hours as a result of parenthood. Over time, unmarried but coresident men who became fathers between 24 and 29 increase their hours, as do married, coresident men who delayed fatherhood until 30 or older. However, the latter increase is moderated by support for egalitarian gender roles. The findings shed light on the contemporary transition to adulthood and on men's work-family balance.

Keywords: fatherhood, work-family, employment hours, birth timing, marriage

Few scholars have studied the effect of fatherhood on men's employment hours, particularly in comparison to the volume of literature on motherhood and paid work (e.g. Hynes & Clarkberg, 2005; Stone, 2007). Moreover, the existing research has not resulted in a consensus (Astone, Dariotis, Sonenstein, Pleck, & Hynes, 2010; Knoester & Eggebeen, 2006; Lundberg & Rose, 2000, 2002; Percheski & Wildeman, 2008). There are good reasons to pursue this topic further. Although men's income is a positive asset for their children, long work hours may crowd out time for parental interaction (Eggebeen & Knoester, 2001), with negative consequences for child development. Men's unavailability also tends to make their partners' work-family difficulties more acute (Cha, 2010). In addition, the evidence suggests that, in spite of men's increased contributions to housework and child care in recent decades, economic provision remains the key element in the "package deal" of mainstream fatherhood (Townsend, 2002). Thus, understanding the effect of the transition to parenthood on employment can shed light on the culture and practice of fatherhood.

With one exception (Astone, et al., 2010), studies have not asked whether the relationship between becoming a father and employment varies depending on men's ages at the first birth. This is an important omission, because younger and older men tend to be differently situated in the job market. Scholars have suggested that men who father children at early ages are a vulnerable group, disadvantaged in terms of family background and school achievement (Jaffee, Caspi, Moffitt, Taylor, & Dickson, 2001; Pears, Pierce, Kim, Capaldi, & Owen, 2005). They are less likely to be fully employed (Dariotis, Pleck, Astone, & Sonenstein, 2011) and, consequently, to be capable of providing adequate economic resources to their children. Men who delay fatherhood, by contrast, tend to be socioeconomically privileged (Coltrane, 1996; Parke & Neville, 1995). Because skilled and educated workers are structurally vulnerable to demands for

extremely long hours of work (Jacobs & Gerson, 2004), the greatest risk to delayed fathers' families is likely to be unavailability at home, rather than lack of money.

Motivated by these considerations, the present study investigates how the effect of fatherhood varies by age at first birth and by several other critical moderating factors: marital status, coresidence with children, gender role attitudes, and partners' employment status. Two hypotheses about the ages at which men's employment hours will increase the most are developed. Much work in the life course tradition suggests that fatherhood will have a larger immediate effect on young men, for whom the first birth is more likely to be an abrupt and life-changing transition. On the other hand, a focus on human capital leads to the conclusion that men who become fathers at older ages will be more likely to experience a sustained increase in their hours of work. These hypotheses are tested with more than two decades of data from the National Longitudinal Survey of Youth – 1979 Cohort (NLSY79), and the latter receives more support.

Theoretical and Conceptual Underpinnings

Why might the experience of becoming a parent cause men to work longer hours than before? In a well-known argument, Becker (1991) offered an explanation grounded in the principle of rational choice. He theorized that when the arrival of a child ratchets household labor needs upward, couples maximize their collective welfare by having one parent (usually the husband) “specialize” in paid labor.

Even though he was primarily interested in marriage, Nock (1998) provided an alternative perspective on the linkage between fatherhood and hours of work. Drawing on concepts from role theory and gender performance theory (West & Zimmerman, 1987), Nock argued that men in all cultures must continually demonstrate an acceptable form of masculine

identity, or else face censure. In the modern United States, this is done by following the dictates of a role package that Nock called “normative marriage”, which includes getting married, having children, and providing for one’s family. Family formation increases involvement with paid employment because men who marry and become fathers feel a pull to accept the “breadwinner” responsibilities that normative marriage assigns them. (See also Townsend, 2002.)

Employer preference may be a third mechanism driving changes in men’s employment hours across the transition to parenthood. Coltrane (2004) has argued that employers, particularly in “elite careers” such as the professions and management, discriminate in favor of fathers, just as they discriminate against mothers. In other words, employers of elite workers may view men as more productive and as worthier candidates for promotion when they have children. In turn, if promotions are accompanied by greater responsibility, then employer discrimination may be part of the explanation for increased hours.

Finally, any observed association between fatherhood and hours of employment could result from selection. Specifically, men with the propensity to work hard and the ability to remain steadily employed may tend to be selected into fatherhood. Absent a randomized experiment, a selection explanation cannot be conclusively refuted. However, cross-sectional time series models, such as random and fixed effects models, can reduce the likelihood that selection is operating by comparing individuals’ hours before and after the transition to parenthood.

Empirical Research on Fatherhood and Employment Hours

In line with the theoretical perspectives outlined here, empirical research employing longitudinal methods has typically found that fatherhood increases some men’s hours of employment. However, there is disagreement about the conditions under which this occurs. Lundberg and

Rose found that when the sample was restricted to married men, hours increased only among husbands in single-earner families (2000). Knoester and Eggebeen (2006) reported that the transition to fatherhood resulted in longer hours only if men lived with their children. Conversely, Astone and co-authors (2010) and Percheski and Wildeman (2008) found that becoming a father led to longer hours only for unmarried men.

The divergent results may result from the use of data sources that are incomparable in terms of population coverage and time span. Although fathers who remain married over time are a select group, some scholars have studied only married men. Similarly, some studies have excluded men who remain childless. Also, while there is no reason to assume that the effect of fatherhood on men's hours stays the same as children age, most research has estimated a single, constant fatherhood effect. (For an exception, see Lundberg & Rose, 2000.) In this article, I study a nationally representative sample of men which includes those of all marital and parental statuses, and I distinguish between the short and long-term effects of the transition to fatherhood.

The Roles of Marriage and Coresidence

It is no surprise that fatherhood has been found to have different effects on employment depending on whether men are married, as well as whether they are living with their children. This is what each theoretical perspective outlined earlier implies. According to rational choice theory, men can only specialize in paid work if a partner is available to specialize in child-rearing. From this point of view, men's hours should increase in both marital and cohabiting relationships. However, to the extent that marriage represents a firmer commitment to the partner (Waite & Gallagher, 2000), marriage reduces the risk of specializing, so one would expect married fathers to increase their hours most in response to fatherhood. Similarly, the theory of normative marriage, as its name implies, specifies that married fathers have the most to

gain symbolically by enacting all the facets of the “package deal”, which includes commitment to paid employment. Finally, to the extent that employers discriminate in favor of fathers, some evidence suggests that they may especially prefer those who are married (Hodges & Budig, 2010).

Based on the above discussion, the following hypothesis is proposed.

Hypothesis 1: The positive relationship between fatherhood and hours of employment will be strongest when men are married and living with their children. Among unmarried men, it will be stronger when they are living with their children than when they do not coreside.

In addition, rational choice theory implies this hypothesis.

Hypothesis 2: Among married men, the positive relationship between fatherhood and hours of employment will be strongest when wives are not employed for pay.

The Role of First Birth Timing

In the past several decades, men have made the transition to fatherhood at increasingly diverse ages in the United States (Weinshenker, 2006). The life course paradigm in sociology (Shanahan & Macmillan, 2008) suggests that such diversity in *timing* might shape the impact of fatherhood on men’s employment. The *duration* that has elapsed since the transition to parenthood may do so as well. In this article, I distinguish between the short and the long-term effects of being a father. “Short-term” is defined as the first two years after the birth, and the “long term” refers to the subsequent years. This is primarily because the data points in the study are spaced at two-year intervals. In addition, the fact that maternity leaves and career breaks most often take place in the first two years of children’s lives provides a basis for expecting that employment pressures upon fathers will be especially intense during this time (Hynes & Clarkberg, 2005).

Older men are relatively likely to be established in the adult statuses of spouse and full-time worker prior to fatherhood, rather than undergoing transitions in all three realms at the same time (Coltrane, 1996). Older fatherhood, then, may involve minimal adjustment in the short term, whereas having a child at an early age is more likely to prompt a sudden transition out of a carefree youth. Specifically, men will be more likely to find themselves forced out of school and into the labor market, and may also be more likely to marry; each of these transitions is clearly connected to hours of work.

Hypothesis 3: In the first year or two after becoming a father, young married men will work longer hours than before. This effect will be smaller or nonexistent for older men and for those who remain unmarried after becoming fathers.

Hypothesis 3A: Because the effect of fatherhood is related to transitions out of school and into full-time employment, controlling for school enrollment and labor force experience will statistically “explain” a portion of it.

On the other hand, delayed fathers tend to have higher occupational status and educational attainment than those who take on parental responsibilities earlier (Coltrane, 1996; Parke & Neville, 1995). As already discussed, fathers with high levels of human capital might be more likely to work long hours because employers of highly educated and skilled workers view fathers as particularly responsible and worthy of promotion. Alternatively, perhaps employers merely have incentives to overwork them, as Jacobs and Gerson (2004) have argued. In addition, early fathers, who are far more likely than their late-timing counterparts to have low levels of human capital (Jaffee, et al., 2001; Pears, et al., 2005), may have trouble maintaining full-time employment in the long term.

Hypothesis 4: After the first year or two of fatherhood, married men who delayed fatherhood will work longer hours than before. This effect will be smaller or nonexistent for early married fathers and for unmarried fathers.

Hypothesis 4A: Because the effect of fatherhood is related to delayed married fathers' human capital, controlling for educational attainment and professional or managerial employment will statistically "explain" a portion of it.

In addition, men who delay fatherhood are especially likely to believe in egalitarian ideals about the division of labor within marriage and to have the desire to take an active role in child care (Coltrane, 1996; Parke & Neville, 1995). Moreover, they may have greater ability than other fathers to act according to their preferences. Educated workers are the most likely to have some degree of control over their schedules (Swanberg, Pitt-Catsouphes, & Drescher-Burke, 2005). Glauber and Gozjolko (2011) found that white, college educated workers in the NLSY79 were the only ones whose hours of work after fatherhood were moderated by gender ideology. Since delayed fathers tend to be both educated and white (Coltrane, 1996; Parke & Neville, 1995), the following hypothesis is proposed.

Hypothesis 5: Married men who delay fatherhood and who hold egalitarian ideals about the division of labor within the family will not work longer hours after the birth, but those with traditional views will. Egalitarian ideals will not moderate hours of work among younger married fathers.

The statistical models used to test all of these hypotheses will control for age in order to separate the effect of the first birth from the secular tendency for wages and employment hours to grow in the young adult years. They will include the respondent's race, which is known to affect not just employment, but also the timing of fatherhood (Weinshenker, 2006). Similarly,

family background, as measured by childhood family structure and respondents' fathers' educational attainment, will be controlled because it influences men's fertility timing as well as their employment outcomes (Pears, et al., 2005; Weinshenker, 2006).

Method

Data Source

The study utilizes data collected from male participants in the cross-sectional sample of the NLSY79, an ongoing longitudinal survey focused on the labor market behavior and demographic experiences of individuals born between 1957 and 1964.¹ (For more information about this dataset, see Center for Human Resource Research, 2004.) The 1979 to 2002 waves are used, thereby making it possible to link the timing of fatherhood to most respondents' work and marital histories before and after the first birth. Because data collection became biennial in 1994, I discard time-varying variables from interviews conducted in odd years. The models presented here examine change in employment outcomes across two-year intervals from 1980 to 2002. Admittedly, it is a limitation of this study that shorter fluctuations in hours are not captured.

The NLSY79 is an excellent source for information about male fertility timing in the United States. It contains fertility data prospectively collected since 1979, when most respondents were still childless. Men's prospective fertility reports are considerably more accurate than retrospective histories (Joyner et al., 2012). Moreover, 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). I count a biological birth prior to 1998 only if the father's

paternity has been rated as “virtually certain” or “reasonably certain”. For the very small number of first births reported between 1998 and 2002, respondents’ reports are taken at face value.

In this article, I analyze observations from male NLSY79 respondents who were over age 18 at the time of the interview; observations collected before respondents turned 18 have been dropped. Because the NLSY79 stopped collecting detailed information about military employment after 1985, observations are also dropped if respondents were serving in the active duty armed forces at the time of the interview. In addition, although the NLSY79 has achieved very high retention rates (77.5% of the original panel members were still participating in 2002), some have ceased cooperating over the years. (Center for Human Resource Research, 2004 provides a discussion of sample attrition and its impact on representativeness.) For all of these reasons, there are many respondents who provided usable observations during some, but not all interviews. In this situation, the entire longitudinal record is not discarded. Rather, only the qualifying observations from each individual are included in the analysis. The data file includes a total of 31,673 observations from 3003 individuals. After excluding observations from respondents who were under 18 or serving in the military, the models presented below are based on 29,514 observations from 2971 respondents.

Measures

The NLSY79 records the hours the respondent reported working for pay during the calendar year in which each interview took place. The dependent measure in this analysis has been created by taking the annual hours and dividing by 50 in order to approximate average weekly hours.

Parental status is modeled using a series of indicators. First, two dummy variables indicate whether the respondent is a father at the time of the interview (that is, whether he has ever fathered a child). There is one indicator for “short term” fatherhood (the first observation

after the birth) and another for the “long term” (all subsequent observations). Because some of the effect of becoming a father on hours may be anticipatory, the models also contain an indicator for the last observation before the birth.

To model the timing of fatherhood, respondents observed to have a child were divided into groups on the basis of their age at the transition to parenthood: those who became fathers before their 24th birthday, between 24 and 29, and after turning 30. These will be referred to as early, on-time, and delayed fathers, respectively. Indicators for group membership were created, with childless men as the omitted category.²

Marital status is controlled in all models by means of a dummy variable indicating whether the respondent was married at the time of observation. In addition, in many of the regression models, the effect of parenthood is estimated separately for three different groups: fathers who are married and living with at least one of their own children, unmarried fathers who are living with their own children, and fathers who do not live with any of their children, regardless of marital status.³ Unfortunately, the NLSY79 did not measure cohabitation until 1990, so the models cannot take into account whether or not unmarried men living with their children are cohabiting or whether they are raising children without partners.

A number of additional predictors are utilized in some or all models. The respondent’s labor market position and human capital are represented by a measure of years of educational attainment and an indicator for professional or managerial employment. To control for the respondent’s progress in the career aspect of the transition to adulthood, I utilize two measures. The first is accumulated weeks of labor force experience at the time of each interview and its square. Both linear and squared terms are included because of the intuition that hours will tend

to increase most rapidly in the early years of employment. The second measure is school enrollment, a primary competitor with paid employment for young men's time.

To test the hypotheses that the effect of fatherhood on married men will depend on their wives' employment, some models include a measure of spousal employment status (employed vs. not employed). Also, to assess the hypothesis that the effect of the transition to fatherhood depends on gender ideology, I use a mean-centered scale of six items designed to measure feelings about women's roles. Respondents were asked to evaluate statements such as, "Woman's place is in the home, not the office or shop," and "Men should share the work around the house with women." Identical questions were asked during the initial survey round in 1979, and again in 1987. I use the 1987 responses unless respondents became parents prior to 1988 or did not participate in the 1987 interview. Thus, egalitarianism was measured prior to parenthood for nearly all men who became fathers in 1980 or later. The scale, which is coded so that a higher value indicates greater egalitarianism, has a Cronbach's alpha value of .70.

As noted earlier, to control for the tendency for hours and wages to increase across the transition to adulthood, all models contain the respondent's age, non-parametrically operationalized as a set of indicator variables. Race is measured by indicators for whether the respondent was Hispanic or non-Hispanic Black; non-Black and non-Hispanic is the omitted category. Family structure at age 14 is a dummy variable indexing whether the respondent lived with two biological or adoptive parents at that age. Respondents' fathers' educational attainment, measured in years, is also controlled in all models.

Statistical Method

This study's hypotheses are tested using pooled time-series linear regression models with random effects. Pooled-time series models exploit the capabilities of panel data by modeling

change in a dependent variable as a function of change in time-varying predictors (Diggle, Liang, & Zeger, 1994). In the analysis presented below, the focus is upon the change in hours of employment associated with a change in parental status (from childless to father). Because a fixed covariate (the respondent's age at the birth of his first child) is of central interest, I utilize linear random effects, or growth curve models.⁴ A key advantage of the random effects model over the fixed effects model is that fixed covariates can be included (Johnson, 1995).

The baseline model replicates the work of those who have asked about the effect of parenthood on men's hours and wages:

$$Y_{it} = \beta_0 + \beta_1 \text{Anticipation} + \beta_2 \text{Short-term} + \beta_3 \text{Long-term} + \beta \mathbf{X}_{it} + \chi \mathbf{Y}_{it} + \mathbf{U}_i + \mathbf{Z}_{ij}$$

(1)

“Anticipation” is an indicator for the final interview before the transition to fatherhood, “Short-term” is an indicator for the first observation after the birth, and “Long-term” indicates all subsequent observations. \mathbf{X}_{it} is a vector of control variables, \mathbf{Y}_{it} is a vector of indicators for the respondent's current age, \mathbf{U}_i is the random effects, and \mathbf{Z}_{ij} is the error terms. Because age is non-parametrically controlled, the coefficient for parenthood is net of the tendency for hours and wages to increase during the young adult years.

Subsequent models elaborate this specification. First, being a parent was interacted with marital and coresidential statuses in order to separately estimate the effect of fatherhood on men who are married and living with children, on unmarried men living with children, and on those living with no children. Similarly, the effect of being observed for the last time before parenthood was separately estimated for married and unmarried men. This model tests hypothesis 1, which proposed that the effect of fatherhood would be greatest for married men.

Next, separate effects of being a parent (or about to become one) were estimated for early, on-time, and delayed fathers of each marital and co-residence status. This model assesses the central contention of the article, which is that the short and long-term impacts of fatherhood on work hours depend on age at the birth.

Twenty-one percent of the observations in the data were missing values on one or more variables. The two most common missing variables were labor force experience (13% missing) and respondents' fathers' education (9%). Other variables were missing no more than 1% of the time. The *ice* routine in *Stata 11.2* was used to create five datasets with values imputed under the MAR assumption, and the *mim* routine was used to analyze these datasets (Carlin, Galati, & Royston, 2008). Models using the complete cases only produced nearly identical results.

All regression models are estimated without weights. Although sampling weights are available for any given NLSY79 interview, there is no practical weight for this dataset, which was assembled by drawing differing numbers of observations for each case.

Results

Descriptive Differences by Fatherhood Timing

Table 1 contains descriptive statistics for all variables for the entire sample, for the three subgroups of fathers based on age at first birth, and for men who never reported a child ("no birth"). Many of the observed group means are consistent with past research about men's birth timing. Among those who became fathers, the likelihood of professional or managerial employment, the fraction of time spent as a student, educational attainment, and gender egalitarianism each rise monotonically with age at the first birth. Men who became fathers before 24 also come from the least advantaged backgrounds; their fathers were the least educated, and they were least likely to be raised by two biological or adoptive parents. In

addition, the highest fractions of Black and Hispanic respondents are found among the earliest fathers. Those who never became fathers have intermediate values for many variables, but they are rarely observed to be married, and they have the lowest values for labor force experience and hours of employment.

Table 1 about here

Elaboration of the Fatherhood Effect

Model 1 in Table 2 reports the estimated effect of fatherhood on weekly hours, with age, marital status, race, gender role attitudes, and family background held constant. According to the results, fatherhood is associated with statistically significant ($p < .001$) increases in men's hours in the short and the long-term and also at the last observation before the birth. The predicted effect of anticipating fatherhood, 2.66 hours, is the largest, and the long-term effect of 1.38 hours is the smallest. The column labeled " β " displays semi-standardized regression coefficients, which measure the relative strength (or effect size) of each predictor in this model but are not comparable across models (Pampel, 2000). In contrast to the unstandardized results, the semi-standardized effect of fatherhood is actually largest in the long term.

Table 2 about here

It is important to note that the effects of fatherhood are modest in comparison to many of the controls. The semi-standardized beta effect of marriage on men's hours ($\beta = 1.85$) is several times larger than any of the effects of fatherhood. Race, gender role attitudes, and family structure each have larger effects than fatherhood as well.

Model 2 in Table 2 reports the results of testing the first research hypothesis, namely that fatherhood will have the greatest effect on the hours of men who are married and living with their children. The findings do not support this proposition. Married coresident fathers are

predicted to increase their employment hours by 1.12 in the short term, and by 1.34 hours in the long term ($p < .05$). However, the unstandardized short and long term coefficients for unmarried resident fathers are considerably larger, 4.78 and 3.38 hours respectively. The short-term coefficient of 2.10 hours for nonresident fathers is also significant and larger than the coefficient for married coresident fathers, but there is no long term effect of fatherhood on men who do not live with their children. The significant beta effects are more comparable in size, but the coefficient for married fathers is never notably larger than the others. Similarly, anticipation of fatherhood is predicted to increase married men's hours by a statistically significant 1.28 hours, but the coefficient for unmarried fathers is three times larger in both unstandardized and semi-standardized units.

Birth Timing Variation

According to hypotheses 3 and 4, the impact of fatherhood should vary based on parental timing. Model 1 in Table 3 tests these conjectures. In addition to the variables in the previous models, this model controls for the timing of birth and interacts birth timing with the combination of parental status, marital status, and residential status.

Table 3 about here

While the results are not entirely consistent with expectations, they confirm the importance of age at first birth. First, this model predicts that employment hours will increase before a first birth only among unmarried men who will become on-time or delayed fathers. Specifically, anticipating on-time fatherhood is associated with an increase of 2.31 hours, and the coefficient for delayed fathers is 3.32 hours. More than 60% of such men in the sample will be married by the first observation after the birth. Thus, employment effort appears to be increasing just prior to anticipated marriage and childbirth, which is in line with the concept of normative

marriage. Early unmarried men's hours do not increase in anticipation of fatherhood. Nor do those of any married fathers, although in this model, as in the previous results, the beta effect of marital status exceeds every effect of parenthood.

Hypothesis 3 predicted that the short-term effect of fatherhood would be largest for early, married coresident fathers. According to the results in model 1, there is only one significant short-term effect, and it is experienced by *unmarried* men who live with their children. They are predicted to work 6.65 hours more than before. However, this only represents a modest increase of 0.24 in semi-standardized units.

Hypothesis 3A proposed that any short-term effects of the transition to parenthood on young men would be statistically explained by controls for labor force experience and school enrollment. Model 2 in Table 3 includes these controls, as well as professional and managerial employment and educational attainment. Contrary to expectation, the coefficient for being an early, unmarried, coresident father is similar in the two models. (Additional analysis shows similar results if educational attainment and professional/managerial employment are excluded.) In addition, model 2 reveals a suppressor effect on delayed married fathers. With labor force experience and school enrollment held constant, delayed married fathers are predicted to work 2.59 hours less than otherwise in the short term.

Hypothesis 4 predicted that, over time, delayed married fathers would work longer hours than before. This hypothesis is supported by the evidence. The model predicts that being a delayed married father is associated with a 1.15 hour increase in employment. In addition, unmarried but coresident on-time fatherhood is associated with an increase of 3.35 hours. However, the effect sizes are again modest, at 0.24 and 0.34 respectively.

While it was initially expected that fatherhood would have no long term impact on men who had a first birth at early ages, it turns out to be a disadvantage. Early fatherhood is predicted to reduce married men's hours by 3.34, and nonresident men's hours by 4.32. The effect sizes are -1.08 and -1.12, indicating that being an early father has a strong effect when compared to many of the controls. There is no significant effect on unmarried coresident fathers.

Hypothesis 4A had specified that any positive effects of parenthood on delayed fathers' hours would be statistically explained by controls for educational attainment and professional and managerial employment. The results in Model 2 appear to confirm the hypothesis; with these controls in the model, the positive effect of fatherhood on married delayed fathers actually reverses in sign, becoming -1.43. In addition, the positive coefficient for unmarried, coresident, on-time fathers shrinks to 1.97, although it remains statistically significant. However, additional analysis reveals that school enrollment and labor force experience are responsible for reducing the size of these coefficients. With these factors excluded from the model, the two fatherhood coefficients in question are similar to Model 1, even if attainment or professional and managerial employment are controlled.

The additional controls in Model 4 have several other effects on the coefficients for fatherhood. The effect of being an early married father shrinks to -2.07, becoming statistically non-significant in the process. Also, the effect of being an on-time nonresident father becomes a statistically significant -1.77.

Before turning away from the statistical models in Table 3, it is worthwhile to discuss the other coefficients. First, early fathers have a higher intercept than delayed fathers. According to the results from Model 1, the youngest fathers are predicted to work 5.62 hours more than childless men before they make the transition to parenthood, but the corresponding coefficients

for the two older groups of men are 3.48 and 3.63. Second, similarly to the earlier models, the predicted effect of being married is a highly significant 3.94 hours per week.

Figure 1 about here

The importance of these coefficients is depicted in Figure 1. The figure presents predicted work hour trajectories for men who become fathers at three ages. The hypothetical men in the figure get married to the mothers of the first children during the year of the final observation before the first birth: age 20 for the early father, 26 for the on-time father, and 32 for the delayed father. All the other control variables are held at their mean values. The figure shows that the earliest father is working the longest hours at age 18, which reflects the high intercept for early fathers. His employment hours trajectory slopes upward more sharply than other men's between 18 and 22, the years during which he transitions to marriage and parenthood. Between 22 and 25, however, hours of employment drop as the negative long-term effect of fatherhood sets in. The men who become fathers at 27 and 33 then catch up with and surpass the early father as they, too, transition to marriage and parenthood. Finally, the positive long-term effect of fatherhood on delayed fathers can be seen at age 36, when delayed fathers are predicted to work the longest hours.

Dual-Earner Marriage and Gender Egalitarianism among Delayed Fathers

Hypothesis 2 proposed, in line with rational choice theory and past empirical research, that married fathers' hours will increase less if their spouses are employed. To test this hypothesis, a dummy variable indicating spousal employment was added to model 1 in Table 3, and this dummy was interacted with each of the coefficients for married, coresident fatherhood (results not shown). Surprisingly, married coresident fathers were not predicted to work fewer hours if their wives were employed. However, all the long-term coefficients were in the expected

direction of shorter hours in dual-earner homes, and the coefficients for on-time and delayed fathers were marginally significant ($p < .10$).

Hypothesis 5 predicted that older men who become married fathers will not experience as much of a subsequent increase in their employment hours if they believe in an egalitarian division of labor in the family. To test this proposition, I fit models which interacted the coefficients for married fatherhood and the gender role attitude scale to model 1 in Table 3 (results not shown). In this case, the results confirmed the hypothesis. In the long term, a delayed father who is one standard deviation above the mean in egalitarianism is predicted to work 1.11 fewer hours once he becomes a parent than a similar man who is at the mean ($p < .05$). Put another way, an egalitarian delayed father will work about 2.25 hours less than a similar man whose traditional views place him one standard deviation below the mean. By contrast, egalitarianism does not significantly impact the hours of men who become fathers at earlier ages.

Robustness Checks: Underemployment and Overwork

To test the robustness of the results, the models were also run with two alternate versions of the dependent variable. First, fathers were divided between those who were underemployed, or working fewer than thirty hours per week (18% of the observations), and all others. Second, those who were overworked, or employed at least 50 hours (19% of the observations) were distinguished from the rest. Because these were dichotomous dependent variables, logistic random effects models were used.

Although the results (not shown) mirror those presented in this article in many ways, there are several noteworthy differences. First, in the long run, fatherhood is predicted to protect on-time and delayed married fathers from being underemployed, but not to protect any

unmarried fathers, including those living with their children. Second, although several types of fathers are predicted to have increased odds of overworking in the long term, fatherhood is not predicted to increase any group of men's chances of overworking at the first observation after the birth. Finally, in contrast to the results for linear employment hours, being in a dual-earner marriage is predicted to significantly reduce many men's odds of overworking in the long run: by 22% for on-time fathers ($p < .01$) and by 21% for delayed fathers ($p < .05$). The effect on early fathers is not statistically significant.

Discussion

Summary and Limitations

This paper provides methodologically sophisticated evidence about the conditions under which men experience increased hours of employment as a result of fatherhood. Marital status, coresidence with children, and the timing of fatherhood all prove to be important conditioning factors. However, they do not always operate in the ways that were anticipated.

The expectation that fatherhood would have the greatest effect on married coresident men is only partly confirmed. Married resident fatherhood is sometimes associated with increased employment, but the effects are, if anything, largest for *unmarried* men who live with their children. On the other hand, only married fathers are predicted to be protected from underemployment in the long term, and only if they had their first child at 24 or above.

In the short term, married coresident fathers are not predicted to increase their hours – not even those who experienced fatherhood at young ages. Instead, unmarried but coresident early fathers are. Contrary to prediction, work experience and school enrollment do not explain this effect. In the long term, the model produced a hypothesized result, namely that married men work more only if they are delayed fathers. Unmarried, coresident, on-time fathers do so as well.

Early fathers never do, and indeed, most early fathers are predicted to work less in the long run. Measures of human capital did not explain the positive long-term effects, but work experience and school enrollment did. In the next section, I consider how to interpret this unexpected finding.

Given the existence of earlier findings (Lundberg & Rose, 2000), it is surprising that the evidence does not strongly confirm that married men's hours would increase more if their wives were not employed. However, when overwork is used as an alternative outcome, this hypothesis is supported for on-time and delayed fathers. Finally, the hypothesis concerning the effect of gender egalitarianism was the only one that was completely confirmed. Among married men, only delayed fathers are predicted to work less if they espouse egalitarian gender attitudes.

In interpreting these results, several limitations of this study must be kept in mind. First, although the random effects models presented here reduce the chances that the apparent effects of fatherhood are due to selection, a selection explanation remains an alternative interpretation of the findings. It was also previously acknowledged that cohabitation could not be included in the study because it was not measured in the earlier waves of the NLSY79. As a result, the extent to which the effects of fatherhood on unmarried men are driven by cohabiters is unknown. Other family statuses and transitions, such as a second birth, remarriage, and the presence of step-children, could have been included in the study, but only at the cost of spiraling model complexity. The models exclude these contingencies in order to focus on testing the hypotheses.

Some of the variables here are imperfect proxies for the theoretical constructs of interest. In particular, educational attainment and professional/managerial employment are rough measures of men's human capital and "elite employment". Better measures might have explained more of the effects of being a parent on delayed fathers. Similarly, the measure of

egalitarianism in the family is composed of questions asking primarily about the role of women, not men. A measure that included more questions about men's roles might have moderated the effect of parenthood on married fathers more strongly. Finally, the NLSY79 is a study of members of one particular cohort who are now years past the typical ages of family formation. Because more recent cohorts of men have come of age in an era of higher unemployment and stagnating earnings, as well as further increases in the average age of becoming a parent, future work should investigate the impact of fatherhood on them.

Implications

The central role of marital status in the results is not surprising, as the rational choice, normative marriage, and employer preference theories each lead to the prediction that married fathers will be more likely to work longer hours after the transition to parenthood. Yet while there are some positive effects of fatherhood on the hours of married men, the largest effects, especially in unstandardized units, are those for unmarried fathers who live with their children. What might account for these findings?

Cohabitation was growing in prevalence during the period of data collection (Smock & Gupta, 2002). So was single fatherhood, although its incidence remained low (Current Population Survey, 2005). Although the data do not indicate whether unmarried coresident fathers are raising children with partners, it is likely that the estimated effects of parenthood on them may be attributed to two factors. First, as expected, unmarried cohabiting fathers – particularly those living with the children's mothers – may be in relationships that function like marriages, albeit lacking the formal sanction of the state. In addition, fathers without partners may have been driven to secure longer hours in order to support their children, especially if they were not employed full-time previously. Future work should seek to confirm this phenomenon.

Another piece of the puzzle appears to be that marriage itself has such a strong and positive effect on men's hours that there is limited scope for the transition to parenthood to lead to further increases. Nock's discussion of normative marriage certainly links marriage and employment. The rational choice theory does as well, since married men potentially have a partner who can specialize in household work while they specialize in paid employment. It is also possible that employers favor married men, just as some work has suggested they favor fathers (Coltrane, 2004; Hodges & Budig, 2010).

Even with marriage controlled, this study has found some important effects of fatherhood *per se*. Married men who become fathers at 30 or older work more hours in the long term, while early fathers' hours are shorter than before. Delayed fathers may have the greatest human capital, but this does not appear to explain the effect of fatherhood on them, as had been expected. Rather, delayed fathers tend to be the last in their cohort to finish school and to seek full-time employment. Fatherhood is therefore associated with longer hours for them for the simple reason that they were less likely to work full-time until around the age they became parents. This may have been due to being in school, or to lack of success finding stable employment, or to other, unmeasured factors.

It is also possible that early and delayed fathers' differences in human capital *indirectly* contribute to the longer hours of the latter group. Recall that delayed fathers are predicted to have low odds of underemployment in the long term. In addition, early fathers' odds are predicted to be marginally higher than before fatherhood ($p < .10$). The high educational attainment of many delayed fathers may protect them from underemployment. Others have demonstrated that educational attainment promotes "career stability", or remaining employed over time at a decent wage (Oppenheimer, Kalmijn, & Lim, 1997). Men who have waited to

finish higher education before becoming fathers may be the ones with the most stable subsequent careers. In contrast, early fathers, with lower average levels of human capital, may be more vulnerable to career reversals. Fatherhood may not be predicted to increase their hours in the aggregate because a relatively large fraction of them are out of work or on the job for fewer hours than they would prefer. If this is true, then this study contributes further evidence that delaying fatherhood tends to enhance long-term economic well-being (Coltrane, 1996; Parke & Neville, 1995).

The results here have demonstrated that delayed fathers work less if they hold egalitarian attitudes. Also, although there is no significant effect on linear hours, many married fathers with employed partners avoid overwork in the long run. Both of these findings are good news from the perspective of women's work-family issues and children's well-being. On the other hand, the predicted differences between groups are modest. Delayed married fathers with egalitarian views are still fulfilling the masculine breadwinner role in their families, just as dual-earner fathers are. This is evidence for the power of the "package deal" (Townsend, 2002) that normative marriage represents.

The findings from this study raise several questions that would be valuable avenues of future research for scholars. First, to what extent does the income "bonus" fathers have been found to receive (Glauber, 2008; Lundberg & Rose, 2000, 2002; Nock, 1998) vary by the timing of fatherhood? To the extent that there is timing variation, is it due to differences between fathers in human capital, or do other explanations come into play?

Further attention should also be paid to the impact of delayed fatherhood on children's socio-emotional well-being. By and large, the research has shown that delayed fatherhood is associated with good parenting and with positive child outcomes (Cooney, Pedersen, Indelicato,

& Palkovitz, 1993; Parke & Neville, 1995). Is the positive impact lessened when men work long hours, or are they able to compensate through spousal attention, third parties, and other mechanisms?

Finally, more needs to be done to explore non-resident fathers' employment. Fatherhood appears to have little impact on the hours of men who do not live with their children, with the exception of one negative effect. What are the contexts within which non-resident fathers work longer hours than they did when they were childless? Non-resident fathers, may not provide the same quality and quantity of face-to-face interaction with their children as co-resident fathers (Carlson & McLanahan, 2002), but they can pay formal child support and offer informal material assistance. Studying the effects of parenthood on these men's hours – and wages – will further our understanding of the conditions under which they do so.

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¹In addition to the “cross-sectional” sample selected to represent the population of U.S. youth, the initial NLSY79 sample contained a supplementary sample of Black and Hispanic youths and of White youths living in low income households, and a second supplementary sample of youths serving in the armed forces. Results from identical models fitted to the full sample and the cross-sectional sample frequently differed. This article presents results from the cross-sectional sample, which is more generalizable to the population of those who were 14 to 22 in 1979.

² It might have been desirable to separately examine those who became parents between 30 and 34, and at 35 or older, but the latter group was too small for separate analysis. Similarly, it would have been interesting to isolate

those who became fathers before 21. However, such men contributed very few observations before the birth, so the estimated effect of parenthood upon them in the random effects model is not reliable.

³ Supplementary analysis showed that the effect of fatherhood on men who do not live with their children did not significantly vary based on marital status.

⁴ Hours of work are sometimes modeled using a Tobit regression specification because of a large number of zeroes. In this sample, respondents did not work at all during the survey year in 5.44 percent of cases. Results obtained using linear and Tobit models were virtually identical. I present results from the linear model here because missing data could be accounted for in this model using multiple imputation in *Stata 11.2*.