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Is It All about Money? Work Characteristics and Women's and Men's Marriage Formation in Early Adulthood

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Abstract

Using data from the NLSY 97, this paper investigates how work characteristics (earnings and autonomy) shape young adults' transition to first marriage separately for men and women. The results suggest that earnings are positively associated with marriage and that this association is as strong for women as men in their mid-to-late twenties. Additionally, occupational autonomy—having the control over one's own work structure—facilitates entry into first marriage for women in their mid-to late-20s but, for men, occupational autonomy is not associated with marriage at these ages. These results suggest that even as women's earnings are increasingly important for marriage, other aspects of work are also important for stable family formation.

Keywords

marriage formation; occupational autonomy; earnings; gender; young adulthood

A large interdisciplinary theoretical and empirical literature attempts to understand how work characteristics shape family life. One well-developed area of research investigates the role of earnings and how this varies by gender. Many studies point to the importance of economic self-sufficiency in shaping whether and when a couple marries in the United States (Landale & Tolnay, 1991). Historically, men have been the primary breadwinners and women had few opportunities for employment, making men's earnings potential a key determinant of marriage (Oppenheimer, 1997). Oppenheimer's theory of marriage timing (1988, 1994, 1997) anticipates that as women's economic opportunities have increased, women's earnings are increasingly important to a couple's economic well-being. Previous research provides support for Oppenheimer's perspective; women's earnings were irrelevant to marriage historically but became a significant predictor for women transitioning into adulthood in the 1980s (Sweeney, 2002).

Another body of research investigates ways that other aspects of work shape family life. For example, nonstandard work schedules are associated with an increased risk of divorce (Presser, 2000) and job autonomy is associated with lower work-family conflict (Bakker & Geurts, 2004; Clark 2001). The theory of marriage timing as well as other theories based in a life-course framework (e.g., Arnett, 2004; Mortimer & Kim, 2010) anticipates that work

shapes marriage for other reasons in addition to earnings effects. Yet previous research has not investigated how other aspects of work might facilitate or impede marriage.

Combining data from the first thirteen waves of the National Longitudinal Survey of Youth 1997 and the O*NET Occupational Database, this study extends previous research by considering the relationship between work autonomy and the timing of first marriage. We argue that work characteristics are important for first marriage timing not only because employment contributes to economic self-sufficiency but also because aspects of employment can help youth become and feel more capable of meeting other obligations of marriage. Furthermore, because of gender differences in family obligations, we expect that the relevance of earnings and autonomy may differ for men and women. This research also contributes to the literature by providing an updated and improved estimate of the association between earnings and marriage for a cohort transitioning into adulthood in the 2000s. Given that earnings, autonomy, as well as occupational status, are all positively correlated, the relationship of each one of these three aspects of work with the risk of marriage may be confounded by one another. By controlling for autonomy and occupational status, we improve the estimation of the potential influence of earnings on the timing of marriage.

Background

Despite delays in marriage, marriage still retains its special and highly valued place in the family system and its symbolic significance as a marker of prestige and personal achievement has become even stronger (Cherlin, 2004). It is still a relationship that requires individuals to meet culturally specified obligations, including meeting the social, emotional, and material needs of spouses (and children), and it continues to be strongly institutionalized and gendered (Raley & Sweeney, 2009). Despite the increasing labor force participation of women, particularly married women (Juhn & Potter, 2006), and the gradual increase in time that men spend with children and domestic work (Bianchi, Milkie, Sayer, & Robinson, 2000; Bianchi, Robinson, & Milkie, 2006; Sayer, 2005), many family obligations still remain gender-specific. For example, married women still spend more time than married men taking care of children and married men still spend more time than married women at work and leisure (Bianchi, Milkie, Sayer, & Robinson, 2000; Bianchi, Robinson, & Milkie, 2006; Sandberg & Hofferth, 2001, 2005; Sayer, 2005; Shelton, 1992). To marry young people need to cultivate capacities for fulfilling these gender-specific criteria and role expectations for marriage. Below, we develop hypotheses about how earnings and autonomy might shape young people's transition to first marriage and how this might differ by gender as well as age.

Earnings and Marriage Formation

Normatively, married-couple households should be financially independent (Gibson-Davis, Edin, & McLanahan, 2005; Harknett & Kuperberg, 2011; Smock, Manning, & Porter, 2005) so the timing of transition to marriage is strongly determined by the timing of the transition into stable employment (Oppenheimer, Kalmijn, & Lim, 1997). As mentioned above, this association between employment and marriage has historically been stronger for men than

for women. Men with higher incomes are more confident in their ability to meet the obligations of marriage (e.g., as breadwinners) and are also more attractive on the marriage market. On the other hand, whether employment and earnings facilitate marriage for women as well has been a matter of debate.

Becker (1981) suggested that as women devote an increasing portion of their time and effort to paid work, the gains to marriage for both men and women declined, leading to a retreat from marriage. Oppenheimer's theory of marriage timing (1988), in contrast, suggests that increases in women's economic opportunities have changed mate selection processes. In short, today many women delay marriage in part to get more education and in part because there is greater uncertainty about what their future work roles will be. Yet Oppenheimer argues that women's economic contributions can facilitate marriage formation, especially after they have completed school, started a job, and uncertainty about their future work roles has declined. Researchers have consistently found support for aspects of Oppenheimer's thesis, showing that earnings are positively associated with first marriages for men (Oppenheimer, 2003; Schwartz & Mare, 2005; Xie, Raymo, Goyette, & Thornton, 2003) and have become more important for women in determining their position in the marriage market (Oppenheimer, 1994; Schwartz & Mare, 2005; Sweeney, 2002; Sweeney & Cancian, 2004). Consequently, we expect to find that earnings are positively associated with marriage for both men and women, and because marriage continues to be gendered, we expect that earnings are more strongly associated with marriage for men than women even for a cohort that has only recently passed through its twenties.

Although earnings are a necessary prerequisite for marriage, they may not be the only aspect of work that relates to their ability to marry. Particularly as work is an important aspect of one's adult identity and lifestyle (Arnett, 2004; Mortimer, Vuolo, Staff, Wakefield, & Xie, 2008), we propose another aspect of work that may also matter for young adult's marriage: occupational autonomy.

Occupational Autonomy and Marriage Formation

Autonomy, the degree of discretion that workers have to determine *how*, *when*, and *where* they get their work done (Bailyn, 1993, 1997; Breugh, 1985, 1989), is important for family life. Having control over the work process is a central resource for reducing the negative effects of work demands on employees' health and psychological wellbeing (e.g., burnout, see Bakker, Demerouti, & Euwema, 2005, for example). Moreover, workers who have control over their own work processes tend to have higher levels of work engagement (Bakker, Demerouti, & Euwema, 2005; Parker, Wall, & Jackson, 1997) and greater job satisfaction (Bakker, Demerouti, & Euwema, 2005; Clark, 2001; Hackman & Oldham, 1976; Parker, Wall, & Jackson, 1997). For both female and male workers, these positive outcomes at work lead to positive work-home interface (Bakker & Geurts, 2004; Clark, 2001; Grzywacz & Marks, 2000; Voydanoff, 2004), higher levels of work-to-family facilitation (Grzywacz & Butler, 2005), and family wellbeing (Clark, 2001).

We expect that autonomy might also facilitate marriage for a variety of reasons. Autonomous jobs require that workers take more responsibility. Having a job with more autonomy could help young adults develop an adult identity and a greater sense of

competence and control (Mortimer & Kim, 2010; Ross, 2000; Ross & Wright, 1998). Autonomy may also provide more flexibility, helping young adults manage the competing demands of work and personal life. Further, we anticipate that work autonomy may matter differently for women than men in view of the fact that marriage continues to be a strongly gendered institution: Wives continue to have primary responsibility for child care, emotion work, and household maintenance, even in dual-earner couples (Arendell, 2001; Bianchi, Milkie, Sayer, & Robinson, 2000; Daly, 2002; Presser, 1994). Being able to reconcile both work and family domains appears to be a bigger issue for women than for men (Byron, 2005; Nomaguchi, Milkie, & Bianchi, 2005; O’Laughlin & Bischoff, 2005), even if there is some evidence that work-family conflict has increased significantly more among men than women (Nomaguchi, 2009). Consequently, having a job that increases their control over the demands of work may be especially important for women as they anticipate the future family obligations that they are going to assume after marriage and possibly childbearing (Martinengo, Jacob, & Hill, 2010). Thus we hypothesize that the occupational autonomy matters more for women than for men.

Variations by Age during Early Adulthood

The life course perspective (e.g., Elder, Johnson, & Crosnoe, 2003; Shanahan, 2000; Shanahan, Mortimer, & Krüger, 2002) anticipates that the factors that shape marriage formation should vary over the early adult years. For example, school enrollment decreases the marriage rate only up to the early 20s; after that, school enrollment is not associated with marriage rates (Goldscheider & Waite, 1986). In contrast, work characteristics are likely irrelevant during the teen years, but become more important over the 20s. This is partly because many conceptualize young adulthood as a time of experimentation, self-exploration, and human capital investment. Arnett (2000, 2004, 2007) coins the term *emerging adulthood* to distinguish the late teens to mid-20s from the life stages of adolescence and early adulthood, emphasizing the variable, transient, uncertain, and vulnerable nature of this developmental stage.

Coming from a different theoretical orientation, but arriving at nearly the same place, Oppenheimer (1988) proposed that early in adulthood economic opportunity should decrease the chances of marriage for two reasons. First, those with opportunity spend their time developing their careers. Second, early adulthood is full of uncertainty about eventual adult roles. Employment in the teens and early twenties often has little to do with future occupations or developing skills that will form the basis for the work they will/ want to do as adults.

Basic descriptions of the early adult life course perspective support this expectation. Of young people today in their late teens and early 20s, many (e.g., middle-class youth) are enrolled in school (Davis & Bauman, 2011). Some are out of school, occupying so-called “bad” jobs, with lower hourly wages, no health insurance or pension benefits, and high turnover rates (Kalleberg, Reskin, & Hudson, 2000), and searching for jobs that can turn into long-term careers. Others are neither in school nor performing economic activities (Danziger & Ratner, 2010; Powers, 1994). In all of these cases, uncertainties about work, both its near-term stability and future prospects, decrease the chances of marriage for both men and

women (Kalmijn, 2011; Sweeney, 2002). In contrast, work characteristics may be more important for marriage as employment becomes more stable and future work roles become clearer (Oppenheimer, 1988).

Data and Methods

Data for this analysis come from Rounds 1–13 of the 1997 National Longitudinal Survey of Youth (NLSY), a national sample survey of 8,984 youth born between January 1980 and December 1984. With the use of the sampling weights provided, the NLSY is designed to be nationally representative. In this study, we use sampling weights from the first round of the NLSY 97 for all of our analyses. Respondents have been interviewed annually since 1997. Between September 2009 and April 2010, at which time the thirteenth survey round was taking place, the oldest respondents were just finishing their 20s. Although NLSY 97 respondents are still young and many of them have not yet married, due to its detailed information on employment and union formation, this data set serves as an excellent resource for researchers interested in understanding the association between labor-market participation and marriage formation among the younger American cohorts. The sample for our analysis is restricted to the respondents who had not experienced their first marriage by the time they reached age 18. Moreover, those respondents who have missing data on the dates of first marriages or whose last interviews occurred before age 18 are also excluded from the sample. This leaves us with 8,677 respondents, almost half female and half male, observed unmarried at age 18. They remain in the sample until the respondents either married or were last interviewed.

In addition to the NLSY 97, we have an additional data source—the O*NET—for information on occupational autonomy and occupational status. The O*NET, created by the Occupation Information Network, is to replace the Dictionary of Occupational Titles. This database, based on the 2000 Standard Occupational Classification (SOC) system, has approximately 1,000 occupation categories (O*NET Code Connector, n.d.) and provides detailed information on occupational characteristics, including indicators of autonomy and status. Because the O*NET occupation categories are more detailed than census categories (509 occupation categories in the 2000 Census) (Fronczek & Johnson, 2003), we aggregated O*NET's more-detailed occupation categories using the crosswalk between Census 2000 and SOC 2000 occupation codes provided by National Crosswalk Service Center. We were then able to match 505 occupation categories and merge the occupational indicators in the O*NET onto the NLSY.

Since the O*NET occupation categories are more detailed than census categories, when aggregating O*NET occupational categories to merge them onto the NLSY, we created variables describing the minimum and maximum autonomy scores for census occupation codes that had more than one O*NET code. For those occupations where the minimum and maximum are very different, we are less certain that the autonomy score is an accurate reflection of the respondent's actual occupational autonomy. To examine whether the uncertainty of measurement may affect our estimation of the coefficients of occupational characteristics, we added a variable describing this uncertainty (the difference, ranging from 0 to 1.05, between the maximum and minimum scores of occupational autonomy) and then

added an interaction between the uncertainty variable and the measure of autonomy. The results (not shown) suggest that the estimated associations between occupational characteristics and marriage do not vary by the uncertainty of measurement.

An advantage of using the O*NET over self-reported work attributes is that it avoids positivity bias. Perhaps people who tend to evaluate their occupations positively are more upbeat and attractive on the marriage market. Yet a disadvantage is that there is considerable variability within occupations in work attributes. If this research finds an association, future data collections might consider measuring work autonomy at a more localized level.

Using birthdates and dates of first marriages, we converted the data into person-months and created two data sets: the complete person-month and the restricted person-month data. The complete person-month data include up to 147 months of observations per individual with first month indicating the month when respondents turned 18 years old. We include all person-months up to first marriage or last interview. The restricted person-month data set excludes person-months that respondents were either not employed or enrolled in school.

Measures

The dependent variable—The main dependent variable of interest in this study is the timing of first marriage. In the person-month data set, it is a dummy variable that measures the transition into first marriage, and is equal to 0 prior to first marriage and 1 in the first month of marriage. In our sample, 1,542 female respondents and 1,274 male respondents have married as of their last NLSY interview.

The independent variables—To measure young adults' *earnings*, we use the annual earnings reports from the respondents, indicating the total income they receive from wages, salary, commissions, or tips from all jobs they have had in the year prior to interview. Our measure of earnings is lagged one year to ensure that the measure reflects earnings prior to marriage. That is, reported earnings in the previous year are used to predict marriage in the subsequent year. Furthermore, because our measure is annual, all person-months in a given year take the same values, regardless of employment status in a particular month during that year. In doing this, we conceptualize earnings as a general indicator of economic resources, while the employment variables (described below) are indicators of month-to-month changes in circumstances. We transform annual earnings variable with natural logarithm before modeling it.

Measures of *employment hours* are constructed based on an NLSY-created variable describing the number of work hours each week. We average the weekly variables to create monthly indicators and recode this variable into 3 categories: *not employed*, *part-time employment* (working fewer than 35 hours a week), and *full-time employment* (working at least 35 hours a week).

To measure occupational autonomy we use an indicator from the O*NET database—*freedom to structure one's own work*. This variable indicates the level of freedom workers in the occupation have to determine tasks, priorities, and goals. It is measured on a 1-to-5 scale, with 1 indicating *having little to no autonomy at work* and 5 indicating *having a high level*

of autonomy at work. Additionally, in young adulthood, working in occupations with high status might facilitate marriage by increasing their attractiveness on the marriage market. Given that autonomy, status, and earnings are all positively correlated and they all may influence marriage formation, we control for *occupational status*. The measure of occupational status, *recognition*, comes from the O*NET as well. The O*NET constructs this indicator based on four occupational characteristics: *opportunities for advancement, recognition workers receive for the work they do, degree of authority, and the extent to which workers are looked up to by others in their company and their community*. This measure is highly correlated with alternative measures of occupational status (see Frederick & Hauser, 2010): the correlation coefficient is 0.88 for occupational education (i.e., the percentage of people in the occupation that holds a college degree, see Hauser & Warren, 1997), 0.86–0.88 for prestige scores (see Nakao & Treas, 1994; Stevens & Cho, 1985), and 0.86 for status scores (see Nakao & Treas, 1994). Moreover, using these alternative measures for status does not change our findings on how occupational autonomy and earnings are associated with the timing of marriage.

To evaluate the validity of our measure of autonomy we estimated its correlation with occupational status and looked for occupations with low status but high autonomy and vice versa. We found that status and autonomy are positively correlated in our analysis sample, with a correlation coefficient of 0.64. Yet autonomy and status are not equivalent. For example, laundry and dry-cleaning workers or door-to-door sales workers, news and street vendors have occupational status in the bottom quartile but levels of autonomy in the top quartile of the distribution (4.26 and 4.85, respectively). Their occupational autonomy is higher than that of computer programmers (3.51) and actors (3.48), whose occupational status, on the other hand, is in the top quartile of the distribution.

In our person-month data sets, these two occupational characteristics (i.e., autonomy and status) can change on a monthly basis to reflect changes in respondents' occupations or shifts in their employment status. Individuals who are not employed do not have valid values on the measures of autonomy. We address this issue in two ways. First, we estimate models using the restricted data set, which includes only person-months employed and not enrolled in school. Second, to ensure that our analyses are not distorted by the restriction, we estimate models using the complete person-month data set, centering autonomy on the sample mean for the employed and assigning zeros for those who are not employed. In these models, the employment variables indicate the influence of employment on marriage at the average level of autonomy. The autonomy variable indicates how the association between employment and marriage changes as autonomy or status increases or decreases. Our findings are substantively consistent across these two data sets and thus we present multivariate analysis only for the restricted sample.

Other controls—Earlier research shows that family background affects individuals' labor-market performance and marriage formation. Therefore, in the analysis, control variables include respondents' race- ethnicity (non-Hispanic White, non-Hispanic Black, Hispanics, and other), family structure when respondents were at age 12 (two-biological parent, single mother, stepparent, and other), and education level of the respondent's most highly educated

parent (less than high school, high school graduate or GED, some college, and college graduate or more).

We also include other control variables that vary on either a monthly or yearly basis. Previous studies have suggested that educational attainment and school enrollment can shape one's employment and path to marriage (e.g., Oppenheimer 2003; Raley 1996; Xie, Raymo, Goyette, & Thornton, 2003). Young people are less likely to marry and participate in the labor force actively and extensively when they are currently enrolled in school. Moreover, those living in the South and nonmetropolitan areas were more likely to marry at earlier ages but also had lower earnings. To account for these factors, we construct variables based on yearly information on respondents' regional (i.e., Northeast, North Central, West, and South) and metropolitan area of residence, current educational attainment on a yearly basis (less than high school, high school graduate or GED, some college, and college graduate or more), and a dummy variable, indicating whether or not respondents were currently enrolled in school in the given month.

An increasing proportion of births are to unmarried women in the United States (Hamilton, Martin, & Ventura, 2006). Given that premarital childbearing experience can influence parents' subsequent opportunity to marry (Bennett, Bloom, & Miller, 1995; Manning, 1993; Upchurch, Lillard, & Panis, 2001) and that having young children at home often influences parents' employment, particularly mothers' (Arun, Arun, & Borooah, 2004; Dex, Joshi, Macran, & McCulloch, 1998; Paull, 2008), our analysis takes into account whether young people are pregnant with or have had their first child. Since the likelihood of transition to marriage for unmarried parents can vary by children's life stages (Manning, 1993), in the person-month data set we construct three variables representing different stages of the first-born children's life courses. The first variable indicates the gestational period starting from the seventh month prior to the birth of the child to the month prior to the child's birth. The second variable indicates first year of the child's life, and the third variable indicates life time of the child since his/her first year birthday.

Finally, we employ the multiple imputation technique in STATA 12, using the Chained equations in MI command (White, Royston, & Wood, 2011) for the analyses with both complete and restricted person-month data sets. We generated ten imputed data sets to impute missing data on all the categorical and continuous independent variables included in the analysis (See Table 1, Table 2a, and Table 2b for the distributions on these variables for the analytical sample, both before and after multiple imputation). Ten imputations in the multiple imputation process are considered sufficient to make good inferences and to get parameter estimates that are close to being fully efficient (Allison, 2009). Results from before and after employing multiple imputation technique are substantively equivalent. Results presented here are based on the multiply imputed data.

Analysis Plan

Overall, this study approaches the analysis of men's and women's transition to first marriage from a life course perspective with a focus on two age groups: Between the ages of 18 and 23 (henceforth late teens to mid-20s) and between ages of 24 and 30 (henceforth mid-to late-20s), for a cohort born between 1980–1984. We employ logistic regression to estimate

discrete-time event history models, where time is measured by a series of dummy variables indicating respondents' age in years. That is, we allow the marriage rates to vary freely by age, imposing no functional form on the data (Allison, 1982, 2010). We estimate a series of models, starting with a baseline model that includes respondent's age in years, race/ethnicity, family structure, parental education, own educational attainment, school enrollment, residence areas, childbearing experience, employment status, occupational status, and earnings. These baseline models allow us to compare our results for a cohort recently passing through early adulthood with previous research findings on older cohorts to see whether the association between earnings and the rate of marriage continues to be positive for both women and men even as we control for occupational status. Next we add the measure of occupational autonomy to the specific models to see if autonomy is associated with marriage even with earnings, status, and educational attainment controlled. We test whether the associations between work characteristics (i.e., earnings and occupational autonomy) and the rates of marriage vary by age with a pooled model and interactions between age group and their variables of interest. Finally, we test for gender differences in the associations between earnings and autonomy and marriage.

Although we have theoretically justified reasons to expect that the predictors of marriage vary by age, our decision to cut the age groups at age 23/24 is arbitrary. We conducted a detailed analysis of how the association between school enrollment, earnings, and autonomy varies by age and found that there was a discrete change in the coefficients in the early twenties. The specific cut point varied depending across variables, but was clearest at age 23/24 for the autonomy variable, our primary focus. We tried other specifications and the results are similar if we choose alternative age cut-points and the BIC statistics for these models indicate that the model fits best if we break the data at age 23/24.

Results

Table 1 displays descriptive statistics for all time-invariant variables used in the multivariate analysis, separately for women and men. Both female and male samples have similar racial and ethnic, family structure, and parental education compositions. The distributions follow the expected pattern with about two-thirds of the sample Non-Hispanic white, just over half were raised in a two-parent family and almost a third with at least one parent with a college degree. The distributions on these time-invariant independent variables are consistent between complete and restricted multiply imputed person-month data sets and the data set without imputation.

Table 2a and 2b present the descriptive information for time-varying variables by age group for women and men, respectively. For both men and women, education increases by age and the percentage of person-months with a college degree is larger for women than for men. This is consistent with the recent trend showing that women on average have educational advantages over men in college completion (e.g., Buchmann & DiPrete, 2006). In addition, more person-months were spent enrolled in school in the late teens to mid-20s than in the mid-to late-20s. Further, in both age groups a majority of person-months were prior to first fertile pregnancy. With respect to labor force participation, a sizable proportion of the person-months were spent not employed (complete person-month data). If they worked,

women tended to work part-time and men tended to work full-time. For both men and women, earnings increase with age. Further, the data also show a persistent earnings disadvantage among women compared to men; however, the gender gap in earnings appears to be slightly smaller in the mid-to late-20s than earlier. Additionally, overall women have higher occupational status and autonomy than do men and these two work assets increase with age. The distributions on these time-varying independent variables are consistent between complete and restricted multiply imputed person-month data sets and the data set without imputation.

Women's Transition to First Marriage during the Early Years of Young Adulthood

In Table 3, Model 1 is the baseline model containing all the control variables. The left panel of Model 1 shows the coefficients and standard errors from the logistic regression model estimating marriage during the late teens to mid-20s; the right panel shows the estimates from the logistic model estimating marriage during the mid-to late-20s. Results from both panels in the baseline model are largely consistent with findings from previous studies. In both age groups, non-Hispanic black women are significantly less likely to transition to first marriages compared with the non-Hispanic white counterparts.

For women in both late teens to mid-20s and mid-to late-20s, marriage is positively associated with education, but the differences in the marriage rates are only significant between respondents with some college education and those with only a high school degree. Employment status (full-time vs. part-time) is not associated with marriage for women in either age group. Occupational status is positively associated with marriage for women in both age groups; however, the association is only significant in the older age group. With occupational status controlled, earnings are positively associated with increased likelihood of marriage for women at older ages.

In Model 2, we add occupational autonomy to the baseline model. The left panel, again, presents the estimated results for women in their late teens to mid-20s, and the right panel for women in their mid-to late-20s. In Model 2, net of all the variables in Model 1, occupational autonomy is positively associated with marriage for women in the mid-to late-20s. With a one-unit increase in the occupational autonomy, the odds of marriage in a given month are expected to increase by 81% (i.e., $1 - \exp(0.596)$). The t-test indicates that the association between occupational autonomy and marriage varies significantly by age ($t=2.56$).

In most cases, the inclusion of the occupational autonomy measure in Model 2 does not change the pattern of associations that we observed in Model 1. Yet the association between occupational status and the marriage rate in the mid-to late-20s does change. Adding the occupational autonomy measure to the baseline model, the positive association between occupational status and marriage in the mid-to late-20s becomes non-significant, whereas earnings and occupational autonomy are significantly associated with increased risk of marriage in a given month. The t-test indicates that for women, the association between earnings and marriage varies significantly by age as well ($t=2.28$).

These results are substantively similar to those from models using the complete data, with autonomy and status centered at their means. A minor exception is that in the models with complete data having at least a college degree is positively associated with marriage rates, whereas in the data restricted to employed person-months this coefficient is not statistically significant. We also investigated, using the complete data set, models that considered the association between employment stability and marriage, similar to research by Oppenheimer, Kalmijn and Lim (1997). To do this we constructed three variables measuring the length of each spell of full-time employment: less than a year, one to two years, and more than two years, to test whether the persistence of full-time employment contributes additional influence on marriage formation. The results (not shown) suggest that the length of time spent full-time employed is not associated with marriage for women or men in either age group under study.

Men's Transition to First Marriage during the Early Years of Young Adulthood

Table 4 shows the results for men. Again, Model 1 is the baseline model containing all the control variables. Results from the baseline models are largely consistent with findings from previous studies. Different from the results for women, with earnings and occupational status controlled, men in both age groups with full-time employment are significantly more likely to marry than men who are employed only part-time. Occupational status is positively associated with men's marriage. Different from the results for women, the association is significant only in the late teens to mid-20s. Earnings are positively associated with men's marriage. Moreover, the association of earnings with the rate of marriage for men is significant in their late teens to mid-20s and it continues to be so in the mid-to late-20s.

In Model 2, we add occupational autonomy to the baseline model. Net of earnings and other control variables, including occupational status, results show that occupational autonomy is not associated with men's transition to first marriage in either age group. This addition of the occupational autonomy measure does not change the pattern of associations between the control variables and marriage observed in Model 1. Earnings are still significantly associated with increased likelihood of marriage for men in both age groups, net of occupational autonomy and status. Yet the association between occupational status and marriage in the late teens to mid-20s, although it remains positive, becomes non-significant. The t-test indicates that for men, the positive association between earnings and marriage does not vary by age ($t=0.14$).

Gender Differences

We formally tested for gender differences in the associations between autonomy and earnings and first marriage by age group. The t-tests indicate that in the mid-to-late 20s, autonomy has a significantly more positive association with marriage for women than men ($t=2.34$). In addition, the positive association between earnings and marriage is significantly greater for men than women at ages 18–23 ($t=2.23$), but there is no gender difference in the association between earnings and marriage in the mid-to-late twenties.

Discussion

The U.S. labor market is increasingly stratified, with some types of work leading to higher incomes, more flexibility, and greater opportunity. Other jobs are increasingly insecure and poorly paid (Kalleberg, 2011). Contemporaneous with these changes in the labor market, opportunities for stable family formation have also become increasingly stratified by educational attainment (McLanahan, 2004). For example, whereas once college educated women were the most likely to never marry, now they are the most likely to ever marry as marriage chances for the less educated have declined over time (Goldstein & Kenny, 2001). The main goal of this study was to explore whether work characteristics are associated with marriage timing, providing suggestive evidence to connect these two trends.

We find that even with occupational status and autonomy controlled, earnings are positively associated with marriage for both men and women. Earnings are more strongly associated with marriage for men than women in the late teens to mid- 20s. Nonetheless, the importance of earnings for women increases over the life course. In the mid-to late-20s, earnings are as strong predictors of marriage for women as for men in this age group. In other words, as women become older, work characteristics become stronger predictors of the transition to marriage. This finding supports previous research that found a significant increase in the importance of women's economic ability in predicting marriage for more recent cohorts (Sweeney, 2002).

Our analyses go beyond previous work, however, by considering other work characteristics besides earnings—autonomy and status. Previous empirical analyses have narrowly conceptualized the ways that work characteristics relate to marriage formation, focusing mostly on earnings and hours of employment. We hypothesized that autonomy should be positively associated with work either because having more responsibility at work might accelerate the development of an adult identity or because flexibility helps young adults manage the competing demands of work and personal lives. We also expected that autonomy might matter more for women than men because marriage is a gendered institution and reconciling work and family roles is more difficult for women. Consistent with these expectations, we found that control over work process is positively associated with marriage rates for women in their mid-to late-20s. All in all, these results suggest that even as women's earnings are increasingly important for marriage, other aspects of work are also important for stable family formation.

Although this analysis is novel for its exploration of the association between work autonomy and marriage using a high-quality nationally representative data set, it has some important weaknesses. First, the oldest respondents in this sample are just reaching age 30 and the majority of our sample, especially those with at least a college degree, had not yet married as of the most recent interview. Thus we have no information on the factors that shape marriage at later life stages. This issue is increasingly important as the age at marriage rises. Nonetheless, the predictors of marriage vary across life stages and thus any analysis should be life-course-stage specific.

Second, this analysis cannot determine whether work characteristics lead to marriage rates. It may be that a desire to marry determines the sorts of jobs young people take or it might be that unmeasured characteristics determine both work characteristics and marriage opportunities. Nonetheless, the analyses use longitudinal data with a lagged dependent variable and control for many other predictors of marriage.

Third, and most importantly, we have only one measure of autonomy and it is at the occupation level. There is likely substantial variation within occupations in autonomy. Moreover, our measure of autonomy captures only one dimension of a multidimensional concept. Despite the aforementioned limitations, we know of no nationally representative data set that would allow us to measure work characteristics with more precision and investigate the transition to first marriage. Thus this analysis represents an advance in our understanding of how work characteristics relate to marriage timing in early adulthood within the contemporary United States. It also demonstrates the utility of the O*NET database for providing proxies for work characteristics in data sets that have occupation codes but limited measures of the social and structural aspects of the work environment. Importantly the O*NET database has many additional measures of occupational characteristics that are not explored here. In sum, this study provides some evidence that autonomy may be important for the transition to marriage and demonstrates the utility of a new data source for measuring some of other aspects of work in addition to earnings.

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Table 1

Descriptive statistics on time-invariant covariates (weighted results)

	Sample (N=8,677)		Complete person-month data ^b (w/imputation)		Restricted person-month data ^b (w/imputation)	
	Female	Male	Female	Male	Female	Male
N of respondents	4,197	4,480	4,197	4,480	3,923	4,276
N of person-months	–	–	359,349	407,488	162,881	209,112
N of marriages had formed ^a	1,542	1,274	1,542	1,274	894	850
Percentage Distribution (%), Weighted Results						
<i>Race/Ethnicity</i>						
Non-Hispanic White	66.81	66.01	63.99	64.65	64.76	65.97
Non-Hispanic Black	15.94	15.48	18.61	16.89	17.85	15.55
Hispanic	11.99	13.55	11.83	13.23	12.33	14.30
Other races	5.26	4.96	5.57	5.23	5.06	4.18
<i>Family structures (at age 12)</i>						
Two biological-parent family	52.97	56.43	52.60	55.43	49.22	53.30
Single-mother family	22.69	20.31	23.46	21.22	24.53	22.02
Step-parent family	15.97	14.89	15.11	14.99	16.89	16.13
Other types of families	8.37	8.38	8.83	8.36	9.36	8.55
<i>Parental educational attainments</i>						
Less than high school	11.06	12.53	11.52	12.62	12.01	13.88
High school	31.65	30.55	32.78	32.07	36.12	36.07
Some college	25.12	24.18	26.08	25.07	26.92	25.73
College or more	27.44	28.18	29.62	30.24	24.96	24.32
Missing information	4.73	4.57	–	–	–	–

Note:

^aFor women, 1,018 marriages were formed between ages 18–23 and 524 were formed between ages 24–30. For men, the corresponding numbers are 733 and 541. In the restricted person-month data, for women, 526 marriages were formed between ages 18 and 23 and 368 were formed between ages 24 and 30; for men, the corresponding figures are 433 and 417.

^bTo construct the restricted person-month data set, we excluded from the complete person-month data set those person-months when respondents were either not employed or enrolled in school. The difference in the sample size is due to the loss of respondents who had never been employed or had never left school (or both) before their last NLSY interview or before they became married.

Descriptive Statistics of Time-Varying Covariates by Age Group Based On Person-Month Data Sets for Women (Weighted Results)

	Age 18–23			Age 24–30		
	(1) w/o imputation, complete	(2) w/ imputation, complete	(3) w/ imputation, restricted	(1) w/o imputation, complete	(2) w/ imputation, complete	(3) w/ imputation, restricted
N. of person-months	256,808	256,080	96,910	103,269	103,269	65,971
	Mean (Std. Dev.), Weighted Results					
<i>Continuous Variables</i>						
Annual Income (ln \$) ^a	5.91 (3.86)	5.88 (0.01)	6.54 (0.01)	7.96 (3.77)	7.90 (0.01)	8.43 (0.01)
Occupational Status (1–7) ^b	2.69 (0.91)	2.66 (0.02)	2.68 (0.00)	3.27 (1.11)	3.20 (0.02)	3.25 (0.00)
Occupational autonomy (1–5) ^c	3.82 (0.42)	3.88 (0.01)	3.82 (0.00)	3.99 (0.42)	3.96 (0.02)	3.98 (0.00)
<i>Categorical Variables</i>						
<i>Education</i>						
Less than high school	13.31	14.59	14.39	8.76	9.29	6.77
High school	69.10	75.06	72.17	46.77	50.19	49.63
Some college	2.35	2.56	2.78	5.98	6.45	6.25
College or more	7.23	7.79	10.66	31.93	34.07	37.36
Missingness	8.01	–	–	6.57	–	–
<i>School Enrollment</i>						
Enrolled	47.23	47.28	–	17.74	82.25	–
Not enrolled	52.59	52.72	–	82.17	17.75	–
Missingness	0.18	–	–	0.08	–	–
<i>Fertility History of first births</i>						
No first births	75.81	78.09	71.64	71.64	62.71	65.88
Pregnancies	2.44	2.51	3.04	3.04	1.26	1.27
1st year of the child's life	4.14	4.27	4.84	4.84	2.43	2.10
2nd year or beyond of the child's life	14.68	15.13	20.47	20.47	33.60	30.75
Missingness	2.93	–	–	–	–	–
<i>Employment</i>						

	Age 18–23			Age 24–30		
	(1) w/o imputation, complete	(2) w/ imputation, complete	(3) w/ imputation, restricted	(1) w/o imputation, complete	(2) w/ imputation, complete	(3) w/ imputation, restricted
Not Employed	28.20	28.41	–	20.03	20.21	–
Part-time	39.80	40.06	38.38	24.06	24.26	26.52
Full-Time	31.32	31.53	61.62	55.09	55.54	73.48
Missingness	0.68	–	–	0.82	–	–

Note: Data are weighted. Standard deviations are shown in parentheses for continuous variables.

^a24.45 % of earnings data are missing for women between ages 18 and 23 and 24.96 % are missing between ages 24 and 30.

^bFor women, between ages 18 and 23, 1.71% of data are missing invalidly on occupational status (i.e., not due to no employment) and 2.16% are missing invalidly between ages 24 and 30.

^cFor women, between ages 18 and 23, 1.91% of data are missing invalidly on occupational autonomy (i.e., not due to no employment) and 2.54% are missing invalidly between ages 24 and 30.

Descriptive Statistics of Time-Varying Covariates by Age Group Based on Person-Month Data Sets for Men (Weighted Results)

	Age 18–23			Age 24–30		
	(1) w/o imputation, complete	(2) w/ imputation, complete	(3) w/ imputation, restricted	(1) w/o imputation, complete	(2) w/ imputation, complete	(3) w/ imputation, restricted
N. of person-months	287,966	287,966	127,415	119,522	119,522	81,697
<i>Continuous Variables</i>						
Mean (Std. Dev.), Weighted Results						
Annual Income (ln \$) ^a	6.19 (3.98)	6.14 (0.01)	6.89 (0.01)	8.23 (3.74)	8.14 (0.01)	8.65 (0.01)
Occupational Status (1–7) ^b	2.59 (0.97)	2.72 (0.02)	2.55 (0.00)	3.12 (1.19)	3.04 (0.01)	3.08 (0.00)
Occupational autonomy (1–5) ^c	3.78 (0.42)	3.83 (0.01)	3.76 (0.00)	3.92 (0.44)	3.92 (0.01)	3.91 (0.00)
<i>Categorical Variables</i>						
<i>Education</i>						
Less than high school	16.61	18.89	19.07	9.96	10.85	9.77
High school	67.02	74.24	73.38	56.25	60.60	60.67
Some college	2.16	2.38	2.49	5.04	5.40	5.63
College or more	4.14	4.50	5.06	21.83	23.16	24.93
Missingness	10.09	–	–	6.91	–	–
<i>School Enrollment</i>						
Enrolled	37.87	37.90	–	13.17	13.17	–
Not enrolled	62.00	62.10	–	86.80	86.83	–
Missingness	0.13	–	–	0.03	–	–
<i>Fertility History of first births</i>						
No first births	84.34	87.93	83.29	72.54	74.32	74.21
Pregnancies	1.76	1.84	2.56	1.44	1.49	1.63
1st year of the child's life	2.70	2.83	3.93	2.68	2.75	3.07
2nd year or beyond of the child's life	7.03	7.40	10.22	20.53	21.14	21.08
Missingness	4.17	–	–	2.81	–	–
<i>Employment</i>						

	Age 18–23			Age 24–30		
	(1) w/o imputation, complete	(2) w/ imputation, complete	(3) w/ imputation, restricted	(1) w/o imputation, complete	(2) w/ imputation, complete	(3) w/ imputation, restricted
Not Employed	31.79	32.01	–	20.95	21.14	–
Part-time	27.39	27.55	26.18	17.84	17.98	19.24
Full-Time	40.22	40.45	73.82	60.46	60.89	80.76
Missingness	0.60	–	–	0.76	–	–

Note: Data are weighted. Standard deviations are shown in parentheses for continuous variables.

^aFor men, 23.02% of earnings data are missing between ages 18 and 23 and 22.74% are missing between ages 24 and 30.

^bFor men, between ages 18 and 23, 2.20% of data are missing invalidly on occupational status and 2.64% of data are missing between ages 24 and 30.

^cFor men, between ages 18 and 23, 2.37% of data are missing invalidly on occupational autonomy and 3.08% of data are missing between ages 24 and 30.

Table 3

Coefficients from Logistic Models of Transition into First Marriage for Women: Late Teens to Mid-20s (Between the Ages 18 and 23) and Mid-To Late-20s (Between the Ages 24 and 30)

	Model 1			Model 2		
	ages 18–23	ages 24–29	ages 18–23	ages 24–29	ages 24–29	
	Coef.	SE	Coef.	SE	Coef.	SE
Race/ethnicity (ref: non-Hispanic whites)						
Black	-1.197***	(0.16)	-1.082***	(0.19)	-1.197***	(0.16)
Hispanic	-0.224 ⁺	(0.14)	-0.192	(0.18)	-0.224 ⁺	(0.14)
Other racial/ethnic groups	-1.037**	(0.36)	-0.592 ⁺	(0.31)	-1.036**	(0.36)
Educational Attainment (ref: High school)						
Less than high school	-0.182	(0.16)	0.118	(0.31)	-0.179	(0.16)
Some college	0.780*	(0.31)	0.459*	(0.21)	0.781*	(0.31)
College or more	0.068	(0.20)	0.241	(0.16)	0.068	(0.20)
Employment status (ref: Full-time)						
Part-time (< 35 hours a week)	-0.068	(0.12)	-0.077	(0.14)	-0.068	(0.12)
Occupational status (mean-centered)						
Annual earnings (logged \$)	-0.009	(0.02)	0.067*	(0.03)	-0.009	(0.02)
Occupational autonomy (mean-centered)						
Constant	-5.742***	(0.30)	-5.536***	(0.44)	-5.741***	(0.30)
# of person-months	96910		65971		96910	

Note: Numbers presented in this table are weighted results from multiply imputed restricted person-month data. All models control for age in years, first birth status, parental education attainment, childhood family structures (at age 12), and regional and metropolitan residence. In the models with the complete person-month data, we further control for school enrollment status and employment status with not employed as the reference group. Results from complete person-month data are available upon request.

[†] indicates statistically significant age differences and *underlines* indicate statistically significant gender difference. T-tests are conducted only in Model 2s.

⁺ p<.1

* p<.05

** p<.01

100<d
***#

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Table 4

Coefficients from Logistic Models of Transition into First Marriage for Men: Late Teens to Mid-20s (Between the Ages 18 and 23) and Mid-To Late-20s (Between the Ages 24 and 30)

	Model 1			Model 2		
	ages 18–23	ages 24–29	ages 18–23	ages 24–29	ages 24–29	
	Coef.	SE	Coef.	SE	Coef.	SE
Race/ethnicity (ref: non-Hispanic whites)						
Black	-1.332 ***	(0.21)	-0.420 *	(0.17)	-1.337 ***	(0.21)
Hispanic	-0.263 †	(0.15)	-0.241	(0.17)	-0.266 †	(0.15)
Other racial/ethnic groups	-0.477	(0.33)	-0.907 *	(0.36)	-0.483	(0.33)
Educational Attainment (ref: High school)						
Less than high school	-0.180	(0.16)	-0.285	(0.23)	-0.181	(0.16)
Some college	0.211	(0.35)	-0.094	(0.25)	0.217	(0.35)
College or more	0.107	(0.28)	0.255 †	(0.16)	0.110	(0.28)
Employment status (ref: Full-time)						
Part-time (< 35 hours a week)	-0.373 *	(0.15)	-0.500 **	(0.18)	-0.374 *	(0.15)
Occupational status	0.129 *	(0.06)	0.014	(0.06)	0.090	(0.07)
Annual earnings (logged \$)	0.052 *	(0.02)	0.057 *	(0.03)	0.052 *	(0.02)
Occupational autonomy					0.140	(0.16)
Constant	-6.730 ***	(0.35)	-5.973 ***	(0.40)	-6.725 ***	(0.35)
# of person-months	127415		81697		127415	81697

Note: Numbers presented in this table are weighted results from multiply imputed restricted person-month data. All models control for age (in years), first birth status, parental education attainment, childhood family structures (at age 12), and regional and metropolitan residence. In the models with the complete person-month data, we further control for school enrollment status and employment status with not employed as the reference group. Results from complete person-month data are available upon request.

† indicates statistically significant age differences and *underlines* indicate statistically significant gender difference. T-tests are conducted only in Model 2s.

‡ p<.1

* p<.05

** p<.01

100<d
***#

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