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The Decoupling of Marriage and Parenthood? Trends in the Timing of Marital First Births, 1945–2002

Family formation changed dramatically over the 20th century in the United States. The impact of these changes on childbearing has primarily been studied in terms of nonmarital fertility. However, changes in family formation behavior also have implications for fertility within marriage. The authors used data from 10 fertility surveys to describe changes in the timing of marital childbearing from the 1940s through the 21st century for non-Hispanic White and non-Hispanic Black women. Based on harmonized data from the Integrated Fertility Survey Series, the results suggest increasing divergence in fertility timing for White women. A growing proportion of marriages begin with a premarital conception; at the same time, an increasing proportion of White women are postponing fertility within marriage. For Black women, marital fertility is increasingly postponed beyond the early years of marriage. Evaluating the sequencing of marriage and parenthood over time is critical to understanding the changing meaning of marriage.

Dramatic changes in family formation behavior occurred over the second half of the 20th century in the United States. These shifts and their implications for child and adult well-being are well documented (e.g., Cherlin, 2010; Ellwood & Jencks, 2004; McLanahan, 2004; Smock & Greenland, 2010). Americans are marrying later, and more are remaining unmarried; divorce rates have increased; nonmarital cohabitation has become more common; more women are remaining childless; and the proportion of births taking place to unmarried women continues to rise. Some of these trends appear to have run their course—for example, divorce rates have plateaued since the 1980s (Raley & Bumpass, 2003)—but others, such as the increase in cohabitation and nonmarital childbearing, continue. Many of these trends have been particularly pronounced among women with lower levels of education (Ellwood & Jencks, 2004; S. P. Martin, 2004; Smock & Greenland, 2010).

As part of these changes, marriage and parenthood have been increasingly decoupled, both behaviorally and normatively. This decoupling has primarily been studied in terms of increased

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childbearing outside of marriage; research on nonmarital fertility sheds light on both the meaning of marriage and the meaning of childbearing (e.g., Edin & Kefalas, 2005; Gibson-Davis, Edin, & McLanahan, 2005). In this article, in contrast, we seek to understand the possible ramifications of family change for fertility behavior *within* marriage. Although the proportion of children born outside of marriage has increased rapidly, it is still the case that the majority of births—59.0% of all births in 2011—occur among married women (J. A. Martin, Hamilton, Ventura, Osterman, & Mathews, 2013), and rates of marriage and marital fertility can have a substantial impact on population-level patterns of childbearing (e.g., Hayford, 2013). Furthermore, the United States has higher marriage rates than other countries, and most Americans eventually marry (Cherlin, 2009), suggesting that marriage still provides some perceived benefits that other union types lack. Thus, the failure to examine and understand trends in marital fertility as well as nonmarital fertility represents a key gap in current knowledge about both childbearing and the changing role of marriage.

To address this gap, we use data from 10 fertility surveys spanning six decades, harmonized into a single resource, the Integrated Fertility Survey Series (IFSS; http://www.icpsr.umich.edu/icpsrweb/IFSS/), to describe changes in the timing of marital fertility over the second half of the 20th century. We explore trends in the interval between first marriage and the first marital birth for Black and White women, with particular attention to births in the first months of marriage (i.e., births resulting from premarital conceptions), accounting for changes in age at marriage, the educational attainment of married women, and premarital fertility over the time period studied. Our focus on childbearing, which once took place almost solely within marriage, will help illuminate the changing meaning of marriage and childbearing and the link between them over a long historical period.

The Changing Nature of Marriage

Cherlin (2004) described changes in family formation behavior over the late 20th century as indicative of the "deinstitutionalization of marriage." The institutionalized marriage described by the structural-functionalists of the 1950s combined multiple functions into a single relationship: the regulation of sexual behavior; the organization of care, support, and legal recognition for children; the distribution of paid and domestic labor; and the provision of intimacy and emotional support (Thornton, Axinn, & Xie, 2007). In contemporary individualized family systems, in contrast, these functions are neither unique to marriage nor necessary for marriage. In particular, sex and childbearing outside of marriage have become widespread, underscoring that the role of marriage in regulating sexual behavior and childbearing has weakened.

These shifts in the functions of marriage were part of a larger set of social transformations valorizing individual rights and freedoms, including the sexual revolution, second-wave feminism, and the gay rights movement (cf. Lesthaeghe, 2010; van de Kaa, 1987). Rather than a social contract or a prescribed marker of adulthood, marriage is increasingly understood as a relationship defined by and for individual needs, and decisions to marry or divorce are subject to individual decision making rather than social pressures or legal restrictions. In addition to ideological shifts, changes in economic conditions and technological and legal advances in family planning have made marriage less necessary. As their educational attainment and labor force participation levels have increased, women are increasingly able to financially support themselves and their children, weakening the economic basis of marriage and potentially reducing the need for women to marry as well as altering fertility behavior within marriage (Becker, 1981; Brewster & Rindfuss, 2000). The development of the birth control pill in the 1960s and the legalization of abortion in the 1970s made it easier to limit fertility and control the timing of childbearing, allowing couples to engage in nonmarital sex without the fear of pregnancy and to postpone childbearing within marriage (Goldin & Katz, 2002; Westoff, 1975).

Despite its declining institutional functions, marriage continues to have high social value in the United States. Most never-married Americans want to marry (Manning, Longmore, & Giordano, 2007; Pew Research Center, 2010; Thornton & Young-DeMarco, 2001), and the large majority of American adults will marry at some point in their lives (Goldstein & Kenney, 2001). Similarly, although rates of childbearing outside of marriage have increased, most Americans believe that marriage is the most appropriate setting for raising children (Pew

Research Center, 2010; Thornton & Young-DeMarco, 2001). The challenge for family scholars, then, is to understand the meaning of marriage in an individualized marriage regime and why people continue to marry.

We suggest that the timing of childbearing relative to marriage over the latter half of the 20th century provides a valuable lens for studying the changing meaning of marriage. There are two possible hypotheses regarding the timing of fertility within marriage. First, childbearing within marriage might be delayed. The increasing emphasis on marriage as an intimate relationship focused on the happiness of the couple might lead couples to want to spend time together without children to solidify their relationship, and the weakening of the normative link between marriage and childbearing means that couples are no longer expected to have children soon after marrying. Furthermore, the high economic and opportunity costs of childbearing, for well-educated women in particular, combined with improvements in the availability and effectiveness of contraception would facilitate the delay of marital fertility; in fact, the increasing prevalence of childlessness suggests that some couples forgo childbearing altogether (Hayford, 2013).

Second, childbearing might take place earlier in marriage. As more couples are dating or cohabiting for long periods prior to marriage (Bumpass & Lu, 2000; Duncan & Phillips, 2010; Kennedy & Bumpass, 2008; Strohm, Seltzer, Cochran, & Mays, 2009), the belief that marriage is the preferable setting for childbearing might be one of the few remaining incentives to marry rather than cohabit. This incentive appears to be stronger for Whites and individuals with high levels of education than other groups (Lichter, 2012; Smock & Greenland, 2010). Couples who delay marriage until they plan to have children would be likely to have children shortly after marriage; these processes might even produce a rise in the proportion of marriages that begin during pregnancy if couples wait for a pregnancy to marry. Although the proportion of nonmarital conceptions that result in marriage before the birth has declined over time (England, Shafer, & Wu, 2012; Raley, 2001), the number of nonmarital conceptions, and conceptions to cohabiting couples in particular, has risen. At the same time, other reasons for marriage (besides childbearing) have declined in importance. These forces may have led to an increase over time in postconception marriages as a proportion of all marriages. In addition, as the average age at marriage increases and approaches the age at which women's fecundity begins to decline, biological pressures might also push couples to have children soon after marriage.

Although these two hypotheses propose opposite patterns of change, it is possible that both hypotheses could be supported under different circumstances or for different groups. For instance, we might observe delayed childbearing within marriage for some subgroups but a shorter interval between marriage and first birth for other groups. In addition, both hypotheses are consistent with research on normative and behavioral change related to marriage and childbearing.

For example, descriptive analyses showed an overall lengthening of the interval between marriage and first birth between 1980 and 2010 (Payne, 2012), but the past few decades have witnessed large shifts in the characteristics of married individuals, and these shifts may have contributed to these changes in marital fertility. The average age at marriage has increased steadily for both men and women since 1950, when the median marriage age reached a historical low of just over 20 years for women (Cohn, Passel, Wang, & Livingston, 2011; Fitch & Ruggles, 2000). In addition, marriage has become increasingly selective of the financially stable and highly educated, and the average education level of recently married women has increased as college-educated women have become more likely to marry than those with lower levels of education (Fry, 2010)—consistent with Furstenberg's (1996) notion of marriage as a "luxury good" and cohabitation as a less preferable, "budget way" to start a family. However, increasing rates of nonmarital fertility (both within and outside of cohabitation) have also likely produced rising proportions of women who already have children when they first marry. Indeed, beginning in 1991, the average age at first marriage exceeded the average age at first birth (Arroyo, Payne, Brown, & Manning, 2012). Although marriage rates among women with nonmarital births have declined (Gibson-Davis, 2012; Graefe & Lichter, 2008), the large number of women with nonmarital births means that mothers constitute an increasing proportion of those who marry.

These changes in the population of married people are likely to be associated with changes

in marital fertility, but the direction of associations is unclear, as is the extent to which these compositional shifts may complement, contradict, or offset each other. For instance, there are several possible associations between the changing age at marriage and changes in the timing of marital fertility. First-birth rates have typically been highest among women in their late teens and early 20s, but trends in the age at first birth have mirrored trends in the age at first marriage (Arroyo et al., 2012; Mathews & Hamilton, 2009). Thus, it is possible that the interval between first birth and marriage has remained stable as age at first marriage has changed. Alternatively, as marriage is delayed, women may feel social and/or biological pressures to have children soon after marriage, reducing the interval between marriage and first birth. Finally, if marriage is postponed to ages at which women's fecundity begins to decline, the interval between marriage and first birth might increase due to challenges in conceiving. However, we believe this mechanism likely plays a minor role in current fertility because the median age at first marriage for women at the start of the 21st century was around age 25, well below the age at which fecundity begins to decline substantially (Fitch, Kennedy, Oakes, & Ruggles, 2012; Menken, Trussell, & Larsen, 1986).

As with age, there are multiple possibilities relating premarital childbearing and marital fertility. For instance, childbearing before marriage might slow marital fertility if women have already reached their desired parity. Conversely, children from a prior union could speed up marital fertility if women want to maintain short birth intervals (Meggiolaro & Ongaro, 2010). Another possibility is that premarital childbearing might not affect marital fertility if childbearing is primarily determined by the desire for shared biological children (e.g., Griffith, Koo, & Suchindran, 1985; Thomson, 2004; Thomson et al., 2002). Education, another important factor in our analysis, is negatively associated with birth rates on average. But this association is due in part to the large educational differentials in marriage and nonmarital fertility, suggesting that educational differentials in marital fertility might be modest (Rindfuss & Parnell, 1989; Livingston & Cohn, 2010). Existing descriptive evidence indicates that, among women married between 2000 and 2010, more educated women have slightly longer intervals between marriage and first birth, but this research did not account for the older average age at marriage among more educated women (Payne, 2012).

There are also racial differences in the composition of married women, with differences growing over time. During the first half of the 20th century, Blacks married at higher rates than Whites, but among those born in the 1940s and 1950s marriage rates, though declining for all, declined more dramatically for Blacks than Whites (Stevenson & Wolfers, 2007). The sharper decline in marriage among Black women in recent cohorts suggests that selectivity into marriage is greater for Black women than White women. Furthermore, Black women marry at substantially older ages than White women (Elliott, Krivackas, Brault, & Kreider, 2012). Between 1950 and 2000, the proportion of ever-married individuals increased among Whites until around age 30, leveling off after that point; for Blacks, age 30 seems less of a transition age, with the proportion married consistently increasing with age, beginning in 1980 (Isen & Stevenson, 2011). Furthermore, the positive association between education and marriage is greater for Blacks than Whites (Goldstein & Kenney, 2001). At the same time, Black women are far more likely to have children outside of marriage (J. A. Martin et al., 2013) and thus to bring children with them into their first marriage. Because of the greater role of selection into marriage for Blacks relative to Whites and its possible implications for marital fertility, we conducted all analyses separately for Black and White women.

Overall, we expect that marital fertility will exhibit distinct and contradictory changes during the latter half of the 20th century, as rising individualism has shifted expectations of marriage and decreased pressures to have children. More married women will experience long intervals between marriage and childbearing, but, simultaneously, more marriages will also be followed closely by a birth (i.e., more marriages will begin with a premarital conception). These two trends reflect a shift away from a common average duration to first birth among all married women toward a bimodal distribution.

Method

Data, Measures, and Sample

Data come from the IFSS, a harmonized data set combining data from 10 surveys of fertility

and family behavior conducted in the United States between 1955 and 2002. The component surveys are the Growth of American Families (GAF) surveys of 1955 and 1960; the National Fertility Surveys (NFS) of 1965 and 1970; and the National Surveys of Family Growth (NSFG) of 1973, 1976, 1982, 1988, 1995, and 2002. All surveys are nationally representative, but the populations represented vary; the sampling frames and sample sizes of each survey are presented in Table 1. The IFSS compiles data from all surveys and harmonizes the original data, including weights and survey design variables, into comparable formats. The variables used in this study are primarily simple sociodemographic characteristics; for these variables, harmonization is straightforward and requires little more than creating comparable labels and formats. We describe the harmonization of the variables we use below. Harmonized IFSS data as well as details on the harmonization process for other variables are available online at http://www.icpsr.umich.edu/icpsrweb/IFSS/.

The primary measures used in this study, timing of first marriage and first marital birth, are fully comparable across surveys. Although the completeness of marital histories collected in the IFSS component surveys varies, all collected start and end dates of first marriages. The only challenge to comparability of these measures is the limited sampling frames of the early surveys. The 1955 GAF and the 1965 NFS interviewed only currently married women (ages 18–39 and 18–54, respectively), and the 1960 GAF focused on currently married women (ages 18–39) with a smaller sample of previously married women (ages 23–44) living with a spouse in 1955. Previously married women were included in the sample frames starting with the 1970 NFS (still restricted to women ages 18–44), and single women with children in the household were interviewed starting with the 1973 NSFG. All the NSFG surveys include women ages 15–44, but the universe differed by marital and parental status across cycles. A representative sample of all women of reproductive age, not limited by marital status or previous fertility, was not interviewed until the 1982 NSFG. Also important is that the 1955 GAF included only White women, and Hispanic ethnicity was not measured in the GAF or NFS surveys. These restrictions pose limitations for analyses. For example, because never-married women were not interviewed in the early surveys, it is not possible to consider change over time in selection into marriage or the proportion of nonmarital conceptions resulting in a marital birth. In addition, the time period analyzed is shorter for Black women than for White women. Nonetheless, given the scarcity of survey data on marriage and families over the course of a half-century, the benefits of using the IFSS data far outweigh the limitations.

In all, the pooled surveys include 56,492 ever-married women; 192 first marriages, or 0.34%, were missing start dates and were dropped from the analytic sample. Marriages with missing start dates were distributed across

Table 1. *Integrated Fertility Survey Series Surveys, Sampling Frames, and Sample Sizes*

Survey	Sample frame	*N* (women)
GAF: 1955	Currently married White women, age 18–39	2,713
GAF: 1960	Currently married White women, age 18–39; previously married White women (married in 1955), age 23–44; married non-White women, age 18–39	3,256
NFS: 1965	Currently married women, age 18–54; Black women oversampled	5,617
NFS: 1970	Ever-married women, age 18–44; Black women oversampled	6,752
NSFG: 1973	Ever-married women and single women with children in household, age 15–44; Black women oversampled	9,797
NSFG: 1976	Ever-married women and single women with children in household, age 15–44; Black women oversampled	8,611
NSFG: 1982	Women, age 15–44; Black and teenage women oversampled	7,969
NSFG: 1988	Women, age 15–44; Black women oversampled	8,450
NSFG: 1995	Women, age 15–44; Black and Hispanic women oversampled	10,847
NSFG: 2002	Women, age 15–44; Black, Hispanic, and teenage women oversampled	7,643

Note: GAF = Growth of American Families; NFS = National Fertility Survey; NSFG = National Survey of Family Growth.

survey years; missingness was not meaningfully linked with any independent variables, and there were no strong associations or apparent patterns of missingness. To minimize bias related to retrospective reporting and age truncation, we limit analyses to marriages occurring within the 15 years prior to the survey in which they were reported ($n = 36{,}998$) to capture marriages that were fairly recent at the time of survey. Even with this restriction, marriages to women age 30 and over are underrepresented in our sample relative to population levels because of the age restrictions of the surveys and truncation of observations in years before the survey. Thus, the results are weighted toward the experience of women who married before age 30. This bias is likely to be more problematic for our analyses of fertility among Black women than White women, for whom marriage rates, the proportion married, and the age at marriage have remained more steady and similar over time (Isen & Stevenson, 2011). In descriptive statistics, we distinguish between marriages at ages 25–29 and marriages to women age 30 and over, but our multivariate models combine these two groups.

Because of changing racial/ethnic categorizations across surveys, we exclude 1,048 marriages to women of other (non-White and non-Black) racial and ethnic groups. We also exclude marriages to Hispanic women ($n = 2{,}213$) because sample sizes in the early years were too small for robust analysis. As noted above, although the GAF and NFS surveys did not measure Hispanic ethnicity, they include both Hispanic and non-Hispanic respondents. For these surveys, we analyze Hispanic and non-Hispanic respondents together. In the 1973 NSFG, the first survey that measured Hispanic ethnicity, less than 3% of the sample self-identified as Hispanic, and the Hispanic population was likely smaller in the earlier surveys. In sensitivity tests, we compared trends for marriage cohorts for which we had data from multiple sources, some of which identified Hispanics: the marriage cohorts of 1955–1969 using data from the 1973 and 1976 NSFGs (excluding Hispanics) and data from the 1965 and 1970 NFS (including Hispanics). There were no statistically or substantively significant differences across these data sources, suggesting that combining Hispanic and non-Hispanic respondents in the earliest surveys is unlikely to distort results.

Of the eligible sample, 344 cases, or 1.02%, were missing data on the marriage end date, race, age at marriage, or education. (No cases were missing data on premarital fertility.) We applied listwise deletion and dropped these cases. Instances of missing data were slightly more common among Black women than among White women and among women in the lowest education category; there is no clear association between age at marriage or marriage cohort and missingness. Listwise deletion produces unbiased results when missingness is not dependent on the outcome variable (Allison, 2001). Although it is impossible to fully test for this dependence, because some cases are missing on the outcome, listwise deletion is robust to violations of assumptions (Allison, 2001). Thus, this approach is appropriate when statistical power is not a concern, as is the case here given the very low levels of missing data and our very large sample. Our final analytic sample consists of 33,111 first marriages to 25,159 White women and 7,952 Black women.

We analyze trends in the timing of marital fertility across 11 marriage cohorts spanning the 20th century from the Baby Boom onward: 1940–1949, 1950–1954, 1955–1959, 1960–1964, 1965–1969, 1970–1974, 1975–1979, 1980–1984, 1985–1989, 1990–1995, and 1995–2002. Most cohorts are 5-year cohorts; the first and last cohorts are slightly longer because of the timing of the earliest and latest surveys and because of small sample size in the earliest marriage cohorts. Timing of marital fertility is defined as the duration elapsed between the date of first marriage and the first birth within the marriage (regardless of the parity of the birth with respect to the woman's reproductive career). All IFSS component surveys collected complete fertility histories, and less than 1% of births reported have missing dates. Following most studies on premarital conceptions, we categorize births that took place within 7 months of the marriage start date as premaritally conceived.

All analyses are conducted separately for White and Black women. Models with controls also incorporate age at marriage, educational attainment, and premarital childbearing; unfortunately, measures of other relevant characteristics, including cohabitation history, employment history, and family income, are not available in all of the component surveys. Age at marriage is taken directly from the IFSS harmonized variable and categorized as follows: under 18, 18–19, 20–24, 25–29, and 30 or over. Educational attainment is measured at the time of

the survey. Although this measure may not accurately represent attainment at the time of marriage because of strong norms about role conflict and the sequencing of marriage and education in the United States, we expect that the error introduced by measuring education at the time of survey rather than the time of marriage is minimal (Schwarz & Mare, 2012). The IFSS harmonized variable reports educational attainment as years of schooling. This variable was based on original variables in the component surveys that also measured years of schooling; in some of the original data, responses were reported as a range (e.g., elementary school, some college). On the basis of this measure, we created four education categories: (a) no high school degree (less than 12 years), (b) high school degree only (12 years), (c) some college education (more than 12 but less than 16 years), and (d) bachelor's degree or higher (16 or more years). Finally, we measure premarital fertility as a linear variable for number of children born before marriage. We also tested a dichotomous measure of any birth before marriage versus no birth before marriage and a measure that takes into account the timing of premarital births (whether the respondent reported a birth in the year prior to her first marriage). There were minimal substantive differences across models using these three measures; because the linear measure of parity provided marginally better model fit, we present this measure in final models.

Analytic Approach

We begin with descriptive analyses presenting the distribution of early and late childbearing in first marriages for White and Black women. We used life table methods to estimate the proportion of marriages in which a child is born (a) in the first 7 months (i.e., the proportion of marriages that begin with a premarital conception), (b) in the first 2 years, and (c) in the first 5 years. We chose the 2- and 5-year intervals because preliminary analyses showed that 2 years was approximately the median first birth interval across cohorts and 5 years was approximately the point at which first birth hazards plateaued. Life table methods use the sample of marriages observed at a specified set of intervals to calculate birth rates in each of these intervals; that is, birth rates in the first 7 months of marriage are calculated on the basis of all marriages observed for the first 7 months, birth rates for months 8–12 are calculated for all marriages observed for at least 12 months in which a birth had not occurred by 8 months, and so on. The life table thus accounts for the censoring (by marital dissolution or the interview date) before the first marital birth. Interval-specific birth rates are then aggregated to construct the average timing of first birth for an "artificial cohort" of marriages assumed to follow the calculated birth rates for each interval. On the basis of exploratory analyses, we defined intervals as 0–7 months, 8–12 months, 13–24 months, 25–36 months, and 37 months or more. We also briefly describe changes in the distribution of age at marriage, education, and premarital childbearing in marriage cohorts over the second half of the 20th century.

We next estimated continuous time event history models (also known as *Cox models* or *proportional hazard models*) predicting the first birth within marriage separately for White and Black women. These models account for censoring of marriages by marital dissolution or the survey date and allow for formal significance tests of differences across cohorts. Cox models assume that the risk of an event for any individual depends on two factors: (a) an underlying, duration-dependent risk and (b) the individual's values on a set of covariates (Allison, 1995; Cox, 1972; Singer & Willett, 2003). The models do not require that one specify the shape of the hazard curve, and they do not produce estimates for duration. Instead, duration is implicit in these models and directly incorporated into the hazard function, which is completely flexible and can take any form depending on the underlying data. The trade-off for this flexibility is that the models assume proportional hazards; that is, effects of covariates estimated by Cox models are assumed to be constant at all marriage durations. This assumption is easily relaxed, however, by incorporating interactions between duration and covariates of interest. Because the baseline hazard is implicit in the model, it is not necessary to include main effects for the duration variables. Given our interest in changes in the timing of marital fertility, we estimated models allowing for interactions between marriage cohort and time since marriage to relax the proportionality assumption and allow the shape of the underlying hazard curve to vary over marriage cohort. As above, we specified duration as a set of intervals: 0–7 months, 8–12 months, 13–24 months, and 25–36 months. These interactions

assess whether time trends in fertility in each of the specified intervals are different from those in the reference category, 37 months or more; these intervals were chosen on the basis of the results of preliminary descriptive analyses. Models also incorporated age at marriage, education, and premarital fertility so we could examine whether changes in the composition of marriage cohorts help account for change in the timing of marital fertility. In exploratory analyses, we tested three-way interactions among marriage cohort, time since marriage, and education to assess whether changes in the timing of marital fertility differed across levels of educational attainment. We found no evidence of education-specific trends in the timing of marital fertility. Our final models thus do not include three-way interactions.

Results

The proportion of marriages in which women reported a birth within 7 months (a premarital conception), 2 years, and 5 years are shown in Table 2. These proportions were generated from life table estimates. Two overall patterns are apparent. First, cumulative proportions reporting a birth after 2 and 5 years of marriage declined over the second half of the 20th century for both White and Black women. In the 1955–1959 marriage cohort, the one with the highest fertility, an estimated 89% of White women and 83% of Black women would have given birth within 5 years of their first marriage if exposed to the observed rates for that period of time. By the late-1990s marriage cohorts, this figure had declined substantially to 68% for White women and 59% for Black women. For Black women, birth rates fell in the very early stages of marriage as well: The proportion of marriages with births in the first 7 months declined for much of the period of observation, although there appears to have been a slight uptick in the 1990s. In contrast, the proportion of White women's marriages that began with a premarital conception increased during the 1950s and early 1960s and remained essentially stable for the rest of the century.

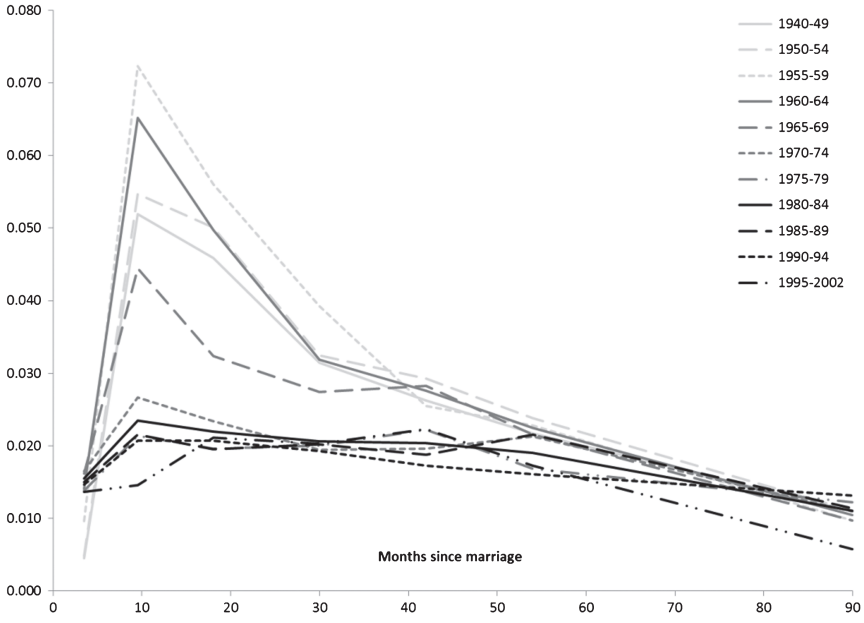
Second, for the most part, trends were similar for White and Black women. The cumulative proportion of women reporting a birth after 2 years of marriage was slightly higher for Black women than for White women for much of the century, but a decline in birth rates was apparent in all marriages. Both levels and trends in the proportion of women experiencing a birth within the first 5 years of marriage were very similar for the two racial groups. Again, fertility in the first 7 months of marriage is an exception to this pattern. The proportion of marriages that began with a premarital conception was substantially higher for Black women than for White women in the 1950s and 1960s marriage cohorts. For example, 24% of marriages to Black women in the period 1955–1959 began with a premarital conception, compared to only 7% of marriages to White women. This proportion declined for

Table 2. *Changing Timing of First Marital Birth for U.S. Marriage Cohorts*

		Cumulative proportion of marriages with first birth within		
Cohort	*N*	7 months	2 years	5 years
		Marriages to White women		
1940–1949	2,241	.03	.58	.84
1950–1954	1,983	.03	.61	.86
1955–1959	2,474	.07	.68	.89
1960–1964	3,613	.09	.65	.87
1965–1969	4,084	.11	.52	.81
1970–1974	3,374	.11	.41	.72
1975–1979	1,604	.09	.36	.68
1980–1984	2,002	.10	.39	.70
1985–1989	1,498	.10	.36	.69
1990–1994	1,353	.10	.37	.66
1995–2002	933	.09	.35	.68
		Marriages to Black women		
1940–1949				
1950–1954				
1955–1959	595	.24	.67	.83
1960–1964	1,371	.23	.68	.83
1965–1969	1,718	.23	.60	.77
1970–1974	1,742	.20	.55	.79
1975–1979	724	.15	.47	.73
1980–1984	733	.17	.49	.69
1985–1989	464	.11	.39	.64
1990–1994	367	.12	.28	.50
1995–2002	238	.16	.46	.59

Note: Data are based on fertility surveys from 1955 to 2002 harmonized by the Integrated Fertility Survey Series project; see the text for a list of the surveys. The table includes first marriages with nonmissing dates of marriage and first birth in the 15 years prior to each survey. Surveys before 1973 combined Hispanic and non-Hispanic respondents; in surveys after 1973, Hispanic respondents were excluded from analyses. The proportions are based on life table estimates accounting for censoring of observations.

FIGURE 1. HAZARD RATES OF FIRST BIRTH WITHIN FIRST MARRIAGE, WHITE WOMEN IN U.S. MARRIAGE COHORTS.



Note: Data are based on fertility surveys from 1955 to 2002 harmonized by the Integrated Fertility Survey Series project. $N = 25{,}157$ first marriages with nonmissing dates of marriage and first birth in the 15 years prior to each survey. Surveys before 1973 combined Hispanic and non-Hispanic respondents; in surveys after 1973, Hispanic respondents were excluded from analyses. Hazard rates are based on life table estimates.

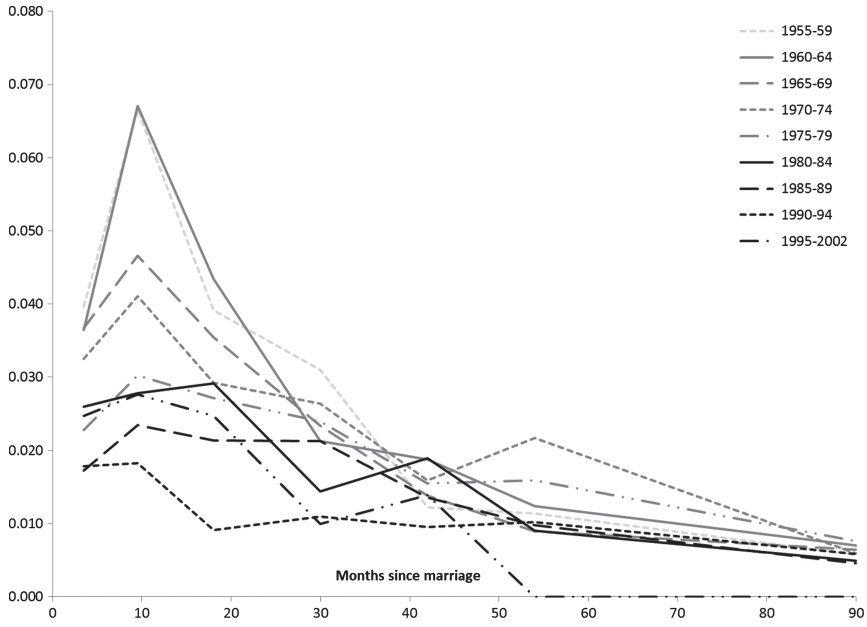
Black women and increased for White women; by the late 1980s, the Black–White difference in early marital fertility was small.

In Figures 1 and 2 we present hazard rates for marital fertility for White and Black women, respectively, by marriage cohort over the second half of the 20th century. Hazard rates are generated from life tables as described above. In both figures, the light gray lines represent marriage cohorts from the 1940s and 1950s, the dark gray lines represent marriage cohorts from the 1960s and 1970s, and the black lines represent marriages cohorts from the 1980s and 1990s; the solid lines are the earliest cohort in each of these groupings.

Figures 1 and 2 are largely consistent with the cumulative proportions of women experiencing a birth shown in Table 2. For White women, early cohorts showed a sharp peak in hazards in the first and second years of marriage, that is, a strong pattern of birth timing shortly after marriage (see Figure 1). This peak flattened out by the 1970s marriage cohorts; birth hazards for the later cohorts were essentially stable after the first 7 months of marriage. This suggests, then, that over the latter half of the 20th century the link between transitioning to marriage and transitioning to a first birth within marriage weakened among White women. Unlike earlier cohorts, who began having children almost immediately after marrying, White women who married in the 1970s or later exhibited far more variation in the timing of transition to a marital first birth.

For Black women, birth hazards declined at all marital durations during the period under study (see Figure 2). There is some evidence of a flattening of the hazard curves for Black women as well, but the pattern is less clear. Because sample sizes are smaller for marriages reported by Black women than by White women, there is more fluctuation in hazard rates both across marriage cohorts and over the duration of marriage. This fluctuation makes it more difficult to discern patterns. In the early cohorts (1955–1959, 1960–1964), when the sharp peak in birth hazards is most apparent, the decline in hazards after the peak in the first year of marriage was larger and more rapid for Black women than for White women. Combined with the higher fertility of Black women than White

FIGURE 2. HAZARD RATES OF FIRST BIRTH WITHIN FIRST MARRIAGE, BLACK WOMEN IN U.S. MARRIAGE COHORTS.



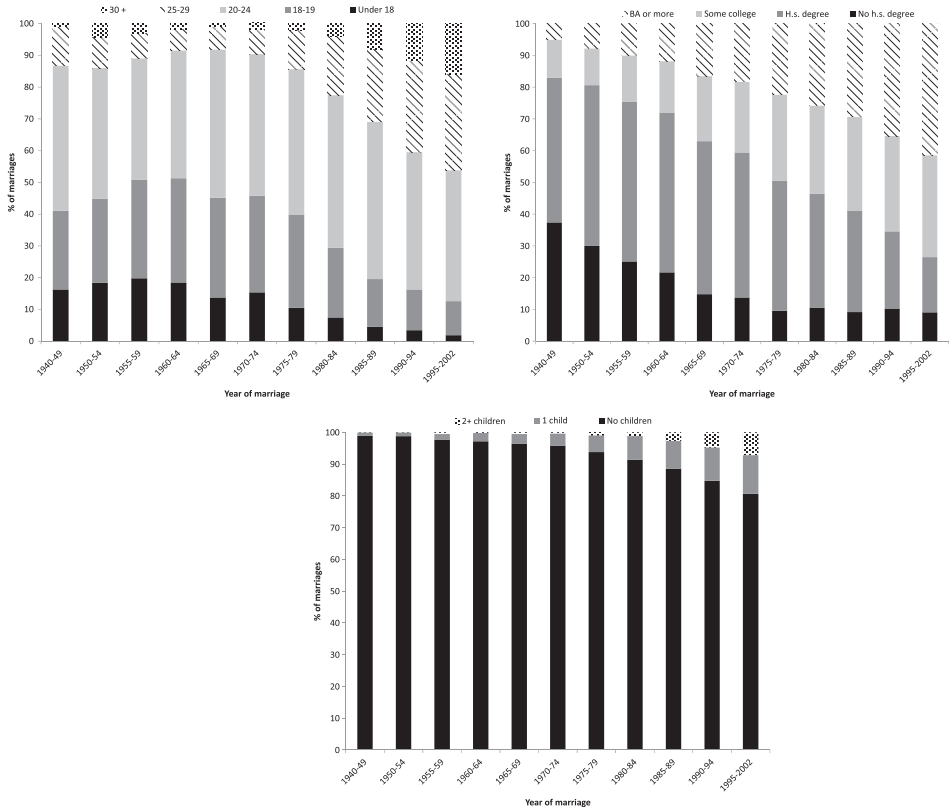
Note: Data are based on fertility surveys from 1955 to 2002 harmonized by the Integrated Fertility Survey Series project. $N = 7{,}951$ first marriages with nonmissing dates of marriage and first birth in the 15 years prior to each survey. Surveys before 1973 combined Hispanic and non-Hispanic respondents; in surveys after 1973, Hispanic respondents were excluded from analyses. Hazard rates are based on life table estimates.

women in the first 7 months of marriage in these cohorts, this pattern suggests that the timing of marriage was even more closely linked to childbearing among Black women than among White women. Put differently, among the earlier cohorts of Black women marrying for the first time, entrance into marriage strongly coincided with entry into parenthood, with many women pregnant at the time of marriage or shortly thereafter. The sharp association between entry into marriage and into parenthood dissipated rapidly across subsequent cohorts, indicating that marriage and fertility have become increasingly decoupled among Black women even as marriage has become more selective.

Changes in the timing of marital births may stem from the changing characteristics of women who marry. Figures 3 and 4 show changes over the second half of the 20th century in the composition of White and Black marriage cohorts with respect to age, education, and premarital fertility. These changes are consistent with previous research and thus are described only briefly here. The age distribution of first marriage shifted substantially upward. The educational attainment of married women also increased over the period of observation. This shift was driven both by the increase in education for all women and by the increasing education gradient in marriage rates; that is, there were more educated women in the population overall, and more educated women became increasingly more likely to get married than less educated women, producing a large increase in the educational attainment of married women. The proportion of women entering first marriage with children as well as the number of children born before marriage increased steadily for both White and Black women; however, levels were much higher for Black women than for White women across all cohorts. The proportion of women with two or more children also rose throughout the period. This increase was proportionally larger for Whites but larger in absolute terms for Blacks.

Results from continuous time models predicting the hazard of first birth are shown in Table 3. These models assess whether the descriptive patterns shown in Figures 1 and 2 persist when accounting for compositional change and test

FIGURE 3. CHANGING AGE, EDUCATION, AND PARITY COMPOSITION OF U.S. MARRIAGE COHORTS, WHITE WOMEN.

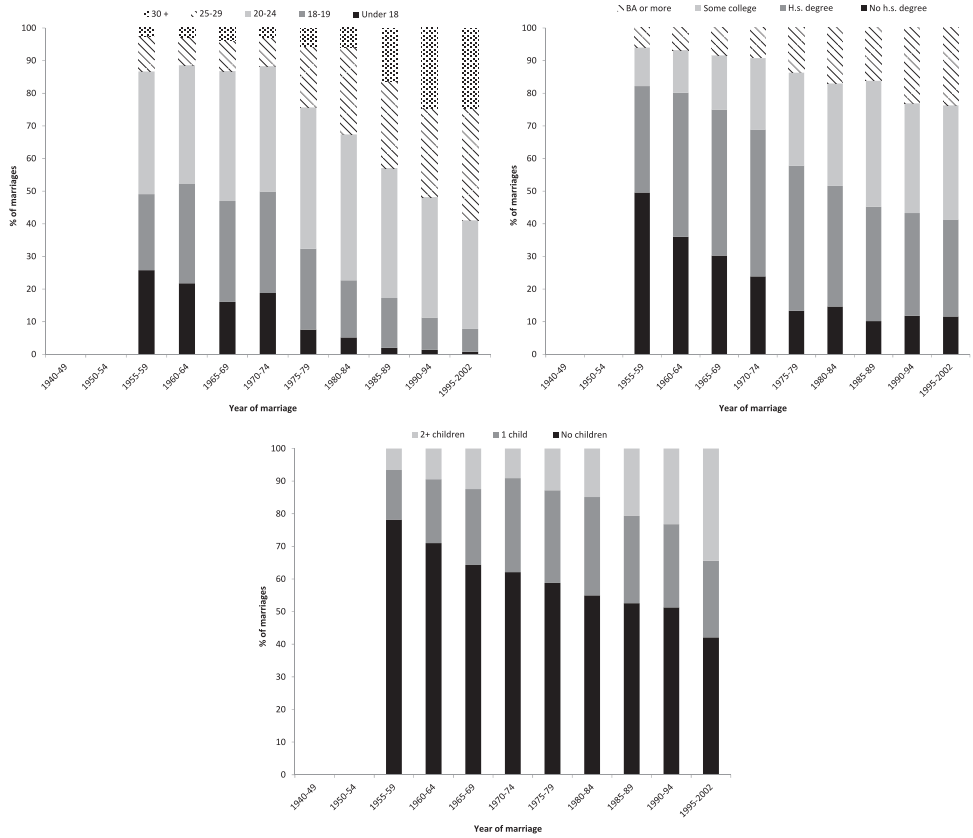


Note: Data are based on fertility surveys from 1955 to 2002 harmonized by the Integrated Fertility Survey Series project. $N = 25{,}157$ first marriages with nonmissing dates of marriage and first birth in the 15 years prior to each survey. Surveys before 1973 combined Hispanic and non-Hispanic respondents; in surveys after 1973, Hispanic respondents were excluded from analyses. BA = bachelor's degree; H.s./h.s. = high school.

the statistical significance of these patterns. As described in the METHOD section, interactions were included for the first 7 months of marriage, months 8–12, months 13–24, and months 25–36. The omitted category is marriage durations longer than 36 months. The main effect of marriage cohort in these models measures time trends in the omitted interval, and interactions assess the degree to which time trends vary by marriage duration—that is, whether the timing as well as the level of marital fertility has changed. Because Cox models do not specify a functional form for the hazard curve, main effects of duration are not included in the models.

For White women, the results are largely consistent with descriptive results. The coefficients for the main effects of marriage cohort are small in magnitude and not statistically different from zero; that is, at longer durations (after 36 months of marriage), change over time in the hazards of the first marital birth is accounted for by changes in the age, educational attainment, and premarital childbearing of women who marry. However, most of the cohort–duration interaction coefficients are statistically significant, and model fit statistics (not shown) indicate that model fit is significantly improved by including these interaction terms. Compositional changes thus did not account for the changing timing of births in the first 3 years of marriage. The positive interactions for the first 7 months of marriage for marriage cohorts after 1960 confirm that the increases in premaritally conceived marital births are statistically significant. Similarly, the cohort–marriage duration interactions for the 8- to 12-month and

FIGURE 4. CHANGING AGE, EDUCATION, AND PARITY COMPOSITION OF U.S. MARRIAGE COHORTS, BLACK WOMEN.



Note: Data are based on fertility surveys from 1955 to 2002 harmonized by the Integrated Fertility Survey Series project. $N = 7{,}951$ marriages with nonmissing dates of marriage and first birth in the 15 years prior to each survey. Surveys before 1973 combined Hispanic and non-Hispanic respondents; in surveys after 1973, Hispanic respondents were excluded from analyses. BA = bachelor's degree; H.s./h.s. = high school.

13- to 24-month intervals were negative in sign, large in magnitude, and statistically significant, consistent with the increased postponement of first marital births beyond the third year of marriage observed in Table 2 and Figure 1.

For Black women, not all patterns observed in the descriptive results are statistically significant. As for White women, cohort main effects are not statistically different from zero, indicating that changes in birth rates at marital durations longer than 36 months are accounted for by controlling for age, educational attainment, and premarital childbearing. Interactions for all of the first three intervals (0–7 months, 8–12 months, and 13–24 months) were negative in sign, and some were reasonably large in magnitude, but not all interactions are statistically significant. The pattern of change in the first 3 years of marriage was more consistent for Black women than for White women; there was no corresponding increase in premaritally conceived births.

Compositional characteristics—age at marriage, education, and premarital fertility—were associated with marital fertility in a manner consistent with prior research. Younger wives had higher birth hazards and older wives had lower birth hazards than women who marry in their early 20s. College education was negatively associated with marital fertility rates relative to high school education; for White women, having less than a high school degree was positively associated with birth rates. For both White and Black women, parity at marriage was negatively

Table 3. *Continuous Time Hazard Models Predicting First Birth in First Marriage*

	White women		Black women	
Predictor	*b*	*SE*	*b*	*SE*
Year of marriage				
1940–1949	−0.10	0.08		
1950–1954	−0.06	0.07		
1955–1959 (omitted)				
1960–1964	0.05	0.08	0.06	0.19
1965–1969	0.10	0.07	−0.04	0.20
1970–1974	−0.09	0.09	0.02	0.19
1975–1979	−0.06	0.09	0.20	0.19
1980–1984	0.00	0.08	0.14	0.22
1985–1989	0.05	0.09	−0.09	0.25
1990–1994	0.05	0.09	0.11	0.28
1995–2002	−0.02	0.12	0.02	0.36
Interactions: Marriage duration × year of marriage				
0–7 months ×				
1940–1949	−0.55	0.13***		
1950–1954	−0.59	0.13***		
1955–1959 (omitted)				
1960–1964	0.28	0.11**	−0.15	0.22
1965–1969	0.34	0.11**	−0.03	0.24
1970–1974	0.49	0.11***	−0.27	0.23
1975–1979	0.37	0.14**	−0.65	0.24**
1980–1984	0.41	0.11***	−0.38	0.27
1985–1989	0.37	0.13**	−0.43	0.31
1990–1994	0.44	0.15**	−0.54	0.34
1995–2002	0.45	0.22*	0.00	0.41
8–12 months ×				
1940–1949	−0.16	0.10†		
1950–1954	−0.09	0.09		
1955–1959 (omitted)				
1960–1964	−0.19	0.10†	0.01	0.24
1965–1969	−0.65	0.09***	−0.26	0.26
1970–1974	−1.01	0.12***	−0.30	0.24
1975–1979	−1.24	0.15***	−0.61	0.26*
1980–1984	−1.05	0.13***	−0.51	0.29†
1985–1989	−1.11	0.14***	−0.46	0.35
1990–1994	−1.27	0.16***	−0.99	0.37**
1995–2002	−1.18	0.19***	−0.12	0.47
13–24 months ×				
1940–1949	−0.17	0.09†		
1950–1954	−0.14	0.09		
1955–1959 (omitted)				
1960–1964	−0.22	0.10*	−0.06	0.24
1965–1969	−0.63	0.09***	−0.04	0.23
1970–1974	−0.77	0.10***	−0.36	0.22†
1975–1979	−0.82	0.11***	−0.53	0.23*
1980–1984	−0.80	0.11***	−0.26	0.25
1985–1989	−0.87	0.11***	−0.30	0.30
1990–1994	−0.76	0.13***	−1.17	0.35***
1995–2002	−0.60	0.15***	0.02	0.39

Table 3. *continued*

Predictor	White women		Black women	
	b	*SE*	*b*	*SE*
25–36 months ×				
1940–1949	−0.21	0.12†		
1950–1954	−0.12	0.11		
1955–1959 (omitted)				
1960–1964	−0.24	0.11*	−0.37	0.33
1965–1969	−0.40	0.11***	−0.23	0.31
1970–1974	−0.53	0.13***	−0.10	0.31
1975–1979	−0.49	0.14***	−0.34	0.31
1980–1984	−0.43	0.12***	−0.51	0.34
1985–1989	−0.50	0.13***	0.10	0.38
1990–1994	−0.41	0.14**	−0.54	0.37
1995–2002	−0.24	0.18	−0.67	0.67
Sociodemographic controls				
Age at marriage				
Under 18	0.42	0.03***	0.47	0.06***
18–19	0.24	0.02***	0.27	0.05***
20–24 (omitted)				
25 or over	−0.21	0.03***	−0.58	0.06***
Education				
No HS degree	0.17	0.03***	−0.05	0.05
HS degree (omitted)				
Some college	−0.12	0.02***	−0.12	0.06*
BA or higher	−0.38	0.03***	−0.17	0.06**
Parity at marriage	−0.12	0.04**	−0.18	0.03***
−2 log likelihood	398,408		28,081	

Note: Data are based on fertility surveys from 1955 to 2002 harmonized by the Integrated Fertility Survey Series project. $N = 25{,}157$ first marriages to White women and 7,951 first marriages to Black women with nonmissing dates of marriage and first birth in the 15 years prior to each survey. Surveys before 1973 combined Hispanic and non-Hispanic respondents; in surveys after 1973, Hispanic respondents were excluded from analyses. Results are from Cox regression models with nonparametric baseline hazards. $^{\dagger}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

associated with birth rates in marriage. Comparisons with models excluding sociodemographic controls (results not shown) indicate that compositional changes account for more of the change in timing of marital births for Black women than for White women. This implies greater selectivity into marriage across cohorts for Black women than White women, with the changes in age, education, and prior fertility explaining a greater proportion of the decline in the risk of transition to a marital birth, in particular in the first years of marriage.

Discussion

In the second half of the 20th century, the U.S. family system was marked by a weakening of normative and behavioral links between marriage and childbearing as the social institution of marriage evolved, economic opportunities grew for women, and family planning options improved. Evidence of these weakening links has been drawn largely from research showing increased rates of childbearing outside of marriage. This article fills an important gap in both the marriage and fertility literatures by turning empirical attention to the question of changing rates and timing of marital fertility.

Our results show that marital fertility rates began to decline for the marriage cohorts of the late 1960s and continued to decrease throughout the 20th century. These declines were concentrated during the first 3 years of marriage. For women who married during the 1960s, there was a sharp peak in birth hazards shortly after marriage; that is, marriage and childbearing were

closely sequenced. The marriage cohorts of the 1980s and 1990s, in contrast, did not experience this early rise in marital fertility. Marriage and fertility were less closely linked temporally for these cohorts, suggesting that they might also be less closely linked in terms of their social meaning. The close sequencing of marriage and childbearing in the early cohorts is consistent with the idea that marriage was largely synonymous with raising a family. The increasing disconnect in the timing of marriage and entry into parent hood in later cohorts, conversely, implies that the meaning of marriage has shifted away, at least partially, from an emphasis on having and raising children. Somewhat surprisingly, we found no evidence of increased fertility early in marriage beyond the impact of premaritally conceived births. Marriage in the United States still takes place at relatively young ages compared to some countries in Western Europe. If age at marriage continues to increase and approach the ages at which women's fecundity begins to decline, biological pressures may contribute to a rise in short birth intervals. It is also possible that we would find more evidence of rising fertility early in marriage with a sample that better represented the experience of women who marry in their 30s and 40s.

For White women, overall declines in marital fertility rates were accompanied by increases in fertility during the first 7 months of marriage—that is, an increasing proportion of marriages followed a premarital conception. At the same time, the proportion of couples who marry after a nonmarital conception has declined (England et al., 2012; Hoelter, LeClere, & Smock, 2008; Raley, 2001). Although declines in marital fertility emerged in the 1960s, corresponding with the introduction of the birth control pill, the continued decline across subsequent cohorts combined with the increase in premarital conceptions suggests that the mere availability of birth control is not enough to fully explain the trend.

These findings suggest instead a complex evolution in the social meaning of marriage. Marriage is no longer the only possible setting for bearing and raising children, and fewer couples view marriage as a necessary response to a nonmarital conception. At the same time, however, the legal and social gains to marriage may be greater for couples with children. For childless couples, marriage adds relatively little to the emotional intimacy, access to sex, and sharing of economic costs provided by dating or cohabiting relationships (but see Cherlin, 2004, for a discussion of possible benefits of marriage). Once couples have children, marriage does confer distinctive legal rights and social responsibility for both parents and children. These conditions, in conjunction with a rising number of conceptions outside marriage either to cohabiting couples or to couples not living together, produce a pattern of more marriages beginning with a conception even as fewer conceptions lead to marriage. Cohabitation likely plays a role here; the existence of this pattern for White but not Black women is consistent with other work showing that pregnant White cohabiters are more likely to transition to marriage prior to birth than other groups (Lichter, 2012).

For Black women, declines in marital fertility were experienced across all durations, including the first 7 months, and the proportion of marriages begun with a premarital conception did not increase. This difference in trends between White and Black marriages is largely driven by different starting points: Relative to White women, Black women had much higher birth rates in the first 7 months of marriage during the 1960s marriage cohorts. Current rates and timing of marital fertility are strikingly similar for White and Black women. This similarity is all the more remarkable given that marriage is much more selective, and rare, for Blacks than Whites in more recent cohorts. In contrast, racial/ethnic differences in nonmarital fertility and in marriage rates continue to be substantial (Furstenberg, 2009; Smock & Greenland, 2010). Our findings lend additional support to the possibility that the growing diversity in family formation behavior in the United States is concentrated among unmarried individuals and especially in the process of selection into marriage, whereas the behavior of married individuals may be converging across different racial/ethnic groups.

The changing composition of marriage cohorts accounts for some of the change in overall marital fertility rates but does little to account for change over time in the timing of marital fertility. This finding might seem surprising, given the extensive evidence of differential change in family formation behavior across education strata. It is perhaps to be expected, however, given our focus on behavior *within* marriage. Our analyses take marriage as a starting point; we are not focusing on the mechanisms of

selection and causation that drive partnership formation and the decision to formalize a relationship by marrying. Our results imply that the ramifications of changing educational gradients in family formation are concentrated in these earlier selection processes rather than on fertility once marriage has taken place. Similarly, changes in births taking place before marriage account for relatively little of the changes in the timing of marital fertility. Thus, changes in marital fertility cannot be attributed to changes in the proportion of women who enter marriage already having completed their desired childbearing.

Instead, we argue, shifts in the timing of marital fertility are evidence of changes in the symbolic meaning of marriage. We also interpret the growing proportion of married couples remaining childless for several years after marrying as yet another piece of evidence demonstrating an ongoing and still increasing separation between marriage and childbearing.

Limitations

Because of the sample frames and content of the family surveys that make up the IFSS, there are some limitations to our analysis. We were unable to analyze trends for Hispanic women, and the time series for Black women was shorter than the time series for White women. Because only married women were included in some data sets, we could not empirically address selection into marriage. In addition, we did not have data on women's labor force participation at the time of marriage or the first birth, so we could not assess the role of women's changing earning power in explaining trends in marital fertility. Furthermore, within each survey our sample was biased toward younger women as the length of time prior to the survey increased, although the use of several surveys over the analytical time period reduced this bias somewhat. Still, the rising age at marriage, especially among Blacks, means that the marriages we observed in our data represent an increasingly select group over time. It is possible that, if we were able to observe more marriages to women in their 30s and 40s, we would have observed an increase in the proportion of marriages with short durations between marriage and childbearing given that "older" women face more biological constraints and pressures to have children. Despite these limitations, the broad scope of the IFSS data allowed us to describe and interpret changes in the interval between marriage and first birth over a crucial time period.

Our analysis accounted statistically for marital dissolution: Women who divorced or separated were not included in measured rates. However, because we could not observe postdivorce fertility behavior among women in the early surveys, it is difficult to speculate on the possible substantive implications of changes across time in who remains married. As divorce rates increased over the time period observed, marriage became increasingly selective of happy couples, because unhappy relationships are more likely to dissolve. Recent research from the Netherlands shows that fertility rates are highest in couples with mid-level relationship quality, with both the highest quality and lowest quality relationships having lower birth rates (Rijken & Thomson, 2011). If this association were true in earlier marriage cohorts as well, marital fertility in cohorts before the rise in divorce might have been depressed by the forced stability of unhappily married couples. Thus, our analysis would have underestimated declines in marital fertility relative to the declines we would see if we could have accounted for changes in the happiness of married couples.

On a related note, we were unable to account for any changes in pre-marriage relationship behavior. In particular, we do not know how long couples were romantically involved prior to marriage, but the increase in cohabitation prior to marriage (Kennedy & Bumpass, 2008) suggests that the overall duration of relationships prior to marriage is likely increasing across these cohorts; cohabitation seems particularly linked to marriage for Whites (Smock, 2000). This, in turn, suggests that if we were able to examine total relationship durations across cohorts, the delay in fertility within relationships over time is even greater than our results suggest.

Conclusion

Despite public concern over the decline of marriage and the rise of nonmarital childbearing, marriage remains a central component of the American lifestyle. Most Americans want to marry, most do marry, and most want to raise their children within marriage. Our analysis showed a decline in marital fertility and a postponement of marital births beyond the first 3 years of marriage, indicating a weakening normative link between marriage and childbearing.

Yet we also found that marriages following a premarital conception make up an increasing proportion of marriages for White women, indicating a continued link between these behaviors for some subsets of the population.

Changes in marital births may, in turn, have implications for marital stability. Research on marriage in the 1970s and 1980s has found that shared biological children are positively associated with marital stability (Cherlin, 1977; Heaton, 1990; Lillard & Waite, 1993); therefore, delays and declines in marital fertility may lead to fewer ties linking married couples together. At the same time, among couples with children, delayed childbearing within marriage is associated with greater stability relative to shorter intervals between marriage and the first birth (Wineberg, 1988). To the extent that the findings from these studies hold for contemporary marriages, postponement of childbearing within marriage might have positive effects on marital stability for parents and, by extension, children's well-being. It is possible, however, that the link between childbearing and marital stability has changed over time and thus needs to be reexamined.

Although we did not explicitly examine attitudes over time toward childbearing within marriage, the purpose of marriage, or the importance of children for marital success, our focus on trends in marital childbearing behaviors provides strong additional support for the argument that the meaning and purpose of marriage is shifting. Couples have become less likely to transition to parenthood shortly after marriage and are instead waiting longer to become parents, if they do so at all. Delayed childbearing within marriage is consistent with the idea that people increasingly view marriage first and foremost as a relationship between two adults. Delaying having children then allows couples time to focus on the marital relationship, and this bodes well for both marriage and child well-being within marriage if it results in stronger marital—and parental—bonds. Still, continued research on behaviors within marriage and attitudes about marriage is warranted as we continue to struggle with the changing role of marriage in American society. Additional work is also needed to understand not just the timing of first births but higher parity fertility behaviors as well. If marriage is increasingly about the spousal relationship, couples may feel less pressure to have higher order births, and if marriage is increasingly delayed, couples may either have to space births more closely together to reach the desired family size prior to biological declines in fecundity or stop after just one birth. Because marital fertility behaviors have implications for overall fertility levels, we encourage continued work on childbearing within marriage.

Note

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