Trends in Lifetime Years Married and in Other Marital Statuses from 1880 to 2019

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Abstract

[TO BE COMPLETED]

Introduction

Since the late-1800s, increased life expectancy and changes in marriage have had major consequences for American life. In 1880, life expectancy for men was short and marriages were more likely to end by death than divorce. Since then, life expectancy has increased substantially, increasing the potential number of years available to spend married. But high rates of separation and divorce, record-high ages at first marriage, and increased nonmarital cohabitation work in the other direction—reducing the number of years adults spend married. Whether adults spend more or fewer years married today than in the past depends on the relative magnitude of these two forces. If gains from life expectancy have outpaced reductions in marriage, then expected lifetime years married will have increased. If gains from life expectancy have lagged behind reductions in marriage, then expected lifetime years married will have declined.

Past research has shown surprising results about the combined effects of changes in life expectancy and marriage patterns between 1800 and 1980 (Watkins, Menken, and Bongaarts 1987). Although there has been much concern at various times from the public and in academia about changes in marriage, the expected number of years married was greater in 1980 than it was in earlier eras with the exception of the heyday of marriage during the Baby Boom era. This finding represents an important counterpoint to claims about marriage decline. As Watkins et al. (1987:353) argue, "If number of years spent in these family statuses is taken as a rough measure of investment in the family, clearly this investment has increased, not decreased."

Watkins et al.'s (1987) and others' research has demonstrated that the post-war Baby Boom era was an exceptional period relative to what came before and what came after (e.g., Cherlin 2014; Ruggles 2015), but are we now living through an equally exceptional period? Since 1980, there have been further gains to life expectancy, age at marriage is at a record high, and cohabitation and divorce remain common. Thus, it is an open question whether lifetime years married is at a record high, low, or somewhere in between. A long-run view of family and demographic change is necessary to put what is currently happening in family life into perspective. In this article, we estimate trends in expected lifetime years married (and in other marital statuses) from 1880 to 2019. We are the first to do so since Watkins et al., whose last data point was in 1980—a very different context than the present day.

Another unanswered question is how years married varies by socioeconomic status. Scholars have compared the extreme level of current U.S. inequality to the Gilded Age of the late 1880s. Not only is income inequality very high but marked inequality in life expectancy and diverging family patterns characterize the last several decades (Case and Deaton 2021a; McLanahan 2004). The dividing line appears to be a bachelor's degree (BA), with those with a BA or more having better health and longer lives, higher marriage rates, and more stable marriages than those without a BA (Case and Deaton 2021a; Lundberg, Pollak, and Stearns 2016). Thus, in addition to examining long-run trends in lifetime years married for the population since 1890, we estimate shorter-run trends for those with and without a BA from 1960, the earliest historical point for which we have BA-status data and an era in which obtaining a college degree was relatively rare, through 2019.

In this article, we focus on men because of the health crisis and increased mortality especially among men at the bottom of the class structure and concomitant declines in marriage for this group in recent decades.[1] Referred to as "deaths of despair," the higher mortality rate of men without a BA has been described as part of a cluster of trends associated with economic dislocation and stress including declining wages and fractured family and community ties (e.g., Case and Deaton 2021a; King, Scheiring, and Nosrati 2022). Estimates of the widening gulf in life expectancy by education have not been combined with changes in

[1] Results for women are broadly similar and are presented in the online appendix [still to be written].

marriage to estimate divergence in lifetime years married. Thus, a key contribution of this article is that it brings together research on trends in education differences in mortality and marriage to estimate lifetime experience in various marital statuses.

Trends in lifetime years married may both reflect and contribute to social and economic inequality. It is well-known that the likelihood of marriage depends heavily on individuals' economic position. Leading explanations for reductions in marriage in the United States are deteriorating economic circumstances of the less educated and widening inequality.

Trends in lifetime years married may have substantial consequences for individuals' lives. Marriage is associated with a host of positive outcomes, but many are likely not causal, and research is ongoing. We primarily view trends in lifetime years married as an indicator or outcome of larger structural socio-economic shifts. Nevertheless, recent research using rigorous methodology to identify causal effects shows that marriage may also have positive effects in some areas. Particularly among men, marriage has been found to improve physical health, reduce drug and alcohol consumption, and protect against criminal behavior (Horn et al. 2013; King, Massoglia, and MacMillan 2007; Salvatore, Gardner, and Kendler 2020; Van den Berg and Gupta 2015).[2] Because the potential effects of marriage likely compound over time, longer exposure may be more consequential than shorter exposure (Dupre, Beck, and Meadows 2009; O'Rand 1996). Given the connection to duration of exposure, our focus is on lifetime years married (and in other marital statuses), but we also estimate trends in the proportion of life for comparison.[3]

Our results show a rise in the number of years spent married between 1890 and the Baby Boom era and a subsequent fall. There are also large and growing differences by BA status. Men with BAs have had high and relatively stable lifetime years married since the 1960s. For men without BAs, lifetime years married plummeted to lows not seen among men since 1900.

Methods

We use two types of data to estimate expected lifetime years married (and in other marital statuses): (1) period life tables for U.S. men, which are used by demographers to calculate life expectancy, and (2) estimates of the distribution of adult men's marital status by age. Our estimates of age-specific full-population male mortality from 1880 to 2019 are from published lifetables from a variety of sources (1880, 1900: Haines 1998, Series I pp. 157, Series III pp. 165; 1910, 1920, 1930: Bell and Miller 2005, Table 6; 1940-2019: Human Mortality Database). We use unabridged life tables (those that contain age-specific mortality for single years of age) for all years except 1880 and 1890, for which only life tables for age groups are available.

Our estimates of age-specific marital status distributions are from the 1880-2010 U.S. decennial censuses and the 2001-2019 American Community Surveys (Ruggles et al. 2022). Our time series begins in 1880 because this is the first year that the census included information about marital status. We differentiate five, mutually exclusive marital statuses: never married, cohabiting (includes never and previously married cohabitors), married, divorced/separated, and widowed. Same-sex married and cohabiting couples are included in these estimates. Cohabitors are not separately identified until 1990 because direct measures were not collected until then. Marital status distributions by age and year are weighted using census/ACS-provided person weights so that estimates are representative of the population.

[2] Cohabitation also appears to have positive causal effects on health behaviors relative to singlehood, but that marriage carries additional benefits over and above cohabitation (Horn et al. 2013). There is less literature on causal effects of cohabitation relative to marriage.

[3] Schoen (2016) and Schoen and Standish (2001) reported trends in the proportion of life married from 1970 to 2010. We expand their time series to 1890 to 2019.

Our measure of expected years lived married (and in other marital statuses) is conceptually similar to demographers' typical measure of life expectancy. Period estimates of life expectancy are calculated using age-specific mortality rates for each year. Period life expectancy represents life expectancy under the assumption that people born in that year experience the age-specific mortality conditions that exist in that year. This is unrealistic because age-specific mortality rates change across a birth cohort's life, but life expectancy is a useful summary measure of prevailing mortality conditions. Moreover, long-run trends in period measures of life expectancy track those estimated from real cohorts closely, albeit with a lag (Goldstein and Wachter 2006). The benefits and limitations of our period estimates of expected years spent married are the same as those for life expectancy.

We use the Sullivan method to estimate expected years lived married and in other marital statuses (Sullivan 1971). The Sullivan method has been commonly used to estimate healthy life expectancy and, increasingly, other kinds of life expectancy (Crimmins and Saito 2001; Imai and Soneji 2007; Ophir and Polos 2022; Raymo and Wang 2022), but it has not been applied to marriage to our knowledge. Unlike multistate lifetable methods (Schoen 2016), the Sullivan method does not require age- and period-specific data on entry and exit rates from the marital states of interest, a difficult requirement given the limitations of both historical and current data. In a comprehensive statistical and conceptual review of the Sullivan method, Imai and Soneji (2007) found that the Sullivan method allows for unbiased and consistent estimation, performs well relative to multistate lifetable methods, and requires only the assumptions already inherent in analyses using period life table methods. Indeed, our estimates using the Sullivan method replicate others' using multistate lifetable methods well (Schoen and Standish 2001; Watkins et al. 1987).

The Sullivan method allocates expected years lived from period lifetables to marital states based on the proportion of the population in a given marital status by age and year. For instance, if a lifetable for year *y* indicates that there were 100,000 person-years lived among men at age 25 and census/ACS data indicate that 10% of men were married at age 25 in year *y*, then we estimate that 10,000 person-years were spent married at age 25. Lifetime expected adult years married in year *y* is estimated as the sum of person-years married at each age, divided by the total number of men who survived to adulthood. For this analysis, we define adulthood as age 15 and above because this is roughly the youngest age men married across this historical period. The calculation of average expected years lived in these five marital states includes all men, even those who never experienced the marital status.

We present trends by BA/non-BA status beginning in 1960. Life table data by BA status is not available prior to this time. In 1960, these data are from Kitagawa and Hauser (1973: Table 2.1). For the early 1980s, they are from Rogot et al. (1992). From 1990 to 2019, we use death certificates data available through the Mortality Multiple Cause Files database following the method outlined Case and Deaton (2021b). Only a small portion of men received a college degree in 1960 and before (9% of men aged 25-54 in 1960) and thus the results for the male population before 1960 are likely very similar to those for men without a BA.

Scholars often present estimates by BA status for those age 25 and older because education is still in-progress at younger ages. Following this convention is not ideal for our analysis, however, because of the importance of years spent married prior to age 25. In the 1950s and 1960s, for example, it was not uncommon for men to marry in their late teen years. Beginning the analysis at age 25 would thus underestimate lifetime years married in this era. To address this, we assume that men share the same age-specific mortality rates and marital status distributions prior to age 25, regardless of educational attainment. This assumption will tend to underestimate BA-status differences in lifetime years married and in other marital statuses. Starting at age 25, we assign men BA- and age-specific mortality rates and

marital status distributions. As an alternative, we present trends for a more limited age range (age 25 to 84), for which BA differences are slightly larger, in the online appendix.

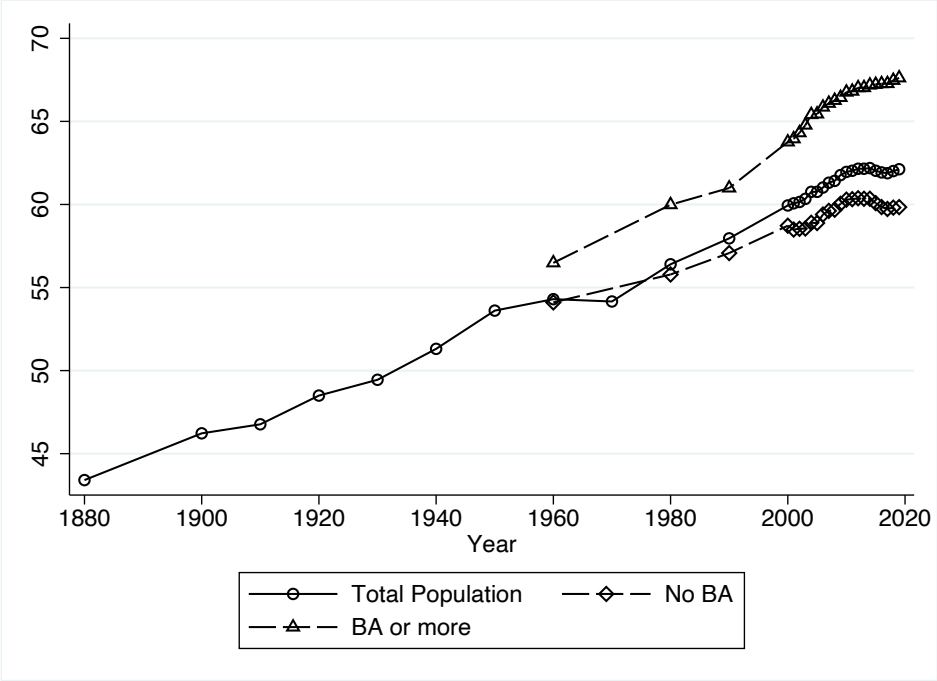
Results

Trends in Life Expectancy

Figure 1 shows trends in life expectancy for men at age 15 (e_{15}) since 1880. Male adult life expectancy has increased and men with BAs have higher life expectancy than those without BAs. This education difference has grown to a 7-year difference in 2019 as also reported by Case and Deaton (2021b). It is remarkable that men without a BA have experienced a decline in life expectancy since 2012. A decline has also occurred for the total male population since 2014 but did not occur for men with a BA. Increases in U.S. life expectancy have been slower over the past several decades than in other countries. American men's life expectancy lags behind other high-income countries, for example, Britain, Germany, France, and Japan (World Bank 2022).

Despite the troubling lack of improvement and decline in life expectancy among adult men without BAs, in comparison with earlier eras, men in 2019 had more potential adult years (age 15+) to spend married than in the past (62 years). Men with BAs, in particular, had a large number of potential adult years to spend married (68 years).

Figure 1. Male Life Expectancy at Age 15: Total Population and by BA Status



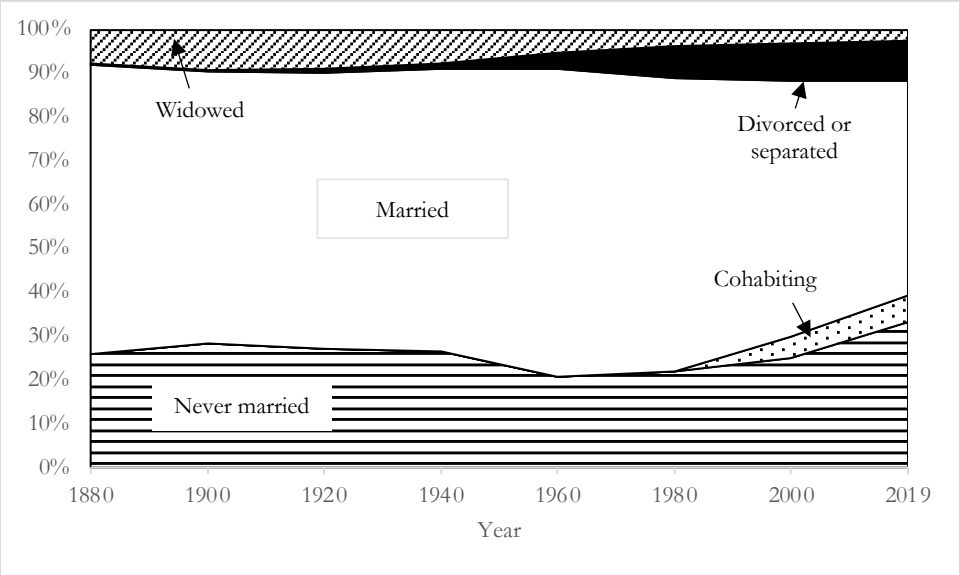
Change in Marriage and Other Marital Statuses

The expected number of years lived in the five marital statuses we differentiate is determined by (1) changes in life expectancy (shown in Figure 1) and (2) marital status trends. Figure 2 shows trends in this

second component—that is, trends in the distribution of men's marital statuses.[4] The notable decline in the percent married since roughly 1980 is clear. Compared with 1980 when 67% of men were married, 49% were married in 2019. Figure 2 shows that the decline since 1980 is accounted for primarily by increases in the percentage of men never married, followed by cohabiting, and then by divorced/separated (1980 to 2019 percentage point increase: 11, 6, and 2, respectively).[5]

Variation in the intensity and timing of entry and exit from marriage and the other marital statuses underly these trends. For example, trends in the percentage of the population never married are the result of variation in marriage timing and the prevalence of lifelong bachelorhood. Between 1880 and 1940, the percentage of the male population never married remained relatively stable due to offsetting trends of a one-year decline in age at first marriage among young men (from about 25.5 to 24.5 years of age) along with an increase in the prevalence of older bachelors (Fitch and Ruggles 2000). The percentage of men never married hit at an all-time low during the Baby Boom era of the 1950s and 1960s both because of early and near universal marriage. Since then, the percentage of men never married has grown because of very high median ages at first marriage (over 30 years of age in 2019) and increases in marriage foregone (Fitch and Ruggles 2000; U.S. Census Bureau 2021b; authors' calculations based on U.S. decennial census and ACS data). Although the majority of adults now cohabit prior to marriage (76% of marriages formed in 2015-19) the typical cohabiting union is short-lived and thus, as Figure 2 shows, only a small proportion of men are in cohabiting unions at any given time (Manning and Carlson 2021; Mernitz 2018).

Figure 2. Percentage Distribution of Male Population Age 15+ by Marital Status (Age Standardized to 2019)



[4]Figure 2 is age standardized to its 2019 distribution to facilitate comparisons across years in marriage behavior controlling for changes in the population age composition. Because the U.S. population has aged, a larger percentage of the population in the past was young and never married. Age standardization allows us to compare trends in marital statuses holding constant changes in the age distribution of the population. See Preston, Heuveline, and Guillot (2000) for a description of this method.

[5] Indirect estimates of cohabitation suggest that cohabitors comprised about 1% of all couple households in 1970 and about 3% in 1980 (Fitch, Goeken, and Ruggles 2005). Using these estimates suggests the percentage of men cohabiting increased by 4 percentage points between 1980 and 2019 (versus 6 when only direct measures are used).

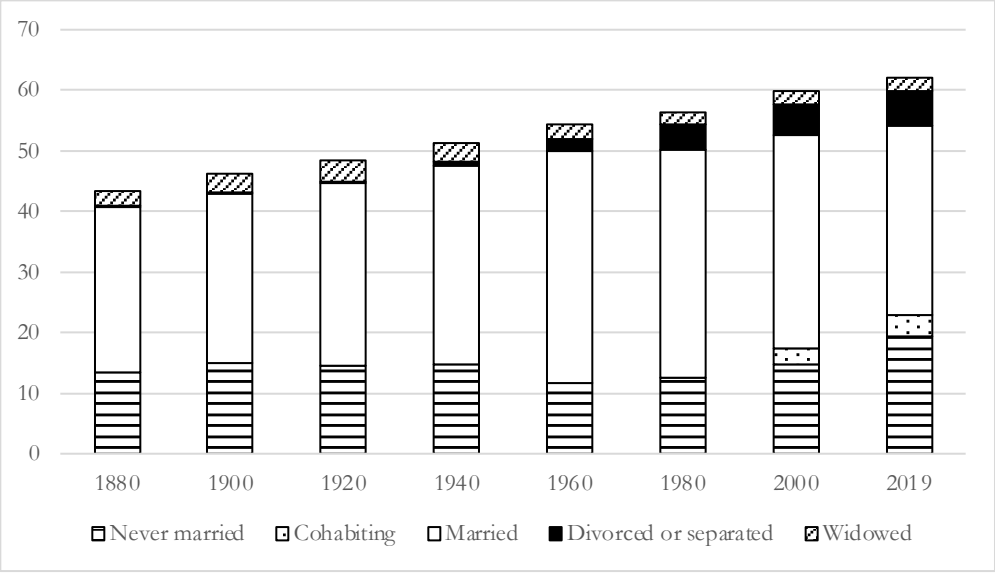
Although divorce rates have declined since the late-1970s, the percentage of men divorced/separated has remained relatively constant. This is because of a substantial decline in remarriage rates. Men's remarriage rates declined from 117 per 1,000 previously married men in 1970 to just 39 per 1,000 in 2017 (Schweizer 2019). Thus, while fewer men were divorced/separated over this period, fewer were also getting remarried, resulting in little change in the percentage of men aged 15 and over who were divorce/separated.

Expected Lifetime Years Married and in Other Marital Statuses

How have changes in life expectancy and marital status combined to produce expected lifetime years spent married and in other marital statutes? Figure 3 shows our estimates of men's adult life expectancy by marital status. The total height of the bars is the increase in life expectancy at age 15 among those surviving to age 15 (e_{15}), which is also presented in Figure 1. Figure 3 shows the number of years of life spent in each marital status. The number of years adult men spent in the never married state has fluctuated since 1880 but was at a record high of almost 20 years in 2019.

In addition, the number of expected lifetime years cohabiting has increased, rising from 1.7 years in 1990 to 3.7 in 2019. Time spent in the divorced/separated state has also increased along with increases in life expectancy from about 2 years in 1960 to almost 6 years in 2019, and the expected number of years widowed has stayed relatively constant at around 2 years since 1880.

Figure 3. Distribution of Men's Adult Life Expectancy by Marital Status (Aged 15+)



To home in on trends in the number of years married, Panel A of Figure 4 plots expected lifetime years married for the total male population, and from 1960 by BA status. Several results stand out. Among all men, expected lifetime years married increased from 27 in 1880, peaking at 38 years in 1960 and 1970 before declining thereafter to 31 years. Expected lifetime years married in 2019 was at its lowest level in the population since 1930. Thus, despite increasing life expectancy, changes in marriage behavior have been large enough to completely offset this, cutting 7 years from expected lifetime years married for men since 1960. Increases in cohabitation have offset a large portion of the decline in years married, but not all. If we were to consider cohabiting unions as marriages, expected lifetime years married would have declined by about 3 years (instead of 7) since 1960.

Figure 4. Men's Expected Lifetime Years Married and Cohabiting (Age 15+)

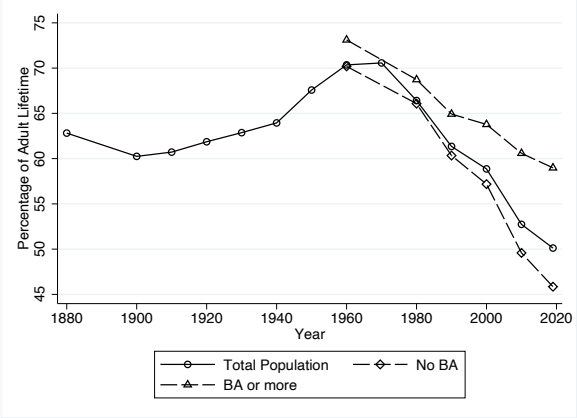
Panel A. Expected Total Years Married



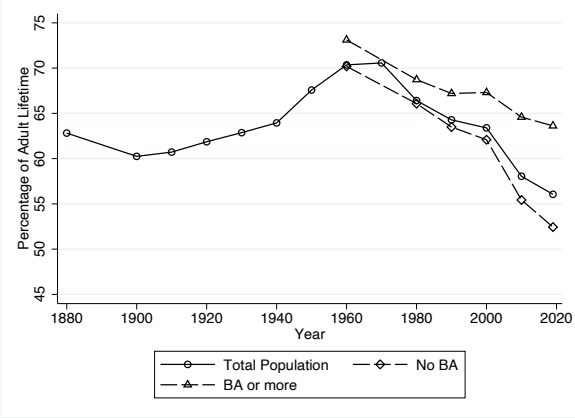
Panel B. Expected Total Years Married or Cohabiting



Panel C. Percentage of Adult Lifetime Married



Panel D. Percentage of Adult Lifetime Married or Cohabiting



Panel A also shows striking education differences. Expected lifetime years married in 1960 for men with BAs was about 3 years greater than for those without BAs, but the difference has grown much larger since then. Remarkably, expected lifetime years married for men with BAs has not declined very little since the golden age of marriage of the Baby Boom era. In 2019, expected lifetime years married for men with BAs was 40 years compared with 41 years in 1960. By contrast, the number of years married for men without a BA declined precipitously from 38 years in 1960 to 27 years in 2019. In 2019, the difference in expected lifetime years married between BA and non-BA men was about 12 years. The lifetime years married for men without BAs in 2019 was as low as it was for men in 1900 when life expectancy was short and marriages were much more likely to end by death rather than divorce.[6]

Panel B shows that increases in non-marital cohabitation offset a large portion of the decline in years married for the total population of men and non-BA men through roughly 2000 but has declined since then. For BA men, there is an increase in years spent partnered when including cohabitation. Educational differences remain as large (12 years).

[6] Because very few men in 1900 were college graduates (<1%), it is reasonable to assume that the expected lifetime number of years married in 1900 for all men is virtually identical to the estimate for men without BAs (U.S. Census Bureau 1975, 2021a), although the nature and meaning of a BA degree has changed substantially since then.

Panel C shows that the proportion of men's adult life spent married was relatively stable at around 60-65% between 1880 and 1940, increased during the Baby Boom era to about 70% of adult years in 1960 and 1970 and then declined precipitously. Even for men with BAs, the percentage declined. Panel D shows that the decline also occurred when cohabitation is included, but to a lesser extent.

These results suggest that the stability of expected lifetime years married for BA men (Panel A) is due to increased life expectancy rather than changes in marriage behavior, a finding replicated when we hold mortality rates constant at their 1960 levels (see appendix). Although the total number of years BA men spend married has stayed relatively stable since 1960, delayed marriage and to a lesser extent divorce/separation and cohabitation mean that these years are a smaller proportion of men's total lifetime. The potential outcomes of marriage and cohabitation are generally measured in terms of years of exposure, but it is possible that perceptions of the proportion of one's life spent in various marital states also affects behavior. Future research should investigate how perceptions and experiences of time horizons affect key outcomes of interest.

Discussion

We have shown that men's expected lifetime years married peaked in the U.S. in 1960 and 1970 and has declined since then to levels comparable to 1930. In addition, very different patterns characterize men with and without BAs. For men with BAs, expected lifetime years married remained relatively stable since the heyday of marriage in the Baby Boom era and, decreasing by just one year (from 41 to 40 years) between 1960 and 2019. By contrast, expected lifetime years married for men without BAs has declined precipitously to 27 years, a level not seen among men in the U.S. since 1900. In 2019, men without BAs could expect to spend about 12 fewer years of their lives married than men with BAs. Cohabitation accounts for a substantial fraction but not all this decline and BA-status differences when cohabitation is included are as large as for marriage alone.

These results tell a different story than past research. Watkin et al.'s (1987) examined trends for women through 1980 and found that, despite much public and academic commentary about changes in marriage and family life in this era (e.g., Popenoe 1993; Stacey 1993), time spent married for was still quite high relative to what had come before. They speculated that increased life expectancy itself may have redefined people's expectations about marriage and family, stating, "it is as if having approached the full potential for family life inherent in low mortality [in the Baby Boom era], subsequent cohorts trimmed the sails sharply" (354).

Although the perceptions about life expectancy may indeed affect marital behavior and be an important part of the explanation for the trends we presented here, we see the evidence in this article as more consistent with an economic inequality and instability explanation. Men with BAs do not appear to have substantially trimmed the sails on lifetime years married since 1960. By contrast, lifetime years married for men without BAs have declined far more than merely returning to their pre-Baby Boom 1940s levels. Growing inequality and the declining economic fortunes of less educated men have made it increasingly difficult to achieve the economic security many people desire prior to marriage (Randles 2016). Growing inequality in both life expectancy and marriage patterns amplify differences in lifetime experiences in co-residential partnerships. If mortality had remained at its 1960 levels, we estimate that the BA difference in years spent married would have been [insert X] rather than 12 years.

To better understand the implications of these shifts, future research should continue to tease out the (likely changing) causal effects of marriage and cohabitation and the extent to which these effects compound with duration. Regardless of their effects, our results show that the combination of changes in

life expectancy and marriage behavior has resulted in high and relatively stable lifetime years married for men with BAs and rapidly declining lifetime years married for men without BAs.

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