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## Changing Gender Norms and Marriage Dynamics in the United States

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### Abstract

Using a regional measure of gender norms from the General Social Surveys together with marital histories from the Panel Study of Income Dynamics, this study explored how gender norms were associated with women's marriage dynamics between 1968 and 2012. Results suggested that a higher prevalence of egalitarian gender norms predicted a decline in marriage formation. This decline was, however, only true for women without a college degree. For college-educated women, the association between gender norms and marriage formation became positive when gender egalitarianism prevailed. The findings also revealed an inverted U-shaped relationship between gender norms and divorce: an initial increase in divorce was observed when gender norms were predominantly traditional. The association, however, reversed as gender norms became egalitarian. No differences by education were found for divorce. The findings partially support the gender revolution framework but also highlight greater barriers to marriage for low-educated women as societies embrace gender equality.

### Keywords

Divorce; education; family roles; marriage; U.S. families

### Introduction

In the second half of the twentieth century, the redefined gender roles of women at home and in the labor market translated into a withdrawal from marriage, a decline in fertility, and an increase in marital instability. Unexpectedly, in the United States, divorce rates not only stabilized in the 1980s but also appear to have declined since then (Goldstein, 1999). Following a similar pattern, divorce rates also reached a plateau in several European countries (Härkönen, 2014). By the late 2000s, fertility trends also stopped declining across the developed world, with few exceptions (Goldstein, Sobotka, & Jasilioniene, 2009).

A recent and novel explanation to demographic change suggests that the prevalence of egalitarian gender norms is key to understanding changes in partnership and fertility behaviors (Esping-Andersen & Billari, 2015; McDonald, 2000). This idea, which I refer to as the *gender revolution framework*, argues that starting from the baby-boom era, demographic change has undergone two distinct phases (Goldscheider, Bernhardt, & Lappegård, 2015). In the first phase, the discrepancy between women's advancement in the public sphere and persistent traditional behavior in the private sphere produced an increase

in family instability and a decline in fertility. The second phase emerged at the turn of the twenty-first century and is still ongoing. In this phase, we should observe a return of stable partnerships and fertility rates around replacement level as institutions and families start adapting to women's new roles outside the household.

An implication of the gender revolution framework is that changes in society-level gender norms are associated with individual-level marriage behavior. An initial increase in the prevalence of egalitarian gender norms is predicted to lead to lower marriage rates and higher divorce rates. As egalitarian gender norms become dominant, we should see a return of stable partnerships. Even though previous studies have shown empirical evidence for the gender revolution framework's predictions on fertility outcomes (Arpino, Esping-Andersen, & Pessin, 2015; Myrskylä, Kohler, & Billari, 2011), no study has explicitly tested if the relationship also holds for marriage and divorce.

Furthermore, within the gender revolution framework, the link between changes in gender norms and partnership behavior are considered without making explicit reference to changes in marriage selectivity. I build upon the gender revolution perspective to argue that -in the United States- the adoption of egalitarian gender norms affects marriage and divorce rates unequally across educational groups. Although previous studies have provided ample support for an educational gradient of partnership behavior in the United States, little evidence exists on how college-education moderates the relationship between changes in contextual gender norms and individual-level propensities to marry and divorce in the United States (see Kalmijn, 2013, for an exception on the case of Europe).

This study is framed by two main research questions. First, is there an association between the prevalence of egalitarian gender norms and marriage formation and divorce in the United States? By addressing this question, I provide a first empirical test of the gender revolution framework and assess whether it holds for the United States between the late 1960s and the early 2010s. Second, is the relationship between contextual gender norms and marriage dynamics even across educational groups? I develop and test the idea that the adoption of egalitarian gender norms affects marriage and divorce rates unequally across educational groups. In particular, I expect that the predictions of the gender revolution framework of a return to stable partnerships when societies have adopted egalitarian gender norms to be limited to the college-educated only. I argue that, in a context of high inequality with limited institutional support for families, such as the United States, the lower educated lack the opportunities and resources to form and maintain egalitarian relationships. To address these research questions, I combine gender role attitudes data from the General Social Surveys with individual-level marriage histories from the Panel Study of Income Dynamics to understand how changes in region-level gender norms have influenced individual-level marriage dynamics between 1968 and 2012.

Why the focus on marriage and not all types of partnership? The gender revolution framework predicts a return of stable partnerships as the revolution nears its completion (Esping-Andersen & Billari, 2015; Goldscheider et al., 2015). In the United States, the prevalence of cohabitation has continued to increase since the 1970s (Kennedy & Bumpass, 2008). Nevertheless, in the United States, cohabitation cannot be treated as a direct

substitute for marriage. Unlike the patterns observed in European countries (Cherlin, 2004), cohabiting unions have become increasingly unstable and less likely to lead to marriage (Guzzo, 2014)

In addition to being the first quantitative study to investigate the relationship between contextual gender norms and individual-level marriage behavior, this study makes three contributions to the literature. First, I provide a more comprehensive empirical and theoretical understanding of how resources and opportunities, i.e. college education, moderate the predictions of the gender revolution in the United States. Second, unlike previous studies that have used cross-sectional data and/or cross-national data, I use longitudinal data on marriage behavior together with historical attitudinal data to capture the dynamic relationship between changes in contextual gender norms and the decision to marry and divorce. Finally, I analyze jointly both entry into marriage and exit from marriage. The advantage of considering both events is that it provides a better understanding of the role played by marriage selectivity in the relationship between contextual gender norms and marriage dynamics.

## Background

### The Gender Revolution Framework

The gender revolution framework was developed as an alternative theory to the Second Demographic Transition (Lesthaeghe & van de Kaa, 1986) to understand recent reversals in family behavior (Esping-Andersen & Billari, 2015; Goldscheider et al., 2015). The main tenet of the gender revolution framework is that, as societies embrace gender egalitarianism, fertility and partnerships are expected to stabilize. High divorce rates and lowest-low fertility levels correspond to transitional trends rather than outcomes of the gender revolution. This is an important distinction from the Second Demographic Transition, which predicts an irreversible evolution toward low fertility and marriage rates and high couple instability (Goldscheider et al., 2015).

The gender revolution framework suggests that demographic change can be divided into two phases (Goldscheider et al., 2015). In the first phase, as societies move away from the breadwinner-homemaker model, the discrepancy between women's advancement outside the home and persistent traditional behavior in the private sphere produce an increase in family instability and a decline in fertility (McDonald, 2000). In the second phase of the gender revolution, societies embrace an egalitarian view toward the family where both spouses are expected to financially provide for the family but also equally engage in domestic work. At this stage, as institutions and men adapt to women's new roles outside the household, we should observe a return to stable partnerships and fertility levels around replacement rate.

The shift from the first to the second phase of the gender revolution lies in the adoption of egalitarian gender attitudes by a majority of the population, which will propel a behavioral and institutional shift in support of gender equality at home and in the labor market (Esping-Andersen & Billari, 2015). Differently from other perspectives on the gender revolution (e.g. Cotter, Hermsen, & Vanneman, 2011; England, 2010), the gender revolution framework describes the advancement of the gender revolution as "irreversible" (Esping-Andersen &

Billari, 2015, p.12). The higher educated are expected to lead the shift toward egalitarian attitudes and behavior and, therefore, to first experience greater partnership stability and fertility (Goldscheider et al., 2015). The gender revolution framework, however, argues that educational differences will narrow as the gender revolution nears its completion.

### **Converging Ideals but Diverging Partnership Behavior**

The United States is considered to have exited the first phase of the gender revolution and entered the second (Stanfors & Goldscheider, 2017). Using the main indicator proposed by Arpino et al. (2015) and Esping-Andersen & Billari (2015) to identify the phases of the gender revolution, the majority of Americans have adopted egalitarian gender attitudes. Furthermore, in recent cohorts, Americans have expressed a strong preference for egalitarian partnerships as their ideal work-family model, with little variation across social classes and gender (Gerson, 2010; Pedulla & Thébaud, 2015). It is important to recognize that the literature has not reached a consensus on whether a social class gradient to gender attitudes persists. What we can draw from existing findings is that differences in gender attitudes across social classes have diminished over time in the United States, especially in recent cohorts (Gerson, 2010).

Although egalitarian ideals have gained dominance across social strata, college education has become a growing determinant of differentiation in partnership behavior in the United States (McLanahan, 2004; Perelli-Harris & Gerber, 2011). Low educated men and women are increasingly less likely to marry and experience higher levels of marital instability with respect to the past (Lundberg, Pollak, & Stearns, 2016). As noted by McLanahan (2004), the higher educated and the lower educated are on two distinct and diverging family paths, which show no sign of convergence.

A limitation of the gender revolution framework is that it does not address how barriers to stable partnerships limit the adoption and stability of the egalitarian work-family ideal across social strata. Egalitarian gender norms signal the possibility of embracing egalitarian practices but they do not account for the structural and institutional impediments to change in family behavior (Cherlin, 2016; Pedulla & Thébaud, 2015). Recent trends in gender egalitarianism and family behavior suggest that, in the United States, differentiated partnership behavior across social classes cannot be entirely attributed to differences in gender attitudes. Instead, these parallel trends highlight how opportunities and resources constrain individuals' ability to enact their preferences (Gerson, 2010, p. 213).

### **The Gender Revolution in the United States: A Bifurcated Family Process**

The gender revolution framework predicts a return to stable partnerships as society embraces egalitarian attitudes and practices. In the context of the United States, these predictions fit accurately the partnership behavior of young college-educated Americans, who are forming increasingly egalitarian and stable marriages. For the lower educated, however, marriage avoidance and marital instability dominate the second phase of the gender revolution because they lack the resources to form and maintain egalitarian partnerships. Applying the gender revolution framework to the United States, I argue that (1) the cultural meaning of marriage among the lower educated, (2) increasing economic inequality and (3) the lack of

family policies are three distinctive features of the American context that shape a *bifurcated family process* as a response to the gender revolution.

In the United States, the practical value of marriage has declined but both the symbolic meaning of marriage and the desire to marry have remained high across all social classes (Cherlin, 2004; Edin & Kefalas, 2005). Although marrying in fewer numbers, economically disadvantaged Americans continue to value marriage highly but often decide not to marry because they are unable to meet the financial standards they perceive as essential to marital stability (Edin & Reed, 2005). The cultural meaning of these prerequisites remains modest and is often limited to securing two stable jobs, the ability to take out a mortgage, and to afford a wedding ceremony (Edin & Kefalas, 2005; Gibson-Davis, 2009). With the growth of precarious employment, less educated Americans face low wages, with little to no benefits, and low job stability over their life course with respect to their higher-educated counterparts (Kalleberg, 2012). In particular, the loss of good jobs for low educated men has increasingly contributed to preventing the less educated from securing the resources necessary to form stable partnerships, leading many disadvantaged Americans to forego marriage (Autor, Dorn, & Hanson, 2017; Cherlin, 2014; McLanahan, 2004; Ruggles, 2015).

The economic and social barriers to marriage are further reinforced by the increasing prevalence of egalitarian gender norms, which promote the egalitarian model as the new ideal work-family arrangement for couples. This ideal remains, however, conditional on securing a stable employment and meeting the high time demands of parenting. In fact, in her qualitative interviews, Gerson (2010) found that young Americans are well aware of the economic and social challenges of forming an egalitarian partnership and often express fallback plans. Although the egalitarian ideal is shared among men and women, the fallback plans are highly gendered. As their “Plan B”, men would opt for a neo-traditional relationship, where the man is the primary worker and the woman the primary carer. In contrast, women would choose economic independence over a neo-traditional arrangement if an egalitarian relationship were not to be feasible. Because the structural barriers to the egalitarian ideal are unequal across social classes, marriage avoidance among lower educated women is likely to be reinforced by their inability to form egalitarian relationships and their preference for self-reliance as a fallback plan.

Furthermore, in the second part of the gender revolution framework, institutional support for dual-earner couples should facilitate the adoption of gender egalitarian practices within and outside the family (Esping-Andersen & Billari, 2015). In the United States, however, the state is mostly silent on work-family issues (Cooke & Baxter, 2010). Families resort to private services or rely on their relatives to outsource domestic work (Lewis, 2009). The lack of public support for dual-earner families means that the lower educated are unlikely to be able to afford services that help the reconciliation of work and family demands; e.g. private childcare services or professional cleaners (Craig, Perales, Vidal, & Baxter, 2016; Gerstel & Clawson, 2014). Furthermore, less educated women are also more likely to be in vulnerable occupations that provide little access to formal work-family benefits (Enchautegui-de-Jesús, 2009). Maintaining the egalitarian ideal is likely to be more difficult for families with less resources and generate marital tensions when these egalitarian expectations are unmet (Sherman, 2017). If it is only the highly educated who have the means to reduce their work-

family challenges, the stabilization of marriages in the second phase of the gender revolution is likely to be concentrated among college-educated Americans.

### The Current Study

This study tests four hypotheses that arise from the theoretical background. First, I provide an empirical test of the predictions of the gender revolution framework on entry into and exit from marriage. I expect that, when gender norms are predominantly traditional, an initial increase in the prevalence of egalitarian attitudes will produce a decline in marriage formation and a rise in divorce. As egalitarian gender norms gain dominance, the relationship should reverse. Specifically, I examine the following two hypotheses:

*Hypothesis 1a* The association between society-level egalitarian gender norms and marriage formation follows a U-shaped relationship.

*Hypothesis 1b* The association between society-level egalitarian gender norms and divorce follows an inverted U-shaped relationship.

The first two hypotheses, however, may not hold if there are important social class differences in the association between gender norms and marriage dynamics. Alternatively, I argue that the predictions of the gender revolution framework for marriage dynamics will produce a bifurcated response among the higher and lower social strata. I expect the reversals in marriage and divorce rates at higher levels of egalitarian gender norms to be concentrated among the college-educated. Specifically, I examine the following two hypotheses:

*Hypothesis 2a* An increase in egalitarian gender norms predicts a decline in marriage formation for women without college education. In contrast, I expect the relationship between egalitarian gender norms and marriage to be U-shaped for college-educated women.

*Hypothesis 2b* An increase in egalitarian gender norms predicts a rise in divorce for women without college education. In contrast, I expect the relationship between egalitarian gender norms and divorce to be inverted U-shaped for college-educated women.

## Method

### Data

The empirical analysis combined individual- and regional-level data to study how contextual gender norms influence entry into and exit from marriage. I matched individual-level marriage histories from the Panel Study of Income Dynamics (<https://psidonline.isr.umich.edu/>) to a regional index of gender norms constructed from the General Social Surveys (<http://gss.norc.org/>). The analysis also included time-varying regional variables, which were based on the March Current Population Surveys data from the Integrated Public Use Microdata Series (<https://usa.ipums.org/usa/>) (King et al., 2010). Descriptive statistics for all variables are presented in Table 1 for the marriage models and in Table 2 for the divorce models. Further explanation on how each variable was constructed and a report on missing values can be found in the online appendix A.



The analysis focused on U.S. women who were present in the PSID between the years 1968 to 2012 and who reported a complete marital history. Retrospective marriage data were collected retrospectively for all respondents starting in 1985. The marital histories were defined from the woman's perspective and were restricted to marriages that occurred between 1968 and 2012 for spouses between the ages of 16 and 40. Observations were right-censored at the earliest of the following events: the death of the respondent, age 40 or the last recorded interview.

Previously married women and higher-order marriages were included in the analysis. The final sample for the marriage models was composed of 12,073 women who experienced 14,014 spells of singlehood of which 6,430 ended in marriage. Spells of singlehood had an average duration of about 8 years and about 18% had been previously married (See Table 1). The final sample for the divorce analysis was composed of 8,066 women who experienced 8,713 marriages of which 1,914 ended in divorce. Marriages had an average duration of about 6 years, first order marriages represented 87% of the sample, and the average age at marriage was 23 (See Table 2). Descriptive statistics were weighted using family weights, normalized to one in each survey year. I chose not to weight the statistical models because my control variables adjusted for the major factors used in constructing the weights. Additional analyses showed that the main findings were robust to the use of sample weights (See the online appendix E).

## Measures

**Outcome variables: Marriage and divorce events**—The dependent variable for the marriage model was defined as a binary variable that took the value of 1 in the year in which the respondent got married and 0 otherwise. For the divorce model, the dependent variable was also defined as a binary variable that took the value of 1 in the year in which the couple either separated or divorced and 0 otherwise. Whenever both the separation and divorce dates were reported, the earliest date was considered as the end of the marriage.

**Key explanatory variables**—The key explanatory variables were a contextual indicator of gender attitudes and its interaction with women's educational attainment. Following the gender revolution framework, the first empirical test laid in the functional form of the relationship between the prevalence of egalitarian gender attitudes and the two outcome variables of interest: marriage and divorce. Turning to the bifurcated family process hypotheses, the second empirical test laid in the interaction between whether the respondent had a 4-year college degree and the prevalence of egalitarian gender attitudes. I followed the operationalization of the gender revolution framework developed in Arpino et al. (2015) and Esping-Andersen & Billari (2015), where the prevalence of egalitarian gender attitudes was used to capture the advancement of the gender revolution.

The contextual indicator of gender attitudes, which I labeled the gender norms index, was aggregated at the regional level and for every year between 1968 and 2012. The gender norms index was based on the following questions from the GSS: (i) It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family (FEFAM); (ii) A working mother can establish as warm and secure a

relationship with her children as a mother who does not work (FECHLD); (iii) A preschool child is likely to suffer if his or her mother works (FEPRESC). The questionnaire asked respondents, on a 1 (*strongly agree*) to 4 (*strongly disagree*) scale, to indicate whether they agreed or disagreed with the statement.

These three questions were asked in the following 18 survey years: in 1977, 1985–1986, 1988–1991, 1993 and every two years from 1994 to 2012. All the available surveys were pooled and a principal-factor analysis was carried out to obtain a unique index where higher scores represented more egalitarian gender attitudes (Cronbach's  $\alpha = 0.74$ ; see Appendix B for more details). To fill the missing years before 1977 and between 1977 and 2010, an interpolation was carried out. Additional analyses showed that the results were not sensitive to the interpolation of the gender index (See the online appendix E). In the regression models, the gender norms index was centered on its grand mean.

The index used in this paper replicates closely the one developed by Cotter et al. (2011) to capture trends in gender attitudes in the United States. The three items loaded on a unique factor but they summarized several dimensions of gender ideology: gendered separate spheres, mother's guilt and working women's relationship quality with their children (see Davis and Greenstein, 2009, for a review). All of which were relevant to the theoretical argument of this article. Ideally, the gender index should have also included items regarding men and fatherhood but no such questions were asked in early years of the GSS.

The gender norms index was aggregated at the regional level to capture contextual norms toward gender roles. The region classification corresponds to the U.S. census divisions (see the online appendix C for the definition of each region). The unit of aggregation was the region rather than the state for two main reasons: (1) The public version of the GSS only provided the region at interview; (2) The target sample of the GSS was of about 1,500 respondents, which was excessively small to derive reliable state-level measures. The state level would have provided a more accurate unit of analysis but the region had the advantage of decreasing the risk of non-random assignment to the context of residence.

**Control variables**—In both the marriage and divorce models, I controlled for the woman's level of education, her race, and her region of residence. I also included two variables to capture family attributes: the number of children in the household and an indicator variable for the presence of children under the age of 4. The education variable was composed of four categories: less than high school (the reference category), high school diploma, 2-year college/some college, 4-year college degree or more. The race variable included three categories: white (reference category), Black, or other race or ethnicity. The region of residence variable took nine different values: New England (reference category), Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, Pacific.

In the marriage analysis, I also considered whether the respondent had been married previously and included dummy variables for the year of birth (the omitted category was the largest birth year, 1964). The respondent's age at the time of the survey was controlled for using a categorical variable, which took five values: 16–18 (reference category), 19–21, 22–



24, 25–27, 31–40. The divorce models controlled for age at marriage and its squared value, whether it was the wife's first marriage and dummy variables for the marriage year (the omitted category was the largest marriage cohort, 1973). For the husband, educational attainment was included, whereas race and age at marriage were excluded because they are highly correlated with the wife's characteristics. The husband's education variable took four values: less than high school (the reference category), high school diploma, 2-year college/some college, 4-year college degree or more. Spousal age difference was also included as a categorical variable taking the following three values: the age difference was inferior to two years (reference category), the wife was at least two years older, the husband was at least two years older. Finally, in the marriage models, the duration was specified as a quadratic function and in the divorce models, as a logarithmic function. The duration functional forms were chosen to fit best the data.

In the biennial survey years, time-varying variables were imputed using information reported in the adjacent years. For the region of residence, additional survey questions about the respondent's geographical move were used to impute the missing years (see the online appendix A for a detailed explanation).

At the regional level, I considered alternative contextual mechanisms to gender norms, which were found to be relevant in previous studies. Using IPUMS March CPS, I constructed yearly variables to control for women's changing roles in the labor market and in tertiary education by including the regional women's employment rate and the regional share of women with tertiary education. To avoid controlling for factors that might be on the causal pathway from gender norms to marriage dynamics, I lagged the women's education and employment variables by five years. Finally, the regional men's unemployment rate was also included to capture the deterioration of men's position in the labor market.

## Models

Entry into and exit from marriage were estimated using a discrete event-history logistic model with random effects at the woman-level to account for repeated events. For each outcome, I estimated four models in sequence. Model 1 was specified as follows:

$$h_{irt} = \alpha f(GI_{rt}) + \beta_1 X_{irt} + \beta_2 I_r + \beta_3 I_c + u_i \quad (1)$$

For a woman  $i$  living in region  $r$  and in year  $t$  with individual-level characteristics  $X_{irt}$ , the corresponding gender norms index is represented by  $f(GI_{rt})$ .  $f(\cdot)$  represents the functional form of the gender norms index. In line with the hypotheses, both a linear and quadratic functional form were tested for each model.  $I_r$  is a set of dummy variables for each region.  $I_c$  is also a set of dummy variable for each cohort. In the marriage models, I controlled for the birth cohort, i.e. the year of birth, and in the divorce models for the marriage cohort, i.e. the year of marriage. The regional and cohort fixed effects controlled for unobservable and time-invariant differences in marriage propensities of each cohort and region. For the divorce models, I considered the marriage year rather than the birth year to capture the context at the time of marriage. Furthermore, in all the models, I indirectly controlled for the effects of the historical context (Teachman, 2002, p. 335). In the marriage model, the historical context

was defined as the sum of the birth year, the unpartnered duration and the respondent's age (age was necessary because I included repeated events). In the divorce model, the historical context was defined as the sum of marriage year, the marriage duration, and the respondent's age at marriage (here as well age at marriage was necessary because higher-order marriages were included in the analysis).

Model 2 added a linear regional-specific cohort trends  $L_{cr}$ , which is an interaction between the cohort year and the region of residence:

$$h_{irt} = \alpha f(GI_{rt}) + \beta_1 X_{irt} + \beta_2 I_r + \beta_3 I_c + \beta_4 L_{cr} + u_i \quad (2)$$

The region-specific cohort trends accounted for unobservable trends within cohort and region, which could be correlated with changes in gender norms. For example, one would expect that religiosity and the acceptance of divorce followed similar trends to gender norms for each cohort and within the different regions in the sample.

Model 3 added three regional time-varying confounders  $Z_{rt}$  as discussed in the control variables:

$$h_{irt} = \alpha f(GI_{rt}) + \beta_1 X_{irt} + \beta_2 I_r + \beta_3 I_c + \beta_4 L_{cr} + \beta_5 Z_{rt} + u_i \quad (3)$$

The region-year variables were introduced in the model to control for spuriousness between gender norms and the two outcome variables of interest: marriage and divorce. These control variables captured parallel structural changes that may be related to both gender attitudes and partnership behavior. Failing to control for these variables could lead to confounding the effect of gender norms with other variables, which also affected our variables of interest. Moreover, these control variables were measured at the regional level and were time varying and, therefore, contributed to removing any period effects from the estimated coefficients for the gender norms index.

Model 4 included an interaction between the gender norms index and the respondent's college education attainment:

$$h_{irt} = \alpha f(GI_{rt}) + COLL_i + \delta f(GI_{rt}) \times COLL_i + \beta_1 X_{irt} + \beta_2 I_r + \beta_3 I_c + \beta_4 L_{cr} + \beta_5 Z_{rt} + u_i \quad (4)$$

The coefficient  $\delta$  indicates whether the relationship between contextual gender norms and marriage dynamics was different for women with and without a college education.

## Results

The structure of the results section is as follows. First, I focus on the association between regional gender norms and marriage. Then, I turn to the findings for divorce. For each outcome, I present the results for the four models described above comparing a linear and quadratic functional form to model the relationship between regional gender norms and

marriage dynamics. Finally, I assess the robustness of the main findings by carrying out several sensitivity checks.

### Gender Norms and Marriage Formation

Table 3 presents the results from the discrete event-history analysis of the association between gender norms and marriage formation. For the sake of parsimony, Table 3 only shows the coefficients of the key explanatory variables. The estimates for all the control variables can be found in the online appendix D in Table D1 for the linear functional form and in Table D2 for the quadratic functional form.

Starting from the gender revolution framework (Hypothesis 1a), I focus on the first three models presented in Table 3 to evaluate the association between regional gender norms and marriage. The results showed that only the linear specification was statistically significant (see Model 1–3 in Table 3). When both the linear and quadratic terms of the gender norms index were included, the coefficient of the quadratic term never reached statistical significance.

In the linear specification, the gender norms index coefficient was statistically significant ( $p < 0.001$ ) and negative. The results presented in Table 3 suggested that increases toward gender-equal norms predicted a linear and negative relationship with the probability of marriage formation. Going from Model 1 to Model 3, the coefficient of the gender norms index became smaller as the regional confounders were included in the model.

To illustrate the magnitude of the association between the regional gender norms index and the probability of marriage formation, Figure 1-A displays the predicted probabilities of marriage going from a traditional regional context to an egalitarian one. The full line represents the predicted values and the grey area corresponds to the 95% confidence intervals. The plotted values are based on Model 3-Linear in Table 3 and the average predicted probabilities were calculated holding all other independent variables to their actual values. In line with the findings presented in Table 3, increases in egalitarian gender norms were negatively associated with marriage formation.

As shown by the results presented in Table 3 and the predicted probabilities illustrated in Figure 1-A, the relationship between gender-egalitarian norms and the probability of marriage did not show any sign of reversal or tapering, as the gender revolution framework would predict. The results did not support the Hypothesis 1a of a U-shaped relationship between egalitarian gender norms and marriage.

Yet, the results presented for Model 1–3 in Table 3 applied to women of all education levels. To bring further evidence to the bifurcated family process argument (Hypothesis 2a), the empirical findings need to show that changes in the prevalence of gender-egalitarian norms predict diverging marriage patterns by educational attainment. In Table 3, Model 4 included the gender norms index and its interaction with having a 4-year college degree. Both the linear and quadratic specifications are presented in Table 3. Because the reference category of the education variable corresponds to not having a college degree, the coefficients of the gender norms index can be interpreted for non-college graduates. The interactions between

college education and the gender norms index test whether the relationship between gender norms and marriage is different by women's education.

In both the linear and quadratic specification, the results showed that the interactions were positive and statistically significant (Model 4 in Table 3). Focusing on the quadratic Model 4, the results showed that the quadratic term of the gender norms index was only statistically significant when interacted with college education. This coefficient suggested that the negative relationship between the regional gender norms index and marriage only applied to non-college graduates. Instead, for women with college education, the relationship appeared to be non-linear.

To further understand the results of Model 4, Figure 1-B illustrates the predicted probabilities of marriage -by educational attainment -going from a traditional regional context with respect to gender norms to an egalitarian one (Model 4-Quadratic in Table 3). For college-educated women, the relationship between the regional gender index and marriage is represented by a full line. For women without a 4-year college degree, the average predicted probabilities are depicted by a dashed line. The predictive margins were calculated holding all other independent variables to their actual values. To test whether the educational gradient is statistically significant, the average predicted probabilities are presented with confidence intervals adapted for pairwise comparisons (Goldstein & Healy, 1995).

In line with the regression results presented in Table 3, the differences in predicted probabilities between women with a 4-year college degree and women without one were statistically significant, as shown by the lack of overlap in the confidence intervals. Figure 1-B shows that increases in the prevalence of egalitarian gender-norms predicted a steep decline in marriage rate for women without college education. For college-educated women, the relationship between regional gender norms and marriage followed a U-shaped relationship. Overall, college-educated women had a lower predicted probability of marrying with respect to their less-educated counterparts. However, when the gender index reached a value of about  $-0.25$ , the predicted marriage rate for college-educated women started increasing and overtook the one for women without a college education.

Taken together, the empirical findings for marriage provided robust evidence for Hypothesis 2a. The results showed that changes in the prevalence of egalitarian gender norms predicted a bifurcated family process between those with and without college education.

### Gender Norms and Divorce

Table 4 presents the results from the discrete event-history analysis of the association between gender norms and divorce. For the sake of parsimony, Table 4 only shows the coefficients of the key explanatory variables of interest. The estimates for all the control variables can be found in the online appendix D in Table D3 for the linear functional form and in Table D4 for the quadratic functional form.

As with the marriage models, I first focus on Model 1–3 in Table 4, which capture the association between the regional gender norms index and divorce for women across all

levels of education. Comparing the coefficients for the gender norms index in the linear and the quadratic models, the results showed that only the quadratic functional was statistically significant. In the quadratic models, the linear and quadratic coefficients of the gender index were negative and statistically significant. The quadratic divorce models' findings implied a non-linear relationship between regional gender norms and the probability to divorce. When gender norms were traditional, an increase in the prevalence of egalitarian gender norms was positively associated with divorce. Conversely, when gender norms became predominantly egalitarian, the relationship reversed. These results remained consistent through the three different model specifications.

Figure 2 shows the average predicted divorce probability corresponding to different levels of the gender norms index. The predicted probabilities are based on Model 3-Quadratic in Table 4. The values plotted in Figure 2 were calculated holding all other independent variables to their actual values. The full line illustrates the predicted divorce probability using the quadratic form regression. The gray area represents the 95% confidence intervals around the predicted values. The vertical line indicates the value of the gender norms index at which the relationship reverses.

Confirming the results presented in Table 4, the predicted probabilities showed an inverted U-shaped pattern between the regional average gender norms and the probability of divorce. The results suggested that it was only when a larger share of society had adopted egalitarian gender attitudes that an increase in gender norms became negatively associated with divorce. The reversal in the relationship between gender norms and divorce occurred when the index took a value of about  $-0.2$ .

The findings for divorce were in line with the gender revolution perspective (Hypothesis 2a), which predicted an inverted U-shaped relationship between regional gender norms and marital dissolution. An initial increase in the prevalence of egalitarian gender norms had a destabilizing effect on marriage. However, when egalitarian gender norms were supported by a critical mass, a decline in divorce was observed as society moved toward equality.

Turning to the bifurcated family process argument, the divorce models were replicated including an interaction term between regional gender norms and college education. Results are presented in Model 4 in Table 4. In both the linear and quadratic Model 4, none of the interactions terms between gender norms and having a 4-year college degree were found to be statistically significant. In contrast with the marriage results, the findings presented in Table 4 showed that there was no educational gradient to the relationship between gender norms and divorce. Contrary to Hypothesis 2b, the relationship between contextual gender norms and divorce was not moderated by college education.

### Sensitivity analysis

To address concerns about the robustness of the findings, the models were re-estimated under the following specifications: (i) excluding higher order events; (ii) excluding years prior to 1977 where the gender norms index was extrapolated; (iii) separately for households with and without children; (iv) lagging the gender norms index by one or two years; (v) including a quadratic or a cubic cohort trend; (vi) including additional control variables to

measure legal access to the Pill and abortion and changes in divorce laws; (vii) constraining all respondents to their first observed region of residence; (viii) applying different sample weights and excluding the low-income families oversample (SEO); (vi) measuring contextual gender norms at the national level instead of the regional level. The main findings of the article remained consistent across the different model specifications. The results of the sensitivity analysis can be found in online appendix E.

## Discussion

The main contributions of this article are two-fold. First, this article presented the first empirical test of the gender revolution framework on marriage dynamics in the United States. Second, the gender revolution framework was contrasted with the bifurcated family process perspective to argue that -in the United States- increases in egalitarian gender norms affected marriage and divorce rates unequally across educational groups. To test these different hypotheses, I applied event-history analysis to a unique combination of datasets from the GSS, PSID and IPUMS-March CPS to study the association between contextual gender norms and entry into marriage and exit from marriage between the 1960s and 2010s.

The marriage results showed that the relationship between regional gender norms and marriage was moderated by whether women have a 4-year college degree. Indeed, regional shifts toward gender equality predicted a decline in marriage for women without a college degree. Consistently with the bifurcated family process argument, gender-egalitarian contexts were negatively associated with marriage formation and evidenced the increasing selectivity of marriage. Instead, for college-educated women, the relationship between gender norms and marriage followed closely the predictions of the gender revolution framework of a U-shaped relationship between egalitarian gender norms and marriage. An initial increase in egalitarianism when gender norms were mainly traditional predicted a decline in marriage. However, the relationship reversed as egalitarian gender norms became dominant. At very high levels of the gender norms index, college-educated women even experienced a higher probability of marriage with respect to their less-educated counterparts.

Turning to the divorce results, the association between regional gender norms and divorce followed an inverted U-shape. When gender norms were traditional, an increase in equality was positively associated with marital instability. Once the prevalence of gender-egalitarian attitudes reached intermediary levels, the association between gender-egalitarian attitudes and divorce became negative. These findings are fully consistent with the predictions of the gender revolution perspective. Furthermore, in contrast with the marriage results, I did not find an educational gradient to the relationship between gender norms and divorce.

How can these results be interpreted? Taken together, the marriage and divorce findings provided mixed evidence for both the gender revolution and the bifurcated family process perspectives. The patterns observed for college-educated women suggest that highly educated women in gender-egalitarian contexts find marriage more attractive and experience lower levels of marital instability. These findings align perfectly with the predictions of the gender revolution of a return to stability as egalitarian gender norms and opportunities for women outside the home align. For women without college education, however, the shift



from traditionalism to egalitarianism predicts a continuous decline in marriage, which is consistent with the economic and social barriers to marriage literature (Edin & Reed, 2005). The finding is also in line with a recent study by Kalmijn (2013), which found that in more gender-egalitarian European countries, higher educated women were more likely to be in a union.

Furthermore, the parallel findings of an increase in marriage avoidance and a decline in divorce among lower educated women suggest that marriage selectivity is at play. As the gender revolution progresses, lower educated women appear to be choosing self-reliance over marriage when resources constrain the possibility of a stable and egalitarian marriage (Edin and Reed, 2005; Gerson, 2010). As a consequence, the decline in divorce across all educational groups can partially be attributed to the fact that women who anticipate a higher risk of divorce select themselves out of marriage in the second phase of the gender revolution.

The analysis does not come without caveats. Although a strength of this article was the longitudinal approach, the data also presented some limitations because fewer control variables could be included in the analysis when using the entire span of the PSID. For example, religiosity, parental divorce and mother's employment during childhood were three important variables that could not be considered in the 1968–2012 analysis. The PSID is also not representative of new waves of immigrants and, therefore, the findings cannot be generalized to these sub-groups of the U.S. population.

Another limitation of this study is that gender norms could only be measured at the regional level. The U.S. census divisions captured important regional variation in attitudes, nevertheless, recent studies that used cross-sectional data have shown that lower levels of geographical analysis can reveal important differences in the relationship between contextual variables and partnership behavior (e.g. Cherlin, Ribar, & Yasutake, 2016). Also, because the PSID does not provide any measures of gender ideology, the models did not control for the respondent's own gender ideology. On the one hand, this study found an educational gradient to the relationship between gender norms and marriage, which could capture differences in gender ideology between working-class and middle-class women. On the other hand, the divorce results suggested that the relationship between gender norms and divorce is the same across social strata. Future work should integrate both individual and contextual measures of gender ideology to shed further light on these findings.

Overall, the results of this study suggest that, in the United States, the predictions of the gender revolution framework apply to the college-educated only. I have argued that egalitarian gender norms only provide the possibility of adopting a stable egalitarian model. For Americans without a college degree, however, rising barriers to marriage prevent them from reaching this new egalitarian ideal. The findings suggest that in a liberal welfare state with rising income inequality, the outcomes of the gender revolution increasingly appear to follow a bifurcated family process. Unless the state provides an ample safety net for lower educated workers and supports dual-earner and dual-carer families, the gender revolution is unlikely to produce a unique social outcome in the United States. If we want to foster stable

and egalitarian partnerships, we need theoretical frameworks and policies that enable men and women to act in accordance with their egalitarian preferences across all social strata.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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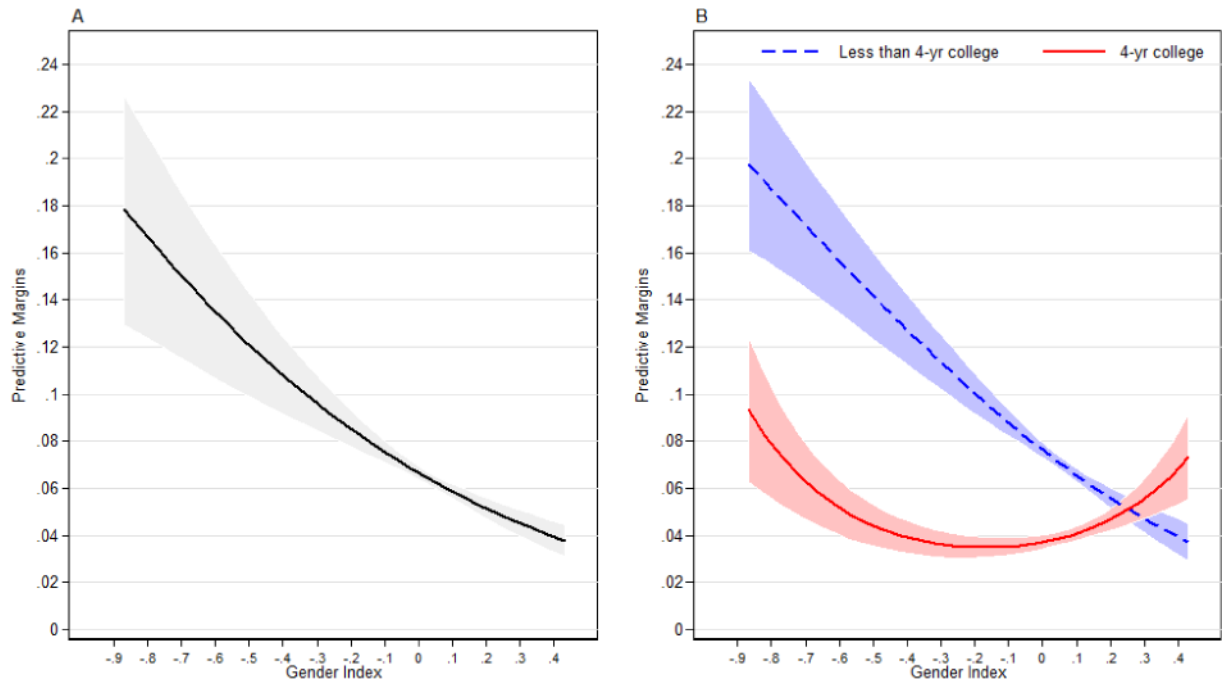
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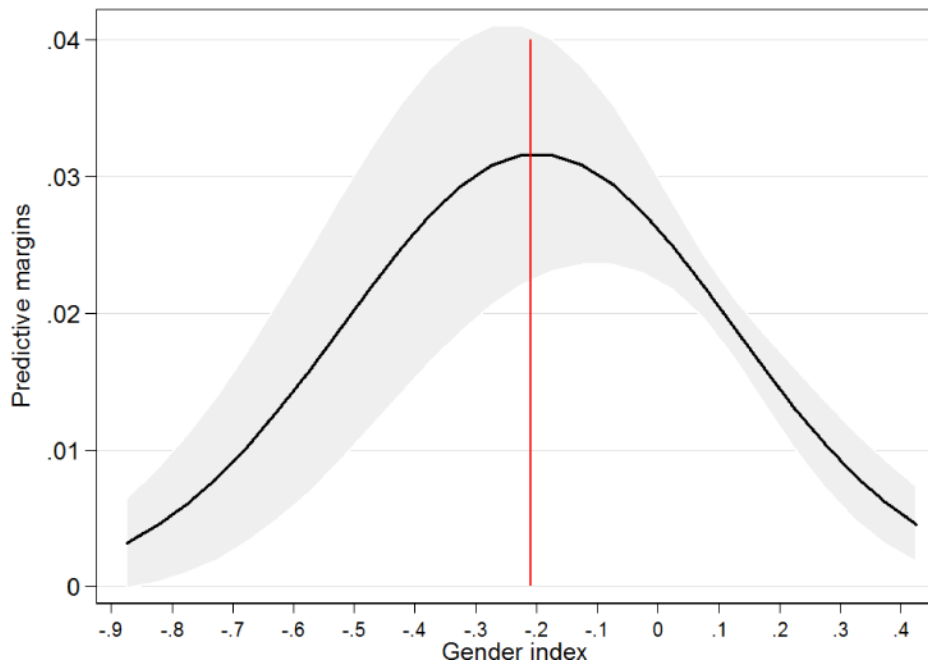
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**FIGURE 1.**  
AVERAGE PREDICTED ASSOCIATION BETWEEN THE GENDER NORMS INDEX  
AND MARRIAGE.



**FIGURE 2.**  
AVERAGE PREDICTED ASSOCIATION BETWEEN THE GENDER NORMS INDEX  
AND DIVORCE.



**Table 1**

Descriptive statistics of variables for the marriage models.

	Mean	Sd	Min	Max
<b>Region-level variables</b>				
Gender norms index	0.00	0.26	-0.87	0.44
Gender norms index sq.	0.07	0.12	0.00	0.75
Male unemployment rate	7.09	2.32	2.01	14.98
Women's employment rate	54.44	6.40	37.74	69.35
% of tertiary educated women	21.43	7.34	6.81	40.60
<b>Individual-level variables</b>				
Duration unpartnered	7.73	5.88	1.00	25.00
Duration unpartnered sq.	94.33	132.67	1.00	625.00
Ever Married	0.18	0.39	0.00	1.00
Race				
White (Ref.)	0.75	0.43	0.00	1.00
Black	0.19	0.39	0.00	1.00
Other	0.06	0.24	0.00	1.00
Education				
Less than high school diploma (Ref.)	0.14	0.35	0.00	1.00
High school diploma	0.30	0.46	0.00	1.00
Some college	0.27	0.44	0.00	1.00
College degree	0.28	0.45	0.00	1.00
Age				
16–18 (Ref.)	0.22	0.41	0.00	1.00
19–21	0.20	0.40	0.00	1.00
22–24	0.16	0.36	0.00	1.00
25–27	0.12	0.32	0.00	1.00
31–40	0.31	0.46	0.00	1.00
Presence of child(ren) ages 0–3	0.10	0.30	0.00	1.00
Number of children	1.61	1.54	0.00	14.00
Region				
New England	0.05	0.22	0.00	1.00
Middle Atlantic	0.17	0.37	0.00	1.00
East North Central	0.19	0.39	0.00	1.00
West North Central	0.08	0.28	0.00	1.00
South Atlantic	0.16	0.37	0.00	1.00
East South Central	0.06	0.24	0.00	1.00
West South Central	0.08	0.27	0.00	1.00
Mountain	0.05	0.23	0.00	1.00
Pacific	0.15	0.35	0.00	1.00
Birth year (1929 = 0)	38.59	12.97	0.00	64.00

Note: Woman-years = 100,978, Women = 12,073, Number of unpartnered spells = 14,014, Number of marriages = 6,430. SD = Standard deviation. sq. = squared. Sample weights are applied.

**Table 2**

Descriptive statistics of variables for the divorce models.

	Mean	SD	Min	Max
<b>Region-level variables</b>				
Gender norms index	0.02	0.21	-0.88	0.43
Gender norms index sq.	0.05	0.08	0.00	0.77
Male unemployment rate	7.12	2.23	2.01	14.98
Female employment rate	54.94	5.84	37.74	69.35
% of tertiary educated women	21.34	6.72	6.81	40.60
<b>Couple- and Individual-level variables</b>				
Log of marriage duration	1.72	0.85	0.00	3.22
Wife's first marriage	0.87	0.34	0.00	1.00
Wife's age at start of marriage	23.48	4.40	16.00	40.00
Wife's age at start of marriage sq.	570.57	224.71	256.00	1600.00
Wife's race				
White	0.87	0.34	0.00	1.00
Black	0.07	0.26	0.00	1.00
Other	0.06	0.23	0.00	1.00
Wife's education				
Less than high school diploma	0.14	0.35	0.00	1.00
High school diploma	0.33	0.47	0.00	1.00
Some college	0.26	0.44	0.00	1.00
College degree	0.27	0.45	0.00	1.00
Husband's education				
Less than high school diploma	0.15	0.36	0.00	1.00
High school diploma	0.34	0.47	0.00	1.00
Some college	0.24	0.42	0.00	1.00
College degree	0.27	0.45	0.00	1.00
Spousal age difference				
Age homogamy	0.60	0.49	0.00	1.00
Wife is older	0.06	0.25	0.00	1.00
Husband is older	0.34	0.47	0.00	1.00
Presence of child(ren) ages 0–3	0.40	0.49	0.00	1.00
Number of children	1.48	1.22	0.00	12.00
Region				
New England	0.05	0.21	0.00	1.00
Middle Atlantic	0.14	0.35	0.00	1.00
East North Central	0.17	0.38	0.00	1.00
West North Central	0.11	0.31	0.00	1.00
South Atlantic	0.16	0.36	0.00	1.00
East South Central	0.07	0.26	0.00	1.00
West South Central	0.10	0.30	0.00	1.00

	<b>Mean</b>	<b>SD</b>	<b>Min</b>	<b>Max</b>
Mountain	0.06	0.25	0.00	1.00
Pacific	0.14	0.35	0.00	1.00
Marriage year (1968 = 0)	17.77	11.17	0.00	44.00

Note: Woman-years = 70,574. Women = 8,066. Number of marriage spells = 8,713. Number of divorces = 1,914. SD = Standard deviation. sq. = squared. Sample weights are applied.

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**Table 3**  
Gender Norms Index as a Predictor of Marriage: Multilevel Logistic Regression

Variable	Model 1			Model 2			Model 3			Model 4		
	B	SE B	OR	B	SE B	OR	B	SE B	OR	B	SE B	OR
<b>Linear</b>												
Gender norms index	-2.235 ***	(0.160)	0.107	-2.337 ***	(0.165)	0.097	-1.501 ***	(0.238)	0.223	-1.664 ***	(0.239)	0.189
4-year college education										-0.627 ***	(0.056)	0.534
GI × 4-yr college education										1.574 ***	(0.189)	4.826
<b>Quadratic</b>												
Gender norms index	-1.951 ***	(0.256)	0.142	-2.120 ***	(0.277)	0.120	-1.326 ***	(0.323)	0.266	-1.790 ***	(0.330)	0.167
Gender norms index sq.	0.413	(0.291)	1.511	0.306	(0.316)	1.358	0.265	(0.332)	1.303	-0.318	(0.351)	0.728
4-year college education										-0.832 ***	(0.071)	0.435
GI × 4-yr college education										2.591 ***	(0.283)	13.343
GI sq. × 4-yr college education										2.683 ***	(0.546)	14.629
Regional fixed effects	+			+						+		+
Birth year fixed effects	+			+						+		+
Regional cohort linear trend				+						+		+
Time-varying regional variables										+		+

Notes: Woman-years = 100,978, Women = 12,073, Number of unpartnered spells = 14,014, Number of marriages = 6,430. Time-varying regional variables = men's unemployment rate, % of women with tertiary education, women's employment rate. The linear and quadratic cells represent results from a separate regression model. All the models include all time-constant and time-varying control variables in Table 1 (Model 4 includes education as a binary variable instead of categorical variable). B = Log-odds, SE B = Standard error of the log-odds, OR = Odds ratio, sq. = squared.

+ p<0.10  
\* p<0.05  
\*\* p<0.01  
\*\*\* p<0.001

**Table 4**

Gender Norms Index as a Predictor of Divorce: Multilevel Logistic Regression

Variable	Model 1			Model 2			Model 3			Model 4		
	B	SE	OR	B	SE	OR	B	SE	OR	B	SE	OR
<b>Linear</b>												
Gender norms index	-0.197	(0.312)	0.821	-0.355	(0.320)	0.701	0.157	(0.433)	1.170	0.179	(0.434)	1.196
4-year college education										-0.570	(0.102)	0.566
GI × 4-yr college education										-0.132	(0.441)	0.876
<b>Quadratic</b>												
Gender norms index	-2.061	(0.453)	0.127	-3.197	(0.515)	0.041	-2.028	(0.574)	0.132	-2.003	(0.577)	0.135
Gender norms index sq.	-4.098	(0.729)	0.017	-5.836	(0.842)	0.003	-5.109	(0.878)	0.006	-5.039	(0.890)	0.006
4-year college education										-0.532	(0.124)	0.587
GI × 4-yr college education										-0.200	(0.525)	0.819
GI sq. × 4-yr college education										-1.055	(1.709)	0.348
<b>Regional fixed effects</b>												
Regional fixed effects	+			+			+			+		+
Marriage year fixed effects	+			+			+			+		+
Regional cohort linear trend				+			+			+		+
<b>Time-varying regional variables</b>												
Time-varying regional variables										+		+

Notes: Woman-years = 70,574. Women = 8,066. Number of marriage spells = 8,713. Number of divorces = 1,914. Time-varying regional variables = men's unemployment rate, % of women with tertiary education, women's employment rate. The linear and quadratic cells represent results from a separate regression model. All the models include all time-constant and time-varying control variables in Table 2 (Model 4 includes wife's education as a binary variable instead of categorical variable). SE B = Standard error of the log-odds. OR = Odds ratio. sq. = squared.

+ p<0.10  
 \* p<0.05  
 \*\* p<0.01  
 \*\*\* p<0.001.