

1-24-2023

Born to Care (or Not): How Gender Role Attitudes Affect Occupational Sorting

Carlianne Patrick

Heather Stephens

Amanda Weinstein

Regional Research Institute West Virginia University

Working Paper Series



Born to Care (or Not): How Gender Role Attitudes Affect Occupational Sorting

CARLIANNE PATRICK
GEORGIA STATE UNIVERSITY

HEATHER STEPHENS
WEST VIRGINIA UNIVERSITY

AMANDA WEINSTEIN
UNIVERSITY OF AKRON

Working Paper Number 2023-01

Date submitted: January 24, 2023

Keywords: gender role attitudes, occupation choice

JEL Classification: J24, J31, R23

Born to Care (or Not): How Gender Role Attitudes Affect Occupational Sorting

By CARLIANNE PATRICK, HEATHER STEPHENS, AMANDA WEINSTEIN*

January 2023

Abstract:

Occupation segregation explains a significant portion of the gender wage gap, with women working in lower paid female-dominated occupations. We examine how childhood and adolescent exposure to gender biased norms about work influence this occupational sorting. We document that early life exposure to traditional gender role attitudes, which view women's role as caretakers, increase women's likelihood of employment in care occupations and decrease the likelihood for men, thereby increasing the gender care occupation gap. A decomposition of the factors affecting this sorting shows that a primary channel is through differences in the choice of post-secondary field of study or major. Our results suggest that traditional gender role attitudes may work to segment the labor market for men and women and contribute to the gender wage gap. This suggests that more egalitarian gender role attitudes which increase the share of men entering care occupations would increase wages for both men and women, lowering the gender wage gap.

Keywords: gender role attitudes, occupation choice

JEL Codes: J24, J31, R23

Data Availability Statement:

This paper uses confidential data from the Bureau of Labor Statistics (BLS). The data can be obtained through application to the BLS ([The Geocode Application Document: U.S. Bureau of Labor Statistics \(bls.gov\)](https://www.bls.gov/geo/geocode-application-document)). The authors are willing to assist. Redacted statistical programs for replication are available in the Online Appendix.

Disclosure Statements:

The authors declare that they have no relevant or material financial interests that relate to the research described herein.

* Patrick: Georgia State University, PO Box 3992, Atlanta, GA 30302 cpatrick@gsu.edu. Stephens: West Virginia University. Weinstein: University of Akron. We would like to thank Judith Hellerstein as well as participants at the Annual Allied Social Science Association and North American Regional Science meetings for the helpful comments and suggestions.

“What do you want to be when you grow up?” ...

Finally, the teacher called on me.

Without hesitation, I answered emphatically, “I want to be a scientist.”

... the teacher replied, “Don’t you mean a nurse?”

--autobiography of Dr. Mae Jemison, Physicist and NASA Astronaut (2001)

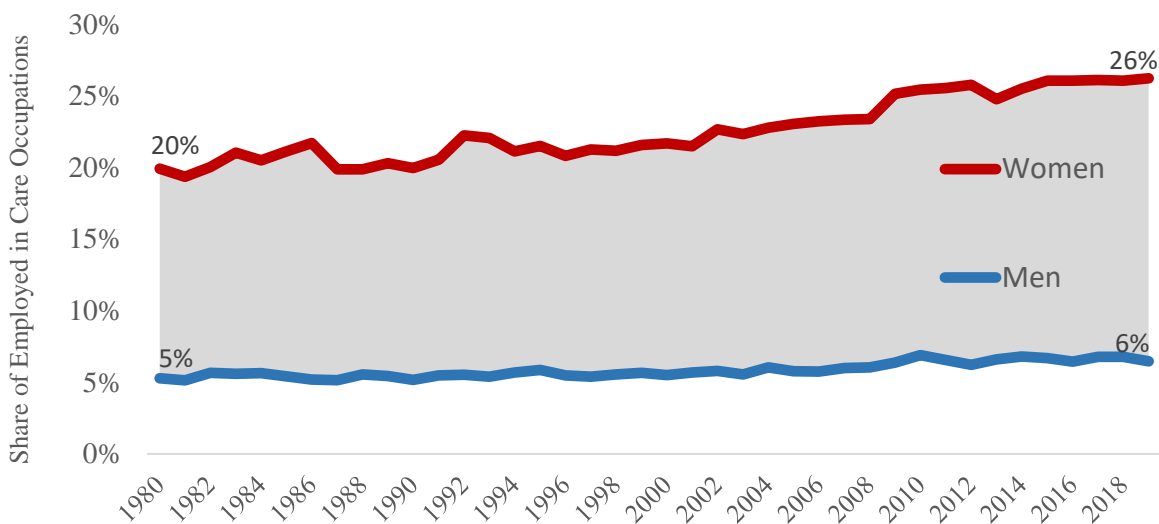
I. Introduction

Occupation segregation with women sorting into lower paid female-dominated occupations explains about half of the gender wage gap (Blau and Kahn, 2017). Women’s entrance into occupations is traditionally viewed through the lens of optimality rather than discrimination, where women have lower paying occupations that offer more flexibility or fewer hours to accommodate unpaid family care work (Goldin, 2014; Usui, 2015). Yet, this contrasts with evidence that women determine their career path before marriage and children (Goldin, 2006). We provide the first evidence, to our knowledge, that early life exposure to different local gender norms may influence occupational sorting through the series of choices about educational attainment, post-secondary field of study, and labor force participation that results in certain occupational outcomes. We create a measure of prevailing gender role attitudes in a person’s location at birth and adolescence and establish a strong correlation between exposure to gendered social norms and care occupational outcomes using a nationally representative sample from the United States (U.S.). We then use detailed microdata to decompose the educational field of study and labor market pathways through which exposure may operate.

Over time, the gender wage gap in the U.S. has narrowed as occupation segregation has declined. The decline in occupational segregation is largely driven by women entering male-

dominated occupations (notably business and finance), and **not** by men entering female-dominated occupations. In fact, for female-dominated *care* occupations (such as healthcare and education), there has been a widening of the gender gap (Figure 1).¹ While the overall female labor force participation has increased and although women are increasingly entering male-dominated fields, women are also increasingly choosing female-dominated *care* occupations (healthcare and education). This widening of the gender gap in care occupations is happening despite the rise of men in nursing (noted by Munnich and Wozniak, 2020) and the increasing share of men employed in care occupations overall (Figure 1).

FIGURE 1. WOMEN ARE INCREASINGLY ENTERING INTO CARE OCCUPATIONS



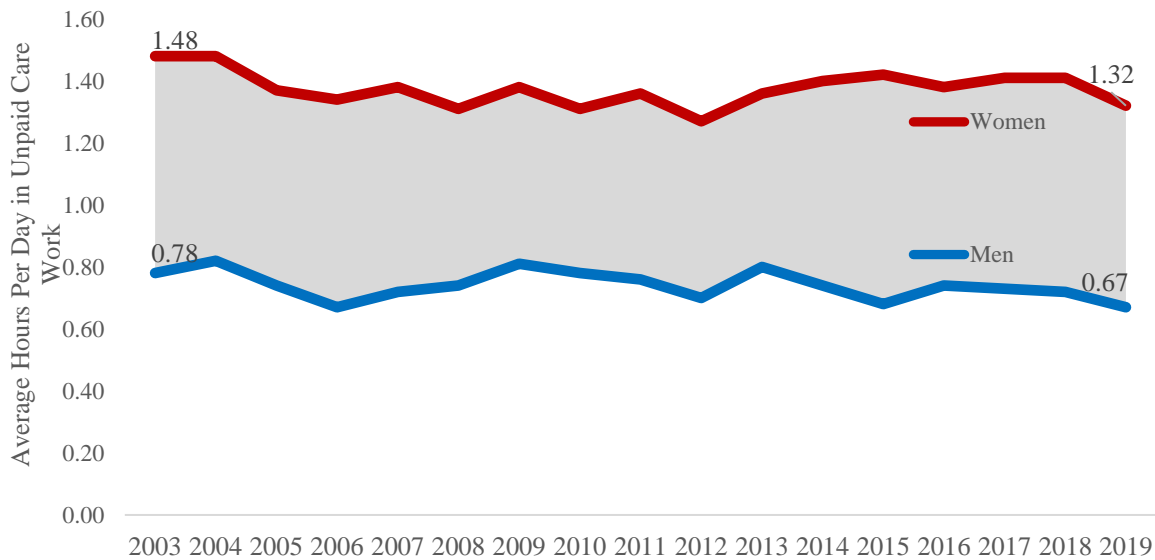
Source: U.S. Census/American Community Survey

Thus, the increase in the gender gap in paid care occupations presents a puzzle. Examining *unpaid* care work may provide some insights. The gender gap in unpaid care work has been stubbornly persistent over time, (Figure 2; Sullivan, 2013); and there is evidence that the gap

¹ Care occupations generally include any occupation in healthcare and education (specifically, we use 2010 U.S. Census occupation codes 2200-2340, 2540, 3000-3650).

widened dramatically during the coronavirus pandemic (Heggeness, 2020; Boca et al., 2022). While the overall increase in labor force participation reflects that society has largely accepted women (especially mothers) in the workplace, longstanding gender role attitudes about women and care work (both unpaid and paid) appear persistent.

FIGURE 2. THE GENDER GAP IN UNPAID CARE WORK²



Fortin (2015) suggests that, beginning in the 1990s, the U.S. experienced a reversion to more traditional gender role attitudes. Traditional gender role attitudes that assign care work (both inside and outside the home) exclusively to women can differentially act as a perceived constraint on the “acceptable” employment options available to both women *and* men or impose a cost on those that step out of gender norms.³ Gendered caregiving roles were even codified in U.S. tax code for a

² We defined unpaid care work as all activities classified as caring for a household or non-household member or volunteer time in social service and care activities

³ For example, traditional gender role attitudes can deter women from engaging in entrepreneurial activities (Patrick, Stephens, and Weinstein, 2016).

time.⁴ At the same time, research shows female-dominated care work occupations are de-valued (England, Budig, and Folbre, 2002; Yavorsky, Ruggs, and Dill, 2021). Thus, both women and men have fewer financial incentives to enter lower paid care occupations. However, the role of exposure to gender attitudes in establishing these lower wages is not well understood.

While women and men can make contemporaneous choices about specific jobs, one challenge is that the occupation someone enters is the outcome of many prior decisions including labor force participation, educational attainment, college major, etc.; all of which are likely conditional on both individual and family characteristics and prevailing local social constructs. Social norms and role models from childhood and adolescence shape children's views of their own innate talents and abilities which may fundamentally alter the career paths that they view as attainable or acceptable (Eccles, Jacobs, Harold, 1990). Pistoiesi (2022) also found that peers from high school can affect the choice of major in higher education, further evidence that social norms may affect these decisions. Gender role attitudes at birth or in adolescence, "background sexism," have also been found to be associated with lower women's wages – widening the gender wage gap (Charles, Guryan, Pan, 2018). Yet, the precise mechanism through which gender role attitudes affect the gender wage gap is not understood.

This paper fills this gap in the literature by empirically investigating how childhood and adolescent exposure to local gender norms affect sorting into care occupations. This is a natural first step in understanding how prevailing cultural norms about gender roles may affect the distribution of men and women in certain (care) occupations and the resulting wage gap as

⁴ Although the sole caregiver for his mother, Charles Moritz was denied caregiving tax deductions because the law distinguished women as caregivers – a law that was later struck down by the courts (Mar, 2020).

traditional (less egalitarian) gender role attitudes assign the role of care work (both inside and outside of the home) to women.

Using a large sample of nationally representative microdata from the U.S., we first document that childhood exposure to more progressive (more egalitarian) gender attitudes is associated with a lower gender gap in care occupations. We then investigate the channels through which these stylized facts operate by combining restricted-use microdata that includes detailed sociodemographic information, parental data, aptitude and ability scores, educational attainment, post-secondary education and field(s) of study, and a complete labor market history, with metrics for gender role attitudes and female role models in an individual's location at birth and in adolescence. Using an empirical method developed by Arcidiacono and Koedel (2014) in the *American Economic Journal: Applied Economics*, we then examine the specific pathways through which early life exposure to gender role attitudes affect future labor market decisions, including the choice of higher education and the choice of field of study. The Arcidiacono and Koedel decomposition allows us to understand the relative importance of pre-labor market decisions about field of study and post-secondary education to current labor market and occupational outcomes.

We find that if individuals exposed to traditional gender role attitudes chose a post-secondary field of study like those in more egalitarian places (conditional on individual characteristics), the occupation gender gap would be smaller for older cohorts. Among younger cohorts, we find that childhood exposure to more egalitarian gender role attitudes contributes to fewer people (of both genders) sorting into care occupations, likely a response to care work being de-valued. In both cohorts, our decomposition indicates that the primary channel for this is the choice of post-secondary (vocational, two-year, four-year, or graduate) field of study. We repeat this exercise using gender role attitudes in the individuals' location at age 14 as well as using a composite

measure of gender role attitudes and exposure to female role models. We then extend our analysis to occupations with care skills (rather than limiting it to traditional care occupations). Our results suggest that exposure to (traditional) gender role attitudes may help explain why women continue to suffer from the double wage gap – lower wages in female dominated occupations and lower wages (than men) in occupations overall.

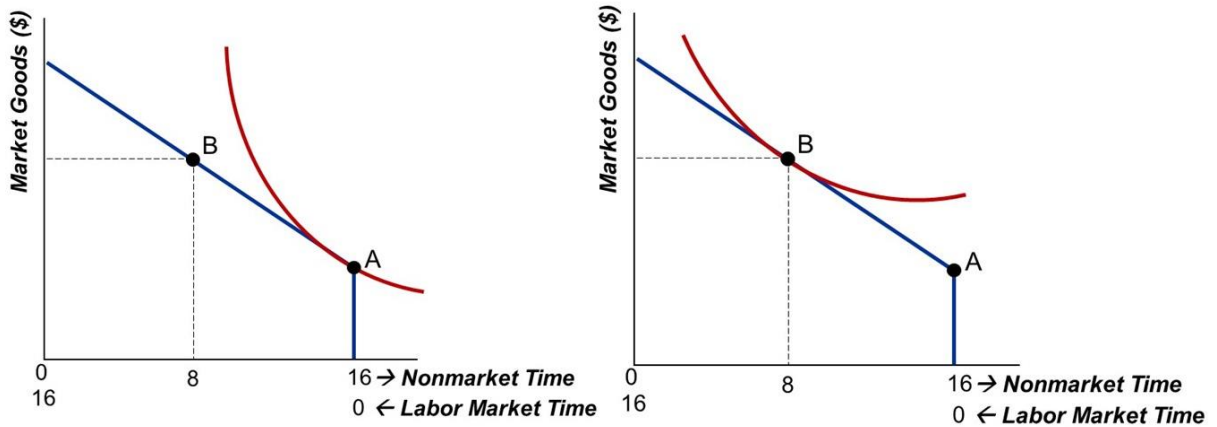
II. Gender Role Attitudes and Occupation

We are interested in how the gender norms to which people are exposed in early life affect their occupational choices later in life – regardless of whether individuals fully internalize the prevailing attitudes. Previous research has shown that cultural attitudes transmitted from the source countries of immigrants (Fernández and Fogli, 2009; Blau, Kahn, and Papps, 2011; Blau et al., 2013; Scoppa and Stranges, 2019), or from mothers to their children (Fernández, Fogli, and Olivetti, 2004; Farré and Vella, 2013) affect the labor market preferences of women. There is also evidence that women’s exposure to more egalitarian regional gender role attitudes is associated with higher female labor force participation rates (Patrick, Stephens, Weinstein, 2016; Charles, Guryan, Pan, 2018).

In a model of utility maximization (Figure 3), more egalitarian gender role attitudes may affect women’s preferences (especially married women), moving their optimal labor market participation from point A to point B (depicting an increase in labor force participation as women’s preferences shift away from nonmarket time spent caring for household members). More egalitarian gender role attitudes could also affect women’s preferences for market time spent in non-care occupations over care occupations as with more egalitarian gender roles there would be less of a penalty from stepping out of gender norms. Thus, changes in preferences resulting from exposure to more

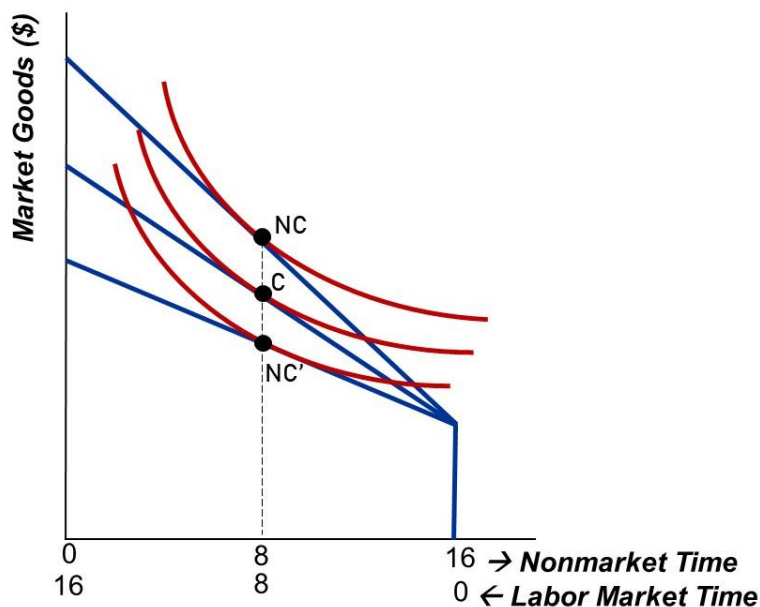
egalitarian gender role attitudes may increase the likelihood of women entering more lucrative non-care occupations, i.e., moving from a lower paid care occupation (Figure 4, point C) to a non-care occupation (Point NC) with higher utility.

FIGURE 3. THE IMPACT OF GENDER ROLE ATTITUDES ON PREFERENCES



In contrast, less egalitarian gender role attitudes may act to constrain the set of occupations that are available or perceived to be available for women. Traditional gender role attitudes may impose a social cost on women who step out of gender norms and enter non-care occupations (see Smith, 2021). This lowers the effective wage (after accounting for social costs) associated with non-care occupations for women in places with more traditional gender role attitudes (from NC to NC' in Figure 4). Thus, women with exposure to more traditional gender role attitudes would be more likely to work in a care occupation (point C) with higher utility than point NC'.

FIGURE 4: IMPACT OF GENDER ROLE ATTITUDES ON CONSTRAINTS

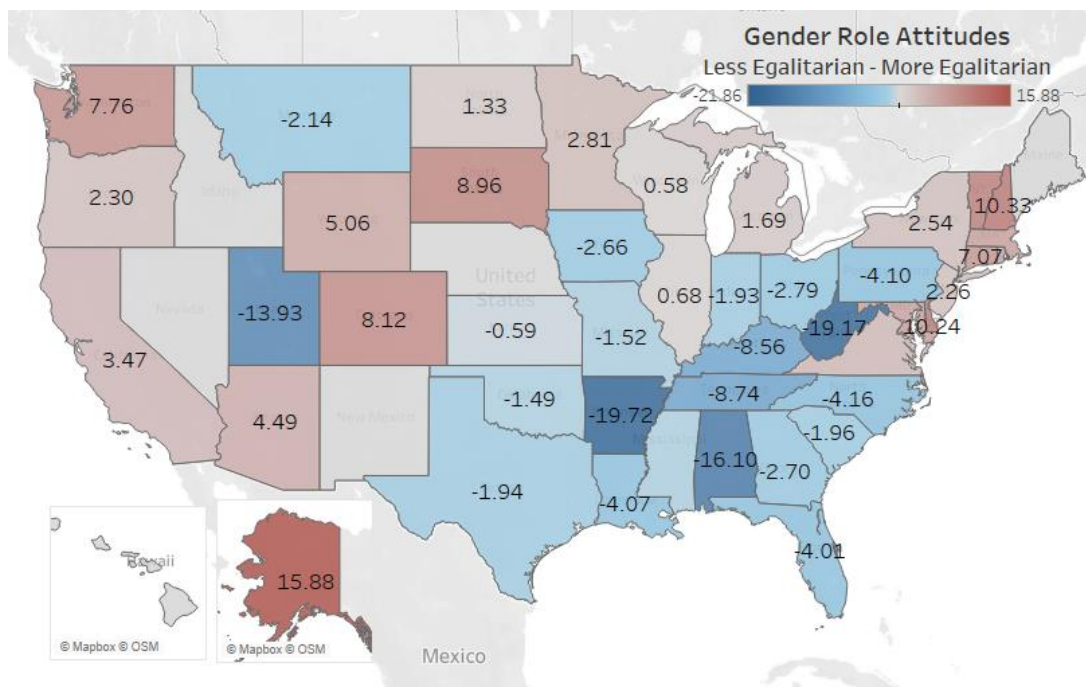


Thus, gender role attitudes may change the labor market outcomes (including occupation) of women (and men) by changing individual preferences and/or changing the constraints they face in their labor supply decisions. If more egalitarian regional gender role attitudes also reduce occupation segregation, with fewer women crowded into lower paying female-dominated occupations, then women's expected wages would increase. In fact, Fortin (2005) finds that countries with more egalitarian views on gender have a lower gender pay gap and higher female employment. Similarly, Charles, Guryan, and Pan (2018) find that exposure to more egalitarian gender role attitudes helps increase women's wages and shrink the gender pay gap (and increase labor force participation). In this paper, we explore the mechanisms through which this takes place.

Our primary measure of locations' prevailing gender role attitudes uses the restricted access General Social Survey (GSS) geocoded data and responses to gender role attitude questions to create a U.S. state-level gender role attitude index, where higher values indicate more egalitarian

gender role attitudes (similar to Charles, Guryan, and Pan, 2018).⁵ Figure 5 illustrates the variation in our GSS measure across U.S. States. In some specifications of the empirical models that follow, we also use a measure that incorporates metrics on the presence of female role models including the share of state legislatures that are female,⁶ women’s labor force participation rates, and the prevalence of women in care occupations.

FIGURE 5. GENDER ROLE ATTITUDES/BACKGROUND SEXISM ACROSS THE U.S



Source: General Social Survey and authors’ calculations

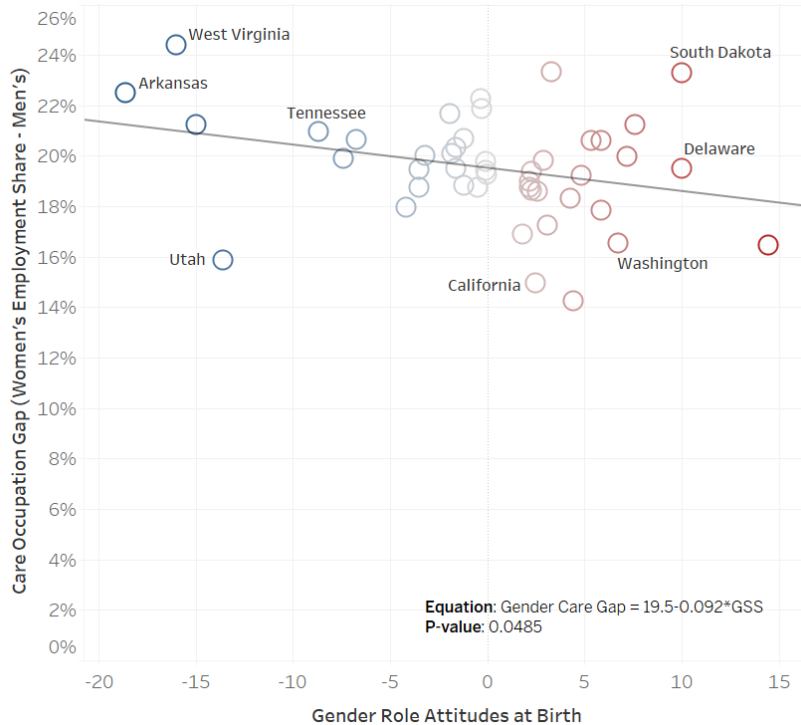
Using 2018 U.S. American Community Survey (ACS) data, we next establish the relationship between gender role attitudes and occupational segregation, focusing on care occupations (using a standard definition based on work by Blau and Kahn, 2017, and Folbre, 2012, which includes most

⁵ From the GSS, we use *fework*, *fehome*, *fepres*, *fepol*, *fechld*, *fepresch*, *fehlp*, *fefam*, questions about attitudes toward women’s roles in the home, in the workplaces and society which are repeated asked from 1977 to 1998. We rescale them so higher is more egalitarian and construct an index that is based on the sum of the z-scores for each of the questions for each state. This is similar to that used in Charles, Guryan, and Pan (2018) and in Patrick, Stephens, and Weinstein (2016). We use a similar approach when we combine other metrics on the presence of female role models.

⁶ Similar to Reynolds and Weinstein (2021) who use state level measures of gender role attitudes from the GSS and the percent of female legislators from the (along with other measures such as whether/when the state approved suffrage and the Equal Rights Amendment).

education and health care occupations). We find more egalitarian gender role attitudes in the place of birth are associated with lower overall occupational segregation (measured using the index of dissimilarity). The share of employed women in care occupations is lower for women born in states with more egalitarian gender role attitudes and the share of employed men in care occupations is higher for men born in states with more egalitarian gender role attitudes. As illustrated in Figure 6, more egalitarian gender attitudes are thus associated with a smaller gender care occupation gap (the difference between the share of employed women in care occupations and the share of employed men in care occupations).

Figure 6. Gender Role Attitudes in a Person’s Birth State and the Gender Care Occupation Gap



Source: IPUMS ACS (2018) American Community Survey (2018) and the General Social Survey. As shown, more egalitarian gender role attitudes are correlated with a smaller gender care occupation gap.

Appendix Table A1 verifies that the relationship between gender role attitudes and the gender care occupation gap is not driven by other economic forces, including larger healthcare systems or faster healthcare growth in states with more egalitarian gender role attitudes

Next, we use the ACS data (2000, 2010, and 2018) to estimate the relationship between gender role attitudes in a person's birth state (background sexism) and the probability of observing an individual in a care occupation today.⁷ Specifically, we estimate whether being exposed to more egalitarian gender role attitudes at birth affects the likelihood an individual is either in a care occupation, non-care occupation, or not employed using multinomial logistic regression. Table 1 presents the marginal effects from this analysis. Our results show that both men and women born in states with more egalitarian attitudes are more likely to be employed. For men, these more egalitarian attitudes may allow them to be more open to occupations that have traditionally been seen as female dominated in the presence of declining employment opportunities in male-dominated industries such as mining. It also suggests that women born in states with more egalitarian attitudes are less likely to be in care occupations while *men born in states with more egalitarian attitudes are more likely to be in care occupations*. Thus, more traditional gender role attitudes (background sexism) are associated with a larger gender care occupation gap.

⁷ We restrict our analysis to individuals between the age of 23 and 64.

TABLE 1— MARGINAL EFFECTS OF MODELS CONSIDERING THE RELATIONSHIP BETWEEN
EGALITARIAN GENDER ROLE ATTITUDES AT BIRTH AND OCCUPATION

	2000		2010		2018	
	Men	Women	Men	Women	Men	Women
	1,681,041	1,735,794	476,771	493,651	623,507	629,487
CARE Occupation	0.0004*** (0.0001)	-0.0005*** (0.0001)	0.0004*** (0.0001)	-0.0006*** (0.0001)	0.0003*** (0.0001)	-0.0004*** (0.0001)
NON-CARE Occupation	0.0009*** (0.0001)	0.0028*** (0.0001)	0.0012*** (0.0001)	0.0032*** (0.0001)	0.0017*** (0.0001)	0.0036*** (0.0001)
Not Employed	-0.0014*** (0.0001)	-0.0023*** (0.0001)	-0.0015*** (0.0001)	-0.0026*** (0.0001)	-0.0020*** (0.0001)	-0.0032*** (0.0001)

*** SIGNIFICANT AT THE 1 PERCENT LEVEL ** SIGNIFICANT AT THE 5 PERCENT LEVEL * SIGNIFICANT AT THE 10 PERCENT LEVEL

As a robustness check, in Table 2, we focus on the impact of gender role attitudes at birth on movers, individuals who live in a state other than their birth state. We find similar results for movers though the magnitudes are smaller or less significant, suggesting a potential role for “residential sexism” as well as “background sexism.” Still, the relationships between background sexism at birth and current occupation remain significant even for those that reside in a state other than their birth state. Overall, these results suggest that occupation may be one mechanism through which gender role attitudes affect the gender wage gap.

TABLE 2 — MARGINAL EFFECTS OF MODELS CONSIDERING THE RELATIONSHIP
BETWEEN EGALITARIAN GENDER ROLE ATTITUDES AT BIRTH AND OCCUPATION FOR
THOSE NOT LIVING IN THEIR BIRTH STATE

	2000		2010		2018	
	Men	Women	Men	Women	Men	Women
	576,214	595,828	169,647	175,923	222,042	226,823
CARE Occupation	0.0003*** (0.0001)	-0.0003*** (0.0001)	0.0004*** (0.0001)	-0.0006*** (0.0002)	0.0000 (0.0001)	-0.0003* (0.0002)
NON-CARE Occupation	0.0011*** (0.0001)	0.0017*** (0.0001)	0.0008*** (0.0002)	0.0023*** (0.0002)	0.0013*** (0.0002)	0.0026*** (0.0002)
Not Employed	-0.0014*** (0.0001)	-0.0014*** (0.0001)	-0.0012*** (0.0002)	-0.0016*** (0.0002)	-0.0013*** (0.0002)	-0.0023*** (0.0002)

*** SIGNIFICANT AT THE 1 PERCENT LEVEL ** SIGNIFICANT AT THE 5 PERCENT LEVEL * SIGNIFICANT AT THE 10 PERCENT LEVEL

We further explore the heterogeneity in these patterns in the appendix where we separately estimate the relationship between prevailing gender role attitudes and occupation for each age cohort (Table A2). We also consider how the relationship between gender role attitudes and occupations may vary across race (Table A3).

When considering age, for women, we find the strongest correlation between gender role attitudes and occupation choices for the younger cohort; more egalitarian gender role attitudes in childhood are associated with younger women being more likely to choose a non-care occupation and less likely to choose a care occupation. For men, the relationship is the strongest for the oldest cohort, with more egalitarian gender role attitudes associated with more older men choosing care occupations. As noted above, more egalitarian attitudes may allow men to be more open to occupations that have traditionally been seen as female dominated in the presence of declining employment opportunities in male-dominated industries.

Turning to race, though trends in employment in care work are similar for both Black and White women, the share of Black women in care occupations is higher,⁸ consistent with previous research showing that Black women have historically filled the demand for care work (Conrad et al., 2014; Banks, 2019). Previous research also finds Black women themselves tend to have the most progressive gender role attitudes and are affected less by regional attitudes (Carter, Corra, and Carter, 2009; Powers et al., 2003). Consistent with this, our results in Table A3 show that Black women's concentration in care occupations is not associated with prevailing regional gender role attitudes. Table A3 also suggests that Black women exposed to more egalitarian gender role attitudes are more likely to be employed in non-care occupations and more likely to be employed

⁸ In 2018, 28 percent of employed Black women worked in care occupations compared to 26 percent for White women.

(Table A3). There is also evidence that Black men are more likely to be employed in a care occupation when they are exposed to more egalitarian gender role attitudes from birth.

Despite some differences, for both White and Black Americans, it appears that more egalitarian (more progressive/less traditional) gender role attitudes play a role in closing the gender gap in care occupations and that more traditional gender role attitudes contribute to a widening of the gender care occupation gap. Thus, a growing gender gap in care occupations could reflect a return to more traditional gender role attitudes (as suggested by Fortin, 2015). However, the ACS data used here do not allow us to control for individual background characteristics which may also be correlated with the gender role attitudes in a State nor does the ACS data allow us to examine the educational attainment and field of study outcomes upon which labor market and occupational outcomes are conditional. Thus, in the next section, we further explore this mechanism using data from the National Longitudinal Surveys of Youth from 1979 and 1997.

III. Decomposition Methodology and Data

To estimate more precisely the mechanisms leading to the current gender care occupation gap, we utilize a methodology developed by Arcidiacono and Koedel (2014) in *American Economic Journal: Applied Economics* to decompose the occupational outcomes and understand the roles of choices about educational attainment and field of study. Card and Payne (2021) provide evidence that the *choices made in adolescence* about whether to take certain science classes lead to future occupational gender gaps in STEM. We therefore expect persistent gender gaps in post-secondary field of study (Turner and Bowen, 1999) to affect gender gaps in the occupations these majors lead to and widen the gender wage gap (Brown and Corcoran, 1997). Given that current labor market and occupational outcomes are affected by the current environment as well as pre-labor market

educational and field of study decisions, the decomposition methodology is necessary to evaluate the relative contributions of these factors. We use confidential geocoded data from the National Longitudinal Surveys of Youth from 1979 and 1997 (NLSY79 and NLSY97).⁹ The two surveys provide detailed information on individuals, their occupations, work history, education, and post-secondary field of study (if applicable) as well as their location at birth and in adolescence. They also represent two generations of people who may be differentially affected by gender role attitudes.

We link the NLSY data with our two state-level measures of gender role attitudes, 1) using the geocoded GSS data and 2) combining the GSS data with our other state-level measures of female role models.¹⁰ This second measure helps to control for other differences by state that could be correlated with gender attitudes. Since children may move between birth and adolescence or be more vulnerable to influence in adolescence, we examine the attitudes based on the state where someone was born and where a person lives in adolescence (age 14 for NLSY 79 and age 12 for NSLY 97).¹¹

Using the methodology developed by Arcidiacono and Koedel (2014), we are then able to decompose the relationship between childhood exposure to gender role attitudes and adult occupation and the numerous choices that affect one's current occupation including the level of educational attainment and choice of field of study, which are decisions made prior to entering the

⁹ NLSY79 includes individuals born between 1957 and 1964; the NSLY97 includes individuals born between 1980 and 1984.

¹⁰ We recognize that there is heterogeneity within states with regards to gender role attitudes, however, there is not sufficient data below the state level to measure these differences.

¹¹ These exposures pre-date the choice of post-secondary education level and field of study. For those who subsequently migrate to another state either for post-secondary education or after, there could be additional differences in exposure to other gender role attitudes, however, they would not be necessarily exogenous to labor market outcomes related to work and/or occupation. Regional gender norms prevailing at the time of measured labor market outcomes are also likely to influence the degree of labor market discrimination and other contemporaneous outcomes related to work/occupation, but not the pre-existing post-secondary education level and field of study. Table A2 also provides evidence that the results are similar for movers and non-movers.

labor market. We focus on the care occupations given that care occupations are dominated by women and there are significant gender occupation gaps.

Following Arcidiacono and Koedel (2014) we define the probability that an individual of gender g with individual characteristics x works in a care occupation using equation (1)

$$\Pr(y = 1|g, a) = \sum_{x \in X} \sum_{m \in M} \sum_{c \in C} \Pr(y = 1|c, m, x, g, a) \Pr(c, m, x, g, a) = \sum_{x \in X} \sum_{m \in M} \sum_{c \in C} \Pr(y = 1|c, m, x, g, a) \Pr(c|m, x, g, a) \Pr(m|x, g, a) \Pr(x|g, a) \quad (1)$$

This is based on post-secondary education (c), post-secondary field of study (m), gender attitudes in the location of birth (a), and occupational choice ($y=1$ if individual i 's occupation is classified as a care occupation).

For the NLSY79 an individual i 's occupation is based on the 1970 Census Code reported occupation of the primary job in 1994 and for the NLSY97 it is based on the 2000 Census Code reported occupation for the primary job in round 16 (2013). At these times, the mean age for both samples is 32 years old which should be far enough into adulthood that the individuals will have completed their education and obtained jobs in their primary occupations. To account for limited unemployment stints at the time of the surveys, we also calculate the individual's modal occupation in the previous five years and use that to define their occupation when there is missing occupational data in our chosen years.

We convert our gender role attitudes index into a binary measure where the gender role attitudes in the individual's state of birth and state in adolescence (age 14 for NLSY 79 and age 12 for NSLY 97) as

$$a = \begin{cases} 1 & \text{if location is in the bottom of the distribution of gender attitude metric} \\ 2 & \text{if location is in the top half of the distribution of gender attitude metric}^{12} \end{cases}$$

¹² While our gender role attitude measure is continuous, for tractability in the analysis, a binary measure was created.

We define educational attainment c as having completed a 4-year college degree or above, having a 2-year degree or vocational training certificate or license, or having no post-secondary credential.

To construct c , we use the highest grade completed and highest degree received as well as the college and vocational/technical training histories and completion years. We group 2-year college degrees with vocational training certificates and licenses because the NLSY 79 data lists nursing school as a vocational degree until 1986 and as a degree program after this point.

We define major field of study m at the time of graduation as either care or non-care using the major codes in the NLSY. We classify all biological sciences, education, health profession, home economics, and psychology majors as care majors (associated with care occupations). Further, we classify all those with a vocational type as nursing school prior to 1986 as having a care major. All other majors are classified as “non-care.”

Table 3 contains key characteristics of the individuals used in our analysis by sex and our main GSS-based measure of gender role attitudes at place of birth. In the older cohort (NLSY79), about 3 percent of men report a care occupation compared to 15-16 percent of women. The gap between men and women is slightly smaller among those born in places with more egalitarian gender role attitudes than those born in locations with more traditional gender role attitudes (consistent with our results using the ACS). Four percent of male respondents chose a care-related field of study for their vocational or college credentials, while 9-10 percent of women chose care fields of study. Both men and women born in places with more egalitarian gender role attitudes achieve higher levels of education and have more educated mothers than those born in locations with more traditional attitudes. Respondents born in places with more egalitarian gender role attitudes also

have significantly higher AFQT¹³ scores than those born in traditional places. It is also important to note that the share of Black respondents born in places with more egalitarian gender role attitudes is significantly lower than the share born in places with more traditional gender norms. The trends are similar with the younger cohort (NLSY97), although significantly more women chose care majors (compared to men) in this cohort.

Table 3: Individual Characteristics by Gender and Gender Norms

	NLSY79		
	Men	Women	Gap (Men-Women)
Traditional Gender Role Attitudes at Birth			
Care Occupation (y)	3,084	3,072	
Care Major (m)	0.034	0.160	-0.126
Post-secondary educational attainment category (c)	0.036	0.087	-0.051
Black	1.274	1.321	-0.047
AFQT score	0.333	0.334	-0.001
Mother's years of education	35.825	36.425	-0.601
Egalitarian Gender Role Attitudes at Birth			
Care Occupation (y)	2,589	2,500	
Care Major (m)	0.031	0.150	-0.120
Post-secondary educational attainment category (c)	0.039	0.104	-0.065
Black	1.336	1.378	-0.043
AFQT score	0.191	0.174	0.016
Mother's years of education	43.563	41.819	1.744
GAP (Egalitarian - Traditional)			
Care Occupation (y)	-0.003	-0.010	
Care Major (m)	0.003	0.017	
Post-secondary educational attainment category (c)	0.062	0.057	
Black	-0.142	-0.159	
AFQT score	7.739	5.394	

¹³ The Armed Forces Qualification Test (AFQT) is used as a measure of aptitude or ability.

Mother's years of education	0.500	0.574	
NLSY97			
	Men	Women	Gap (Men-Women)
Traditional Gender Role Attitudes at Birth			
	1,659	1,562	
Care Occupation (y)	0.039	0.150	-0.111
Care Major (m)	0.043	0.131	-0.088
Post-secondary educational attainment category (c)	1.436	1.647	-0.210
Black	0.390	0.401	-0.011
ASVAB score*	40699.12	44002.10	-3302.98
Mother's years of education	12.645	12.660	-0.015
Egalitarian Gender Role Attitudes at Birth			
	1,580	1,433	
Care Occupation (y)	0.037	0.134	-0.097
Care Major (m)	0.037	0.137	-0.099
Post-secondary educational attainment category (c)	1.565	1.784	-0.218
Black	0.173	0.178	-0.005
ASVAB score*	50532.51	52856.94	-2324.43
Mother's years of education	13.371	13.233	0.138
GAP (Egalitarian - Traditional)			
Care Occupation (y)	-0.002	-0.016	
Care Major (m)	-0.005	0.006	
Post-secondary educational attainment category (c)	0.129	0.137	
Black	-0.217	-0.223	
ASVAB score*	9833.39	8854.84	
Mother's years of education	0.725	0.573	

* Armed Services Vocational Aptitude Battery (ASVAB) is used instead of the AFQT as an aptitude test with the NLSY97 cohort.

Using equation (1) and the methodology developed by Arcidiacono and Koedel (2014) provides a natural way of decomposing the effects of c , m , and x on occupation:

- (i) How much do the different ways that (men and) women in locations with more egalitarian gender role attitudes and more traditional gender role attitudes choose

- post-secondary education (conditional on individual background and care or non-care major field of study) account for differences in whether they are in a care occupation?
- (ii) How much do the different ways that (men and) women in locations with more egalitarian gender role attitudes and more traditional gender role attitudes choose their post-secondary major (conditional on individual background) account for differences in whether they are in a care occupation?

We predict counterfactual occupations for individuals with childhood exposure to more traditional gender role attitudes based upon the occupations of those individuals with childhood exposure to more egalitarian gender role attitudes (conditional on individual characteristics).

Resorting the level of post-secondary education conditional on care or non-care major field of study choice (decomposition *i*, above) effectively allows individuals to choose whether they are interested in fields broadly related to care or not, and, based upon that interest, then decide the level of education attainment. In other words, our post-secondary-only resorting demonstrates how differences in the choice of post-secondary educational attainment among the groups revealing interest in care-related majors influences final sorting into care or non-care occupations.

Resorting on both major and post-secondary education choices (decomposition *ii*, above) allows us to consider the way in which individuals with different early life exposure to gender norms differentially pursue care related fields of study and post-secondary education.

The following sections describe the estimation process in more detail.

A. Reducing the State Space

Given the nature of Equation (1), we first need to reduce the state space for purposes of estimation. We follow Arcidiacono and Koedel (2014) and estimate a function that incorporates

individual gender (g), other individual background characteristics (x), and gender role attitudes (a) into what we call a background index, BI .

The NLSY contains a number of possible individual background characteristics (x). Based on the findings in Table A3, it seems important that we control for race. Thus, the background index (Equation 2) is formed from information on individuals' gender, $g_i = 1$ if female and zero otherwise, race, $b_i = 1$ if Black and zero otherwise, and gender role attitudes in birth/adolescence location, a_i :

$$BI_i = \gamma_0 + \gamma_1 g_i + \gamma_2 I(a_i = 2) + \gamma_3 [g_i * I(a_i = 2)] + \gamma_4 b_i \quad (2)$$

We tested alternative specifications for the background index in which BI also includes other measure of x , including AFQT/ASVAB score percentile (an aptitude test) and mother's educational attainment. However, we prefer the simple specification as aptitude scores and mother's educational attainment are likely endogenous in our context and race is clearly exogenous.

We then make two assumptions about how BI interacts with the choices of post-secondary option (c) and major (m). First, we assume that the probability of entering a CARE occupation is independent of individual characteristics (including race) (x), gender (g), and gender role attitudes (a) once we condition on c , m , and BI :

$$\Pr(y = 1 | c, m, BI, x, g, a) = \Pr(y = 1 | c, m, BI) \forall \{x, g, a\} \quad (3)$$

In other words, differences in occupations between women (and men) in locations with egalitarian and traditional gender role attitudes, conditional on choosing the same post-secondary education option and major, operate through the background index (equation (3)).

Second, we assume that the effects of x (individual characteristics) on choice of post-secondary education and field of study operate through the background index, based on equations (4) and (5):

$$\Pr(c|m, BI, x, g, a) = \Pr(c|m, BI, g, a) \forall x \quad (4)$$

$$\Pr(m|x, AI, g, a) = \Pr(m|BI, g, a) \forall x \quad (5)$$

These assumptions still allow (men and) women exposed to different gender role attitudes to make different post-secondary and major choices given their background (in this case, their gender, race, and the gender role attitudes around them).

B. Probability of Choosing a CARE occupation

With this framework, we can now estimate the conditional probability in (1). In other words, whether someone is in a care occupation is determined by an individual i 's latent utility from the occupation. The latent utility, which depends upon post-secondary education choice, major field of study, background, and cohort t , is defined in equation (6):

$$y_i^* = \sum_c \sum_m \sum_t I(c, m, t|i) \delta_{0cmt} + \sum_c \sum_m I(c, m|i) BI_i \delta_{1cm} + \varepsilon_i, \quad (6)$$

where $I(c, m, t|i)$ is an indicator variable for whether i made post-secondary choice c with major m , and is part of cohort t . Cohorts are defined based upon 2 birth-year windows for each dataset (NLSY79 and NLSY97). $I(c, m|i)$ is a similarly defined indicator variable that is not cohort specific. ε_i is an individual-specific preference shock with a Type I extreme value distribution such that we can estimate the probability of choosing a care occupation using a logit model.

C. Sorting into Post-Secondary Education

Next, we consider how individuals sort into post-secondary education based upon gender and childhood exposure to gender role attitudes; where obtaining a particular type of post-secondary education c depends upon gender, g_i , childhood exposure to gender role attitudes, a_i , field of

study, m , cohort, t , background index, BI , and an unobserved preference, η , that follows a Type I extreme value distribution.

$$\begin{aligned}
U_{ic} = \sum I(m, t|i) & [\phi_{0cmt} + \phi_{1cmt}g_i + \sum_{a=1}^2 I(a_i = a)\phi_{2cmt} + \sum_g \sum_{a=1}^2 [g_i * \\
& I(a_i = a)]\phi_{3cmt} + BI_i(\phi_{4cmt} + \phi_{5cmt}g_i + \sum_{a=1}^2 I(a_i = a)\phi_{6cmt} + \sum_g \sum_{a=1}^2 [g_i * \\
& I(a_i = a)]\phi_{7cmt})] + \eta_{ic}
\end{aligned} \tag{7}$$

Equation (7) implies that we can estimate a separate multinomial logit for each cohort based on gender, childhood exposure to gender role attitudes, and care/non-care field of study.

D. Major Sorting

Similarly, the latent utility of sorting into a care or non-care field of study or major is given by equation (8):

$$\begin{aligned}
V_{im} = \sum I(t|i) & [\tau_{0mt} + \tau_{1mt}g_i + \sum_{a=1}^2 I(a_i = a)\tau_{2mt} + \sum_g \sum_{a=1}^2 [g_i * I(a_i = a)]\tau_{3mt} + \\
& BI_i(\tau_{4mt} + \tau_{5mt}g_i + \sum_{a=1}^2 I(a_i = a)\tau_{6mt} + \sum_g \sum_{a=1}^2 [g_i * I(a_i = a)]\tau_{7mt})] + \xi_{im}
\end{aligned} \tag{8}$$

where ξ is distributed Type I extreme value. We estimate the probability individual i chooses a major m using separate logit regressions for each gender-attitudes cohort.

IV. Decomposing the Gender Care Occupation Gap

Table 4 presents the results of our decomposition using GSS measured gender role attitudes at place of birth. The results show that our model does a good job of predicting the actual occupation of individuals. It also presents an interesting story. For the 1979 cohort, if those born in places with more traditional gender role attitudes choose post-secondary education levels and majors (conditional on individual background) like people born in locations with more egalitarian gender role attitudes, then more men and women enter care occupations. As shown in Section III, our

individual background controls include race, so that the resorting, for example, of a Black woman in a traditional gender role attitudes place is compared to a Black woman born in a place with more egalitarian gender role attitudes. The increase in those entering care occupations in locations with more egalitarian gender role attitudes is much greater for men, resulting in an overall decrease in the care occupation gap of 6.6% without considering any general equilibrium effects on demand and/or wages. The decomposition suggests this is almost entirely attributable to changes in field of study.

However, for the 1997 cohort, we see evidence that more egalitarian gender role attitudes lead to much fewer men entering care professions (especially when conditioning on both major and post-secondary choice), a small decrease in the number of women entering care, and an increase in the gender occupation gap in care.

TABLE 4 —EGALITARIAN GENDER ROLE ATTITUDES IN THE PLACE OF BIRTH AND CARE OCCUPATIONS

		1979			1997		
		Men	Women	Gap	Men	Women	Gap
Actual	CARE	3,084	3,072		1,704	1,593	
occupational choice		0.034	0.160	-0.126	0.039	0.151	-0.111
Predicted	CARE	0.036	0.159	-0.123	0.037	0.150	-0.114
Predicted	counterfactual						
CARE	occupational						
choices with alternative							
post-secondary sorting		0.036	0.157	-0.121	0.021	0.138	-0.117
Predicted	-						
Counterfactual		0.000	0.002	-0.002	0.015	0.012	0.003
Predicted	counterfactual						
CARE	occupational						
choices with alternative							
post-secondary and major							
sorting		0.129	0.186	-0.057	0.007	0.144	-0.137
Predicted -	-						
Counterfactual		-0.093	-0.027	-0.066	0.030	0.006	0.023

Note: Predicted counterfactual occupational choices are from base model. Predicted counterfactual occupational choices with alternative post-secondary (and major) sorting refers to the base model predicted occupational choices for individuals born in traditional gender role attitude locations after resorting them into the post-secondary education (and major) choices in places with more egalitarian gender role attitudes, conditional on their background.

We repeat this exercise using GSS gender role attitudes in individuals' locations in adolescence (Table 5) and see very similar patterns, suggesting that childhood exposure to regional gender norms may be internalized by the early teens. Adolescent exposure to more egalitarian gender role attitudes is associated with an increase in the propensity of both genders in the 1979 cohort to choose post-secondary majors leading to care occupations, with larger increases for men and an overall reduction in the gender care gap. On the other hand, adolescent exposure to more egalitarian gender role attitudes in the 1997 cohort is associated with fewer people of both genders choosing majors leading to a care occupation. Interestingly, in the 1997 cohort, men with adolescent exposure to more egalitarian gender role attitudes are much more likely to sort into post-secondary educational choices that would lead to a care occupation. However, major resorting eliminates the increase in men in care occupations.

TABLE 5— EGALITARIAN GENDER ROLE ATTITUDES IN THE PLACE IN ADOLESCENCE
AND CARE OCCUPATIONS

	1979			1997		
	Men	Women	Gap	Men	Women	Gap
Actual CARE occupational choice	3,092	3,118		1,640	1,526	
Predicted CARE occupational choice	0.035	0.161	-0.126	0.041	0.148	-0.107
Predicted counterfactual CARE occupational choices with alternative post-secondary sorting	0.038	0.163	-0.125	0.039	0.154	-0.115
Predicted Counterfactual -	0.002	0.000	0.001	-0.086	0.020	-0.106
Predicted counterfactual CARE occupational choices with alternative post-secondary and major sorting	0.135	0.201	-0.065	0.008	0.148	-0.140
Predicted Counterfactual -	-0.097	-0.038	-0.060	0.031	0.006	0.025

Note: Predicted counterfactual occupational choices are from base model. Predicted counterfactual occupational choices with alternative post-secondary (and major) sorting refers to the base model predicted occupational choices for individuals who lived in adolescence in traditional gender role attitude locations after resorting them into the post-secondary education (and major) choices in places with more egalitarian gender role attitudes, conditional on their background.

Our findings are consistent with Zafar (2013) who suggests that gender differences in college majors are not due to differences in academic ability (or background) but instead due to gender differences in preferences and tastes (or perceived constraints) formed well before college. They are also consistent with the findings of Philipp (2022) that certain fields of study are considered “typically male” or “typically female. *Our results suggest that exposure to traditional gender role attitudes affects whether someone enters a care occupation through the choice of major/field of study (and not through the choice of the type of postsecondary education).*

V. Sensitivity Analysis

A. Alternative Gender Role Attitudes

To test the sensitivity of our findings we extend our analysis in two important ways. First, we investigate the sensitivity of our main findings to a broader definition of gender role attitudes that includes exposure to female role models. The gender norm metric for Tables 6 and 7 considers exposure to female role models as well as other indicators of gender role attitudes. We combine the GSS data with annual data on the share of elected state legislators that are female, women’s labor force participation rate, the share of people with a care occupation that are women, and the share of women that are in a care occupation.

As shown in Table 6, and similar to the previous results, greater shares of the older cohorts of men and women born in more places with more traditional gender role norms and role models sort into care occupations when they choose majors and post-secondary education like those born in places with more egalitarian gender norms and role models. However, the increase for men is smaller, resulting in little overall change in the gender care occupation gap. In contrast, as show in

Table 7, the influence of gender norm and role models in adolescence appears to be greater for men, resulting in a reduction in the gender care occupation gap.

The results for the younger cohort are almost identical to those using the GSS-only metric, suggesting that role models have little additional effect on their choices.

TABLE 6— GENDER NORMS AND FEMALE ROLE MODELS IN PLACE OF BIRTH AND CARE OCCUPATIONS

	1979			1997		
	Men	Women	Gap	Men	Women	Gap
Actual CARE occupational choice	3,830	3,767		1,659	1,562	
Predicted CARE occupational choice	0.034	0.162	-0.128	0.039	0.150	-0.111
Predicted counterfactual CARE occupational choices with alternative post-secondary sorting	0.037	0.164	-0.128	0.036	0.152	-0.116
<i>Predicted Counterfactual</i>	-0.010	0.072	0.002	-0.006	0.087	-0.116
Predicted counterfactual CARE occupational choices with alternative post-secondary and major sorting	0.036	0.126	-0.090	0.021	0.137	-0.116
<i>Predicted - Counterfactual</i>	-0.027	-0.029	0.002	0.027	0.004	0.023

Note: Predicted counterfactual occupational choices are from base model. Predicted counterfactual occupational choices with alternative post-secondary (and major) sorting refers to the base model predicted occupational choices for individuals born in traditional gender role attitude and role model locations after resorting them into the post-secondary education (and major) choices in places with more egalitarian gender role attitudes and more female role models, conditional on their background.

TABLE 7— GENDER NORMS AND FEMALE ROLE MODELS IN PLACE IN ADOLESCENCE
AND CARE OCCUPATIONS

		1979			1997		
		Men	Women	Gap	Men	Women	Gap
		3,524	3,495		831	769	
Actual	CARE						
occupational choice		0.036	0.165	-0.129	0.030	0.144	-0.114
Predicted	CARE						
occupational choice		0.039	0.166	-0.128	0.023	0.154	-0.131
Predicted counterfactual	CARE occupational						
choices with alternative							
post-secondary sorting		0.037	0.168	-0.131	0.012	0.128	-0.116
Predicted	-						
Counterfactual		0.002	-0.002	0.003	0.011	0.026	-0.015
Predicted counterfactual	CARE occupational						
choices with alternative							
post-secondary and major							
sorting		0.190	0.217	-0.027	0.005	0.144	-0.139
Predicted -	-						
Counterfactual		-0.151	-0.050	-0.101	0.018	0.010	0.008

Note: Predicted counterfactual occupational choices are from base model. Predicted counterfactual occupational choices with alternative post-secondary (and major) sorting refers to the base model predicted occupational choices for individuals who lived in adolescence in traditional gender role attitude and role model locations after resorting them into the post-secondary education (and major) choices in places with more egalitarian gender role attitudes and female role models, conditional on their background.

B. Care Skills Occupational Choice Decomposition

We also test the sensitivity of our analysis to our definition of care occupations. The standard classification (based on work by Blau and Kahn, 2017, and Folbre, 2012), which we use in our original analysis, includes most education and health care occupations but few occupations outside those sectors. An alternative way of conceptualizing care occupations is to consider the skills associated with the Folbre’s (2012) definition and classify care occupations as those that require high levels of the associated skills. Thus, we create a new set of occupations defined by the level of “service” skills required using the O*NET occupational data. We choose the O*NET skill of Service Orientation which is defined as “actively looking for ways to help people” as it most closely relates to Folbre’s (2012) definition of care occupations as those in which “concern for the well-being of others is likely to affect the quality of services provide.” This service skills measure

is a subset of the people skills examined by Borghans et al. (2014) and Weinstein and Patrick (2020). In addition to many of the education and health care occupations classified traditionally as care, the skill-based definition also includes some social service, law enforcement, and service occupations. We updated the associated major fields of study to correspond with the new skill-based definition.

Table 8 presents the results of our occupational decomposition using the alternative definition of care “service” occupations using our GSS-based gender role attitudes measure at place of birth. The actual gender care occupational gap is slightly wider for both samples using the care “service” definition than with the standard care classification – as are initial occupation shares. The most notable difference between the results in Table 8 and earlier results is that the effect of resorting among the cohorts is reversed. More older cohort men and women born in places with traditional gender norms work in service occupations after major and post-secondary education resorting, but the effect is much larger for women. This results in an increase in the care “service” occupation gap of approximately five percent (as opposed to the 6-10 percent reductions previously seen in this cohort). As before, this effect is entirely driven by individuals choosing different post-secondary fields of study.

On the other hand, the predicted care “service” occupation gap for the younger cohort falls by six percent rather than increasing by two percent when considering care occupations. Under the standard definition of care occupations, younger men and women born in places with more traditional gender norms were much less likely to work in care occupations after resorting into post-secondary education and fields of study like their counterparts born in places with more egalitarian gender role attitudes. Using the care “service” occupational definition, in the younger cohort, men in more places with more egalitarian gender role attitudes make post-secondary

education choices that increase employment in care (service) occupations by six percent while women’s employment in these occupations remains largely unaffected in the aggregate (although it is possible there is resorting within the set of occupations). The overall effect of exposure to more egalitarian gender role attitudes is a reduction in the care (service) occupation gap.

TABLE 8— EGALITARIAN GENDER ROLE ATTITUDES IN THE PLACE OF BIRTH AND SERVICE SKILL OCCUPATIONS

		1979			1997		
		Men	Women	Gap	Men	Women	Gap
Actual	CARE	3,084	3,072		1,704	1,593	
occupational choice		0.084	0.229	-0.145	0.113	0.242	-0.129
Predicted	CARE	0.085	0.229	-0.144	0.113	0.238	-0.125
occupational choice							
Predicted counterfactual	CARE occupational						
choices with alternative							
post-secondary sorting		0.085	0.229	-0.144	0.170	0.226	-0.056
Predicted	-						
Counterfactual		0.000	0.000	0.000	-0.057	0.012	-0.069
Predicted counterfactual	CARE occupational						
choices with alternative							
post-secondary and major							
sorting		0.089	0.287	-0.198	0.172	0.234	-0.062
Predicted -							
Counterfactual		-0.004	-0.058	0.054	-0.059	0.004	-0.063

Note: Predicted counterfactual occupational choices are from base model. Predicted counterfactual occupational choices with alternative post-secondary (and major) sorting refers to the base model predicted occupational choices for individuals born in traditional gender role attitude locations after resorting them into the post-secondary education (and major) choices in places with more egalitarian gender role attitudes conditional on their background.

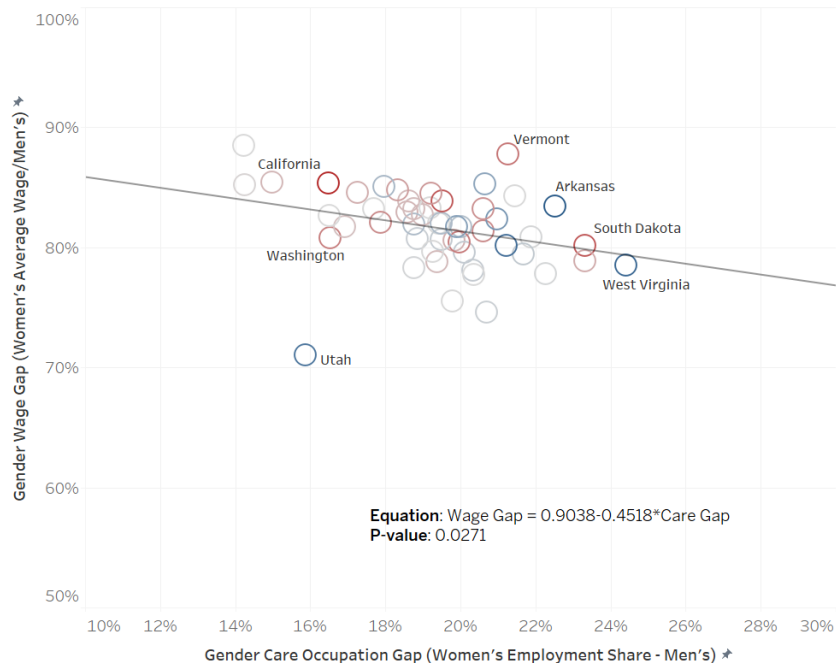
Together, these results suggest it is not an underlying difference in innate preferences or skill for caring and serving others that drives our results about the role of gender norms in the care occupation gender gap. Instead, it is the classification of occupations serving children and the health needs of others. In our discussion of the main decomposition results, we postulated that the devaluation of “women’s work” relative to other types of work may be an underlying reason why so few individuals in our younger sample choose care occupations after resorting. The results

related to the resorting into service-skill care occupations which includes a broader grouping of occupations in Table 8 gives some credence to this idea, which we explore more in the next section.

VI. The Gender Wage Gap

Our results suggest that traditional gender role attitudes may work to segment the labor market for men and women. The dual labor market theory suggests that if women and men are segmented into separate labor markets, then the wage gap between women and men will widen as women are crowded into female-dominated occupations such as care occupations (see for example, Doeringer and Piore, 1971). Consistent with this, we find (using ACS data based on birth state) that a larger gender gap in care occupations is associated with a larger gender wage gap (Figure 8).

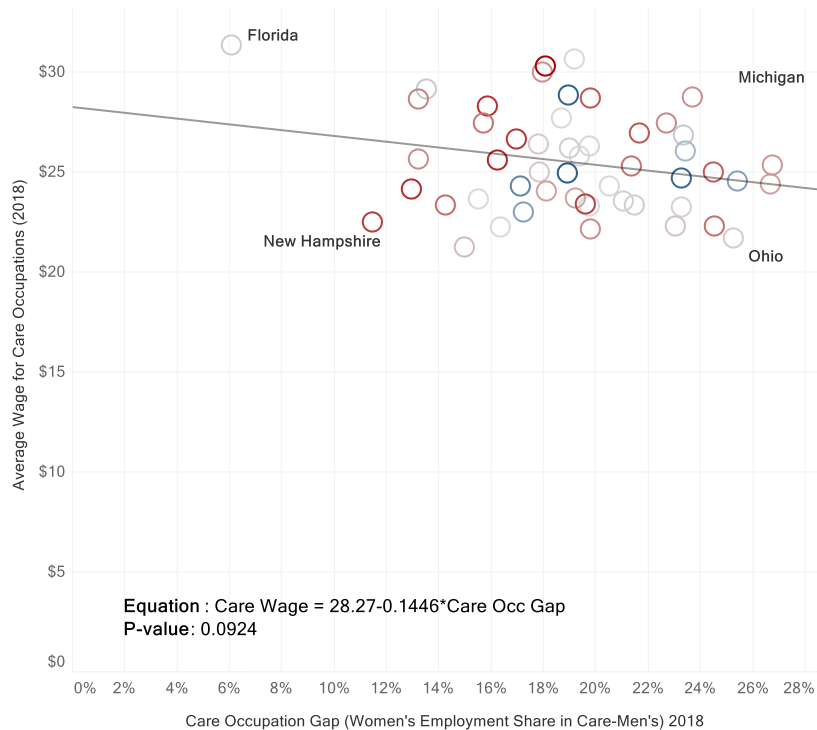
FIGURE 8. THE GENDER CARE OCCUPATION GAP & THE GENDER WAGE GAP



Source: IPUMS ACS (2018) by birth state (U.S.)

It appears that as care occupations are increasingly female-dominated, this further de-values these occupations, keeping wages low. This is in line with previous research (Sorenson, 1989, for example) that shows women in female-dominated jobs earn less than comparable women. As evidence, inflation adjusted wages for U.S.-based pediatricians and internal medicine doctors (female-dominated) have declined in recent years, while wages for surgeons (heavily male-dominated) have increased (Hughes, 2020). In fact, Huang (2018) found that after controlling for changes in educational attainment, wage opportunities for women worsened between 2000 and 2014. Meara et al. (2020) found that the gender segregation and the concentration of women in lower paid industries increases the gender wage gap. To further illustrate this, Figure 9 shows that a larger gender gap in care occupations at the state level is associated with lower average wages for care occupations in the state.

FIGURE 9. THE GENDER CARE OCCUPATION GAP & CARE WAGES



Source: IPUMS ACS (2018) by U.S. State

Thus, a widening gender gap in care occupations may contribute to the widening of the gender wage gap, even as the demand for care occupations, including healthcare, is rising. For example, while U.S. spending on healthcare (private and public) has increased 178% since 2000, average earnings in the healthcare sector have increased by only 66% (and employment by 56%).¹⁴ Wage growth in the health sector has lagged the nation and the gap between average earnings (overall) and average earnings in the health sector has widened.

As care wages in the U.S. have failed to keep pace with other occupations, stories of nursing shortages and teacher shortages are common (even before the coronavirus pandemic). Higher wages in the care sector would help alleviate these shortages by making jobs in the care economy more attractive to both women and men. If more men entered care occupations, the value of care work would likely increase as well, further pushing wages up. As the value of care work increases, gendered ideas about care work, both *paid* and *unpaid*, may also become more egalitarian. All of this suggests that more egalitarian gender role attitudes may help shrink the gender wage gap by affecting the occupation choices of both men and women.

VII. Conclusion

Over the last century, as gender role attitudes became more egalitarian, lowering the stigma of women working (especially married women and mothers), women's labor force participation increased, despite the fact that wages were not necessarily increasing (Lombard, 1999). However, in recent decades, women's labor force participation rates and the closing of the gender wage gap have stalled as the U.S. may have seen a reversion to more traditional gender

¹⁴ Using total private and public healthcare spending from the Peterson-Kaiser Family Foundation Health System Tracker and data on healthcare employment and healthcare wages and salaries from the U.S. BEA.

role attitudes (Fortin, 2015). Our results suggest that one mechanism through which more traditional or less egalitarian gender role attitudes may work to stall the gender wage gap is through their effects on occupational segregation.

We find evidence that the gender gap in care occupations in the U.S. has been widening over time and that less egalitarian gender role attitudes are associated with a wider gender gap in care occupations (and a wider gender wage gap). Use of the NSLY data and our decomposition of these effects provides a more nuanced view of the relative importance of local gender norms on pre-labor market outcomes affecting occupational outcomes. While for those close to retirement age, more egalitarian gender role attitudes can lead more men to enter care occupations, resulting in a smaller gender care occupation gap, these trends have reversed (consistent with Appendix Table A2 using ACS data). Younger men and women with childhood exposure to more egalitarian gender role attitudes are less likely to work in care occupations, but the effect is more pronounced for men. This is likely due to higher ability individuals (as evidenced by higher AFQT scores) being less likely to enter into lower wage jobs in female-dominated fields.

Despite women increasingly entering male-dominated (non-care) fields, the higher demand for paid care work has been filled mostly by women and the gender gap in care occupations has widened. Similarly, when childcare became unavailable to families during the pandemic, the increased demand for *unpaid* care work also fell largely on women (Casselman and Koeze, 2021; Boca et al., 2022). As care work has become increasingly female-dominated, wages for care work have failed to rise commensurate with the shift in labor demand given the need for more care workers. This creates lower incentives for men to transition to care work when it is valued less than other, traditionally male, occupations (counteracting any effects of egalitarian gender role attitudes that may lessen the perceived cost of men entering care occupations).

Our results suggest that the presence of less egalitarian gender role attitudes have played a substantial role in care occupational segregation which previous research attributes to the devaluing of care work (and a wider gender wage gap). Our decomposition shows that a primary channel for this is through the choice of post-secondary field of study – a choice made prior to the measured labor market outcomes and therefore unaffected by contemporaneous regional gender norms. Among the younger cohort in our analysis, for those born in places with less egalitarian/more traditional gender role attitudes, after resorting into post-secondary education and major choices like those born in more egalitarian places, lower relative care wages lead to fewer people entering care occupations (conditional on individual characteristics). The effect is especially large for men – contributing to more care occupation segregation.

Our results should concern both men and women. Men that are exposed to less egalitarian gender role attitudes, or “background sexism,” are less likely to be employed, in part, because they are less likely to enter care occupations – which are growing, in contrast with the decline of typically male-dominated manufacturing jobs. Similarly, Yavorsky, Ruggs, and Dill (2021) find that unemployed men are less willing to take on jobs that require them to perform tasks viewed as more feminine. Overcoming this stigma has value, as taking female-dominated jobs after a period of unemployment may mitigate the scarring effects of unemployment for men (Yavorsky and Dill, 2000). Interestingly, men appear to benefit the most from more egalitarian gender role attitudes as our data show that both men and women who were born in states with more egalitarian gender role attitudes have higher aptitude (AFQT) scores, but even more so for men. Higher ability men also increasingly choose higher wage non-care occupations, which may contribute to the continuing gender wage gap. Our findings suggest both men and women benefit from changing gendered cultural norms about caregiving.

REFERENCES

- Arcidiacono, Peter, and Cory Koedel. 2014. "Race and College Success: Evidence from Missouri." *American Economic Journal: Applied Economics*, 6 (3): 20-57.
- Banks, Nina. 2019. "Black Women's Labor Market History Reveals Deep-Seated Race and Gender Discrimination." Economic Policy Institute: Working Economics Blog. <https://www.epi.org/blog/black-womens-labor-market-history-reveals-deep-seated-race-and-gender-discrimination/>
- Blau, Francine D., and Lawrence M. Kahn. 2017. "The Gender Wage Gap: Extent, Trends, and Explanations." *Journal of Economic Literature*, 55 (3): 789-865.
- Blau, Francin D., Lawrence M. Kahn, and Kerry L. Papps. 2011. "Gender, Source Country Characteristics, and Labor Market Assimilation among Immigrants." *The Review of Economics and Statistics*, 93(1):43-58.
- Blau, Francine D., Lawrence M. Kahn, Albert Yung-Hsu Liu, and Kerry L. Papps. 2013. "The Transmission of Women's Fertility, Human Capital, and Work Orientation across Immigrant Generations." *Journal of Population Economics*, 26:405-435.
- Boca, D., Oggero, N., Profeta, P. & Rossi, M. 2022. "The impact of COVID-19 on the gender division of housework and childcare: Evidence from two waves of the pandemic in Italy." *IZA Journal of Labor Economics*, 11(1).
- Borghans, Lex and Bas Ter Weel and Bruce A. Weinberg. 2014. "People Skills and the Labor-Market Outcomes of Underrepresented Groups." *Industrial and Labor Relations Review*, 67 (2): 287-334.
- Brown, Charles and Mary Corcoran. 1997. "Sex based differences in school content and the male/female wage gap." *Journal of Labor Economics*, 15 (3): 431-465.
- Carter, J. S., Corra, M., & Carter, S. K. (2009). The interaction of race and gender: Changing gender-role attitudes, 1974-2006. *Social Science Quarterly*, 90(1), 196-211. <https://doi.org/10.1111/j.1540-6237.2009.00611.x>
- Charles, Kerwin Kofi, Jonathan Guryan, and Jessica Pan, "The Effects of Sexism on American Women: The Role of Norms vs. Discrimination," NBER Working Paper No. w24904, 2018.

- Conrad, Cecilia and Adrienne Dixson, Clementine “Tina” Sloan Green, Wendy Smooth, Anita Tijerina Revilla. 2014. “A Discussion on Gender Equity and Women of Color.” *A Journal of Women Studies*, 35(3): 3-14.
- Doeringer, Peter B. and Piore, Michael J., *International Labor Markets and Manpower Analysis*. Lexington: Lexington Books, 1971
- England, Paula, Michelle Budig, Nancy Folbre. 2002. “Wages of Virtue: The Relative Pay of Care Work.” *Social Problems*, (4):455–473.
- Farré, Lúdia and Francis Vella. 2013. “The Intergenerational Transmission of Gender Role Attitudes and its Implications for Female Labour Force Participation.” *Economica*, 80(318):219-247.
- Fernández, Raquel and Alessandra Fogli. 2009. “Culture: An Empirical Investigation of Beliefs, Work, and Fertility.” *American Economic Journal: Macroeconomics*, 1(1):146-177.
- Fernández, Raquel, Alessandra Fogli, and Claudia Olivetti. 2004. “Mothers and Sons: Preference Formation and Female Labor Force Dynamics.” *The Quarterly Journal of Economics*, 119(4): 1249-1299.
- Fortin, Nicole M. 2005. “Gender Role Attitudes and the Labour-market Outcomes of Women across OECD Countries.” *Oxford Review of Economic Policy*, 21(3):416-438.
- Fortin, Nicole M. 2015. “Gender Role Attitudes and Women's Labor Market Participation: Opting Out, AIDS, and the Persistent Appeal of Housewifery,” *Annals of Economics and Statistics, Special Issue on Economics of Gender* (117/118): 379-401.
- Gill, Andrew M. and Duane E. Leigh. 2000. “Community College Enrollment, College Major, and the Gender Wage Gap.” *Industrial and Labor Relations Review*, 54(1): 163-181.
- Goldin, C. (2006), “The Quiet Revolution that Transformed Women’s Employment, Education, and Family,” *American Economic Review* 96(2):1-21.
- Goldin, Claudia. 2014. "A Grand Gender Convergence: Its Last Chapter." *American Economic Review*, 104 (4): 1091-1119.
- Heggeness, Misty. 2020. “Estimating the immediate impact of the COVID-19 shock on parental attachment to the labor market and the double bind of mothers.” *Rev Econ Household* 18: 1053–1078.
- Huang, C. 2018. “Why are U.S. Women Decreasing Their Labor Force Participation if Their Wages are Rising?” *Economic Inquiry* 56: 2010-2026.

- Hughes, Jonathan Ford. 2020. "Is It Better to Be a Doctor Now Than It Was 50 Years Ago?" PhysicianSense, MDLinx.
- Jemison, Mae. 2001. *Find Where the Wind Goes: Moments From My Life*. Scholastic Press.
- Lombard, K.V. 1999. "Women's Rising Market Opportunities and Increased Labor Force Participation." *Economic Inquiry* 37: 195-212.
- Mar, Ria Tabacco. 2020. "Ruth Bader Ginsburg's fight for gender equity was for all of us." *SCOTUSblog* September 21, 2020, accessed at [Ruth Bader Ginsburg's fight for gender equity was for all of us - SCOTUSblog](#) on December 9, 2021.
- Meara, K., Pastore, F. & Webster, A. 2020. "The gender pay gap in the USA: a matching study." *Journal of Population Economics* 33:271–305. <https://doi.org/10.1007/s00148-019-00743-8>
- Munnich, Elizabeth and Abigail Wozniak. 2020. "What Explains the Rising Share of US Men in Registered Nursing?" *Industrial and Labor Relations Review*, 73(1): 91-123.
- Patrick, Carlianne, Heather Stephens, and Amanda Weinstein. 2016. "Where are all the self-employed women? Push and pull factors influencing female labor market decisions." *Small Business Economics* 46(3): 365-390.
- Philipp, J. 2022. "Gendered university major choice: the role of intergenerational transmission." *Journal of Population Economics*. <https://doi.org/10.1007/s00148-022-00900-6>
- Pistolesi, Nicolas. 2022. "Enrolling at university and the social influence of peers" *IZA Journal of Labor Economics* 11(1).
- Powers, Rebecca S. and J. Jill Sutor, Susana Guerra, Monisa Shackelford, Dorothy Mecom, and Kim Gusman. 2003. "Regional differences in gender—role attitudes: Variations by gender and race." *Gender Issues* 21: 40–54. <https://doi.org/10.1007/s12147-003-0015-y>
- Reynolds, C. Lockwood and Amanda Weinstein. 2021 "Gender differences in quality of life and preferences for location-specific amenities across cities." *Journal of Regional Science*, 61(5):916-943.
- Scoppa, Vincenzo and Manuela Stranges. 2019. "Cultural Values and Decision to Work of Immigrant Women in Italy." *Labour*, 33(1): 101-123.
- Sorenson, Elaine. 1989. "Measuring the Pay Disparity between Typically Female Occupations and other Jobs: A Bivariate Selectivity Approach." *Industrial and Labor Relations Review*, 42(4): 624-639.
- Smith, Stacey Vanek. 2021. *Machiavelli for Women*. Simon and Schuster Gallery Books: New

- York, New York.
- Sullivan, Oriel. 2013. "What Do We Learn about Gender by Analyzing Housework Separately From Child Care? Some Considerations from Time-Use Evidence." *Journal of Family Theory and Review* 5(2):72–84.
- Turner, Sarah E. and William G. Bowen. 1999. "Choice of Major: The Changing (Unchanging) Gender Gap." *Industrial and Labor Relations Review*, 52 (2): 289-313.
- Weinstein, Amanda and Carlianne Patrick. 2020. "Recession-proof skills, cities, and resilience in economic downturns." *Journal of Regional Science*, 60(2): 348-373.
- Usui, E. 2015. "Occupational gender segregation in an equilibrium search model." *IZA Journal of Labor Economics* 4:13.
- Yavorsky, Jill E. and Janette Dill. 2020. "Unemployment and Men's Entrance into Female-Dominated Jobs." *Social Science Research*, 85.
- Yavorsky, Jill E., Enrica N. Ruggs, and Janette S. Dill. 2021. "Gendered Skills and Unemployed Men's Resistance to 'Women's Work'." *Gender, Work, and Organization*, 28(4): 1524-1545.
- Zafar, Basit. 2013. "College Major Choice and the Gender Gap." *The Journal of Human Resources*, 48 (3): 545-595