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RESEARCH NOTE

Household education gaps and gender role attitudes

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Abstract
Individuals' attitudes about gender roles have been shown to be associated with a wide range of political outcomes. It is therefore crucial to better understand what shapes these attitudes. This note takes advantage of a randomized survey experiment embedded in the 2018 wave of the European Social Survey (ESS) to investigate how differences in education levels between partners influence the "gender childcare bias"—the extent to which individuals disapprove more of women working full time with children under three than men. Although male and female respondents exhibit an equally strong gender childcare bias on average, we find clear-cut evidence that the bias varies asymmetrically across the household education gap for women and men. In particular, positive household education gaps lead to a smaller gender childcare bias for female respondents, whereas the opposite holds for male respondents. Our findings are more in line with a *resource-bargaining* approach than a *gender identity* approach to the formation of gender role attitudes.

Keywords: Gender and politics; political economy; public opinion

1. Introduction

Individuals' attitudes about gender roles have been shown to be associated with a wide range of political outcomes such as political participation and interest (Andersen, 1996; Corder and Wolbrecht, 2006; Fraile and Gomez, 2017), party choice (Inglehart and Norris, 2003), women's political representation (Hill, 1981; Arceneaux, 2001; Paxton and Kunovich, 2003), women's decision to run political office (Elder, 2004), ministerial portfolio allocations (Goddard, 2019), the durability of marriage among top politicians (Folke and Rickne, 2020), welfare spending (Bolzendahl and Brooks, 2007; Bolzendahl, 2009), and voters and member of parliament (MP)'s support for gender-related policies such as abortion laws and affirmative action (Washington, 2008; Kane and Whipkey, 2009; Van Effenterre, 2020).[1] It is therefore crucial that we understand what shapes these attitudes. Yet, influential theories on the formation of gender role attitudes provide competing explanations. A *resource-bargaining* approach sees gender role attitudes as a function of the relative power of individuals within the household (see, e.g., Iversen and Rosenbluth, 2006; Skorge, 2019; Syrda, 2020). In contrast, a *gender identity* (or *gender deviance*) approach highlights the cost of deviating from stereotypical gender roles (see, e.g., Bittman *et al.*, 2003; Dechant and Schulz, 2014; Bertrand *et al.*, 2015; Folke and Rickne, 2020).

We use a randomized survey experiment embedded in the 2018 wave of the European Social Survey (ESS) to provide new insights into what drives individuals' gender role attitudes. More specifically, we investigate how differences in education levels between partners affect the "gender

[1]Gender role attitudes are also found to affect a broad range of socio-economic outcomes; for reviews of these sociological and economic literatures, see Davis and Greenstein (2009) and Bertrand (2011).

childcare bias"—the extent to which individuals disapprove more of women working full time with children under three than men. We find strong and robust evidence that positive household education gaps lead to a larger gender childcare bias for men, whereas the opposite holds for women. Irrespective of respondents' education and income levels, women (men) with greater educational resources than their partners exhibit less (more) bias against women when asked about their disapproval of individuals with young children working full time. While our analysis is focused specifically on gender bias in attitudes to childcare, our results provide support for a *resource-bargaining* approach to the formation of gender role attitudes and show little support for a *gender identity* approach.

2. Research design

We use data from the ESS, which is a large-scale, cross-national survey carried out every two years through face-to-face interviews. We draw on Round 9 of the ESS (2018), which covered 19 European countries and contained a randomized survey experiment on gender attitudes. Given that we are interested in household education gaps, we look only at respondents with a partner.

Respondents were asked the extent to which they disapprove if a *person* has a full-time job while they have children under three years old (0 = strongly approve, …, 4 = strongly disapprove). This is the dependent variable y.

The survey experiment then randomized whether the *person* asked about in the question was a man or a woman—that is, half the respondents were asked the extent to which they disapprove of a *man* working full time with children under 3 (assignment $B = 0$) and the other half were asked the same question about a *woman* (assignment $B = 1$). This design allows us to estimate the "gender childcare bias"—the extent to which individuals disapprove more of women working full time with children under three than men—by taking the difference between the aggregate score of the dependent variable y under assignment $B = 1$ and that under assignment $B = 0$.

Figure 1(a) presents the distribution of the main dependent variable for respondents assigned to answer the question about a *woman* (grey bars) and a *man* (outlined bars) for female and male respondents, respectively. We can clearly see that both male and female respondents disapprove more of a *woman* working full time with young children. The difference in means reveals a substantial bias for both women (0.60; SE = 0.02) and men (0.61; SE = 0.02).[2] There is thus clear evidence of a gender childcare bias, which amounts to more than half a point on the 0–4 (strongly approve-strongly disapprove) scale. Moreover, women and men exhibit an *equally* strong gender childcare bias.[3]

Our aim is to test how the gender childcare bias varies with the household education gap for women and men. To measure the household education gap, we take each respondent's level of education on a 1–7 ES-ISCED scale minus the respondent partner's level of education on the same scale. It thus ranges from −6 to +6 (Appendix A.1 provides full definitions and summary statistics for all variables used in the analyses). Figure 1(b) shows that the distribution of the household education gap, denoted as ΔE, is symmetric, meaning that the likelihood of having a more educated partner is the same as the likelihood of having a less educated partner. Many couples also have either the same (46 percent) or one-point different (24 percent) levels of education. This is not surprising in light of a large body of empirical evidence on the strength of assortative matching in marriage outcomes (see, e.g., Siow, 2015).

One way to examine how the household education gap conditions the gender childcare bias would be to include an interaction term between the random assignment B and the household education gap ΔE in an OLS model. Yet, such a specification would only correctly capture a

[2]With country-fixed effects, the main effects are 0.59 (SE = 0.02; women) and 0.61 (SE = 0.02; men).

[3]In a regression of y on the assignment B, a dummy for female respondents, and their multiplicative interaction, the interaction coefficient is not significant ($\beta_{\text{interaction}} = -0.02$, SE = 0.03, p = 0.52).

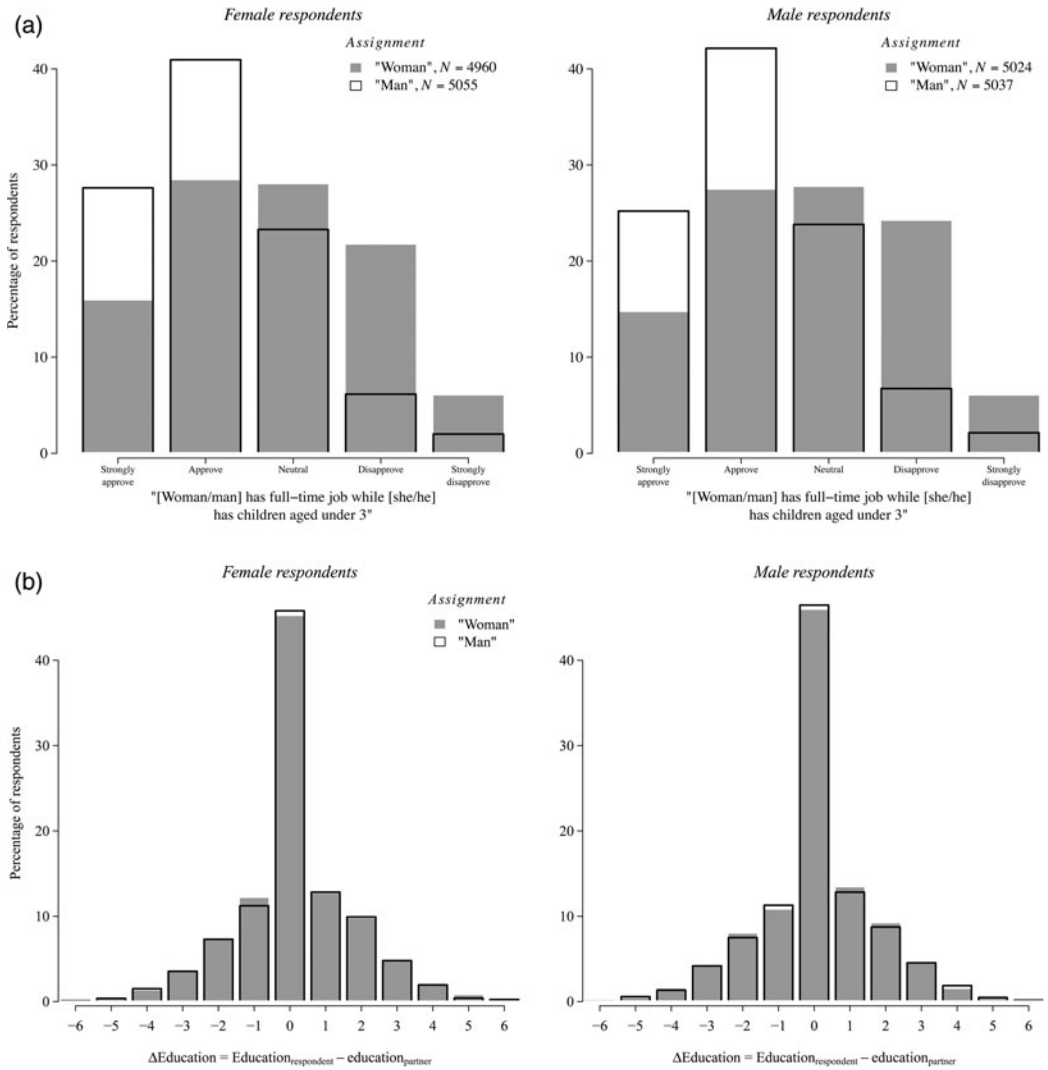

Figure 1. Distributions for the dependent and the moderator variables displayed separately for female and male respondents according to the random assignment. (a) Dependent variable. (b) Moderator variable.

bias that is monotonically increasing or decreasing with ΔE.[4] One appealing method that allows for the possibility that gender childcare bias varies non-monotonically across the household education gap is the kernel method proposed by Hainmueller *et al.* (2019), where we locally estimate the bias over the range of the household education gap. For each individual i in country c, we have the following specification:

$$y_{i,c} = \alpha_c + f(\Delta E_{i,c}) + g(\Delta E_{i,c})B_i + \gamma(\Delta E_{i,c})Z_{i,c} + \varepsilon_{i,c}. \tag{1}$$

[4]For instance, if the gender childcare bias among men only declines once their partners have more education than they do, or if the bias is smallest for couples that have an equal amount of education, then such a model would be inaccurate.

In Equation 1, $f(\cdot)$, $g(\cdot)$, and $\gamma(\cdot)$ are smooth functions estimated using a Gaussian kernel (for details, see Hainmueller *et al.*, 2019). Of interest to us is $g(\cdot)$, which is the marginal gender childcare bias conditional on the household gender gap in education, $\Delta E_{i,c}$.[5]

We also include a vector of covariates, $Z_{i,c}$. Crucially, these coefficients are also permitted to vary non-monotonically over the values of $\Delta E_{i,c}$, which alleviates chances of misspecification bias and permits us to control flexibly for other factors that may plausibly be correlated with the household education gap and the gender childcare bias (Blackwell and Olson, 2019: 174; Hainmueller *et al.*, 2019). In our models, we include the following covariates: level of education, household income and its square, occupational prestige, age and its square, share of the household members that are women, ethnic minority status, whether the respondent is foreign born, unemployment status, partner's unemployment status, urban/rural residence, religiosity, female survey interviewer, and whether the partner interfered in the survey interview.[6] In other words, we control for the possibility that the variation in the gender childcare bias over the household gender gap is due to differences across individuals on these covariates.[7]

Of particular importance is the control for education, as the household education gap could simply be picking up that respondents with more education show less of a gender childcare bias.[8] By including education, our results show how the gender childcare bias varies with the household education gap *net of respondents' education level*. We also include country fixed effects, α_c, so that our estimates compare respondents within the same country. As the theoretical perspectives lead us to expect different effects for women and men, we estimate Equation 1 separately for female and male respondents.

3. Results

Figure 2 presents the estimates of how the marginal gender childcare bias varies with the household education gap for female and male respondents. Across the range of the household education gap, and for both women and men, there is a gender childcare bias, as the marginal bias is always different from zero. Moreover, female and male respondents share the same marginal gender childcare bias when they have equal levels of education to their partner. This shows how expectations about care and career are generally stacked against mothers' full participation in the labor market, and against men's full participation at home.

For women, the marginal gender childcare bias is linearly decreasing as women have more of the educational resources in the household. As exemplified with the curly brace in the left panel of Figure 2, women who have slightly more education than their partners, $\Delta E = 1$, have a 0.09 smaller marginal bias than women who have slightly less education than their partners, $\Delta E = -1$ (with $p < 0.001$). For men, on the other hand, the gender childcare bias monotonically increases with their relative educational resources, although not as steeply as for women and not significantly different for men with slightly more or less education than their partners ($p = 0.163$).[9]

[5]The bandwidth for the estimated kernel $g(\cdot)$ is obtained via tenfold least square cross validation. 95 percent confidence intervals are computed using a bootstrap procedure with 10,000 replications (with replacement). In the Appendix, we show that the results below are highly similar if we fix the bandwidth at a range of values (0.5, 1, 3, 5, and 10) (see Figure A.7) and if we replace the kernel with a general cross-validated spline (Figure A.8).

[6]We include a dummy for female survey interviewer as a covariate because previous research has found that the gender of the interviewer can affect responses to gender-related survey questions (Kane and Macaulay, 1993).

[7]Figures A.1 and A.2 show that the results remain highly similar without covariates and with survey weights, respectively.

[8]Education has been found to be a strong predictor of key socio-political attitudes (e.g., Hagendoorn and Nekuee, 2018; Gelepithis and Giani, 2020), including gender-related attitudes (e.g., Gök *et al.*, 2019).

[9]We also tested whether the slope of the interaction between the household education gap and the assignment varied statistically significantly by country. To do so we regressed our dependent variable on a three-way interaction between the household education gap, the assignment, and the country fixed effects. A joint *F*-test of the three-way interactions does not indicate significant cross-national variation in the slope of the interaction (women: $p = 0.28$; men: $p = 0.67$).

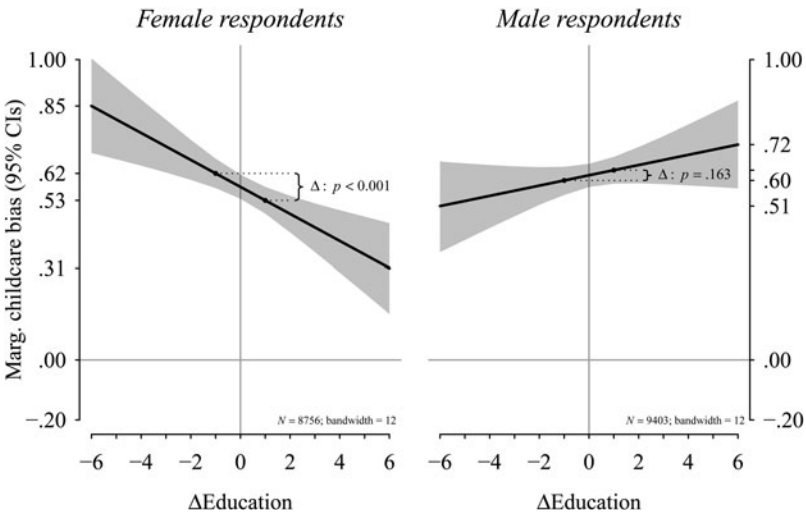

Figure 2. The conditional marginal gender childcare bias, with "full-time job when children aged under 3" as the dependent variable.
Note: The Δ shows the p-value from taking the difference in the marginal gender childcare bias at values −1 and 1 of the moderator. p-values and confidence intervals based on 10,000 bootstrap replications.

4. Discussion

At least two competing, influential theoretical approaches may shed light on this variation in the gender childcare bias. A *gender identity* (or *gender deviance*) perspective highlights how individuals try to conform to prevalent social norms and stereotypes, such that women should be the main carer for children. If women outperform their partners in terms of status in paid employment, women overcompensate by ascribing *more* to gendered care-taking norms and taking *more* responsibility for the household and child care work—and vice versa for men (see, e.g., Greenstein, 2000; Bittman *et al.*, 2003; Bertrand *et al.*, 2015; Folke and Rickne, 2020). Bertrand *et al.* (2015), for instance, find that women out-earning their husbands take a larger responsibility for the home. This perspective may thus imply an increase in the gender childcare bias for both female and male respondents when women have *more* education than their partners, as individuals seek to reaffirm their gender roles. Figure 2, however, does not bear out these expectations.

A *resource-bargaining* framework instead emphasizes how relative educational resources increase individuals' bargaining power within the household. The partner with the highest educational resources, regardless of gender, thus favors the other partner taking the main responsibility for non-paid work within the household (as such work would not further one's transferable resources in case of divorce) (see, e.g., Lundberg and Pollak, 1996; Iversen and Rosenbluth, 2006; Evertsson and Nermo, 2007; Skorge, 2019). This approach thus leads to the expectation that the gender childcare bias monotonically decreases (increases) in women's (men's) education level relative to their partner, as more relative educational resources enhance one's bargaining position on the household division of labor.[10] Figure 2 is clearly in line with such conjectures.[11]

[10] Focusing on income, a recent paper by Syrda (2020) finds that male psychological distress is low when earnings are similar within the couple and higher otherwise. We do not detect such non-linearity in the context of educational gaps.

[11] We also check whether our results are explained by the household gap in income (rather than education). The ESS unfortunately does not include data on individual income; still, as a proxy, we can use the ISCO occupation of respondents and their partners to create a measure of the household gap in *occupational prestige* (according to the well-established Standard International Occupational Prestige Scale, see Treiman, 1977). As a validation check, Figure A.4 in the Appendix shows a tight correlation between household income decile and the average household job prestige score. Our

The pattern in Figure 2 may nevertheless also be explained by reverse causality. In particular, a childhood socialization argument could suggest that women socialized into more egalitarian gender norms during childhood are more likely to take higher education and to enter into partnerships where they have an equal or greater amount of education than their partners (Fernández *et al.*, 2004). This would imply that relative educational resources have no independent effect on gender role attitudes, but are instead the product of women's selection into higher education.

To further attempt to distinguish between the bargaining approach and the possibility of a socialization (reverse causality) argument, we leverage two pieces of suggestive evidence. First, the childhood socialization approach does not envision that men will choose to take more education (or select into partnerships) based on their gender role attitudes; yet, Figure 2 shows that the marginal effect declines as men have relatively less of the household educational resources. Second, recent evidence suggests that parents' division of labor affects women's preferences over family and career (Kleven *et al.*, 2019). If our results are driven by women's selection into higher education based on childhood socialization of gender role attitudes, then controlling for parents' division of labor should help in addressing this possibility. We include covariates that measure mother and father's employment when the respondent was age 14 and parents' relative education. Figure A.3 in the Appendix shows that including these covariates does not notably affect our results. These additional probes, therefore, point more in the direction of the resource-bargaining approach.

5. Conclusions

This note provides evidence that the gender childcare bias—the extent to which individuals disapprove more of women working full time with children under three than men—is greater for men with more education than their partners, whereas the opposite holds for women. The effect is sizable and takes place even though men and women on average hold a very similar bias. Thus, the household education gap is a key driver of the gender childcare bias.

While our results pertain specifically to attitudes to childcare, which is only one dimension of gender role attitudes, they are more in line with a *resource-bargaining* than a *gender identity* approach to the formation of gender role attitudes. They suggest that the partner with the greater educational resources in the household favors a division of work and care responsibilities that sees their partner taking on more of the non-paid work in the household.

Our findings point to several fruitful avenues for future research. First, our findings are limited to the childcare dimension of gender bias. Studying the effect of household education gaps on different dimensions of gender role attitudes (elderly care, household chores, etc.) would permit a greater understanding of whether the childcare dimension is idiosyncratic, or whether our findings generalize to other possibly gendered household activities. Second, due to the nature of our data, our analysis does not permit us to assess how the gender childcare bias evolves over time. Using longitudinal data to address the stability of the documented attitudinal patterns over time would allow this limitation to be overcome.[12] Finally, our results are based on a micro-level approach on a sample of European respondents. Complementary approaches may investigate which features of the institutional context are key to resource bargaining dynamics, thereby highlighting policy implications, as well as exploring whether our findings hold in different geographical contexts.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/psrm.2021.16.

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main finding is robust to the additional control for the household occupational prestige gap (see Figure A.5) and the household gap in prestige does not condition the gender care bias (see Figure A.6).

[12]Using a qualitative approach, Dechant and Schulz (2014) demonstrated that the longitudinal dimension may be very important, as gender-egalitarianism decays over time.

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