

# How Entry into Parenthood Shapes Gender Role Attitudes: New Evidence from Longitudinal UK data

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## Abstract

Attitudes of women and men about how paid and unpaid work should be divided in the couple largely determine women's earnings and career prospects. Hence, it is important to understand how people's gender role attitudes are formed and evolve over the lifetime. In this paper, we concentrate on one of the most path-breaking events in life: becoming a parent. Using longitudinal panel data for the UK, we first show that entry into parenthood significantly shifts women's attitudes toward more conservative views, while leaving men unaffected. Exploiting information on the women's use of external childcare and transitions into disadvantageous working status after the childbirth, we then provide a first evidence that the effect for women stems from externally imposed traditional arrangements in the gender division of paid and unpaid work following the childbirth, rather than from internal changes in the self-identity. Pervasive policy implications about parental leaves, public childcare, and part-time work are drawn.

*Keywords:* Gender equality, gender role attitudes, entry into parenthood, cognitive dissonance, changes in the self-identity, household- and individual-level longitudinal data, Understanding Society (US) data set.

*JEL:* J16; J13.

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## 1. Introduction

Even though cultural norms are changing toward more egalitarian views, most of the Western societies are still characterized by a traditional division of paid and unpaid work, where the man primarily undertakes breadwinning activities, while the woman's job is mainly to look after the home and family. In fact, activity rates are by far lower among women than men: according to the OECD, the activity rate for men stood at 75.6% in the OECD countries in 2015, as compared to only 62.9% for women. In addition, many employed women work on a part-time basis. The OECD reveals that as much as 25.9% of women who were employed in the OECD area in 2015 worked part-time, as compared to only 9.5% for men. A traditional gender division of labor also appears if we consider the amount of time that women and men devote to unpaid work. The OECD reports that women across the OECD countries in the period 1998-2009 spent on average 4.5 hours per day on unpaid work, as compared to only 2.2 hours for men.

This unequal division of paid and unpaid work makes women economically weaker than men. As stressed by the European Union, women's risk of poverty is higher, since they more often do not work, getting no wage, or work on a part-time basis, getting only a fraction of the full-time wage. In addition, it is known that part-time work is often associated with pay penalties and can lead to skills and career stagnation (Hirsh, 2005; Manning and Petrongolo, 2009; Russo and Hassink, 2008). Also, since unpaid work is mostly on their shoulders, working women may experience difficulties in combining paid and unpaid work, thus limiting their involvement into the job and the possibility of career enhancements and wage increases (Evertsson, 2012). Moreover, the traditional view about the gender division of labor is likely to bring about discriminatory behaviors toward women (especially mothers) who choose to work, in relation to pay, career prospects, or inclusion in training activities (Budig and England, 2001; Correll et al., 2007; Gangl and Ziefle, 2009). It also creates stereotypes about what is suited for females and males, at work already during the childhood of an individual (Chalabaev et al., 2013; Cvencek et al., 2011; Pomerleau et al., 1990). In particular, gender stereotypes influence the educational choices of girls and boys. Girls tend to be underrepresented in many technical degrees, such as Engineering and Sciences, and overrepresented in degrees such as Humanities and Education (Turner and Bowen, 1999), a trend that decreases women's future earnings (Arcidiacono, 2004). What is more, traditional views of the gender division of labor shape institutions in a gendered way (Lewis, 1992), triggering a vicious circle that feeds economic inequality between women and men (Mandel and Semyonov, 2005; Pettit and Hook, 2005). In fact, in more traditional contexts, public childcare facilities lack, paternity leaves are uncommon, and flexible working time arrangements such as part-time work are mainly addressed to women rather than men, thus heavily conditioning women's economic outcomes.

Hence, it is manifest that a society's view about the role of women sets the limits of women's possibilities, in terms of employment, earnings, and career prospects. It is, therefore, of crucial importance to understand how women's and men's attitudes toward the gender division of labor are formed and evolve.

While much of the literature on gender role attitudes concentrates on aggregate long-term trends (Brewster and Padavic, 2000; Brooks and Bolzendahl, 2004; Ciabattari, 2001; Cotter et al., 2011; Danigelis et al., 2007), a smaller group of studies, to which our paper belongs, investigate how individuals' gender role attitudes are linked to several social structural characteristics, such as the educational attainment (Bolzendahl and Myers, 2004; Cunningham, 2008; Cunningham et al., 2005; Kane, 1995), employment (Berrington et al., 2008; Bolzendahl and Myers, 2004; Cunningham, 2008; Cunningham et al., 2005) and marital (Bolzendahl and Myers, 2004; Cunningham et al., 2005; Moors, 2003) status, and, of course, parenthood (Baxter et al., 2014; Cunningham et al., 2005; Schober and Scott, 2012). While results from this last set of studies point to substantial impacts of social structural characteristics on individuals' gender role attitudes, most of them rely on cross-sectional data and methods, hence not taking into account spurious relationships that likely hide the true impacts.

Building on this preliminary but compelling evidence that gender role attitudes may not be stable over the lifetime, but rather change after significant life course events, we explore the impact of entry into parenthood, arguably one of the most path-breaking event in life, on women's and men's gender role attitudes.

Despite its relevance, only Baxter et al. (2014) examine such impact using longitudinal data and methods, a strategy also followed here, that yields a neater estimate of the real impact. Resorting to Australian data, they find that both women and men become significantly more supportive of traditional views after they become parents.

Theoretical grounds are provided by the psychological literature, identifying two main mechanisms through which the entry into parenthood may affect attitudes toward the gender division of labor. Firstly, cognitive and social psychologists argue that important life course experiences, such as becoming a parent, produce substantial changes in the self-identity of both women and men, that may modify gender role attitudes (Stewart, 1982; Stewart et al., 1986). Secondly, the cognitive dissonance theory (Festinger, 1957) suggests that, when established arrangements are such that women are mainly responsible for the children, women and men adapt their attitudes to the actual condition, thus experiencing a traditionalization of their views. In sum, while the first set of theories predict that the effect is internally-determined, stemming from changes in the self-identity of individuals that are free from any external conditioning, the cognitive dissonance theory suggests that the effect is driven by the external imposition of traditional arrangements.

To examine the impact of entry into parenthood on gender role attitudes, we use two waves

of a uniquely rich, recent data set for the UK (Understanding Society), in which individuals' attitudes are probed through four Likert-type questions. Exploiting the panel nature of our data, we compare attitudes before and after the entry into parenthood for each individual (that is, we perform fixed effects estimation), thus obtaining a neater estimate of the real effect. To avoid spurious relationships, we also control for several time-varying variables, including changes in the educational attainment, marital status, and area of residence.

Coherently with Baxter et al. (2014), we find that becoming a parent is associated with a significant change in attitudes toward more traditional positions. However, differently from the Australian case, we find that only women experience a significant change, suggesting that new mothers are more affected by the childbirth compared to new fathers, regardless of whether the mechanism is internal changes or cognitive dissonance.

Though informative, this result does not clarify the mechanism driving the impact observed for women, which is, instead, of crucial importance to draw proper policy implications. While Baxter et al. (2014) use reliable methods for their Australian study, they miss to give explanations about the mechanisms at stake; a task this, that we try to pursue in our paper.

To understand whether the impact found for women derives from internally-determined changes in the self-identity or from the emergence of a cognitive dissonance due to externally-imposed arrangements, we exploit the information on the use of external childcare and employment status available in our data. According to the cognitive dissonance hypothesis, the shift toward more traditional views gets larger as the effective arrangements become more traditional. We can identify such cases by looking at whether the woman can resort to some form of external childcare and at her transitions in the working status following the childbirth. In practice, women that can not count on external childcare and/or that pass from a full working life to a disadvantageous working status (such as short part-time employment or inactivity) experience more traditional arrangements after the childbirth. Thus, if the cognitive dissonance plays a role, we expect that the effect is bigger for these kinds of women. On the contrary, changes in attitudes stemming from modifications in the self-identity are expected to be independent of outside factors and to occur regardless of post-natal family arrangements.

Our results suggest that the emergence of imposed arrangements, rather than changes in the self-identity, explains the traditionalization of gender role attitudes following the entry into parenthood for women. In fact, we find that women not resorting to external childcare and/or transiting into disadvantageous working status become significantly more traditionalist after they become mothers, compared to the other women, for which the impact is largely not significant.

A *caveat*, however, is needed already here. While we believe that not resorting to external childcare or transiting into unfortunate working status is, at least in the majority of cases, the result of external constraints (for instance, economic considerations in the couple or gender

stereotypes), we can not exclude that in some cases it is a deliberate choice of the woman. If this happens, our finding risks being affected by such spurious effect. To minimize this possibility, we perform robustness checks on sub-samples of women for which it is most likely that traditional arrangements after the childbirth stem from external constraints. Our robustness checks again indicate that cognitive dissonance may indeed be the mechanism driving the impact.

The implications of our findings are disquieting. Gendered institutions and gender stereotypes associated with the traditional gender division of labor not only limit the possibilities of mothers, but also make them more supportive of those ill arrangements. In other words, rather than reacting to such harmful conditions, women contribute to propagate them.

The rest of the paper is structured as follows. Section 2 presents a literature review and background information; Section 3 discusses the empirical model and the identification strategy; Section 4 describes the data used in the empirical analysis and the UK context; Section 5 shows and discusses our findings; and Section 6 draws policy implications and concludes.

## 2. Literature review and background

A society's view about the gender division of labor shapes economic prospects of women and men and many institutional settings, ranging from regulations about parental leaves to provisions of public childcare facilities. In view of its enormous importance, scholars from a variety of disciplines, including sociology, economics, political sciences, and psychology, have studied how women's and men's gender role attitudes form and evolve.

A first group of the literature on gender role attitudes focuses on aggregate-level analyses, either exploring aggregate long-term trends (Cotter et al., 2011), or differences across cohorts (Ciabattari, 2001), or the importance of cohort replacements *versus* intra-cohort changes in explaining the aggregate change in attitudes (Brewster and Padavic, 2000; Brooks and Bolzendahl, 2004; Danigelis et al., 2007).

A second group of studies, to which our paper belongs, concentrate on individual-level analyses, aimed at exploring how individuals' attitudes are linked to social structural characteristics. Results from these studies point to substantial impacts of several social structural characteristics on individuals' gender role attitudes. For instance, they show that highly-educated people tend to hold more progressive views, suggesting that education might be an important determinant of an individual's attitudes, possibly because it entails a wide range of social relationships and getting in touch with new ideas (Bolzendahl and Myers, 2004; Cunningham, 2008; Cunningham et al., 2005; Kane, 1995). Moreover, they have found that employed women tend to hold more egalitarian positions, indicating that paid work might shape attitudes, possibly due to a greater exposure to diverse ideas or because employed women value their work and modify views to support their condition (Berrington et al., 2008; Bolzendahl and Myers, 2004; Cunningham, 2008; Cunningham et al., 2005). Also, there is evidence that family life-course events such as

getting married or becoming a parent may also modify individuals' attitudes, due to changes in the self-identity and arrangements accompanying the marriage or the entry into parenthood (Baxter et al., 2014; Bolzendahl and Myers, 2004; Corrigan and Konrad, 2007; Cunningham et al., 2005; Moors, 2003; Schober and Scott, 2012).

However, results from these studies are generally unreliable. The great majority of them use cross-sectional data and methods that do not permit to control for unobserved individual characteristics, such as personal experiences and inclinations, that are likely to represent a major obstacle in the estimation of the true effect. For instance, educational attainments might indeed modify attitudes, but it may so happen that more open-minded individuals are also more likely to enroll into higher education programs. In this case, methods that do not control for unobserved individual heterogeneity can not identify the real effect of education on attitudes. The same happens for the case of female employment: without accounting for unobserved differences across individuals, it is not possible to distinguish between the true effect of employment on attitudes and the fact that women supporting egalitarian views are also more likely to seek and have a paid job. Similarly, estimating the real impact of getting married or entry into parenthood requires eliminating confounding unobserved differences across individuals, since women and men with more traditional views may be more likely to get married or become parents.

A way to remove unobserved individual heterogeneity and obtain neater estimates of the true impacts is to resort to longitudinal data and methods. In practice, this amounts to estimating how gender role perceptions change after the occurrence of a certain event (for instance, the attainment of an educational degree, a change in the employment or marital status, or the entry into parenthood) for each single individual. This estimation method is commonly referred to as fixed effects regressions.

Building on this preliminary evidence that social structural characteristics may influence gender role attitudes, we use fixed effects regressions to reliably estimate the impact of entry into parenthood, one of the most important events in life, on gender role attitudes.

Despite its relevance, only Baxter et al. (2014) analyze the impact of entry into parenthood using fixed effects regressions.<sup>1</sup> Resorting to the Household, Income, and Labour Dynamics

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<sup>1</sup>Several studies, instead, explore such impact using cross-sectional methods (sometimes inserting a dynamic component), that do not account for unobserved individual characteristics, thus obtaining unconvincing results. Using ordinary least squares estimations, Bolzendahl and Myers (2004) report that gender role attitudes are negatively related to the number of children in the US; resorting to US data and ordinary least squares estimations, Corrigan and Konrad (2007) find that having a child is related to subsequent traditionalization of gender role attitudes; using ordinary least squares regressions, Cunningham et al. (2005) find no evidence that childbearing affects gender role attitudes in subsequent periods in their US sample; using cross-sectional log-linear path models and German data, Moors (2003) finds that being a mother is related to subsequent traditional family values; finally, using cross-sectional structural equation models and UK data, Schober and Scott (2012) find that less traditional attitudes are more likely in couples where women's postnatal labor market participation and the use

in Australia survey, they apply fixed effects regressions and find that entry into parenthood is associated with a significant traditionalization of both women's and men's gender role attitudes. However, while using a reliable empirical method, the authors miss to provide explanations about what mechanism drives their result. A task this, that is important to pursue and that we try to address in this paper.

In fact, the psychological literature suggests two opposite mechanisms through which the entry into parenthood may modify gender role attitudes.

Firstly, cognitive and social psychologists argue that becoming a parent entails changes in the self-identity and self-concept of both women and men (Stewart, 1982; Stewart et al., 1986), that may modify attitudes toward parenting practices and, by extension, toward views about the gender division of labor. In particular, it is widely recognized that future mothers start a process of self-socialization already during the pregnancy, that continues after the childbirth, in which they construct new images of themselves as mothers (Deutsch et al., 1988; Jessner et al., 1970). It is possible that such process intensifies a maternal, caregiving disposition, that, together with the strong physical attachment of the mother to the child, may change gender role beliefs toward more traditional positions. Similarly, it is known that men also undergo a process of self-socialization in preparation for fatherhood and after the birth of the child (Doucet, 2009; Yeung et al., 2001). It is possible that this process entails a reconsideration of parenting practices and gender role views, possibly toward more traditional schemes if the mother displays a greater attachment to the child compared to the father, whose role would mainly become to economically sustain his new family, while the mother would mainly raise and educate the child. While we regard these outcomes as more likely, we can not exclude that new mothers and fathers may also change their views toward more progressive positions. For instance, it may so happen that the experience of parenthood makes women and men open their eyes on the existing gender inequality that we are still living nowadays, thus shifting toward more egalitarian views, with the aim of delivering their children a fairer world. In sum, this first set of theories predict that gender role attitudes are modified by the entry into parenthood in a self-determined manner; or, said differently, that the change in attitudes derives from *internal* modifications of the self-identity and self-concept of both women and men.

Secondly, the cognitive dissonance theory (Festinger, 1957) suggests that, whenever attitudes are inconsistent with (imposed) behaviors, attitudes are modified to reduce such inconsistency. Women and men that are somehow forced to adopt traditional arrangements regarding the gender division of paid and unpaid work, will adopt more traditional views to conform beliefs to imposed traditional arrangements. An important implication of this theory is that the

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of external childcare contradict their traditional prenatal attitudes, thus finding a preliminary support for the cognitive dissonance hypothesis.

change in attitudes will increase as the imposed arrangements get more tightening. Traditional arrangements might be forced due to pressing gender stereotypes or to institutional designs that, being shaped by the prevailing culture, are often gendered (Boeckmann et al., 2015; Del Boca et al., 2009). For instance, many couples may be forced to organize paid and unpaid work in a traditional fashion because public childcare facilities might not be sufficient and private nurseries might be too costly. If the woman is the second earner in the couple, it may be economically more convenient if she retires from the labor market or reduces her working time to look herself after the child (Baker et al., 2008; Brilli et al., 2016; Connelly, 1992; Del Boca, 2002; Del Boca and Vuri, 2007). At the same time, men generally find themselves unable (or unwilling) to help women in looking after the child, since switching from a full-time to a part-time contract is often associated with a stigma, hindering career enhancements and/or earning increases, and paternal leaves are usually uncommon and looked with askance by the firms (Brandth and Kvande, 2002, 2001). In sum, the cognitive dissonance theory predicts that attitudes are modified by the entry into parenthood in an externally-determined way, that is, that the change in attitudes stems from *externally*-imposed modifications of family arrangements for both women and men.

Taken for granted that a fair government should design laws giving equal opportunities to women and men, especially concerning parental leaves, childcare facilities, and part-time work, and take active steps to eradicate ill stereotypes, understanding which mechanism determines the change in attitudes that we observe (i.e., more traditional views for women) is crucial to draw proper policy implications. In fact, if more traditional views after the entry into parenthood originate from an internal (and unconditioned) modification of the women's self-identity, there is no reason to intervene, since women are obviously free to choose what is the best arrangement for them. Instead, the ethical problem arises when women become more traditionalist for adapting their beliefs to traditional arrangements that are *de facto* imposed by external constraints, such as gender stereotypes and gendered institutional settings. If this happens, it means that we are far from having a real gender equality and more involvement of policy makers is needed to grant women equal opportunities.

Resorting to information on socioeconomic variables and exploiting the implication of the cognitive dissonance theory according to which the change in attitudes is greater when imposed arrangements are stricter, our paper represents a first systematic attempt to explore which mechanism determines the traditionalization in women's attitudes after the entry into parenthood that we observe.

To sum up, our paper contributes to the literature in several ways. Firstly, it provides robust evidence that individuals' gender role attitudes are not stable over the lifetime, but rather change after important life course events, such as entry into parenthood. Secondly, differently from most of the previous studies, our results derive from longitudinal estimation

methods (that is, fixed effects regressions) that allow to obtain a neater estimate of the real impact, free from confounding (fixed) unobserved factors. Third, we dig into the mechanisms at stake. In particular, we try to identify whether the impact observed for women stems from internal modifications of the self-identity or impositions of traditional arrangements. Fourth, our paper gives new evidence for a country that, though similar with many respects, is different from Australia, thus widening our knowledge on how parenthood may impact on gender role attitudes.

### 3. Empirical model and identification

To estimate the impact of entry into parenthood on gender role attitudes, we start from the following model:

$$GRA_{it} = a + \beta * FIRSTBIRTH_{it} + \eta_i + \epsilon_{it} \quad (1)$$

where  $GRA_{it}$  denotes the gender role attitudes of individual  $i$  at time  $t$ ;  $FIRSTBIRTH_{it}$  is a dummy variable taking the value of 1 if the individual  $i$  enters into parenthood (that is, has the first child) by time  $t$  and 0 otherwise;  $\eta_i$  collects all the time-invariant (observed and unobserved) factors influencing gender role attitudes and may also the probability of becoming a parent, such as gender, birth year, birth place, cultural background, personal experiences and inclinations; and  $\epsilon_{it}$  collects all the time-varying (observed and unobserved) factors influencing attitudes and may also the probability of becoming a parent, such as education, marital status, area of residence, and unpredictable shocks.

Given that we could only control for some observable time-invariant variables such as gender and year and place of birth, we exploit the panel dimension of our data (that is, two waves) and consider Equation (1) in differences, so as to eliminate any element, both observed and unobserved, in  $\eta_i$ , a strategy that allows us to obtain a neater estimate of the true effect. In fact, unobserved factors such as cultural, family, and individual backgrounds and experiences are likely to play a central role in determining both gender role attitudes and the probability of entry into parenthood, thus mudding the estimation of the real effect if not properly taken into account. In practice, to better estimate the impact, we compare gender role attitudes of the *same* individual before and after the entry into parenthood, according to the following equation:

$$GRA_{it} - GRA_{it-1} = \beta(FIRSTBIRTH_{it} - FIRSTBIRTH_{it-1}) + \epsilon_{it} - \epsilon_{it-1} \quad (2)$$

If Equation (2) solves the problem of unobserved time-invariant heterogeneity among individuals (that is, it eliminates  $\eta_i$ ), it may suffer from another endogeneity issue. Changes in time-varying factors occurring between the two waves (that is,  $\epsilon_{it} - \epsilon_{it-1}$ ) can lead to a revision

of the gender role attitudes and, at the same time, to a change in the probability of having the first child. To attenuate this possible source of bias, we control for several time-varying factors, which are known to affect gender role attitudes. They include education, marital status, and area of residence. In fact, it may be that a change in the educational attainment (for instance, obtaining a degree) makes the individual more open to new ideas, also in relation to gender role attitudes, and increases the probability of having the first child shortly after, since the individual may have completed his studies. Also changes in the marital status (that is, being married *versus* living as a couple *versus* living as a single) may influence both gender role attitudes and the probability of entry into parenthood. For example, getting married is likely to increase the probability of having the first child (many people get married and then have their first child) and, at the same time, may result in more conservative attitudes, possibly because gender stereotypes become more pressing once married. It may also be that moving to countryside is associated with an increase in the probability of entry into parenthood (some people leave the city when starting a family) and, at the same time, to more conservative gender role attitudes, possibly because rural areas are characterized by stronger stereotypes.<sup>2</sup> Therefore, the inclusion of these variables in our regressions limits the omitted variable bias, thus delivering a better estimate of the true impact.

Summarizing, we solve the problem of unobserved heterogeneity in cultural backgrounds and individual attitudes by estimating Equation (1) in differences (that is, fixed effects regressions), thus only considering within-individual changes. We also attenuate the problem of omitted variable bias due to time-varying factors (that is, variables that influence changes in both the gender role attitudes and the probability of entry into parenthood), including several controls that we consider to be relevant. Taken together, these solutions allow us to obtain a reliable, neater estimate of the true effect of interest.

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<sup>2</sup>Also age is a critical variable that, in principle, should be included in the regressions. In fact, it may be that growing older modifies gender role attitudes in a more conservative way and also positively influences the decision of having the first child. However, since we restrict the sample to people having their first child between the first and second waves (that is, the rate of individuals entering into parenthood between the first and second waves is 100%), we do not include age in our regressions. This is due to the fact that the change in age is (almost) perfectly collinear with the entry into parenthood. Also changes in income may play a role in influencing gender role attitudes and the probability of having a child. For instance, an increase in the household income may increase the probability of having the first child shortly after and, at the same time, it may change gender role attitudes of the woman and man in the couple. If the increase in income is attributable to the woman, views may become more progressive; on the contrary, if the man experiences such an increase, views may get more traditionalist. Though this argument would suggest that income may be an important variable to control for, we decide not to insert it in our regressions. In fact, it is by far more likely that changes in income happen as a *result* of the entry into parenthood (consider, for instance, the case that the woman exits the labor market or reduces her working time due to the childbirth) and not the reverse. Moreover, in the first instance, we want to assess the impact of entry into parenthood on gender role attitudes, regardless of whether it is direct or mediated by changes in income. Understanding whether it is mediated by imposed arrangements is the objective of a second analysis that, as discussed before, we conduct in our paper.

#### 4. The Understanding Society data set and the UK context

To perform our empirical analysis, we use the Understanding Society (US) survey, a uniquely rich individual- and household-level panel data set for the UK. The US survey is conducted every year since 2009 on approximately 40,000 households (at wave 1), sampled on the basis of a complex representative probability design. Individuals aged 16 or more in the household are interviewed every year on a wide range of topics, including family and children, employment, and financial situation.

As Australia, the nation considered by Baxter et al. (2014), the UK is a typical Western country, where traditional views of gender roles are still common. This is evident if we look at the employment patterns of UK women and at the UK institutional design concerning childcare facilities and parental leaves. As for the other Western countries, inactivity rates in the UK are by far higher among women than men. According to the OECD, 28.3% of women in the working age in 2015 in the UK were inactive, while the same figure for men was significantly lower (17.8%). Part-time jobs are mainly occupied by women also in the UK. The OECD reports that as much as 37.7% of employed women were working on a part-time basis in 2015 in the UK, making up for 73.7% of the total part-time workforce, a slightly higher proportion compared to the OECD average (68.7%). In the UK, unpaid work is also unbalanced to the disadvantage of women, even if to a lesser extent compared to the OECD average. The OECD reveals that, over the period 1998-2009, the UK women in the working age were spending on average about 2 hours per day more than men on unpaid work. The UK government spends only a tiny fraction (0.8% in 2013) of its GDP on day-care facilities and early childhood education, anyhow slightly more than the OECD average (0.7%). The greatest expense item (about 0.7% of the GDP) is early childhood education, provided to children between 3 and 5 years old. On the contrary, expenditure on day-care, aimed at children aged 0-2 years, is exiguous (less than 0.1% of the GDP), suggesting that public childcare facilities for very young children are often lacking. Finally, the UK government grants rather generous paid maternity leaves, amounting to 39 (partially) paid weeks available for mothers before and after the childbirth. On the contrary, paternity leaves are very modest: only 2 (partially) paid weeks are available for fathers during the first few months after the childbirth, a significantly lower amount compared to the other OECD countries which, on average, grant fathers slightly more than 8 (partially) paid weeks to dedicate to the newborn child.

In our empirical analysis, we restrict the attention to waves 2 and 4 of the US data set, since information on gender role attitudes is only provided in these waves. Gender role attitudes are probed through four Likert-type statements, that respondents are asked to rate on a five-points scale ranging from ‘strongly agree’ to ‘strongly disagree’ in a self-completion section of the questionnaire. The statements are the following:

- (i) *A pre-school child is likely to suffer if his or her mother works;*
- (ii) *All in all, family life suffers when the woman has a full-time job;*
- (iii) *Both the husband and wife should contribute to the household income;*
- (iv) *A husband's job is to earn money; a wife's job is to look after the home and family.*

Where necessary, we recode responses so that a low value always means more traditional views, while a high value always represents more egalitarian views. To synthetically indicate the gender role attitudes of an individual, we construct a simple score variable by summing up the four items together. This score variable ranges from -8, that represents the most conservative view, to +8, indicating the most progressive view, with '0' meaning neutrality. We treat the score variable (and the single items) as ordinal variables, thus allowing us to apply simple linear estimation techniques, in our case, fixed effects regressions. Many researchers using Likert-type questions follow this approach (Baxter et al., 2014; Frey and Stutzer, 2008). In fact, linear estimation is more practical, especially when it is fundamental to control for unobserved time-invariant heterogeneity, as in our case, and conclusions are mostly identical to those stemming from complex nonlinear models, such as binary or multinomial logit/probit models accounting for conditional individual fixed effects (Ferrer-i Carbonell and Frijters, 2004; Frey and Stutzer, 2000; Riedl and Geisheckerb, 2014).

Since we are specifically interested into the effect of entry into parenthood, rather than generically having a child, we restrict the attention to people having their first child between waves 2 and 4. This entails considering people in the fertility age<sup>3</sup> who have never had children up to wave 2 and who had their first child by the wave 4. To identify whether the individual had a child between waves 2 and 4, we resort to the information contained in the 'newmum' and 'newdad' variables, indicating whether the individual has had a natural child since the last interview. To assess whether the newborn child is the first, we use a series of variables present in the data to reconstruct the entire fertility history of the individual.

In sum, the final sample used in our analysis is composed of people in the fertility age (i) observed and having completed the self-completion questionnaire (the section of the questionnaire where gender role attitudes are probed) in wave 2 and not having had any children up to that wave and (ii) observed and having completed the self-completion questionnaire in wave 4 and having had their first child by that wave (that is, between waves 2 and 4).

Our sample is, therefore, a perfectly balanced panel with two observations per individual, one for wave 2 and one for wave 4. It collects 383 individuals, for a total of 766 observations. All these 383 individuals have their first child between waves 2 and 4. Hence,  $FIRSTBIRTH_{it}$ ,

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<sup>3</sup>We select women having between 16 and 45 years and men having between 16 and 50 years by the wave 4.

our variable indicating whether the individual becomes a parent for the first time by the wave 4, switches from 0 to 1 100% of the times (that is, for each individual). Thus, our estimate of the impact of interest is obtained from the simple comparison of attitudes before and after the entry into parenthood, obviously also controlling for the time-varying variables described before (that is, education, marital status, and area of residence).

Table 1 shows summary statistics about gender role attitudes. The average value of the score variable (remember that it ranges between -8 and +8) stands at 2.21, indicating a certain degree of progressivism. Consistently with the fact that women are more exposed to gender role issues, they tend to exhibit more progressive attitudes compared to men (2.42 for women *versus* 1.91 for men). To better understand how gender role attitudes are structured, we also present average scores of each single statement, since each one measures a particular aspect of gender role attitudes. In fact, the first and second statements (that is, *A pre-school child is likely to suffer if his or her mother works.* and *All in all, family life suffers when the woman has a full-time job.*) are more related to parenting practices and, in particular, to whether the mother is more suited than the father to care for young children and the family in general. Differently, the third and fourth statements (that is, *Both the husband and wife should contribute to the household income.* and *A husband's job is to earn money; a wife's job is to look after the home and family.*) refer more to the gender division of paid and unpaid work and, in particular, to whether the woman should mainly dedicate to unpaid family work and the men should primarily undertake breadwinning activities. Data show that attitudes are rather different when considering parenting practices *versus* gender division of labor, for both women and men. While women and men have, on average, more traditional views regarding which parent should take care of the children and family (that is, the mother), they seem more progressive concerning who should do paid work in the household (that is, both should contribute to the household income). This suggests that egalitarian views on the gender division of labor can coexist together with more traditional views about parenting practices (Sjöberg, 2010). This fact explains the relatively modest internal consistency (Cronbach's alpha equal to 0.63) of the four statements. While we believe that the score variable is howsoever a reliable overall indicator of the gender role attitudes of an individual, we also present estimation results for each single statement to examine whether the impact of entry into parenthood differs on the basis of the type of attitudes probed (that is, toward parenting practices or gender division of labor). The descriptive statistics also show that women hold, on average, more progressive positions compared to men in all the four statements of the questionnaire.

Table 2 presents summary statistics on the control variables. A great proportion of individuals (actually, observations) in the sample are highly educated, holding a degree (51.4%) or a higher education qualification (11.1%); 17.9% of them hold an A Level qualification, while 17% have a GCSE qualification. A tiny fraction of individuals have other types of qualifications

(1.8%) or no qualifications at all (0.8%). Most of the individuals in the sample live with their spouse (58%), 28.8% live with the partner, and only 13.2% live as a single.<sup>4</sup> The great majority of individuals in the sample live in urban areas (78.2%), while 21.8% live in rural areas.<sup>5</sup>

## 5. Results and discussion

Understanding whether and why the birth of the first child modifies gender role attitudes is the object of the present section.

### 5.1. Main results

Table 3 reports our main findings.

All the results come from fixed effects estimations, comparing gender role attitudes of each individual before and after he or she becomes a parent. Our set of estimations progressively add the controls for changes in the time-varying variables discussed before, while always controlling for observed and unobserved fixed heterogeneity. The first column does not include any time-varying control, the second adds a control for changes in the educational attainment that may have occurred between the waves 2 and 4, the third controls for potentially confounding changes in the marital status, and the fourth includes a control for changes in the geographical area of residence (that is, passing from urban to rural areas or *vice versa*).

The results are largely stable across all the specifications and always statistically significant (p-values are always below 0.016). Like Baxter et al. (2014), we find that entry into parenthood, in general, makes individuals significantly more conservative, thus suggesting that attitudes are not stable over the lifetime, but rather change after path-breaking events such as becoming a parent. According to our most robust estimate (Column 4), becoming a parent shifts gender role attitudes by 0.420 points toward conservatism on the 16-points (that is, from -8 to +8) Likert-scale.

Table 4 shows whether the impact of entry into parenthood is different across the four items. It allows us to explore whether attitudes toward parenting practices, on the one hand, and gender division of paid and unpaid work, on the other hand, respond differently to having the first child.<sup>6</sup> While entry into parenthood, in general, does not modify new parents' opinions

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<sup>4</sup>Note that the percentage of singles in wave 2 is 19.1%, while in wave 4, when the individuals have had their first child, it lowers considerably, standing at only 7.3%.

<sup>5</sup>We provide aside information on age and income, the two controls that we do not insert in our regressions for the reasons discussed above. Individuals in the sample have, on average, 30.27 years of age; women are, on average, about 29 years old, while men are about 32 years old. Net personal income in the sample is, on average, 1,514.68 Pounds per month. Consistently with the fact that inactivity and part-time work rates are by far higher among women (especially, mothers) than men, women's net personal income is 31.6% lower compared to men (1,269.74 Pounds per month for women *versus* 1,856.05 for men). In the average household of our sample, each adult member (having more than 16 years of age) can count on 1,559.02 Pounds per month.

<sup>6</sup>Note that all the following estimations include the same set of controls of Column 4 of Table 3.

about the idea that young children suffer if their mother works (Column 1), it makes them significantly more likely to think that the family life suffers if the mother works on a full-time basis (Column 2). This suggests that new parents become more supportive of the idea that what really damages children and family life is not generically the engagement of mothers into paid work, but rather into *full-time* work. This result indicates that, overall, the views about parenting practices become more traditional after the entry into parenthood, leading new parents to be more supportive of the idea that mothers are best suited to raise and educate children. Opinions about how paid and unpaid work should be divided between the woman and man in the household are also significantly affected by the entry into parenthood, again toward more traditional views. In fact, new parents become less supportive of the idea that both the husband and wife should contribute to the household income (Column 3) and more in agreement with the idea that the husband’s job is to earn money while the wife’s job is to look after the home and family (Column 4).

Whatever the mechanism behind the impact, it is legitimate to expect that women are affected by the entry into parenthood more than men. In fact, eventual impositions of traditional arrangements burden women and changes in the self-identity are arguably stronger among women, also due their greater physical attachment with the child and hormonal transformations. We explore this possibility in Table 5. As expected, women’s attitudes respond more intensively to the entry into parenthood compared to men. The estimated effect for women is sizable (-0.585) and strongly significant, while for men it is lower in magnitude and largely not significant. Our result is in contrast with the finding of Baxter et al. (2014): for their Australian sample, they find that both women and men reacted (approximately to the same extent) to the entry into parenthood. Table 5 also presents the separate impacts on the four statements separately for women and men. For three out of the four items men do not display any significant change after the childbirth. However, there is little evidence (the coefficient is significant only at the 10% level) that men only revise their opinions about the idea that the man and woman should contribute to the household income, again toward more conservative views. Women, on the contrary, are estimated to become significantly more traditionalist for three out of the four items probed. In particular, women become more likely to think that the family life suffers if the woman has a full-time job and that the wife’s job is to look after the home and family, and less likely to think that women should contribute to the household income, while they do not revise their opinions about whether preschool children suffer if the mother works.

## 5.2. Extensions and robustness checks

Up to this point, we have found that becoming a parent significantly shifts women’s attitudes toward more traditional positions, both regarding parenting practices and the gender division

of labor, while leaving men’s attitudes essentially unchanged.

As discussed before, the psychological literature has proposed two mechanisms that can explain the impact found for women: it can stem from changes in the self-identity and self-concept or from the emergence of a cognitive dissonance due to imposed traditional arrangements. Here, we try to assess which mechanism operates behind the impact that we observe for women.

Firstly, we resort to the information on the use of external childcare, that is, any form of childcare carried out by someone different from the parents, including relatives, babysitters, and nursery services. Women that do not receive any external help in caring their children, have to bear most of the burden of childcare, thus devoting much time and effort.<sup>7</sup> Since having no external help in the childcare often arises from external constraints, rather than voluntary choices, we expect that women not using external childcare are more likely to experience a cognitive dissonance, and, consequently, a stronger impact compared to women resorting to external childcare. In practice, if the dissonance mechanism exists, we expect to see a stronger impact for women that can not count on any external help in raising their children. Conversely, if the impact is originated from internal changes, we expect that it affects women regardless of whether they use or not external childcare.

Table 6 provides a first indication that the cognitive dissonance might be the driving force of the impact observed for women. In fact, we estimate that women resorting to some form of external childcare do not experience any significant change in attitudes, testified by the small coefficient (-0.181) and high p-value, while women that do not resort to external childcare experience a significantly higher effect (by 0.826 points). For them, entry into parenthood is estimated to cause a strongly significant (at the 1% level) and large change (by  $1.007=0.181+0.826$  points) toward more conservative attitudes.

Secondly, we use the information on the women’s working status before and after the childbirth. Women that after the childbirth end into disadvantageous working conditions, such as short part-time work or inactivity, sacrifice (part of) their working life for looking after the newborn child, thus experiencing a traditionalization in the household arrangements of paid and unpaid work. Since entering into such disadvantageous working status is often the result of economic considerations and constraints, rather than spontaneous decisions, we expect that these women experience a cognitive dissonance, leading them to revise attitudes in accordance with the new traditional arrangements. Hence, if the cognitive dissonance mechanism drives the impact, we expect that the effect is stronger for women experiencing a substantial worsening

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<sup>7</sup>Only in a few cases new mothers that do not resort to external childcare can count on the husband’s or partner’s help to care after the child. In fact, as much 77.4% of the new mothers in the sample that do not resort to external childcare and that live with the husband or partner declare themselves to be those mainly responsible for the childcare. Only 18.3% declare that they share childcare activities with their husband or partner, while a tiny fraction (3.2%) report that their husband or partner is mainly responsible for the childcare.

in their working conditions. Conversely, if the impact stems from internal modifications of the self-identity, we expect that women’s attitudes change regardless of the change in their working status.

The second column of Table 6 provides a second evidence that the impact may indeed stem from cognitive dissonance, rather than internal changes. In fact, we find that women experiencing a deterioration of their working conditions, passing from full-time or long part-time jobs to short part-time positions or inactivity, become significantly and largely (by  $1.652=1.364+0.288$  points) more supportive of traditional views. On the contrary, the impact on other women, those not changing or even improving their working conditions after the childbirth, is little in magnitude ( $-0.288$ ) and largely not significant.<sup>8</sup>

Putting the use of external childcare and the transition to unfortunate working conditions together in the same regression, we can have a more complete picture. Results confirm that both having no external help in looking after the child and transiting into disadvantageous working conditions make women significantly and strongly more supportive of conservative positions. For instance, a woman that does not use external childcare *and* transits into unfortunate working status is estimated to revise her attitudes by as much as  $2.028=0.739+1.289$  points toward traditionalism more than the reference group (that is, women resorting to external childcare and not changing or even improving their working status). Reference women, instead, are estimated to experience a positive change in attitudes (i.e., they would become more progressive after the childbirth), even if very small ( $0.057$ ) and highly not significant. This result is a further evidence that the cognitive dissonance hypothesis may drive the impact.

A *caveat*, however, is due. While we believe that not resorting to external childcare and transiting into disadvantageous working conditions mostly stem from externally imposed conditions, such as economic constraints of the household or gender stereotypes, we can not exclude that they may partly be the result of a deliberate and spontaneous woman’s decision (possibly following the modification of the self-identity, and, hence, of the woman’s preferences). Therefore, it is possible that our results are affected by the fact that women experiencing larger negative impacts due to inner transformations, are those deciding to mostly dedicate to their newborn child, thus not using external childcare and/or limiting their involvement into paid work.

To overcome this problem, we restrict the attention to women for which taking on more traditional arrangements is most likely the result of external constraints, rather than a sponta-

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<sup>8</sup>The classification of full-time *versus* long part-time *versus* short part-time jobs is made using the information on the average number of hours worked per day by the individual. Full-time jobs are defined as jobs for which daily working hours is greater or equal to 35; long part-time jobs are defined as jobs with daily working hours between less than 35 and more than 20 hours; and short part-time jobs are defined as those for which the number of daily working hours is equal to or less than 20.

neous modification of preferences. We individuate two categories of such women: women that before the childbirth were contributing relatively little to the household income and women that before the childbirth earned a relatively low income. In both cases, it is likely that economic considerations regarding post-natal arrangements push toward more traditional schemes and, consequently, that a cognitive dissonance emerges. In fact, if the woman contributed relatively little to the household income already before the childbirth, it may be economically more convenient if she devotes most of her time to the newborn child, thus saving on potentially high childcare costs. The same reasoning applies to women earning a relatively low income: in these cases, it may be more convenient if the woman reduces the involvement into paid work, since the loss in her income may overcompensate for savings of expenses for external childcare. Practically, we divide the sample of women according to their contribution to the household income before the childbirth (that is, in wave 2) and define low-contributor (high-contributor) women to be those below (above) the median. We do the same with the income of the woman before the childbirth and define low-income (high-income) women to be those below (above) the median.<sup>9</sup> We then run the usual fixed effects regressions including the use of external childcare and transitions into unfortunate working conditions for each of these four groups separately (that is, low-contributor and high-contributor women and low-income and high-income women).

Results for this exercise are shown in Table 7. The cognitive dissonance hypothesis again finds support in our data. Not having external childcare and transiting into disadvantageous working conditions are both predicted to significantly and largely increase the shift toward more conservative positions for both low-contributor and low-income women. On the contrary, for both high-contributor and high-income women such impacts are always smaller and not significant. Furthermore, coefficients associated with the use of external childcare and the transitions into unfortunate working conditions get even larger when considering the sub-sample of low-contributor *and* low-income women, those for which the emergence of cognitive dissonance is even more likely (Column 5). Among this group, women that do not use external childcare *and* transit into unfortunate working status are estimated to revise their attitudes by as much as  $3.455=1.378+2.077$  points toward traditionalism more than the reference group.

Taken together, these results provide a first evidence that traditional arrangements that are often imposed after the childbirth due to economic constraints and may also gender stereotypes, trigger women to become more supportive of such traditional arrangements. On the contrary, the hypothesis that the impact stems from changes in preferences due to internal modifications of the self-identity finds no support in our data.

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<sup>9</sup>The median contribution of women to the household income before the childbirth is 43.1%, while the median income of women before the childbirth is 1,191.02 Pounds per month.

## 6. Conclusions

Motivated by the great importance of the individuals' attitudes toward parenting practices and gender division of labor in determining women's economic outcomes, we explore how gender role attitudes of women and men change after a major life event: becoming a parent.

Differently from most of the previous studies, we exploit the longitudinal nature of our data and provide results that are robust to unobserved time-invariant heterogeneity (and several time-varying controls), that likely hinder the identification of the true impact.

Like other studies conducted before (in particular, by Baxter et al., 2014), our results indicate that the entry into parenthood makes individuals significantly more supportive of traditional positions. However, we find that such effect is strong and significant only for women, while it becomes smaller and not significant for men, thus suggesting that women are touched more closely by the event of childbirth compared to men.

We then move to assess *why* we observe such traditionalization of women's attitudes, result that represents our original contribution to the literature. Informed by the psychological research, we deduce that the impact observed for women can essentially stem from two main mechanisms: the emergence of a cognitive dissonance due to imposed traditional arrangements and the spontaneous modification of the women's self-identity and preferences. Resorting to the information on the use of external childcare and the transition into disadvantageous working status after the childbirth, such as short part-time work or inactivity, we are able to get (indirect) evidence on the driving force.

Our results, accompanied by several robustness checks aimed at limiting the possibility of spurious relationships, make a clear statement in this regard. Externally imposed traditional arrangements emerging after the entry into parenthood trigger women to become more supportive of conservative positions. On the contrary, there is no evidence that the impact stems from spontaneous modifications of the women's self-identity and preferences.

Economic considerations and may also gender stereotypes emerging once entered into parenthood often result in a traditional division of paid and unpaid work in the couple, with women mainly looking after the newborn child and men primarily undertaking breadwinning activities. Institutions, that are still gendered in most of the Western countries (including the UK), contribute to the emergence of traditional arrangements once women become mothers. Paltry paternity leaves, lacking public childcare facilities and expensive private nurseries, and negligible male part-time work make most women's choice univocal: dedicating to childcare and sacrificing (most part of) working life. What is more, our findings give evidence that women do not react to imposed traditional (and harmful) arrangements, but rather contribute to propagate them.

In this view, it is the politicians who should first take the responsibility to interrupt such

vicious circle. They should grant to mothers the possibility to have a full working life, without being forced to choose between children and work. This task includes taking active steps to promote paternity leaves, male part-time work, and public childcare services, as well as measures to fight against deleterious gender stereotypes.

Table 1: Descriptive statistics: gender role attitudes

	Overall		Women		Men	
	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
<b>Score variable</b> (values between -8 and +8)	2.21	2.79	2.42	2.73	1.91	2.85
<b>Single items</b> (values between -2 and +2)						
(i) <i>A pre-school child is likely to suffer if his or her mother works.</i>	0.27	1.02	0.37	1.00	0.13	1.03
(ii) <i>All in all, family life suffers when the woman has a full-time job.</i>	0.34	1.08	0.34	1.09	0.33	1.07
(iii) <i>A husband's job is to earn money; a wife's job is to look after the home and family.</i>	0.71	0.97	0.76	0.98	0.64	0.97
(iv) <i>Both the husband and wife should contribute to the household income.</i>	0.89	0.99	0.95	0.98	0.81	1.01

Number of observations: 766

Number of individuals: 383

Number of women: 223 (446 observations)

Number of men: 160 (320 observations)

*Source:* US data set (waves 2 and 4)

High values represent more progressive views; low values indicate more traditional views; '0' means neutrality.

Table 2: Descriptive statistics: control variables

	Overall Percentage	Women Percentage	Men Percentage
<b>Education</b>			
Degree or equivalent and above	51.4%	53.2%	49.1%
Higher education qualification below degree	11.1%	11.0%	11.2%
A Level or equivalent	17.9%	17.5%	18.4%
GCSE or equivalent	17.0%	17.0%	16.9%
Other qualifications	1.8%	0.2%	4.1%
No qualifications	0.8%	1.1%	0.3%
<b>Family status</b>			
Living with the spouse	58.0%	53.1%	64.7%
Cohabiting with the partner	28.8%	28.3%	29.7%
Living as a single	13.2%	18.6%	5.6%
<b>Area of residence</b>			
Urban area	78.2%	78.2%	78.1%
Rural area	21.8%	21.8%	21.9%

Number of observations: 766

Number of individuals: 383

Number of women: 223 (446 observations)

Number of men: 160 (320 observations)

*Source:* US data set (waves 2 and 4)

Table 3: **Main results: impact of entry into parenthood on gender role attitudes (whole sample, score variable); estimation method: fixed effects regressions.**

<i>Dependent variable: gender role attitudes (score variable; values between -8 and +8)</i>				
	1	2	3	4
Entry into parenthood	-0.530*** (0.150)	-0.487*** (0.150)	-0.432** (0.175)	-0.420** (0.174)
Control variables:				
Education:				
Highly educated		-3.313*** (1.049)	-3.284*** (1.017)	-3.274*** (1.001)
Family status:				
Cohabiting with the partner			-0.206 (0.587)	-0.277 (0.579)
Living with the spouse			-0.420 (0.718)	-0.530 (0.715)
Area of residence:				
Rural area				-0.882 (0.756)
			Number of observations: 766	
			Number of individuals: 383	
			Individuals becoming parents by the wave 4: 383 out of 383 (100%)	

*Source:* US data set (waves 2 and 4)

Robust standard errors in parentheses; \*\*\*, \*\*, and \* denote, respectively, the 1%, 5%, and 10% significance level. Highly educated people include individuals with a degree or more or with a higher education qualification below the degree level. We do not insert dummies accounting for all the six possible educational levels (see Table 2) because only a tiny fraction (1.8%) of the individuals in the sample obtain new qualifications between the two waves and several dummies would not be identified. The tiny fraction of people passing from the low to the high educational category (1.3%) prevents from any causal interpretation of the coefficient associated with education, even if it is statistically significant; in our case, controlling for changes in the educational attainment is only required to clean our estimation from spurious relationships. The reference group for the family status is living as a single.

Table 4: **Main results: impact of entry into parenthood on gender role attitudes (whole sample, separate analysis for each of the four statements); estimation method: fixed effects regressions.**

<i>Dependent variables: each of the four statements (values between -2 and +2)</i>				
	(i)	(ii)	(iii)	(iv)
	<i>A pre-school child is likely to suffer if his or her mother works.</i>	<i>All in all, family life suffers when the woman has a full-time job.</i>	<i>Both the husband and wife should contribute to the household income.</i>	<i>A husband's job is to earn money; a wife's job is to look after the home and family.</i>
Entry into parenthood	0.102 (0.069)	-0.183*** (0.069)	-0.210*** (0.059)	-0.130** (0.060)

Number of observations: 766  
Number of individuals: 383  
Individuals becoming parents by the wave 4: 383 out of 383 (100%)

Source: US data set (waves 2 and 4)

Robust standard errors in parentheses; \*\*\*, \*\*, and \* denote, respectively, the 1%, 5%, and 10% significance level. All the estimations include the same set of controls used in Column 4, Table 3.

Table 5: **Main results: impact of entry into parenthood on gender role attitudes (separate analysis for women and men, score variable and separate analysis for each of the four statements); estimation method: fixed effects regressions.**

<i>Dependent variable: gender role attitudes (score variable; values between -8 and +8)</i>		
Entry into parenthood - impact on women	-0.585***	(0.223)
Entry into parenthood - impact on men	-0.223	(0.283)
<i>Dependent variables: each of the four statements (values between -2 and +2)</i>		
(i) <i>A pre-school child is likely to suffer if his or her mother works.</i> - impact on women	0.064	(0.086)
(i) <i>A pre-school child is likely to suffer if his or her mother works.</i> - impact on men	0.143	(0.115)
(ii) <i>All in all, family life suffers when the woman has a full-time job.</i> - impact on women	-0.247***	(0.094)
(ii) <i>All in all, family life suffers when the woman has a full-time job.</i> - impact on men	-0.099	(0.103)
(iii) <i>Both the husband and wife should contribute to the household income.</i> - impact on women	-0.253***	(0.081)
(iii) <i>Both the husband and wife should contribute to the household income.</i> - impact on men	-0.155*	(0.086)
(iv) <i>A husband's job is to earn money; a wife's job is to look after the home and family.</i> - impact on women	-0.149*	(0.084)
(iv) <i>A husband's job is to earn money; a wife's job is to look after the home and family.</i> - impact on men	-0.111	(0.088)

Number of women: 223 (446 observations)  
Number of men: 160 (320 observations)  
Number of women and men becoming parents by the wave 4: 223 women and 160 men (100%)

Source: US data set (waves 2 and 4)

Robust standard errors in parentheses; \*\*\*, \*\*, and \* denote, respectively, the 1%, 5%, and 10% significance level. All the estimations include the same set of controls used in Column 4, Table 3.

Table 6: **Extensions: mechanisms at work (cognitive dissonance *versus* changes in the self-identity, sub-sample of women); estimation method: fixed effects regressions.**

<i>Dependent variable: gender role attitudes (score variable; values between -8 and +8)</i>			
	1. Use of external childcare	2. Transitions into disadvantageous working conditions (short part-time work or inactivity)	3. Use of external childcare <i>and</i> transitions into disadvantageous working conditions
Entry into parenthood	-0.181 (0.245)	-0.288 (0.244)	0.057 (0.252)
No use of external childcare	-0.826** (0.379)		-0.739** (0.376)
Transition into disadvantageous working conditions		-1.364*** (0.430)	-1.289*** (0.435)
Number of women: 223 (446 observations)			
Number of women becoming mothers by the wave 4: 223 (100%)			
Number of women not using external childcare: 118 (52.9%)			
Number of women transiting into disadvantageous working conditions: 45 (20.2%)			
Number of women not using external childcare <i>and</i> transiting into disadvantageous working conditions: 27 (12.1%)			

*Source:* US data set (waves 2 and 4)

Robust standard errors in parentheses; \*\*\*, \*\*, and \* denote, respectively, the 1%, 5%, and 10% significance level. All the estimations include the same set of controls used in Column 4, Table 3.

Table 7: **Robustness checks: mechanisms at work (cognitive dissonance *versus* changes in the self-identity, sub-sample of women), division of women on the basis of their contribution to the household income and their income; estimation method: fixed effects regressions.**

<i>Dependent variable: gender role attitudes (score variable; values between -8 and +8)</i>					
	Low contribution	High contribution	Low income	High income	Low contribution <i>and</i> low income
Entry into parenthood	0.280 (0.351)	-0.148 (0.356)	0.226 (0.476)	0.107 (0.358)	0.354 (0.478)
No use of external childcare	-1.043** (0.527)	-0.467 (0.530)	-1.112* (0.594)	-0.384 (0.475)	-1.378** (0.683)
Transition into disadvantageous working conditions	-1.728*** (0.635)	-0.627 (0.586)	-1.541* (0.802)	-1.107 (0.697)	-2.077** (0.937)
Number of observations	224	222	224	222	162
Number of women	112	111	112	112	81

*Source:* US data set (waves 2 and 4)

Robust standard errors in parentheses; \*\*\*, \*\*, and \* denote, respectively, the 1%, 5%, and 10% significance level. All the estimations include the same set of controls used in Column 4, Table 3.

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