

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

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## Abstract

The attitudes of people about how paid and unpaid work should be divided between the members of a couple determine gendered socio-economic outcomes to a great extent. It is thus important to understand how gender role attitudes (GRA) are formed and evolve. In this paper, we concentrate on a path-breaking event in life: becoming a parent. Using longitudinal data from the UK, we show that, in general, becoming a parent significantly shifts women's GRA toward more traditional positions, but leaves men's unaffected. Prenatal attitudes are a critical factor. After parenthood occurs, we find a substantial traditionalization of attitudes for (both) progressive parents, while no significant change is observed for parents with conservative prenatal attitudes. Novel analyses show that the traditionalization of attitudes for progressive individuals, after they become parents, is stronger as postnatal arrangements in the division of paid and unpaid work are more traditional.

*Keywords:* Gender role attitudes, entry into parenthood, cognitive dissonance, gender identity, gendered institutions and gender stereotypes, Understanding Society.

*JEL:* J16; J13; D02.

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## 1. Introduction

Cultural norms are gradually embracing more gender-egalitarian views of society (Knight and Brinton, 2017). However, most Western countries are still characterized by a traditional gender division of paid and unpaid work (Craig and Mullan, 2011). Despite huge differences exist across countries (e.g., depending on institutional settings; Anxo et al., 2011) and among different types of women (e.g., depending on educational background; Erten and Keskin, 2018), women still represent the principal providers of unpaid work (García-Mainar et al., 2011). Women devote disproportionately more time than men to unpaid work, even when they work long hours and contribute substantially to the household income (Grunow et al., 2012). In high-income countries, women spend 4.3 hours per day on unpaid work, 1.9 times more than men (ILO, 2018). Women in paid work are less than men and are by far more likely to be employed part-time. The labor force participation rate in OECD countries in 2018 was 80.6% for men, compared to 64.5% for women, and 25.4% of the employed women in the OECD area in 2018 worked part-time, compared to 9.4% of men (OECD, 2020).

The unequal division of paid and unpaid work puts women in an economically weaker position than men. The risk of poverty is higher for women (Corsi et al., 2016). Part-time work can be associated with pay penalties and lead to skill and career stagnation, with long-term negative consequences on workers' outcomes, particularly women's (Manning and Petrongolo, 2009). Women tend to take account of family commitments in their job choices more than men do, limiting the possibility of wage increases (Evertsson, 2012).

Gender role attitudes (GRA) contribute to shaping female labor market outcomes as well as the gender division of paid and unpaid work (Giuliano, 2020). Conservative GRA negatively influence the participation of women in the labor market and increase gender pay gaps (Fortin, 2015). Traditional views can strengthen discriminatory behaviors toward women (especially mothers) who choose to work, concerning pay and career prospects (Gangl and Ziefle, 2009). Gender stereotypes influence educational choices (Carlana, 2019), in a way that decreases future earnings of women (Joensen and Nielsen, 2009). Crucially, traditional views shape institutions in a gendered way (Pearse and Connell, 2016), triggering a vicious circle that feeds gender inequality (Mandel and Semyonov, 2005). In more traditional contexts, there is a lack of public childcare, paternity leaves are uncommon, and flexible working time arrangements, such as part-time work, are directed more at women than men, heavily conditioning the economic outcomes of women (Grunow et al., 2018).

In sum, a society's view on the role of women contributes to setting the limits of women's possibilities, in terms of employment, earnings, and career prospects. It is thus important to understand how GRA of people are formed and evolve.

A rich literature suggests that life-course experiences, such as educational attainments,

changes in marital status, and becoming parents, can be important drivers of attitude formation and change (e.g., Baxter et al., 2015; Vespa, 2009). This paper examines the impact of becoming a parent, one of the most path-breaking events in life, on GRA. The event of parenthood necessarily increases unpaid work and new parents may thus reshuffle the sharing of this work between the couple following childbirth, and how they combine it with their paid jobs. Traditional arrangements in the division of paid and unpaid work often prevail following childbirth (Frenette, 2011), and gendered institutions and norms can impact such a pattern (Campaña et al., 2018). Understanding how postnatal arrangements can modify GRA is critical to draw policy implications that guarantee more gender equality. This is especially relevant because women’s (and men’s) adherence to traditional gender role views contributes to the (re)production of patterns of gender inequality over their life course (Nitsche and Grunow, 2016). Moreover, gendered expectations might significantly change the attitudes of new parents, particularly those of women, who experience greater pressures to adhere to the existing parental gender norms (Fortin, 2015).

We use an individual longitudinal survey for the UK (Understanding Society), which provides information on GRA, fertility and employment history, and use of external childcare. Longitudinal data provide evidence about changes in attitudes for new parents. Our fixed-effects (FE) estimates confront how GRA of new parents change after their first child’s birth, compared to those individuals who do not become parents in the observation window, while also controlling for several time-varying factors, such as marital status and education.

We first provide evidence on the overall impact of becoming parents on GRA of men and women. Our results show a high asymmetry between the two genders, with women becoming more conservative in attitudes after experiencing motherhood, while men, on average, do not display any changes. We also find that traditional postnatal arrangements, which we proxy with either the non-use of external childcare or the woman leaving employment, strongly lead to more conservative attitudes of men and women, but only when they have progressive prenatal attitudes. We also provide additional evidence (in the Online Appendix) that a similar picture emerges when men and women are exposed to more traditional local contexts, which we identify with three district-level proxies (i.e., local GRA, local use of external childcare, and local maternal employment rate).

Several factors can explain these results, which we summarize in two complementary channels: cognitive dissonance and gendered expectations. Cognitive dissonance is a psychological status emerging when a person’s beliefs contradict his/her behaviors (Festinger, 1957). People perceive this as a situation of psychological discomfort and solve it either by adapting their beliefs to their behaviors or, *vice versa*, by adapting their behaviors to their beliefs. When traditional arrangements after childbirth emerge as external constraints, GRA

might change toward more traditional positions to become more coherent with postnatal arrangements. Expectations are themselves not neutral to gender. The event of giving birth makes a woman experience a marked new expectation of herself as a mother. Gender roles in raising a child are different, and they reflect a social norm about what is appropriate for women and men to do, once they become parents (Akerlof and Kranton, 2000). Becoming a mother makes a woman’s identity switch to a “woman with children identity”, which differs from a “woman with no children identity”. More conservative attitudes after childbirth may thus emerge to conform to the existing parental social norm, and this could imply a more significant shift for those who were more distant from such a norm before becoming parents.

This paper contributes to the literature in two main ways. First, we provide evidence on *changes* in GRA after becoming a parent. Much of the previous literature (e.g., Bolzendahl and Myers, 2004; Cunningham et al., 2005; Corrigan and Konrad, 2007) explored how attitudes differ between people with children and people without children, mainly using cross-sectional data, and no evidence was provided about changes in attitudes after becoming a parent. A panel data set instead allows unobserved individual fixed heterogeneity to be removed, thereby abstracting from confounding factors related to an individual’s background (e.g., previous personal experiences), and concentrating on within-individual changes. Second, to the best of our knowledge, this paper is the first to explore the role of prenatal attitudes and postnatal arrangements in such a framework. This analysis delves into the mechanisms behind attitude change, allowing a better understanding of how social norms and institutions shape attitude formation and change after becoming parents.

The paper is structured as follows. After a brief review of previous empirical studies, we discuss the potential mechanisms involved in the attitude change of new parents. We then present the empirical model, the data set, and the UK context. Finally, we show and discuss our results and draw conclusions.

## 2. Previous empirical studies

Although becoming a parent is a breakthrough event, only a few studies have investigated how GRA change as a result of the transition to parenthood.

Vespa (2009) found that becoming parents is associated with more traditional attitudes for married parents of both genders in the US. The effect on unmarried parents is more mixed. They reported a tendency toward more egalitarian GRA among unmarried new mothers, but no significant change among unmarried first-time fathers. Baxter et al. (2015) provided evidence that both new fathers and new mothers become significantly more traditional in attitudes in Australia, with no significant difference between genders. Finally, Kuziemko et al. (2018) provided empirical evidence, both for the UK and the US, on women becoming

significantly more conservative after giving birth, being less likely to agree with the claim that work does not inhibit their ability to be good wives and mothers. Interestingly, Kuziemko et al. (2018) found that new mothers do not anticipate the adverse effects of motherhood on their employment perspectives, but find themselves trapped in unwanted changes in their work life. The authors also reported that new mothers state that motherhood is more complicated than they expected. These results suggest that shifts in women’s working patterns after becoming mothers may arise from external constraints rather than deliberate choices.

In sum, the existing studies point to substantial revisions of attitudes toward more traditional positions after becoming parents, suggesting that becoming parents is a critical moment of attitude formation and evolution.

Other studies have used cross-sectional methods, thus not observing within-individual changes in attitudes. By comparing different individuals, these studies do not control for any confounding unobserved fixed heterogeneity among them. If respondents’ unobserved fixed traits also relate to GRA, the cross-sectional estimated coefficients do not reflect the actual impact of becoming parents on GRA. With few exceptions, these studies indicate that traditional GRA are positively related to parenthood.<sup>1</sup> Interestingly, Schober and Scott (2012) used cross-sectional structural equation models and the British Household Panel Survey (BHPS) to study how parenthood is related to GRA. They reported that conservative attitudes are found in couples in which the women’s postnatal labor market participation and use of formal childcare contrast with prenatal attitudes, which provides preliminary evidence on the cognitive dissonance mechanism (see below).<sup>2</sup>

Our paper enriches the existing literature by using panel data and FE regressions. Moreover, we explore how attitude changes after becoming parents are affected by prenatal attitudes and postnatal arrangements, providing novel evidence on the role of social norms and gendered institutions.

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<sup>1</sup>See, for instance, Corrigan and Konrad (2007); Moors (2003); Fan and Marini (2000); Katz-Wise et al. (2010).

<sup>2</sup>Using BHPS data, Himmelweit and Sigala (2004) looked at how GRA (which they measured through women’s agreement with the statement “a pre-school child is likely to suffer if his or her mother works”) and employment behavior influence each other. They found significant feedback effects, whereby attitudes affect the probability of behavioral change (i.e., leaving employment) while behavior affects the probability of attitude change, which remarks the important role of cognitive dissonance and external constraints in determining attitude changes.

### 3. Parenthood and GRA change

There are at least two complementary mechanisms that can be implicated in the process of attitude change of new parents: cognitive dissonance and changes in gender identity.

Cognitive dissonance is a concept that was originally developed by Festinger (1957). When a person's beliefs are in contrast with his/her behavior, cognitive dissonance emerges and creates psychological discomfort in the individual, which can be solved by aligning beliefs to behavior or *vice versa*. Although this procedure of conflict resolution is, in principle, bidirectional, when behaviors are difficult to change (e.g., because of external constraints), individuals typically end up adapting their beliefs to behaviors. Cognitive dissonance might emerge after becoming parents when the individual's prenatal GRA conflict with his/her postnatal behavior in the gender division of paid and unpaid work. If traditional arrangements in the division of paid and unpaid work between genders occur as an external constraint, individuals might shift toward more conservative attitudes to conform their beliefs to their (constrained) behavior.

Traditional arrangements often emerge from external constraints. The channel by which they emerge is a complex interplay between social norms, institutional settings, and choices. Social norms shape institutions in a gendered way (Pearse and Connell, 2016), and gendered institutions force individuals to take on traditional modes of sharing paid work and childcare responsibilities in a couple. Many couples organize paid and unpaid work in a traditional fashion, after becoming parents, because resources are not sufficient to pay nursery services or free childcare is not available (Bettio and Plantenga, 2004; Romiti, 2018). If a woman is the lower earner in a couple, it may be economically more convenient if she exits the labor market or reduces her working time to look after their child (Brilli et al., 2016). At the same time, men often find themselves unable or unwilling to help women look after the child. They may encounter their employer's resistance to switching to a part-time contract (Devicienti et al., 2019). Men may also be less prepared than women to put up with the inferior conditions of part-time jobs (i.e., occupational segregation) and their long-lasting negative consequences on workers' outcomes (Manning and Petrongolo, 2009). Part-time work is often associated with a stigma, especially for men, which possibly hinders career enhancements and earning increases, thus discouraging men from working part-time (Chung, 2020). Moreover, paternity leaves are usually uncommon or poorly remunerated, thereby further increasing the disparities between genders regarding childcare responsibilities (Castro-García and Pazos-Moran, 2016; Ray et al., 2010).

Traditional modes of dividing paid and unpaid work between genders after childbirth entail substantial changes in the lives of women, but minimal changes in the lives of men (Frenette, 2011). Women, under traditional arrangements, carry out the bulk of childcare

activities and can experience significant reductions in working time or leave employment. Men, instead, take a residual part in childcare responsibilities and do not experience changes (or experience only minimal changes) in their working conditions after the birth of a child. If traditional postnatal arrangements are introduced due to external constraints, the attitude change to conform beliefs to constrained behavior might thus be more pronounced for women than for men.

Similarly, if individuals are trapped in traditional postnatal arrangements, the attitude change might be more prominent when prenatal attitudes are more discordant with postnatal arrangements. This is because a more substantial revision in attitudes would be needed to make the beliefs of such individuals coherent with their behavior. In this respect, a more substantial traditionalization of women’s attitudes could be expected, given that they typically have more progressive views than men (Valentova, 2013).<sup>3</sup>

Attitudes might also change due to modifications of the identity of new parents. Identity is defined as one’s sense of self, and it is constructed and modified in relation to belonging to a specific social category (Akerlof and Kranton, 2000). The identity a person assumes may encompass a clear view of how a specific category of people should behave. Gender identity is shaped by a social norm about what is appropriate for women and men to do (Bertrand, 2011). Even though gender norms are gradually becoming more progressive, they still impose a distinction between the tasks of men and women in paid and unpaid work, especially when they are parents (i.e., the bulk of unpaid work is carried out by mothers; Craig and Mullan, 2011). Becoming a mother makes a woman’s identity switch to a “woman with children identity”, which differs from a “woman with no children identity” (Laney et al., 2015). In short, after experiencing parenthood, the attitudes of individuals might change to adhere more closely to the prevailing gendered social norms for their new parental identity.<sup>4</sup>

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<sup>3</sup>There could be nuances related to cognitive dissonance. While a higher agreement with traditional statements following childbirth may reflect a mechanical internalization of the norm (i.e., as an outcome to resolve cognitive dissonance), it could also be related to the practical acceptance of external constraints and doing accordingly. For instance, in a study for the Netherlands, Endendijk et al. (2018) reported that “implicit gender-role stereotypes and behavior became increasingly traditional over time in most parents, except for [...] older, highly educated mothers who worked relatively many hours outside the home and who had an egalitarian task division at home”. Similarly, Schober and Scott (2012) found that women’s prenatal earnings have an indirect (positive) effect on attitude change of both parents through incentives for maternal employment, thus suggesting that women who have more resources can better align their postnatal behavior to prenatal attitudes. Our results in the Online Appendix that new mothers with progressive prenatal attitudes who are exposed to less traditional postnatal arrangements experience lower traditionalization in attitudes than those with high exposure to traditional arrangements might suggest that having to do what is needed given constraints (i.e., the practical acceptance of constraints) might be at play as much as a greater degree of internalizing “traditionalism”. We thank an anonymous reviewer for this comment.

<sup>4</sup>This mechanism can be put in dialogue with the cognitive dissonance explanation. A change in identity to conform to prevailing parental norms could be seen as a change pushed by external constraints to reduce

A direct consequence is that the traditionalization of attitudes after childbirth may be more marked for individuals who were more distant from such a social norm before childbirth (i.e., those with progressive attitudes).

With this framework in mind, we move to the empirical analysis. After exploring the overall change in GRA of new fathers and mothers, we analyze how prenatal attitudes and postnatal arrangements affect the impact. Before discussing the results, we now describe the empirical model and the data set.<sup>5</sup>

#### 4. Empirical model

We start from the following model:

$$GRA_{it} = \alpha + \beta * FIRSTCHILD_{it} + \eta_i + \epsilon_{it}. \quad (1)$$

The dependent variable,  $GRA_{it}$ , denotes GRA of individual  $i$  at time  $t$ .  $FIRSTCHILD_{it}$  is the regressor of interest: a dummy variable taking on the value of 1 if individual  $i$  has entered into his/her first parenthood by time  $t$ , and 0 otherwise. The  $\eta_i$  variable collects all the time-invariant factors influencing GRA and possibly affecting the probability of becoming a parent (i.e., personal background). Finally,  $\epsilon_{it}$  collects all the time-varying factors influencing GRA and possibly the probability of having a first child and unpredictable shocks.

We exploit the panel dimension of our data (i.e., two waves, see below) and consider Equation (1) in differences.<sup>6</sup> In this way, any observed and unobserved elements in  $\eta_i$  are wiped out. Indeed, unobserved factors such as cultural and family background could muddle the estimation of the impact if not taken into account.

However, changes in time-varying factors occurring between the two waves (i.e.,  $\epsilon_{it} - \epsilon_{it-1}$ ) can lead to a revision of attitudes and, at the same time, to a change in the probability of having a first child. To attenuate this source of bias, we control for relevant time-varying socio-demographic characteristics, including age, education, marital status, area of residence, and religious beliefs. While growing older may modify attitudes in a more conservative way, it may also positively influence the decision of having a first child. A change in the educational level (e.g., obtaining a degree) may make the individual more progressive, also concerning GRA, and may contextually affect the probability of having a first child shortly after. Getting married likely increases the probability of becoming parents and may result

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the dissonance between one's beliefs and prevailing social norms for behavior (Stone and Cooper, 2001).

<sup>5</sup>We thank the anonymous reviewers for their insightful comments on the construction of this section.

<sup>6</sup>In practice, we run FE regressions, which is equivalent to first-differences estimates in our case (two observations per individual).



in more conservative attitudes, possibly because gender stereotypes are more pressing once married. Moving to the countryside may be associated with an increase in the probability of becoming a parent (some people relocate to countryside areas when starting a family) and, at the same time, with more conservative attitudes, possibly because gender norms in rural areas are more traditional. In the same way, higher religious devotion may raise the probability of having a first child and may lead to more conservative attitudes.<sup>7</sup>

By estimating Equation 1 through a FE regression, we confront how GRA of new parents change after the birth of their first child, compared to those individuals who did not become parents in the observation window, while also controlling for changes in the above-mentioned socio-demographic characteristics. The FE estimation of Equation 1 answers our first research question, that is, how GRA of new parents change following childbirth. To investigate how prenatal attitudes and postnatal arrangements shape the attitude change of new parents, we estimate several versions of Equation 1, by either including variables interacted with our regressor of interest or running regressions on split samples (see Section 6 and the Online Appendix).

## 5. Data and the UK context

We use Understanding Society, a rich individual panel data set for the UK, conducted every year since 2009 by the Institute for Social and Economic Research on approximately 40,000 households (at wave 1).<sup>8</sup>

The UK has a prevalence of the “modified male-breadwinner” model, in which fathers are employed full-time and mothers work part-time (McMunn et al., 2020). It is one of the few countries, together with the Netherlands, Austria, and Germany, where the majority of *employed* mothers work part-time (33.3% of mothers of children aged 0-14 in 2014 against 32.9% in full-time employment).<sup>9</sup> These prevalent arrangements emerge in a context of low availability and affordability of childcare services, as well as very modest parental leaves (Thévenon, 2011).

Public childcare facilities are sparse and insufficient (OECD, 2017). Although private

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<sup>7</sup>Changes in income may play a role, too. For instance, according to the “doing gender” hypothesis, increases in a woman’s relative share of household earnings may lead to more conservative attitudes (and increases in her unpaid work efforts) to compensate for the deviation from the norm in the paid work domain (Fortin, 2015). However, we do not control for income, since it is more likely that changes in income happen as a consequence of becoming a parent (e.g., when a woman leaves employment or reduces her working time due to childbirth) than as a precondition.

<sup>8</sup>The data can be downloaded from <https://www.understandingsociety.ac.uk>.

<sup>9</sup>These data can be retrieved from <http://www.oecd.org/els/family/database.htm>.

childcare is subsidized, it remains costly (Thévenon, 2011).<sup>10</sup> Lauri et al. (2020) showed that 43.3% of UK parents of children aged 0-4 find the affordability of childcare services very complicated (the UK features the highest percentage among the 22 countries considered in the study). Although the UK government grants long maternity leaves (39 weeks for mothers before and after childbirth), paternity leaves are very modest and have only been introduced recently (Ray et al., 2010). Since 2003, fathers are only entitled to 2 weeks of paternity leave during the first few months after childbirth. Even though a few European countries have substantial parental leaves reserved for fathers, most of them provide leaves that can be shared between mothers and fathers. Conversely, parental leaves in the UK have until recently been gender-specific. Moreover, parental leaves in the UK are poorly paid. Only 6 weeks of maternity leave are paid at 90% of the average weekly pay, while the remaining 33 weeks are paid at a (low) flat amount or at 90% of the average weekly pay, whichever is less. Only a few families could thus afford the fathers to take paternity leave (Castro-García and Pazos-Moran, 2016).<sup>11</sup>

We use waves 2 and 4 of Understanding Society, which refer to the years 2010/2011 and 2012/2013, respectively. This is because information on GRA is provided every two waves. GRA are probed through four Likert-type statements, which respondents are asked to rate on a five-point 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 (i.e., third statement), we recode responses so that a low (high) value reflects more conservative (progressive) GRA. We construct a score variable to synthetically indicate GRA by summing the scores on the four statements. This variable ranges from 4, which represents very conservative attitudes, to 20, which indicates very progressive views. We treat the score variable (and the single statements) as cardinal variables, which allows us to apply linear estimation techniques. Linear estimation is more practical, especially when it is fundamental to control for unobserved time-invariant heterogeneity among individuals, and the conclusions are generally identical to those stemming from complex nonlinear models (Ferrer-i Carbonell and Frijters, 2004).

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<sup>10</sup>Nearly all parents can benefit from subsidies to date, but in the years covered by our sample (2010-2013), subsidies were directed toward working parents eligible for state benefits (i.e., tax credits).

<sup>11</sup>As of April 2015, mothers are allowed to share some of their maternity leave with their partners. However, the uptake of this option has remained very low (McMunn et al., 2020). For studies comparing childcare and parental leave regimes across countries, see Ray et al. (2010); Thévenon (2011). We thank an anonymous reviewer for insightful comments on these issues.

We construct a dummy variable that identifies people who had their *first* child between waves 2 and 4, by first identifying whether the individual had a child between the two waves and then reconstructing the fertility history of the individual to assess whether the newborn child was the first child. The sample is composed of people in the fertility age (16-50), who (i) were observed and completed the self-completion questionnaire in wave 2 and had not had any children before that wave, and (ii) were observed and completed the self-completion questionnaire in wave 4. It is a perfectly balanced panel with two observations per individual, which also includes individuals that had not become parents by wave 4.

The sample collects 3,892 individuals, 1,918 women and 1,974 men. A total of 227 women (11.8%) and 155 men (7.9%) became parents between waves 2 and 4. The women, on average, are nearly 30 years old, while the men are about 32 years old. The majority of the individuals have a high-school qualification (56.3% of the women and 59.3% of the men). Most of the men and women in the sample live as singles (58.6% and 54.8%, respectively). Most individuals live in urban areas, while slightly less than one-fifth of them live in rural areas (19.3% of the women and 18.2% of the men). Finally, more than half of the individuals declare they do not belong to any religion (55.8% of the women and 62.5% of the men).<sup>12</sup>

Table 1 shows summary statistics of GRA by gender, both pooled and differentiating between individuals who had become parents by wave 4 and those who had not (and, further, by wave). The (pooled) average score variable stands at 14.83 for women and 13.89 for men, consistently with the finding reported in the literature that women display more progressive GRA than men. Even though the table provides simple comparisons of the averages, new mothers undergo a rather large attitude change toward more traditional positions (from 14.74 in wave 2, before childbirth, to 14.08 in wave 4, after childbirth; t-test of mean differences significant at the 1% level). In contrast, no relevant changes are observed for the women who had not experienced childbirth (from 14.88 in wave 2 to 14.90 in wave 4; t-test of mean differences not statistically significant). The pattern for males is similar, with new fathers experiencing relatively greater changes (toward more traditional positions) than men who had not entered into parenthood, even though the magnitude of change for them is much lower than that of women and not statistically significant.

Table A.2 in the Online Appendix focuses on individuals who had become parents at wave 4, dividing them on the basis of whether their attitudes at wave 2 were progressive or conservative. In this paper, we define individuals as “progressive” whenever their score variable at wave 2 is greater or equal to 16. This amounts to requiring that the individual disagrees or strongly disagrees with all four (recoded) statements. About 43% of the women

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<sup>12</sup>The full table is reported in the Online Appendix (Table A.1).

in our (overall) sample fall into this category, while the percentage among men is lower (31.3%). Attitudes at wave 2 are defined as “conservative” if the score variable is lower than 16. When comparing average values between waves 2 and 4, large attitude changes emerge for both new mothers and fathers with progressive prenatal attitudes (from 17.07 to 15.02 and from 16.91 to 15.06, respectively; both statistically significant at the 1% level). On the contrary, attitude changes of new parents with conservative prenatal attitudes, both women and men, are small and not statistically significant.

Table 1 also presents average values of each statement (second panel). The first and second statements are related to opinions about what benefits children. The third and fourth statements instead refer to attitudes about the gender division of paid and unpaid work. Attitudes are somewhat different when considering what benefits children *versus* the gender division of labor, for both women and men (first two columns in Table 1). Both women and men display lower average values associated with statements about what benefits children compared to those associated with who should do paid work in the household. This might suggest that more traditional views of what benefits children can coexist with less traditional views of the gender division of labor (Baxter et al., 2015). The fact that GRA are multidimensional and may capture different aspects could explain the relatively modest internal consistency of the four statements (Cronbach’s alpha equal to 0.67). Notably, women, on average, hold more progressive positions than men for all four statements.

Interesting insights have emerged from this descriptive evidence that GRA change substantially and significantly for new mothers, whereas new fathers do not, in general, undergo significant changes in attitudes. Moreover, suggestive evidence has emerged on the potentially critical role of prenatal attitudes. However, we observe large and (mostly) statistically significant differences in GRA across several socio-demographic characteristics (see Table A.3 in the Online Appendix). Coherently with previous findings in the literature, older individuals are associated with more conservative attitudes (Valentova, 2013), as well as those less educated (Erten and Keskin, 2018), married (particularly women; Cunningham et al., 2005), and those who belong to a religion (Giuliano, 2020). Average scores are instead similar for individuals living in rural *versus* urban areas.<sup>13</sup> Furthermore, we detected a marked heterogeneity in these characteristics (and their changes over time) when comparing people who became parents with people who did not.<sup>14</sup> The econometric analysis, which controls for

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<sup>13</sup>T-tests for mean comparisons across socio-economic groups are statistically significant at conventional levels, except for the area of residence (both women and men) and marital status (only men). Marital status was collapsed as living with a spouse *versus* living as a single or cohabiting with a partner to perform t-tests of mean differences between two groups. For education, we collapsed medium and low educational levels, thereby testing the mean difference with the high educational level.

<sup>14</sup>For instance, differently from the overall sample, among those who had become parents, the majority is

individual fixed effects and changes in socio-demographic characteristics, provides a robust assessment of GRA changes after becoming parents.

## 6. Results

Tables 2 to 5 report the main results. We perform the estimations separately by gender. A negative coefficient associated with the  $FIRSTCHILD_{it}$  variable means that GRA become more traditional after becoming parents, while a positive coefficient means that they become more progressive. The standard errors are clustered at the individual level.

Table 2 shows the impact of becoming parents on GRA of men and women, as measured by our aggregate score variable. Women are estimated to experience a significant attitude change toward more traditional positions after becoming mothers by 0.665 points on the 16-point score variable. The impact on men is also negative, but relatively small in magnitude (0.274) and not significant. Therefore, there is no evidence that men, in general, revise their attitudes after they become fathers.

Table 3 reports the impact of becoming parents on GRA of men and women, as measured by each statement. As concerns the statements about what benefits children and family life, new mothers are estimated to become significantly more likely to think that family life suffers if the mother works on a full-time basis (second statement; second column). However, they do not significantly modify their opinions about the idea that young children suffer if their mother works (first statement; first column). This suggests that new mothers become more likely to think that what damages children and family life is not generically their engagement in paid work, but rather having a full-time job. As regards the statements on the gender division of labor, new mothers become significantly less supportive of the idea that both the husband and the wife should contribute to the household income (third statement; third column). They also become significantly more likely to agree with the claim that the husband's job is to earn money, while the wife's job is to look after the home and family (fourth statement; fourth column).<sup>15</sup> Finally, new fathers do not display any significant

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highly educated and those who live as a single represent a residual fraction. A notable proportion of future parents got married between waves 2 and 4. The full set of statistics is available from the authors upon request.

<sup>15</sup>While new mothers do not significantly change their attitudes as to whether children suffer if their mother works (though this holds only for non-full-time jobs), they nonetheless become more traditional in their attitudes toward the roles of women and men in the provision of unpaid work. This discordance could be related to the fact that attitudes about what benefits children and the gender division of labor may follow distinct dynamics, which remarks the importance of separately considering the different statements. For how institutions are designed, women are typically the principal providers of childcare in the household. After childbirth, they may become more likely to think that this is right, as a mechanical internalization of the *status quo*, without this modifying their attitudes on whether children benefit or not from such a condition.

changes in any of the four statements probed.

Table 4 focuses on men and women with progressive attitudes at wave 2 (i.e., before the possible childbirth), and explores how traditional arrangements in the gender division of paid and unpaid work emerging between the two waves (i.e., after the possible childbirth) affect their attitude change. The first panel in the table shows that women who were progressive at wave 2 experience a significant and substantial traditionalization of attitudes after becoming mothers, revising their attitudes by  $-1.211$  points. Conversely, the impact for men is not statistically significant. The subsequent panels display the differential impact of traditional arrangements at wave 4. We proxy traditional arrangements with either (i) the non-use of external childcare or (ii) the woman leaving employment.<sup>16</sup> On the one hand, women who do not receive any external help in caring for their children bear most of the childcare burden. As much as 76.3% of the new mothers in our sample, who do not resort to external childcare, declare they are the main person responsible for childcare. Only 18.3% of them declare that they share childcare activities with their husbands or partners, while a residual fraction (5.4%) report that their husbands or partners are mainly responsible for their child’s care. On the other hand, women who leave employment after childbirth sacrifice (part of) their working life to look after the child.

The second panel in the table reports the results relative to external childcare. In addition to the  $FIRSTCHILD_{it}$  variable, we insert a dummy variable indicating whether the individual does not use external childcare.<sup>17</sup> The coefficient associated with this dummy variable gives the additional attitude change for new parents who do not use external childcare compared to those who use it. The coefficient associated with the  $FIRSTCHILD_{it}$  variable estimates the impact of becoming parents for the residual category (i.e., those using external childcare). The latter coefficient is statistically significant and equal to  $-0.580$ . The coefficient associated with the dummy variable indicating the non-use of external childcare is negative, equal to  $-1.265$ , and significant. New mothers with progressive views at wave 2 are thus estimated to undergo a significantly higher traditionalization of attitudes when they do not use external childcare than when they do.

Panel 3a in the table reports the results concerning the woman leaving employment. We

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However, this discordance may also relate to nuances of GRA. Indeed, it disappears when full-time work is considered: new mothers become more likely to think that their engagement in full-time paid work harms their children and – coherently – adopt more traditional positions on the gender division of unpaid work.

<sup>16</sup>External childcare includes any form of childcare carried out by someone other than the parents, such as relatives, babysitters, and nursery services. When we generically write “traditional arrangements”, we refer to both our proxies.

<sup>17</sup>We included individuals who had not become parents by wave 4 in a residual category. Our dummy variable thus separates three cases: (i) becoming a parent and not using external childcare, (ii) becoming a parent and using external childcare, and (iii) not becoming a parent.

add to our baseline Equation 1 a variable indicating whether the woman leaves employment in wave 4 and another with its interaction with the  $FIRSTCHILD_{it}$  variable. This interaction variable gives the additional change in attitudes of new parents who experience the woman’s exit from the labor market by wave 4. The coefficient associated with the  $FIRSTCHILD_{it}$  variable estimates the effect of becoming a parent for the residual category (i.e., when there is no transition out of employment).<sup>18</sup> Both coefficients are significantly negative, equal to  $-2.580$  and  $-1.110$ , respectively. New mothers with progressive attitudes at wave 2, who leave employment by wave 4, are thus estimated to undergo a significantly greater change toward conservative attitudes (by 2.580 points more) than those who do not experience such a transition. Panel 3b reports the results of a robustness check in which we restrict the attention to transitions of the women out of paid employment occurring between waves 3 and 4, thus isolating those that surely happen after or contemporaneously to the possible childbirth. This allows a more precise estimate of the impact, since it excludes the cases in which such transitions are antecedent to childbirth. The estimated coefficients associated with the  $FIRSTCHILD_{it}$  variable and its interaction with the woman’s leaving employment are very similar to those of panel 3a.

As concerns men, the impact on new fathers who were progressive at wave 2 is not significant when they do not confront traditional arrangements (i.e., the coefficients associated with the  $FIRSTCHILD_{it}$  variable are never statistically significant for them). However, when there is no use of external childcare (panel 2) and when their spouse or partner leaves employment (panels 3a and 3b), they appear to significantly revise their attitudes toward more conservative positions.

Table 5 replicates Table 4 for individuals with conservative attitudes at wave 2. Both women and men with conservative attitudes at wave 2 do not experience any significant attitude changes after becoming parents, regardless of traditional postnatal arrangements.

In the Online Appendix, we provide evidence on “environmental factors”. We exploited three district-level indicators to capture the exposure of individuals to traditional contexts, and evaluated how attitudes of new parents change following childbirth depending on the degree of exposure to such contexts, differentiating between individuals with progressive attitudes and individuals with conservative attitudes at wave 2. We found a substantial confirmation of the results obtained considering the individual behavior. When women and men are exposed to more traditional local contexts (in particular, conservative local-level GRA for women and low use of external childcare for men), they undergo a greater

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<sup>18</sup>It is important to include the control variable indicating whether the woman leaves employment to make sure that our interaction variable captures the effect of such a transition *as a result* of entry into parenthood.

traditionalization of attitudes, but only when their prenatal attitudes are progressive.

## 7. Discussion of results and conclusions

The results are compatible with the idea that becoming parents implies changes in the gender identity and generates cognitive dissonance.

Changes in identity – possibly through cognitive dissonance – to adapt to the prevailing social norms on parenting practices and the gender division of paid and unpaid work might explain why a significant traditionalization of attitudes is only observed for those women who, before childbirth, deviated from the norm, displaying more progressive attitudes.<sup>19</sup> Those women who had already displayed more conservative attitudes before childbirth, instead, did not revise their attitudes after becoming mothers, consistently with the fact that they were more consonant with the prevalent parental gender norms before becoming mothers. That women are affected by social norms is evident from our results on local contexts in the Online Appendix, where a significantly greater tendency to traditionalization of attitudes is detected for new mothers with progressive prenatal attitudes living in areas with more traditional GRA as compared with areas with less traditional GRA.

The strong traditionalization of attitudes observed among the women whose postnatal arrangements contradicted their progressive views before childbirth is also compatible with cognitive dissonance. Traditional postnatal arrangements are often the result of constrained behavior, which might emerge from the combination of gender norms, stereotypes, and gendered institutional settings. To attenuate the contrast between progressive prenatal attitudes and traditional postnatal arrangements, attitudes might thus change to become more consonant with postnatal arrangements. On the contrary, women who had already had conservative attitudes before childbirth should be less likely to experience cognitive dissonance – and, therefore, to revise their attitudes – because their prenatal attitudes are more consonant with traditional postnatal arrangements. Our results support this: women with conservative attitudes before childbirth did not revise their attitudes when there were traditional postnatal arrangements.

The need to conform to social norms seems lower in men, since a significant traditionalization in attitudes only emerges when men’s progressive prenatal attitudes contrast with traditional postnatal arrangements. The results in the Online Appendix also support this conclusion. Differently from women, new fathers with progressive prenatal attitudes do not

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<sup>19</sup>If one attaches to the average score variable of women the “norm value” (i.e., 14.83; Table 1), our definition of progressive attitudes (i.e., equal to or more than 16) identifies women who deviate from the norm, displaying more progressive attitudes.



experience significant differences in attitude changes when they are exposed to more traditional local-level GRA. In contrast, their traditionalization in attitudes is significantly higher when they are exposed to traditional postnatal arrangements (in particular, low local-level use of external childcare).

Other mechanisms might also be at play. Biological factors can be important determinants of attitude change, especially regarding childbearing, a moment in which hormones undergo intense modifications (Udry, 2000). However, all of our tests suggest that the attitude change happened in individuals who were more distant from the prevailing social norms and/or confronted traditional postnatal arrangements. Taken together, our results provide evidence that institutions and gender norms play a prominent role in shaping attitudes changes of new parents. Overall, they indicate that the need to conform to prevalent gender norms and constrained traditional arrangements is an important source of attitude change.

The policy implications of our results are broad. Policy makers should devise policies to interrupt the vicious circle reported in our findings, whereby gendered institutions and traditional social norms reinforce the support of individuals for these settings. This is important to foster gender equality, whereby mothers are granted the possibility of having a full working life without being forced to choose between children and work. The tasks of governments could include taking active steps to promote paternity leaves, part-time work for men, and public childcare services, as well as measures to fight against gender stereotypes. The possibility that institutions have of enhancing gender equality is well known. For example, recent evidence suggests that longer paternity leaves can engender long-lasting changes in the contribution of men toward unpaid care activities (Bünning, 2015). To the extent that this and other measures produce egalitarian arrangements, GRA of people can change correspondingly. In turn, this could encourage the modification of existing traditional gender norms toward more progressive values, thereby favoring the onset of a virtuous circle in which institutions and attitudes move our societies, in a reciprocal relationship, toward greater gender equality.

This paper provides evidence on the UK. This country has a specific institutional background, with a similar childcare and family support system to other Anglo-Saxon countries, such as New Zealand, Ireland, and Canada (Thévenon, 2011). A “modified male breadwinning model” is prevalent in the UK, where mothers work part-time and fathers full-time as a strategy of combining employment and childcare duties in a context of a lack of public childcare, costly private childcare services, and exiguous paternity leaves (McMunn et al., 2020). Although our results might be generalizable to other countries with similar institutions, further evidence on countries with different contexts would help better understand the

mechanisms behind attitude changes of new parents. Moreover, due to data limitations, this paper has concentrated on heterosexual couples and childbirth, not considering same-sex relationships and becoming parents through other pathways (e.g., adoption or surrogacy), which might follow differentiated dynamics. Further research on these issues might bring new insights on the role of social norms and institutions in affecting attitude changes *versus* other potential mechanisms (e.g., biological factors).

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Table 1: **GRA: score variable and single statements by gender, pooled and by entry into parenthood and wave.**

	Women Pooled	Men Pooled	Women				Men			
			No EIP		EIP		No EIP		EIP	
			W2	W4	W2	W4	W2	W4	W2	W4
Score variable	14.83 (2.79)	13.89 (2.80)	14.88 (2.75)	14.90 (2.83)	14.74 (2.53)	14.08 (2.85)	13.92 (2.85)	13.88 (2.72)	13.88 (2.75)	13.61 (3.14)
Statement (i)	3.33 (1.00)	3.03 (1.00)	3.31 (1.00)	3.34 (0.99)	3.36 (0.95)	3.39 (1.06)	2.99 (1.00)	3.05 (0.99)	3.05 (0.96)	3.14 (1.17)
Statement (ii)	3.54 (1.07)	3.36 (1.04)	3.55 (1.06)	3.60 (1.06)	3.46 (1.01)	3.21 (1.13)	3.37 (1.05)	3.37 (1.02)	3.33 (1.05)	3.23 (1.16)
Statement (iii)	3.88 (0.91)	3.71 (0.91)	3.91 (0.90)	3.89 (0.91)	3.88 (0.92)	3.65 (1.00)	3.75 (0.91)	3.68 (0.88)	3.73 (0.96)	3.57 (1.00)
Statement (iv)	4.07 (0.97)	3.79 (1.02)	4.11 (0.97)	4.07 (0.98)	4.04 (0.92)	3.84 (1.01)	3.80 (1.05)	3.79 (0.99)	3.78 (1.06)	3.66 (1.05)
Observations	3,836	3,948	1,691	1,691	227	227	1,819	1,819	155	155

*Source:* Understanding Society

Mean and standard deviation (in parentheses). EIP stands for “entry into parenthood”; W2 and W4 stand for “wave 2” and “wave 4”, respectively.



Table 2: **The impact of entry into parenthood on GRA: score variable, by gender.**

<i>Dependent variable: score variable</i>		
	<b>Women</b>	<b>Men</b>
<i>FIRSTCHILD</i> <sub>it</sub>	-0.665*** (0.208)	-0.274 (0.253)
Age		
Years	-0.005 (0.031)	-0.009 (0.029)
Education		
Medium	-0.394 (0.251)	-0.443 (0.271)
Low	-1.335 (0.904)	-0.337 (0.788)
Marital status		
Cohabiting with a partner	-0.109 (0.204)	-0.121 (0.213)
Living with a spouse	-0.230 (0.292)	-0.143 (0.307)
Area of residence		
Rural	+0.300 (0.254)	-0.190 (0.374)
Religion		
Not belonging to a religion	-0.050 (0.153)	-0.250 (0.167)
Observations	3,836	3,948
Individuals	1,918	1,974
Individuals becoming parents between waves 2 and 4	227	155
Individuals becoming parents between waves 2 and 4 (%)	11.84%	7.85%

*Source:* Understanding Society

Standard errors in parentheses; \*\*\*, \*\*, and \* denote the 1%, 5%, and 10% significance levels, respectively. The reference group for education (marital status) is high education (living as a single).

Table 3: **The impact of entry into parenthood on GRA: single statements, by gender.**

<i>Dependent variables: single statements</i>								
	Statement (i)		Statement (ii)		Statement (iii)		Statement (iv)	
	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>
<i>FIRSTCHILD</i> <sub>it</sub>	+0.022 (0.081)	+0.055 (0.110)	-0.308*** (0.086)	-0.108 (0.102)	-0.219*** (0.077)	-0.106 (0.082)	-0.161** (0.079)	-0.114 (0.081)
Observations	3,836	3,948	3,836	3,948	3,836	3,948	3,836	3,948

*Source:* Understanding Society

Standard errors in parentheses; \*\*\*, \*\*, and \* denote the 1%, 5%, and 10% significance levels, respectively. All the estimations include the same set of controls used in Table 2.

Table 4: The impact of entry into parenthood on GRA: progressive prenatal GRA and postnatal traditional arrangements; score variable, by gender.

	<i>Dependent variable: score variable</i>							
	Panel 1		Panel 2		Panel 3a		Panel 3b	
	Women	Men	Women	Men	Women	Men	Women	Men
<i>FIRSTCHILD<sub>it</sub></i>	-1.211*** (0.303)	-0.628 (0.453)	-0.580* (0.351)	+0.328 (0.687)	-1.110*** (0.312)	-0.320 (0.522)	-1.196*** (0.321)	-0.385 (0.552)
No use of external childcare			-1.265** (0.553)	-1.744* (0.940)				
Woman's leaving employment					+0.924** (0.466)	//	+0.813 (0.498)	//
<i>FIRSTCHILD<sub>it</sub></i> *					-2.580*** (0.929)	-4.163*** (0.593)	-2.015** (0.950)	-4.069*** (0.612)
Observations	1,650	1,234	1,650	1,212	1,650	1,212	1,572	1,126

Source: Understanding Society

Standard errors in parentheses; \*\*\*, \*\*, and \* denote the 1%, 5%, and 10% significance levels, respectively. All the estimations include the same set of controls used in Table 2. We retrieved information on the use of external childcare and the partner's transition away from employment for men from the questionnaire on the partner with whom they cohabited. This information was not available for a few individuals (11). Single men were given a value of 0 on the "woman's leaving employment" variable in order to keep them in the sample. There were no men whose partners exited the labor market without contextually becoming parents (i.e., the "woman's leaving employment" variable was not identified). Those observations (5-8%) for which we were unable to reconstruct information on the transitions away from employment between waves 3 and 4 were removed from analysis 3b.

Table 5: The impact of entry into parenthood on GRA: conservative prenatal GRA and postnatal traditional arrangements; score variable, by gender.

	<i>Dependent variable: score variable</i>							
	Panel 1		Panel 2		Panel 3a		Panel 3b	
	Women	Men	Women	Men	Women	Men	Women	Men
$FIRSTCHILD_{it}$	-0.283 (0.236)	-0.144 (0.275)	-0.262 (0.287)	+0.080 (0.390)	-0.325 (0.246)	-0.185 (0.313)	-0.307 (0.255)	+0.023 (0.306)
No use of external childcare			-0.042 (0.427)	-0.436 (0.581)				
Woman's leaving employment					-1.020 (0.628)	//	-1.402* (0.720)	//
$FIRSTCHILD_{it} *$					+1.360 (0.991)	+2.207 (1.872)	+1.060 (1.077)	-0.178 (1.029)
Observations	2,186	2,714	2,186	2,646	2,186	2,646	2,026	2,474

Source: Understanding Society

Standard errors in parentheses; \*\*\*, \*\*, and \* denote the 1%, 5%, and 10% significance levels, respectively. All the estimations include the same set of controls used in Table 2. Information on the use of external childcare and the partner's transition away from employment for men was not available for a few individuals (34). Single men were given a value of 0 for the "woman's leaving employment" variable in order to keep them in the sample. There are no men whose partner exited the labor market without contextually becoming parents (i.e., the "woman's leaving employment" variable was not identified). Those observations (7%) for which we were unable to reconstruct information on the transition away from employment between waves 3 and 4 were removed from analysis 3b.

# Appendices

## A. Descriptive statistics: tables

Table A.1: **Sample composition by gender and socio-demographic characteristics (pooled).**

	Women	Men
Age		
Years (mean; standard deviation in parentheses)	29.68 (9.32)	32.35 (10.69)
Education		
High (%)	40.12	33.33
Medium (%)	56.28	59.25
Low (%)	3.60	7.42
Marital status		
Living as a single (%)	54.77	58.59
Cohabiting with a partner (%)	18.95	16.97
Living with a spouse (%)	26.28	24.44
Area of residence		
Urban (%)	80.68	81.79
Rural (%)	19.32	18.21
Religion		
Belonging to a religion (%)	44.24	37.49
Not belonging to a religion (%)	55.76	62.51
Observations	3,836	3,948

*Source:* Understanding Society

High education refers to qualifications obtained after the high-school diploma; medium education refers to a high-school diploma; low education indicates qualifications below the high-school diploma or no qualifications.

Table A.2: **GRA: score variable of new parents by gender, progressive or conservative prenatal attitudes, and wave.**

	Women				Men			
	EIP prog.		EIP cons.		EIP prog.		EIP cons.	
Score variable	W2	W4	W2	W4	W2	W4	W2	W4
	17.07 (1.30)	15.02 (2.98)	13.06 (1.74)	13.40 (2.55)	16.91 (1.15)	15.06 (3.14)	12.61 (2.16)	12.99 (2.94)
Observations	95	95	132	132	46	46	109	109

*Source:* Understanding Society

Mean and standard deviation (in parentheses). The terms “prog.” and “cons.” stand for progressive and conservative attitudes at wave 2.

Table A.3: **GRA: score variable by gender and socio-demographic characteristics (pooled).**

	<b>Women</b>	<b>Men</b>
Age		
Under 30	15.00 (2.87)	14.08 (2.86)
Over 30	14.60 (2.65)	13.70 (2.72)
Education		
High	14.97 (2.83)	14.09 (2.77)
Medium	14.79 (2.75)	13.89 (2.79)
Low	13.89 (2.78)	12.96 (2.82)
Marital status		
Living as a single	14.94 (2.78)	13.83 (2.79)
Cohabiting with a partner	15.11 (2.79)	14.28 (2.67)
Living with a spouse	14.42 (2.75)	13.77 (2.87)
Area of residence		
Urban	14.84 (2.79)	13.90 (2.80)
Rural	14.80 (2.77)	13.83 (2.79)
Religion		
Belonging to a religion	14.48 (2.83)	13.24 (2.91)
Not belonging to a religion	15.11 (2.72)	14.28 (2.65)
Observations	3,836	3,948

*Source:* Understanding Society

Mean and standard deviation (in parentheses). The “under 30” category includes individuals aged 30.

## B. Results: local-level contexts

In this Online Appendix, we provide further evidence on the role of gendered norms and institutions in affecting the attitude change of new parents. We construct local-level indicators on the individuals' exposure to traditional gender norms and postnatal arrangements to evaluate whether and how "environmental factors" are important determinants of attitude changes following the entry into parenthood. We select three indicators to capture this. The first is living in areas characterized by conservative GRA. Gender stereotypes can be very pressing in such areas, and (consequently) local institutions may be more gendered. The second indicator is living in areas characterized by a limited use of external childcare. In such contexts, which are characterized by either a low availability or a low demand for external childcare, the institutional constraints and social norms that push toward a traditional gender division of labor are likely stronger, since external childcare is essential to allow women to continue working (full-time) after childbirth. The third indicator is living in areas characterized by low employment rates of mothers. Local areas characterized by a low participation of mothers in the labor market are likely related to more traditional local institutions and gender norms.<sup>B.1</sup>

We retrieve information on these three indicators by exploiting the complete Understanding Society data set.<sup>B.2</sup> The geographical units of reference are local authority districts, which are also referred to as "local government districts". We choose local authority districts because the UK adopts this form of subnational division for local governments. We compute average GRA of each local authority district. We proxy the use of external childcare in each local authority district by computing the local-level percentage of parents of children aged 0-14 that use some form of external childcare. We measure the employment levels of mothers in each local authority district by computing the local-level percentage of mothers of children aged 0-14 that have a paid job. We then classify the 405 local authority districts on the basis of whether they have low (below the median) or high (above the median) levels of our three measures. We merge this information with the men and women in our sample,

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<sup>B.1</sup>The analysis on the exposure to local-level traditional arrangements (i.e., local-level use of external childcare and maternal employment rates) also provides a robustness test of our results on individual behavior (see Section 6 of the paper). New parents who experienced a greater traditionalization of attitudes (e.g., because of biological changes or changes in the set of preferences) might also have been more likely to *voluntarily* engage in traditional arrangements after childbirth, thereby causing possible simultaneity problems in the results on individual behavior. This analysis thus provides robustness evidence by capturing the push toward traditional arrangements as exogenously as possible, abstracting from individual choices.

<sup>B.2</sup>We used wave 1 to measure the local use of external childcare and the employment levels of mothers, and wave 2 to proxy local GRA. Both waves included around 50,000 individuals. We chose the initial waves in order to have the largest samples possible. We excluded the individuals considered in our sample from the computation of the local-level averages to avoid possible endogeneity problems.

in order to know whether they lived (in wave 4, after childbirth) in a more or less traditional local area.<sup>B.3</sup> Finally, we estimate the separate impacts (i.e., we conduct the analysis on split samples) for women and men based on their attitudes at wave 2 (i.e., whether they were progressive or conservative) and the local context they lived in, as defined by the three above-mentioned categories (i.e., area characterized by conservative or progressive GRA; area characterized by a limited or high use of external childcare; area characterized by a low or high employment rate of mothers).

Table B.1 presents the first set of results. It shows how the attitudes of new fathers and mothers with progressive views at wave 2 change following childbirth on the basis of our three environmental factors.

Women who are progressive at wave 2 and live in local authority districts characterized by more conservative gender role views experience a traditionalization in attitudes following the entry into motherhood of as much as 1.858 points on the 16-point score variable. This impact is more than halved ( $-0.761$ ) when they live in areas characterized by less traditional gender role views, compatibly with the fact that the distance they need to cover to conform to the prevailing gender norms is lower in such places. These results thus provide support for a “conforming to prevalent gender norms explanation”. A lower traditionalization of attitudes is also detected for new mothers who live in areas characterized by a higher use of external childcare ( $-1.077$ ) compared to those who live in contexts where external childcare is less widespread ( $-1.342$ ). A similar pattern emerges for women located in contexts of higher employment rates of mothers. They are estimated to revise their attitudes by  $-0.943$ , a lower amount than women located in areas with a low employment rate of mothers ( $-1.491$ ). Lower cognitive dissonance for women in less traditional contexts could explain why they are characterized by a smaller traditionalization of attitudes following childbirth. As concerns men, new fathers who were progressive at wave 2 only display a significant traditionalization of attitudes when they are more exposed to traditional arrangements (i.e., a limited local-level use of external childcare and low employment rates of mothers). On the contrary – and differently from women – they do not significantly revise their attitudes when living in local contexts characterized by conservative GRA. This reflects and reinforces our finding that men only revise their attitudes when confront traditional arrangements, whereas women also seem influenced by the necessity of adapting to social norms.

When assessing the differences in attitude changes between low and high exposure to traditional contexts across our three proxies (bottom panel of the table), they are all negative,

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<sup>B.3</sup>Since the location, at wave 4, may have been the result of a change in attitudes after childbirth, we also ran robustness checks in which we considered the location at wave 2, before childbirth. The results remained unchanged.

in line with our expectations. However, also given the low numerosity of observations in each split sample, they are estimated rather imprecisely. Nonetheless, it emerges a statistically significant difference, albeit asymmetrically for the two genders, when local-level GRA are considered as well as when childcare arrangements are considered (i.e., use of external childcare). The asymmetry between men and women arises when we consider the type of pro-gender environment where the partners live. The difference in attitude changes for new mothers is significantly different for women belonging to an environment with more traditional GRA as compared with local contexts with less traditional GRA, while this difference is not significant across men. However, the opposite is true if we look at childcare arrangements as the key variable to determine the type of social environment. Men, only, show a significant difference in this case, this evidence further indicating that for men a more practical variable affecting the working arrangements shapes their attitudes in a different way.

Finally, Table B.2 replicates Table B.1 for men and women with conservative attitudes at wave 2. Overall, the attitudes of these individuals are not significantly affected during the transition to parenthood, irrespective of whether they are located in more or less traditional areas.<sup>B.4</sup> This finding is again consistent with our main results, whereby it emerges that those individuals who adhere more to prevailing social norms and have attitudes that are compatible with traditional postnatal arrangements do not undergo any significant changes to either conform to such views or to attenuate possible cognitive dissonance. As for the tests of the differences in coefficients across the three proxies (bottom panel of the table), none of them is statistically significant, thereby suggesting a substantial zero-effect on attitudes of new parents with prenatal conservative attitudes, regardless of the exposure to more or less traditional environments.

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<sup>B.4</sup>We only detected a slightly significant and relatively small impact on traditionalization for new mothers with conservative prenatal attitudes when they were exposed to a limited use of external childcare.



Table B.1: **The impact of entry into parenthood on GRA: progressive prenatal GRA and postnatal exposure to traditional contexts; score variable, by gender.**

<i>Dependent variable: score variable</i>						
High exposure to traditional contexts	1a. Progressive prenatal GRA and living in an area characterized by conservative GRA		2a. Progressive prenatal GRA and living in an area characterized by a limited use of external childcare		3a. Progressive prenatal GRA and living in an area characterized by a low employment rate of mothers	
<i>FIRSTCHILD<sub>it</sub></i>	<b>Women</b> -1.858*** (0.462)	<b>Men</b> -0.837 (0.732)	<b>Women</b> -1.342*** (0.440)	<b>Men</b> -1.565*** (0.572)	<b>Women</b> -1.491*** (0.408)	<b>Men</b> -1.092* (0.567)
Observations	690	520	836	618	886	680
Low exposure to traditional contexts	1b. Progressive prenatal GRA and living in an area characterized by progressive GRA		2b. Progressive prenatal GRA and living in an area characterized by a high use of external childcare		3b. Progressive prenatal GRA and living in an area characterized by a high employment rate of mothers	
<i>FIRSTCHILD<sub>it</sub></i>	<b>Women</b> -0.761** (0.388)	<b>Men</b> -0.420 (0.531)	<b>Women</b> -1.077*** (0.410)	<b>Men</b> -0.033 (0.598)	<b>Women</b> -0.943** (0.449)	<b>Men</b> -0.070 (0.675)
Observations	960	714	814	616	764	554
Difference; high exposure <i>versus</i> low exposure (p-value in parenthesis)	<b>Women</b> -1.097* (0.069)	<b>Men</b> -0.417 (0.645)	<b>Women</b> -0.265 (0.659)	<b>Men</b> -1.532* (0.064)	<b>Women</b> -0.548 (0.366)	<b>Men</b> -1.023 (0.246)

*Source:* Understanding Society

Standard errors in parentheses; \*\*\*, \*\*, and \* denote the 1%, 5%, and 10% significance levels, respectively. All the estimations include the same set of controls used in Table 2.

Table B.2: **The impact of entry into parenthood on GRA: conservative prenatal GRA and postnatal exposure to traditional contexts; score variable, by gender.**

<i>Dependent variable: score variable</i>						
High exposure to traditional contexts	1a. Conservative prenatal GRA and living in an area characterized by conservative GRA		2a. Conservative prenatal GRA and living in an area characterized by a limited use of external childcare		3a. Conservative prenatal GRA and living in an area characterized by a low employment rate of mothers	
<i>FIRSTCHILD<sub>it</sub></i>	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>
	-0.436	-0.414	-0.601*	+0.240	-0.368	-0.094
	(0.317)	(0.398)	(0.335)	(0.429)	(0.329)	(0.433)
Observations	1,132	1,396	1,210	1,450	1,308	1,544
Low exposure to traditional contexts	1b. Conservative prenatal GRA and living in an area characterized by progressive GRA		2b. Conservative prenatal GRA and living in an area characterized by a high use of external childcare		3b. Conservative prenatal GRA and living in an area characterized by a high employment rate of mothers	
<i>FIRSTCHILD<sub>it</sub></i>	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>
	-0.150	+0.085	-0.059	-0.512	-0.184	-0.195
	(0.356)	(0.366)	(0.331)	(0.350)	(0.337)	(0.326)
Observations	1,054	1,318	976	1,264	878	1,170
Difference; high exposure <i>versus</i> low exposure (p-value in parenthesis)	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>	<b>Women</b>	<b>Men</b>
	-0.285	-0.500	-0.542	0.751	-0.184	0.101
	(0.549)	(0.355)	(0.250)	(0.175)	(0.696)	(0.852)

*Source:* Understanding Society

Standard errors in parentheses; \*\*\*, \*\*, and \* denote the 1%, 5%, and 10% significance levels, respectively. All the estimations include the same set of controls used in Table 2.