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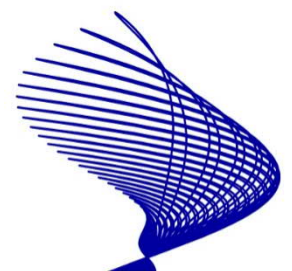
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Gendered division of housework during the COVID-19 pandemic: temporary shocks or durable change?

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Abstract

BACKGROUND: First evidence shows that lockdown and confinement measures were associated with a more egalitarian gendered household division of labor. However, we know little about the dynamics of how gendered household divisions of labor adjusted in different phases of the pandemic. **OBJECTIVE:** We ask: 1) How did the gender division of housework change with the first lockdown in March 2020 in the UK? 2) Did observed changes persist when the lockdown measures were lifted or did couples revert to pre-pandemic gender divisions of housework? **METHODS:** We describe changes in the share of housework done by women in UK households before, during, and after the first lockdown using data from the Understanding Society COVID-19 study and employing fixed effects regression, comparing couples with children of different ages to couples without children living at home. **RESULTS:** The lockdown measures moderately affected the gender division of housework with differential effects depending on the age of the youngest child in the household. Couples with younger children were the quickest to return to pre-lockdown gender division of housework, whereas couples with school-age children tended instead to an enduringly more equal share of housework. **CONCLUSIONS:** Like other shocks to the division of labor, couples tend to adapt to the new circumstances, sustaining previous patterns of within household inequality, but the effects depend on the life course stage at which households were at the time of the shock. Signs of increasing gender equality at the start of the pandemic, however, had already started to vanish for some by September 2020.

Keywords: COVID-19, division of labor, family, gender, life course

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Introduction

Lockdown and social distancing measures in the COVID-19 pandemic in the UK created a care gap for households, especially those with dependent children or adults (Andrew, Cattan, Dias, et al., 2020). Although evidence suggests that in early stages of the pandemic both women and men took on the additional care created by the restrictions, women have carried a disproportionate share of the burden (Andrew, Cattan, Costa Dias, et al., 2020; Kreyenfeld & Zinn, 2021; Sevilla & Smith, 2020). However, little is known about how families have adapted to the pandemic as the situation has evolved. Early commentators speculated that men's increasing involvement in the home during the first lockdown may permanently lead towards more household equity. Alternatively, changes might only be short lived and fade-out over time.

Transitory or permanent adaptations indicate families' ability to bounce back and readjust. In this context, continual adjustment processes are likely given that shocks from lockdown and confinement policies affected multiple dimensions of the work-family interface (Adams-Prassl, Boneva, Golin, & Rauh, 2020). Some couples had more time available for housework (e.g. due to unemployment or furlough, and reductions in leisure activities), but time demands of housework (e.g. more cooking, shopping, and cleaning), homeschooling, and developmental childcare increased (e.g., because of school and childcare closures).

Previous research shows that other shocks to the family, such as first births, reserved parental leave for fathers, or unemployment, can trigger changes in the gender division of household labor of a temporary nature, towards greater equality. In the long run, external shocks have in the past tended to reinforce or sustain a traditional gender division of labor, despite substantial gradual changes towards a more egalitarian division over multiple generations (Bianchi, Sayer, Milkie, & Robinson, 2012; Ciccia & Bleijenbergh, 2014; England, 2010). For example, the effects of first births show that a gender gap in unpaid labor, that was not present before the birth of the first child, emerges immediately after the birth even among couples with egalitarian values (Nitsche & Grunow, 2016; Yavorsky, Kamp Dush, & Schoppe-Sullivan, 2015). Reserved paternity leave for fathers has been shown to increase fathers' engagement with their children (Cools, Fiva, & Kirkebøen, 2015; Wray, 2020), and reduce the mental health costs of childbearing (Persson & Rossin-Slater, 2019). These changes, however, are often short-lived and depend on the relative duration and type of reserved paternity leave (Bünning, 2015; Schober & Zoch, 2019). Finally, unemployment has been associated with a reallocation of housework to the unemployed spouse, but wives tend to show a much larger increase in housework hours than husbands following unemployment (Dernberger & Pepin, 2020; McMunn, Bird, Webb, & Sacker, 2020; Nitsche & Grunow, 2018; Scarborough, Sin, & Risman, 2019).

In this study we ask, first, how did the gender division of housework change with the first lockdown in March 2020; and second, did the observed changes persist when the first lockdown measures were lifted or did couples quickly revert to pre-pandemic gender divisions of housework? By September 2020, lockdown measures had been eased and most schools had reopened. This allows us to explore whether men's increased involvement in the home that was

noted early on persisted (Sevilla & Smith, 2020), or whether as families adjusted to the new circumstances and children went back to school there was a reversion to old patterns. We compare couples without dependent children in the household (i.e., below 16 years old) with couples who have a youngest child aged between 0–5 years old, and with couples with school-age children. We expect to observe the shock to be greater for couples with children, who experienced the largest rise in care demands.

Methods and Data

Methods

To assess changes in the household division of labor following the simultaneous public intervention of lockdown and closure of schools and childcare facilities, we employ a fixed effects (FE) regression, comparing opposite-gender couples without children to couples with a youngest child aged between 0–5 years, and those with youngest children of school age, between 6-15 years old. This is exemplified in the linear regression equation (1)

$$Y_{itj} = \alpha_i + \psi \times X_{ijt} + \beta_1 \times \tau_t + \beta_2 \times \delta_j + \beta_4 \times (\delta \times \tau)_{jt} + \varepsilon_{itj} \quad (1)$$

where δ_j denotes whether couples have children and their age and τ_t is a period indicator marking the pre-lockdown (2019) and various post lockdown periods (April, May, June, and September 2020)

We analyze how changes in the share of housework done by women vary across different types of couples in a unified manner (Olden & Møen, 2020) using FE regression to adjust for individual time-invariant characteristics, as captured by the term α_i . In the case of asymmetric panel attrition, estimates obtained by fixed effects are less biased than estimates obtained by pooling panel waves and using ordinary least squares (Lechner, Rodriguez-Planas, & Fernández Kranz, 2016). We further adjust this fixed effect model for the couple’s division of paid labor during and after the lockdown, as measured by men’s share of household paid work. By definition, all time-invariant characteristics are dropped from the model. We present estimates with and without adjustment for the time varying couple division of paid labor - a potentially endogenous variable, given that couples work and care decisions during the pandemic may be jointly determined (Harkness, 2021). Our estimates are thus denoted here as

$$\hat{\delta}_{0-5} = [(\bar{Y}_{post, child\ 0-5\ yo} - \bar{Y}_{pre, child\ 0-5\ yo})] - [(\bar{Y}_{post, no\ children} - \bar{Y}_{pre, no\ children})]$$

and

$$\hat{\delta}_{school\ age} = [(\bar{Y}_{post, school\ age} - \bar{Y}_{pre, school\ age})] - [(\bar{Y}_{post, no\ children} - \bar{Y}_{pre, no\ children})]$$

which capture the difference between couples without dependent children and couples with a 0–5 years old child living at home, and with those couples with a 6–15 years old school-age child, respectively, at multiple time periods. These correspond to the estimates of β_4 in equation (1), under the assumption that the trajectory of women’s share of housework in couples without

children serves as an approximation to the unobserved trajectory of the share of housework that would have been observed for couples with children had schools and nurseries not closed. Our outcome variable corresponds to the log of the share of housework, $\log(s)$, done by women in opposite-gender couples (Gerdes, 2010), where s takes values between 0 and 1, $s \in (0,1)$. Table 1 shows descriptive statistics for our sample at three points in time, showing no strong selection in terms of these observed characteristics.

Table 1. Descriptive statistics for analytical samples

Variable	Statistic: mean(s.e.) or %	10th Wave (N = 2,007)	April 2020 (N = 1,233)	September 2020 (N = 929)
Woman's age	Mean (s.e.)	44.38 (0.18)	44.55 (0.29)	44.54 (0.36)
Man's age	Mean (s.e.)	47.15 (0.21)	47.24 (0.39)	47.55 (0.45)
Woman's race-ethnicity	Black, Asian, Minority Ethnic	7.68	5.61	6.73
	White	92.32	94.39	93.27
Man's race-ethnicity	Black, Asian, Minority Ethnic	7.2	4.99	5.19
	White	92.8	95.01	94.81
Woman's education	A-Level, GCSE or lower	41.69	46.44	46.95
	Degree or higher	58.31	53.56	53.05
Man's education	A-Level, GCSE or lower	44.84	51.23	51.85
	Degree or higher	55.16	48.77	48.15
Woman's employment status	Employed, working from home	12.26	32.98	25.02
	Employed, at work	71.74	35.09	44.88
	OLF	16	16.99	27
	Furloughed	0	14.93	3.1
Man's employment status	Employed, working from home	12.05	31.75	27.46
	Employed, at work	80.43	40.1	49.49
	OLF	7.52	9.78	17.9
	Furloughed	0	18.37	5.15
Woman's working hours	Mean (s.e.)	21.3 (0.4)	19.21 (0.74)	19.53 (0.86)
Man's working hours	Mean (s.e.)	29.06 (0.45)	26.76 (0.74)	30.36 (0.77)

Share of household paid labor done by men	Mean (s.e.)	0.56 (0.01)	0.57 (0.01)	0.62 (0.01)
Age of youngest child in household	Without children living at home	37.8	39.01	39.53
	With a 0–5 year old child	19.74	18.41	18.83
	With 6–15 year old school-age child	42.46	42.58	41.64
Marital Status	Married	11	11.58	9.68
	Cohabiting	89	88.42	90.32
Woman's housework hours	Mean (s.e.)	13.05 (0.23)	14.72 (0.35)	13.01 (0.43)
Man's housework hours	Mean (s.e.)	6.62 (0.14)	9.58 (0.35)	7.68 (0.31)
Share of housework done by women	Mean (s.e.)	0.65 (0.01)	0.6 (0.01)	0.62 (0.01)
Pre-lockdown couple employment typology	Both full-time	22.97	29.89	26.19
	Both OLF	2.15	2.32	1.52
	Both part-time	12.87	7.07	10.86
	Man part-time, woman full-time	5.9	3.76	6
	Man paidwork, woman housework	13.84	13.34	12.68
	Woman part-time, man full-time	36.89	38.5	37.87
	Woman paidwork, man housework	5.37	5.12	4.89

Data

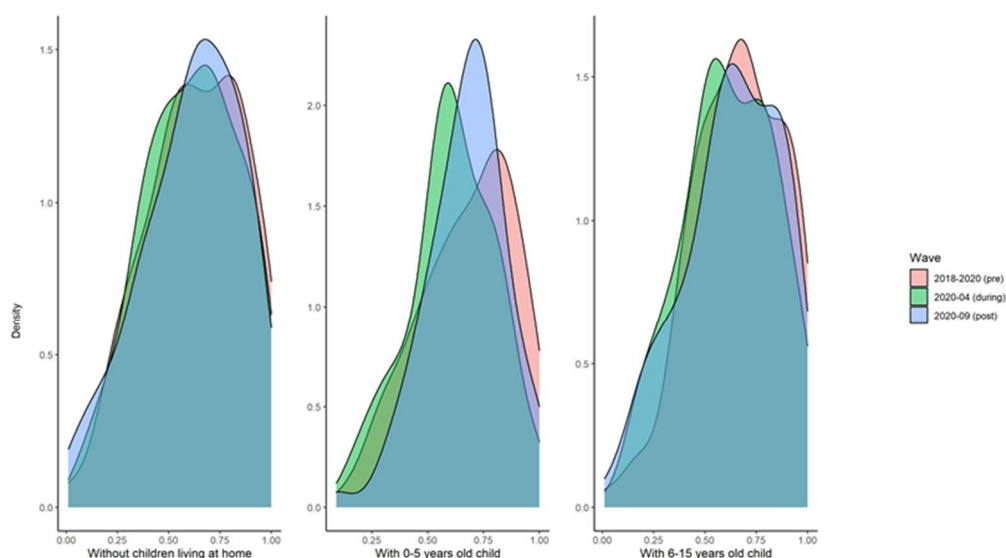
We use data from the Understanding Society COVID-19 study, a longitudinal study that follows a subsample of the UK Household Longitudinal Study (UKHLS) and asks respondents about their experiences during the COVID-19 pandemic (Institute for Social and Economic Research, 2021). We link the data from this survey to wave 9 of the UKHLS (Institute for Social and Economic Research, 2020), which was used to draw the COVID-19 subsample. The information on partners in a household were linked with respondents' personal and partners' IDs. We use data from the April, May, June, and September 2020 waves of the Understanding Society COVID-19 study, because the July and November 2020 waves do not have information on the household division of labor, and of wave 10 given that most respondents were surveyed

during 2019 and the first quarter of 2020, prior to the lockdown. We restrict the analysis to opposite-gender couples of prime working age (between 24–54 years old) who were living together at the first wave of the COVID-19 Study in April and remained together as a couple, and whose household ID variable did not change between the 9th UKHLS wave and the first COVID-19 wave.

All analyses are based on complete cases and our final sample size is 2044 couples, an unbalanced panel with five time points. We report unweighted estimates of changes in housework shares first because longitudinal weights are not designed for the type of analysis conducted here, and second because they are set at zero for those who do not respond to each waves of the survey significantly reducing sample size (Institute for Social and Economic Research, 2021, pp. 56–57; see also Jenkins, 2008). We also computed weighted estimates, which gave qualitatively similar results, and are available upon request. Analyses were performed in R version 4.0.5, and the following packages were used for estimating or fixed effects model and the robust standard errors, respectively: `plm` v. 2.4-1 and `clubSandwich` v. 0.5.3 (Croissant & Millo, 2019; Zeileis, Lumley, Berger, Graham, & Zeileis, 2020).

Results

Figure 1 shows three density plots of the share of housework done by women at three points in time, pre, during, and after lockdown, and for different types of couples. These density plots reveal that the immediate effect of the lockdown and school closures was a reduction in the women’s share of housework and therefore a strong shift towards greater equality across the distribution. However, as we move further away from the initial shock, the distribution of the share of housework tends back towards the original left skewed distribution.



Note: UKHLS and COVID-19 study. Own calculations. Weighted results.
 These were estimated employing a cross-validation bin-width selection method.
 The more traditional plug-in estimators (e.g., following Silverman’s rule of thumb) do not deviate much from this.

Figure 1. Distribution of women’s share of housework

These dynamics are further reflected in Figure 2 which tracks the evolution of the average women’s share of housework before, during, and after the lockdown. Following the lockdown, women’s share initially declined for all types of couples, with a slight increase in the month of May, and a further decrease in June. However, by September 2020 these groups diverged: Couples with school-age children maintained a more equal division of labor than pre-lockdown, whereas couples with a 0–5 year old child reverted to pre pandemic levels of a more traditional gender division of labor.

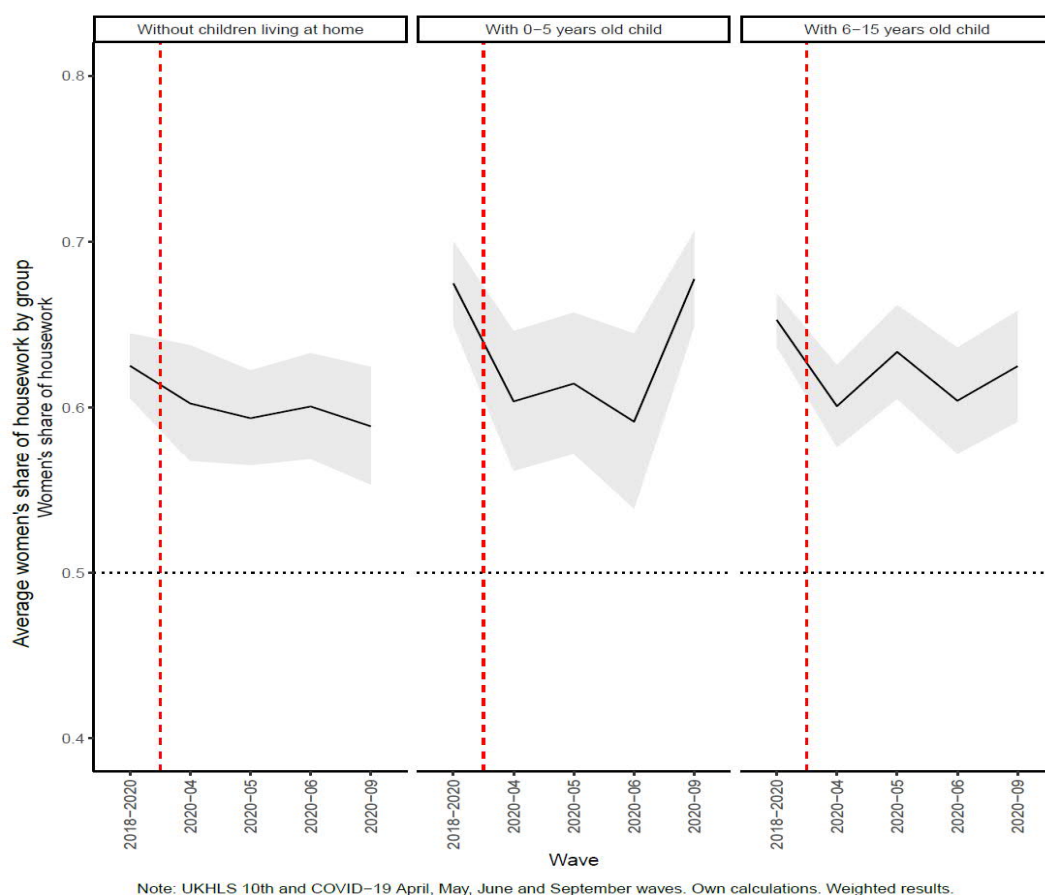


Figure 2. Average share of housework by group

In Table 1, we observe the expected changes in the proportion of women and men on furlough, as well as increases in the share of those employed, but working from home, and a reduction and then rise in the number of working hours. Working hours reduced substantially, especially during April, but largely recovered by September 2020 (Crossley, Fisher, & Low, 2021). We also see a substantial increase in housework hours for both men and women during the first COVID-19 survey and a return to the pre-pandemic levels by September.

Overall, our findings show a reduction in women’s share of housework for all households. However, whereas for couples without children women’s share of work tended to decrease, in contrast, the rate at which women’s share of housework changed diverges for couples with children: a quick return to pre-pandemic levels of inequality for couples with young children opposed to an ongoing trend to a more gender egalitarian division of housework for couples

with older children. Table 2 shows the estimates of our FE regressions for the two specifications discussed above. Both models show similar effects. The further adjustment does little to change the observed tendencies, with coefficients slightly changed in size in the adjusted models, but not in direction. Couples with young children are more specialized than couples without children and with school-age children. Couples with younger children did see the largest changes towards more equity ($\exp(\beta_{4, Sep, child_{0-5yo}}) - 1 = -7.31\%$ with $CI: [-14.28; 0.22]$)

On the one hand, at first, the two treatment groups follow a similar dynamic, whereas the couples without children show basically no further change in the observation window. But by September 2020, couples with children between 0-5 years old were already tending towards the pre-lockdown levels ($\exp(\beta_{4, Sep, child_{0-5yo}}) - 1 = 1.52\%$ with $CI: [-5.8; 9.4]$), whereas couples with school-age children still sustained a trend towards more equity ($\exp(\beta_{4, Sep, school\ age}) - 1 = -4.22\%$ with $CI: [-10.96; 3.04]$).

The division of paid labor captured here by men's share of paid work, on the other hand, has a positive reinforcing effect on the gender division of labor, by far the largest effect. Although this association cannot be considered causal, the fact that the changes over time across groups are not affected by this adjustment suggest the dynamic of the share of housework are mostly a result of the life course and family structure and are not simply driven by labor market effects differently affecting men and women. This result further highlights the dependency between the family and work domains which jointly determine the gendered division of housework labor.

Table 2. Estimates of the FE regression, two specifications

Variables	Survey	Unadjusted			Adjusted		
		Coefficients	C.I.	P value	Coefficients	C.I.	P value
Division of paid labor (men's share)		-	-	-	0.161	[0.092 ; 0.23]	0.0000
With 0–5 years old child	2020-04	-0.076	[-0.154 ; 0.002]	0.0574	-0.078	[-0.156 ; 0]	0.0514
	2020-05	-0.05	[-0.135 ; 0.036]	0.2551	-0.044	[-0.128 ; 0.04]	0.3068
	2020-06	0.014	[-0.081 ; 0.108]	0.7774	0.019	[-0.075 ; 0.112]	0.6951
	2020-09	0.015	[-0.06 ; 0.09]	0.6937	0.011	[-0.065 ; 0.086]	0.7789
With 6–15 years old child	2020-04	-0.014	[-0.082 ; 0.053]	0.6806	-0.012	[-0.079 ; 0.054]	0.7156
	2020-05	0.028	[-0.044 ; 0.1]	0.4496	0.030	[-0.041 ; 0.102]	0.4036
	2020-06	0.026	[-0.047 ; 0.098]	0.4876	0.033	[-0.038 ; 0.104]	0.3626
	2020-09	-0.043	[-0.116 ; 0.03]	0.2475	-0.044	[-0.117 ; 0.029]	0.2383
Without children living at home	2020-04	-0.02	[-0.071 ; 0.031]	0.4416	-0.019	[-0.069 ; 0.032]	0.4670
	2020-05	-0.018	[-0.068 ; 0.032]	0.4782	-0.019	[-0.068 ; 0.03]	0.4466
	2020-06	-0.062	[-0.121 ; -0.003]	0.0416	-0.065	[-0.124 ; -0.006]	0.0310
	2020-09	-0.038	[-0.092 ; 0.017]	0.1785	-0.043	[-0.097 ; 0.012]	0.1244

Note: UKHLS and COVID-19 study. Own calculations. Unweighted results, undjusted and adjusted by the share of household paid labor done by men

Discussion

This study highlights that lockdown measures may have lasting consequences for some families, but not for others. Although the distribution of women's share of housework tends to slowly shift to the pre-lockdown levels over time, the shift is slower for couples with school-age children for which more equity in the household was more sustained than for couples with a child aged 0-5. How lockdown measures affect the gender division of housework at different stages of the pandemic depends on the presence of children and the life course stage of the family. The feared retraditionalization of women's role in family life under lockdown depends on the presence of small children in the household and the increase in developmental childcare tasks, and the division of paid labor. Smaller children are much less able to keep themselves busy and were not offered online alternatives to the same extent as school age children. These results are consistent with the stronger specialization of housework among new mothers (Harkness, Borkowska, & Pelikh, 2019), who are more likely to reduce their working hours than fathers.

Work hours likely are an important explanatory factor for the dynamic adjustment of household divisions of labor. Although the lockdown measures also affected working hours and destabilized the labor market, we cannot disentangle the relative importance of changes in family life and changes in work life for the trends in the gender division of labor that we observed during the pandemic. Couples had to make decisions about work and care, and mothers have tended to reduce work hours to take up the extra burden of care. For example, the Coronavirus Job Retention Scheme (CJRS) was effective in keeping both men and women on furlough and protecting their jobs (Harkness, 2021). Thus, post lockdown working hours or couple employment typologies are affected by the onset of the lockdown as well.

Our study highlights the need for a dynamic perspective on changes in family life during the pandemic, going beyond simple before and after comparisons. Our results should be interpreted in light of several limitations. Measurement error of self-reported housework hours is well-known. Although some studies suggest the bias can be important (Bryant, Kang, Zick, & Chan, 2004), others consider that stylized measures as dependent variables may not necessarily lead to wrong conclusions (Kan & Pudney, 2008). Other studies based on time-use cross-sectional data showed similar immediate effects of the lockdown (Andrew, Cattan, Costa Dias, et al., 2020), but these studies have not captured longer term dynamics. Further work could explore whether work and family demands, as well as extra housework, have led to a temporary or enduring decrease in the mental health of women with families (Xue & McMunn, 2021), as recent findings suggest the mental load of household labor falls largely on women (Daming, 2019) Further research should also examine the extent to which the extended family may have contributed to alleviate some of the care burden for couples with children, despite the government's recommendation of reduced social contact. Finally, cross-nationally comparative analyses offer important opportunities to assess country-specific lock-down measures and the generalizability of trends in the gender division of labor during the pandemic in different contexts.

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