

Gender Roles and Division of Housework: Do We Model Our Parents?

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1. Introduction

The assumption that people are endowed with fixed, exogenous preferences governing their economic behaviors is at the center of neoclassical choice theory. However, various branches of literature have demonstrated that preferences are shaped by and respond to many factors such as institutional environment, social and cultural norms, family influences, and exposure to opportunities and past experiences¹. Akerlof & Kranton (2015) proposes a theoretical model where individual's behavior is shaped by social norms and self-identity and thereby endogenizing preference formation to explain differences in outcomes between social groups. Gender norm is an example of such social norms and plays an important role in explaining many economic behaviors between men and women. These behaviors can range from which career to choose, how much to work and earn, and how to allocate time between working in the market and caring for a young child at home. Individual's beliefs about how they should behave or how others expect them to behave, which are shaped by social norms, dictate many of these economic behaviors. My study focuses on married couple's behavior in unpaid

¹For general discussions, see Bowles (1998) and Fehr and Hoff (2011)

care work² and the role of childhood socialization about gender roles in shaping their adult behavior in unpaid care work.

The time use data shows that division of unpaid care work and domestic work today are still highly divided along gender line even though women now participate in market work significantly more than they used to several decades ago. This is in contrast to Beckerian approach, which predicts that as women increase their ‘comparative advantage’ in market work, we would observe women and men doing more equal share of unpaid care work. Individual’s beliefs regarding gender roles at home can explain, to some extent, this persistent large gap in unpaid care work between men and women³. How do these beliefs and behaviors form and evolve? My study focuses on one channel: childhood socialization.

Bisin and Verder (2018) highlights three types of cultural transmission: a child learns cultural and social norms from their parent, from their peers, and from their broader social network. This paper considers the vertical transmission from parents to children as the channel to study childhood socialization. That is, how an individual is raised and how their parents as role models behaved during their childhood can have long-lasting effects on the individual. When it comes to transmission of gender norm and gender role attitudes from parents to children, psychologists have considered the following. Parents can directly reinforce appropriate behavior to the child based on the child’s gender in addition to being their role models especially to their same-sex child (Hyde and Rosenberg 1980; Williams 1977). By focusing on the latter, I focus on to what extent adult children model their parents’ behavior based on what type of parents’ observed behaviors they were exposed to during childhood. In addition, I focus on how adult children’s spouses are also associated with their parent-in-laws’ behavior, which can happen due to assortive mating (Bisin & Verder 2011) or the fact that

²Unpaid care and domestic work refers to all non-market, unpaid activities carried out in households – including both direct care of persons, such as children or elderly, and indirect care, such as cooking, cleaning or fetching water (OECD, 2014.)

³Although my study focuses on observed behavior such as how couples divide their housework hours and use the effects of clear gender line in the observed division of housework, I conduct an exercise on how explicit beliefs, not just behavior, about gender roles at home are associated with actual behavior in doing and allocating housework in Appendix A1. The results show that gender line along division of housework are associated with individual’s gender role attitudes.

individuals may induce their spouses to behave similar to their own parent (e.g. Fernandez 2004). To be specific, I focus on child’s exposure to three types of family behaviors: mother working, only mother providing unpaid care work (i.e. fathers unpaid care work hours are zero), and father providing equal or more share of the unpaid care work relative the mother. The construction of these variables are discussed in more details in Section 2.

To study the effects of these variables describing childhood socialization on the unpaid care work of adult children and their spouses, I use a novel data on housework hours of married couples collected since 1968 spanning over two generations of families⁴. This allows me to study the effects of childhood socialization on both the levels of housework hours of couples and the division of housework hours between couples. To do this, I employ two empirical strategies. I first study the dynamics of housework hours of married couples before and after their first child arrives. To analyze the effects of childhood socialization, I then examine the heterogeneity in the dynamics of housework hours based on the three variables describing one spouse’s childhood socialization. This allows us to analyze the effects of childhood socialization on the levels of housework hours of adult children and their spouses within a dynamic framework and around an event of having their first child. Second, I focus on the division of housework hours between adult children and their spouses by considering four different arrangements: wife only providing housework, wife doing majority of housework, wife and husband providing an equal amount of housework and husband providing majority or all of housework⁵. Using the categorical variable, I run a multinomial logit model to study the effects of childhood socialization on which arrangement adult children and their spouses demonstrate in dividing housework hours.

I find that the effects of having a first child on the housework hours of men and women

⁴The survey question on housework hours specifically asks “In the last week, how much time did you spend on cooking, doing laundry, maintaining the house etc.?”. The wording specifically excludes childcare and any other type of direct care work. I thus use housework hours as a proxy for unpaid care work.

⁵This categorization refers to four mutually exclusive bins of wife’s share of housework hours out of total (wife’s plus husband’s) housework hours. For example, wife only providing housework hours is equal to 1 if wife’s relative share of housework is 1 while husband providing majority of housework is equal to 4 if wife’s relative share of housework is less than 0.5. See Appendix A2. for the histogram of relative share of housework underlying the four categories.

are sizably different. Women spend upwards of 5 additional hours on housework hours all the way till 10 years after the first child with peristent statistical significance at the 5% level. On the other hand, men spend less than 2 additional hours on housework hours after having their first child and the statistical significance wanes after 2 years of having their child. The effects of husbands having working mothers during their middle childhood (ages 6 to 11) lowered the wife's housework hours by an average of 3.98 hours during post-motherhood to their first child. When the husband is exposed to only mother providing housework during his teenagehood (Ages 11 to 15), he decreases on average 2.48 hours during post-fatherhood to their first child. Father's involvement in housework hours and childhood socialization of the wife did not have significant effects when dynamic effects are averaged over post-parenthood periods. As for the division of housework, I find strong effects of only mother providing housework hours across childhood periods on the probability of adult daughters also providing all of the housework, less probabilities of adult daughters sharing equal amount of housework with the spouses and spouses providing more housework. The effects of mother doing all of the housework also persist in adult sons, especially from childhood socialization during pre-school period and middle childhood. Working mothers increase the probability of more non-traditional division of housework in adult children and their spouses such husbands providing equal or majority of the housework. Father's involvement did not have consistent significant effects on the division of housework.

My study contributes to two main strands of literature. The first strand relates to studying the role of gender norm and gender role attitudes in explaining female outcomes. The role of gender role attitudes on female labor force participation have been extensively studied (most notably, Fortin 2005, 2009 and Farre Vella 2013). As mentioned above, the role of gender role attitudes on unpaid care work is scant and this paper is the first attempt to use attitudes of both spouses on their own and spouse's unpaid care hours. As for gender norm and not explicit belief questions, Bertrand et al. (2015) shows that wife earning more than their husband increases her housework hours to conform to more traditional gender

norm. They subscribe the gender norm such that “women should not earn more than men” and show additionally that wife earning more than their husband on average lowers her market participation and is more likely to get divorced in the subsequent periods. Kleven et al. (2020) matches biological and adoptive mothers on a rich set of observables to investigate the difference in their long-term earnings after the arrival of their first child. The results show that mothers, whether biological or adoptive, present the same 18 percent drop in long-term earnings, compared to men with similar earnings potential in the year of first child arrival. They conclude that though giving birth has short-term (biological) effects on work interruption and health condition of mothers, having and raising children explain the long-term gender inequality in earnings, and point to the possibility of gender norm shaping the gendered division of housework over long term. In addition, the gendered division of unpaid care work are more prevalent in different-sex households as studies have shown more egalitarian division in same-sex households (Andresen & Nix 2019; Martell & Roncolato 2020), again pointing to the potential explanatory power of gender norm on division of unpaid care work. To complement these studies, I use both explicit belief questions and gender norm transmitted intergenerationally to explain the gendered division of unpaid care work.

The second strand of literature have examined the intergenerational transmission of gender norm and gender role attitudes to explain gender inequality. While some studies have used survey questionnaire on explicit gender role beliefs of parents and find that parents’ less traditional beliefs are associated with more egalitarian outcomes for their sons and daughters in adulthood (Fernandez et al., 2004; Farre and Vella, 2007), others have examined the effect of mothers’ employment on their daughters’ employment (Olivetti et al., 2013) or on their sons’ and daughter-in-laws’ employment (Fernandez et al. 2004). Economic studies that look at the division of labor between parents in market work and housework, and link those to the children’s division of unpaid care work with their spouses are rare. There are, however, a literature in psychology that show that parents’ division of housework predicted children’s later participation in household tasks in their own marriages (Marks, Bun & Mc Hale 2009).

Moreover, Croft et al. (2014) finds that fathers who enacted more egalitarian distribution of household labor, the daughters in particular aspired for less stereotypical occupations. This shows that not only mother’s employment affects their daughters’ preference to work later in their adulthood but also the division of unpaid care between mothers and fathers, especially father’s involvement in housework, might have an effect on daughter’s egalitarian views and household decisions in adulthood. My study complements these studies by using novel panel data on housework hours and studying the effects of childhood socialization on both adult children and their spouses.

The paper is organized as follows. Section 2 discusses the data used for the study. Section 3 presents the empirical strategy and the results regarding the effects of childhood socialization on the levels of housework hours while Section 4 regarding the effects on the division of housework hours. Section 5 concludes.

2. Data

The study uses the nationally representative 2,930 families selected in 1968 as part of the Panel Study of Income Dynamics (PSID). Beginning in 1968, the study followed all ‘sample persons’ living in those families plus those who were subsequently born to or adopted by them. Additionally, the study follows those who split off from the original families to establish their own family units, allowing for a unique framework covering multi-generations of families over the last five decades.

To study the parents’ behavior when children are young and then the children when they are adults, I start with cohorts of 3,549 newborns that are born to or adopted by the original families between 1969 and 1988. I use all 51 waves of the study that are collected annually between 1969 and 1996, and biannually between 1997 and 2019. When followed successfully through 2019, the first cohort of newborns in 1969 are as old as 51 years old while the last cohort of newborns in 1988 are as old as 32 years old. I use the following

process to construct my sample of analysis. Out of 3,549 children, 2,511 children left their parents' home to establish their own family units or were followed until they are observed as heads of households. I further drop 412 individuals who were never married since my study focuses on married couples. Out of the remaining children, 1,274 children had first 15 years of childhood with nonmissing observation describing parents' behaviors in market work and housework. The final sample with nonmissing observations on any of the covariates, listed in Table 1, consists of 1,270 children with 7,068 person-wave observations⁶.

Table 1 provides the descriptive statistics on the children's characteristics. Daughters have slightly more total number of children, as compared to sons, mostly related to being younger when they first get married and subsequently have children. Women spend at least as twice much time on housework hours than men do with the gap larger for daughter's sample than the sons's sample. Women also work in the market two third of what men work even though women are significantly more likely to have at least some college education. Men earn twice as women and more likely to be employed than women. Daughters are more likely to be employed, college educated than daughter-in-laws while sons are more likely to be college educated and earn substantially more than son-in-laws. In terms of division of housework, at least 60% of the couples show women doing majority of the housework with more daughters reporting they only do housework compared to daughter-in-laws. Son's families are likely to do more equal share of housework and sons do majority of the housework than son-in-laws do. The housework hours are the answers to the question on how many hours a week a respondent and their partner spends "cooking, cleaning, doing laundry and maintaining household" since 1968 (with exceptions in 1972 and 1985).

Table 2 reports the descriptive statistics on the parents' information. I construct three main variables describing mother's market work and time use in housework and father's involvement in unpaid care work. For example, 51% of mothers had a job for pay more than

⁶The waves span from year 1987 to year 2019 with two years in increments as, where necessary, the observations during even years before 1997 were absorbed into the observations of the subsequent odd year or dropped otherwise.

Table 1: Child Estimation Sample

| | (1) All | (2) Daughters | (3) Sons |
|--------------------------------------|-----------------|------------------|---------------|
| Age | 32.4 | 32 | 33 |
| Spouse's age | - | 34 | 32 |
| Total number of kids | 2.07 | 2.08 | 1.9 |
| Age at marriage | 26 | 25.6 | 26.8 |
| Age at first child | 28.6 | 27.8 | 29.4 |
| Housework hours (husband) | 7 | 6 | 8 |
| Housework hours (wife) | 16 | 16 | 16 |
| Market hours (husband) | 2,175 | 2,169 | 2,182 |
| Market hours (wife) | 1,443 | 1,478 | 1,407 |
| Working (husband) | 0.97 | 0.97 | 0.97 |
| Working (wife) | 0.85 | 0.86 | 0.84 |
| % at least some college (husband) | 70% | 69% | 71% |
| % at least some college (wife) | 77% | 79% | 75% |
| Income (husband) | 59,523 | 57,042 | 62,080 |
| Income (wife) | 32,026 | 32,847 | 31,179 |
| % wife only does housework | 6% | 7% | 4% |
| % wife does majority of housework | 67% | 71% | 62% |
| % both do equal housework | 17% | 14% | 21% |
| % husband does majority of housework | 11% | 8% | 13% |
| Observations | 1,270 N=7068 | 631 N=3588 | 639 N=3480 |

50% of the time during the the child was less than 6 years old. The number of working mothers increase significantly as the child grows older. Moreover, 10% of mothers were observed as the only person who did housework (i.e. father's housework hours were zero) majority of the time when the child was 11-15 years old. Lastly, 20% of fathers were observed as doing equal or more housework than mothers at least once when the child was 6-10 years old. More sons tend to have working mothers and mothers who are the only ones doing housework. On the other hand, daughters are slightly more likely to have more involved fathers than sons.

Table 2: Parent Characteristics

| | (1) All | (2) Daughters | (3) Sons |
|--|------------|------------------|-------------|
| % at least some college (mother) | 42% | 42% | 42% |
| % at least some college (father) | 54% | 54% | 53% |
| Total number of siblings | 2.9 | 2.9 | 2.9 |
| Mother worked majority of the time during: | | | |
| <i>1-5 years old</i> | 51% | 51% | 52% |
| <i>6-10 years old</i> | 65% | 64% | 65% |
| <i>11-15 years old</i> | 79% | 77.5% | 80% |
| Only mother did housework majority of the time during: | | | |
| <i>1-5 years old</i> | 15% | 14% | 16% |
| <i>6-10 years old</i> | 11% | 10% | 12% |
| <i>11-15 years old</i> | 10% | 10% | 10% |
| Father did equal or more housework at least once during: | | | |
| <i>1-5 years old</i> | 18% | 19% | 18% |
| <i>6-10 years old</i> | 20% | 21% | 19% |
| <i>11-15 years old</i> | 26% | 26% | 26% |
| Total log income during 1-15 years old | 136 | 137 | 136 |
| Standard deviation of log income during 1-15 years old | 0.63 | 0.61 | 0.65 |
| Observations | 1,270 | 631 | 639 |
| | N=7068 | N=3588 | N=3480 |

3. Do Childhood Socialization Affect Housework Hours in Adulthood?

3.1. Event-Study Specifications

To study the effect of childhood socialization on adult child and their spouse's housework hours, we need to first estimate how the full dynamics of unpaid care work respond to the arrival of children. Particularly, I study the dynamics of housework hours 4 years before the arrival of first child and 10 years beyond the arrival of first child. Following the event-study specification proposed by Kleven, Landais and Søgaard (2019), for each adult child and spouse in the data, event time t is indexed relative to the year of the first child birth. I run the following regression separately for husband and wife:

$$Y_{ist}^g = \alpha^g D_{ist}^{Event} + \beta^g D_{ist}^{Age} + \gamma^g D_{ist}^{Year} + \nu_{ist}^g \quad (1)$$

where Y_{ist}^g denotes the weekly housework hours for individual i of family type $g = \{\text{adult daughter's family, adult son's family}\}$ in year s and at event time t . Since the years are biannual in the PSID, $t = \{-4, -2, 0, 2, 4, 6, 8, 10\}$ with event of first child arriving at $t = 0$. The first term includes event-time dummies D_{ist}^{Event} and the reference group is $t = -2$, which means the event-time coefficients α^g measure the impact of first child relative to two years before the first child. The next terms includes age dummies D_{ist}^{Age} and year dummies D_{ist}^{Year} to control for life-cycle and time trends, respectively. This is to assume that, conditional on age and year, the variation in age at which individuals have their first child causes variation in even time.

Let us study the dynamics of housework hours given the arrival of first child based on heterogeneity along dimension related to adult child's parents' behavior. To do this, we fully interact the event-study dummies, the age and time fixed effects with the dummy variable $Z = \{0, 1\}$ where it consists of all dummy variables describing parents' market and housework

behaviors in Table 2. We run the following regression to study the heterogeneity of childhood upbringing on the dynamics of housework hours when a first child arrives:

$$Y_{ist}^g = \alpha^g D_{ist}^{Event} + \beta^g D_{ist}^{Age} + \gamma^g D_{ist}^{Year} + Z_i \cdot [\alpha^g D_{ist}^{Event} + \beta^g D_{ist}^{Age} + \gamma^g D_{ist}^{Year}] + Z_i + \epsilon_{ist}^g \quad (2)$$

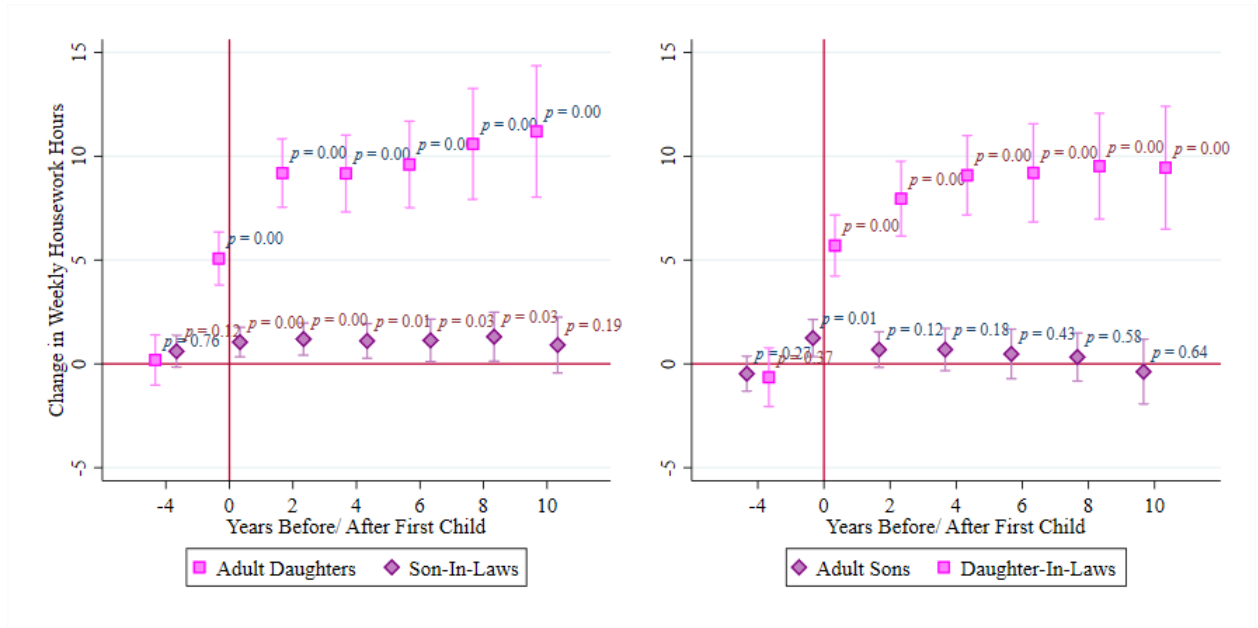
This equation is based on our main specification in (1) but fully interacts the variables of our interest into the event-study, age and time fixed effects dummies.

3.2. Results

Figure 1 reports the coefficients in front of the event dummies for families of adult daughters and adult sons separately. As shown, we can see the dynamic trajectory of housework hours of adult children and their spouses once their first child arrives at time $t = 0$. For women, the housework hours significantly increase compared to the reference point of time $t = -2$; however, for sons, the immediate effects is significant and positive but small in magnitude and the significance does not persist over the long-term. Specifically, I find that the effects of having a first child on the housework hours of men and women are sizably different. Women spend upwards of 5 additional hours on housework hours in first period after having their child and then close to 10 and more additional hours in housework hours starting 4 years after the first child to 10 years after. The effects are statistical significant at the 1% and 5% levels. On the other hand, men spend less than 2 additional hours on housework hours 2 and 4 years after having their first child at the statistic significant of 1%. The small increase in housework hours phase out beyond first 4 years of having their first child.

Figure 2 reports the heterogeneity in the dynamics of housework hours based on husband's childhood socialization. That is, the heterogeneous effects of childhood socialization on adult sons and their spouses are considered. Figure 3, on the other hand, presents the heterogeneity in the dynamics of housework hours based on wife's childhood socialization, which means the estimates refer to the adult daughters and their spouses. The estimates are

Figure 1: The Arrival of First Child

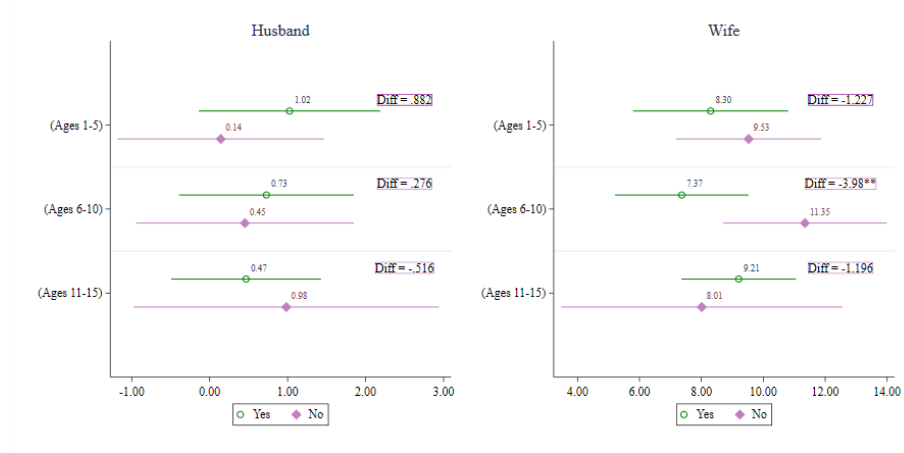


Notes: The sample includes the families of adult sons and adult daughters that were born to the original PSID core sample between 1969 and 1988. The selection criteria for the sample requires that the adult child is followed through their adulthood, formed their own household and married. The figures report the coefficients of the event dummies in the event-study specifications. All coefficients are relative to the event period $t = -2$, which is two years before the event of first child. The event of having a first child happens at $t=0$. The event-study specification controls for age-in-years and calendar-year fixed effects. Standard errors are clustered at the household level.

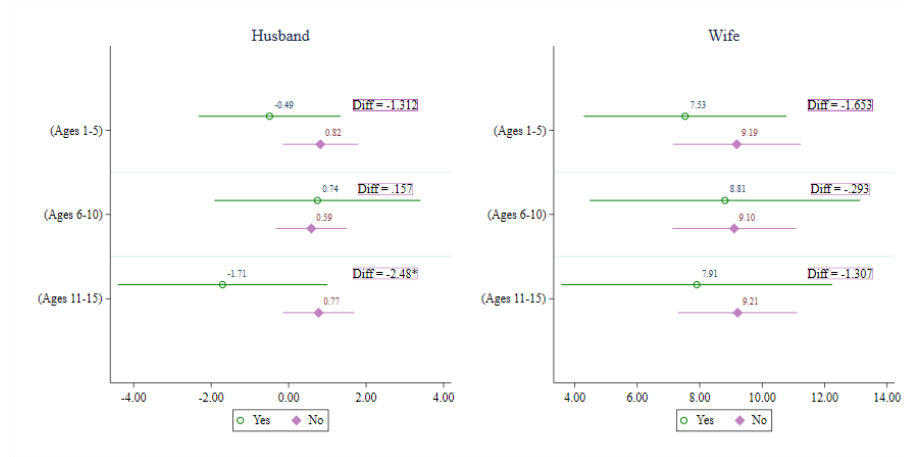
from the event-study regression specified in Equation 2 with heterogeneous effects. To avoid clutter, I average the post-event non-interacted and interacted coefficients and plot them separately across three childhood socialization variables and childhood periods. Estimates corresponding to “No” are from a t-test of the post-event averages of the non-interacted event-study coefficients. The “Diff” values listed to the right of each series of estimates are the averages of the interacted post-event event-study coefficients, and the estimates corresponding to “Yes” are the sum of “No” and “Diff”. Panel (a) refers to the effects of working mothers, (b) refers to the effects of mother doing all of the housework and (c) refers to the effects of father doing equal or more of the housework. Exposure to these childhood socialization are disaggregated by which childhood period being considered: when the child was less than 5, between 6 and 10, and between 11 and 15.

As for the estimation sample of adult sons and their spouses, the effects of husbands having working mothers during their middle childhood (ages 6 to 11) lowered the wife’s housework hours by an average of 3.98 hours during post-motherhood to their first child. When the adult son is exposed to only mother providing housework during his teenagehood (ages 11 to 15), he decreases on average 2.48 hours during post-fatherhood to their first child. Father’s involvement in housework hours did not have significant effects when averaged over post-event periods. As shown in Figure 3, the estimation sample of adult daughters and their spouses did not show significance on averaged coefficients over post-event periods. This does not, however, rule out the cases where adult daughters and their spouses were significantly affected by the wife’s childhood socialization but not in a consistent manner, which explains the muted effects in the averaged coefficients of the post-event periods.

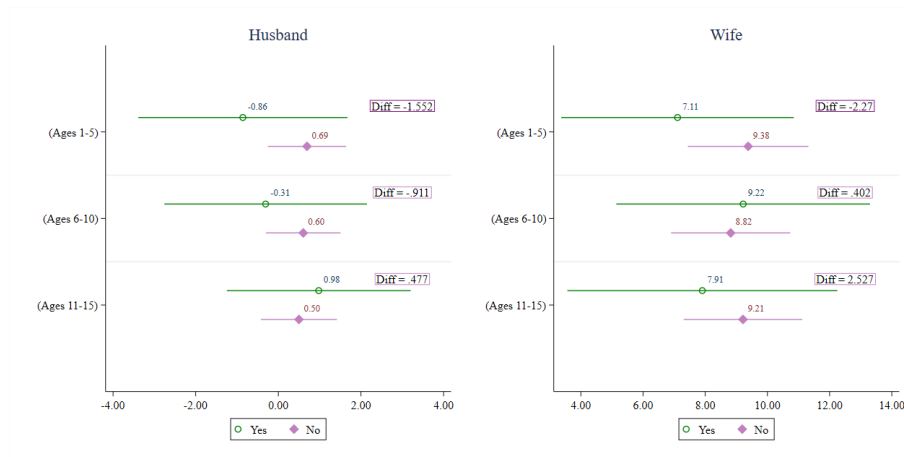
Figure 2: The Heterogenous Effects of Childhood Socialization: Families of Adult Sons



(a) Husband's Mother Worked



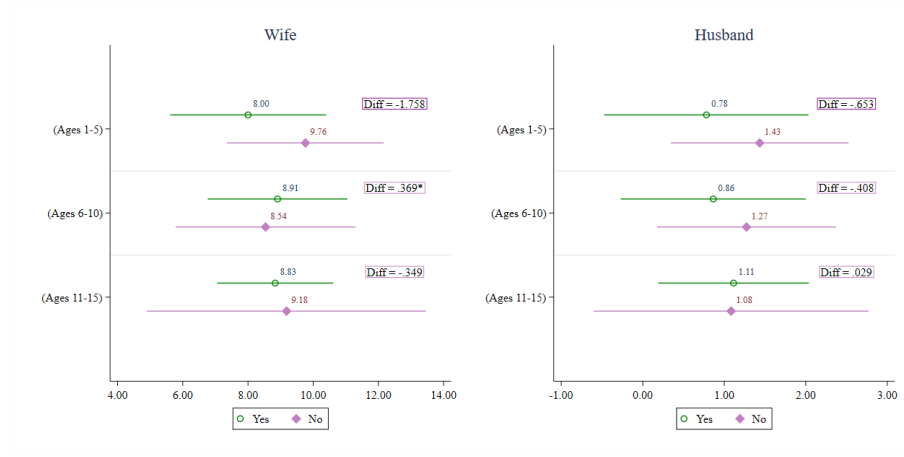
(b) Husband's Mother Only Housework



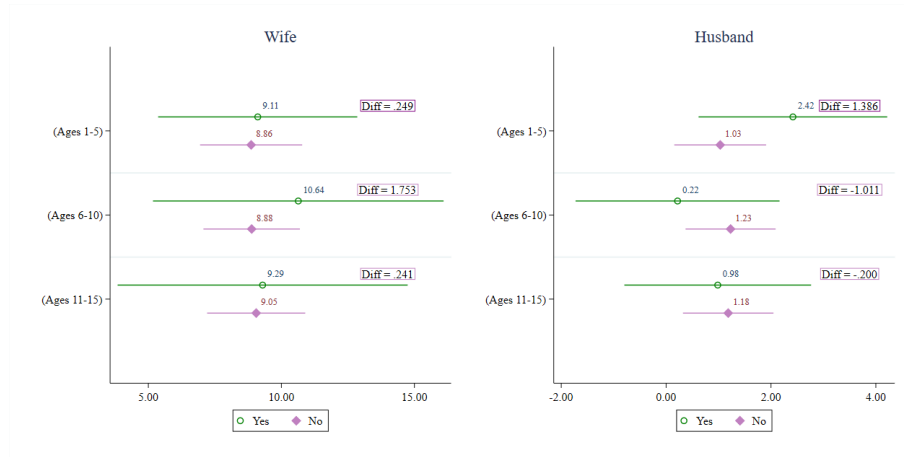
(c) Husband's Father Did Equal or More

Notes: Estimates corresponding to "No" are from a t-test of the post-event averages of the non-interacted event-study coefficients in Equation 2. The "Diff" values listed to the right of each series of estimates are the averages of the interacted post-event event-study coefficients, and the estimates corresponding to "Yes" are the sum of "No" and "Diff". Standard errors are clustered at the household level.

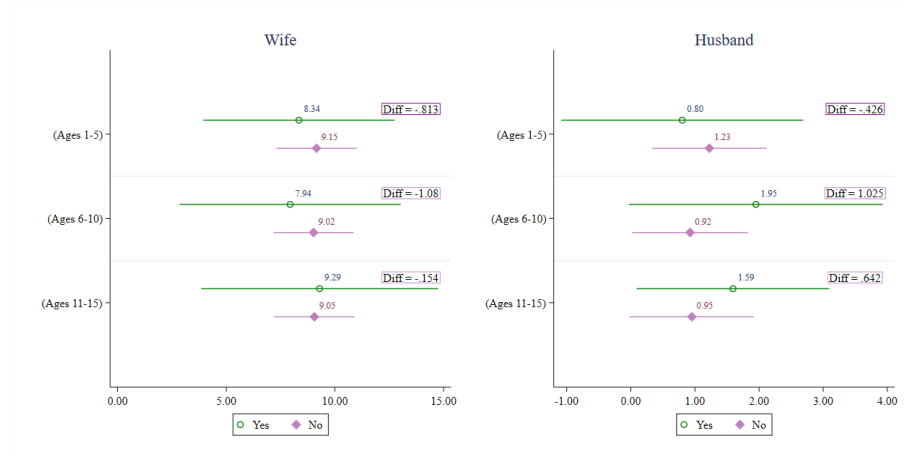
Figure 3: The Heterogenous Effects of Childhood Socialization: Families of Adult Daughters



(a) Wife's Mother Worked



(b) Wife's Mother Only Housework



(c) Wife's Father Did Equal or More

Notes: Estimates corresponding to "No" are from a t-test of the post-event averages of the non-interacted event-study coefficients in Equation 2. The "Diff" values listed to the right of each series of estimates are the averages of the interacted post-event event-study coefficients, and the estimates corresponding to "Yes" are the sum of "No" and "Diff". Standard errors are clustered at the household level.

4. Do Childhood Socialization Affect the Division of Housework in Adulthood?

4.1. Multinomial Logit Model

Based on the categorical variable describing the division of housework of married couples (details in Section 2), I run the following multinomial logistic regression model where the reference category is $Y_{it}^g = 2$, which means all other coefficients are interpreted based on the most common category of women doing majority of the housework:

$$\ln \frac{P(Y_{tj}^g = m)}{P(Y_{tj}^g = 2)} = \alpha_{mj}^g + \sum_{k=1}^K \beta_{mj}^g X_{tjk}^g + \gamma_{mj}^g Z_j^g \quad (3)$$

where $m = \{1, 2, 3, 4\}$ refers to the categories and $P(Y_{tj}^g = m)$ refers to the probability that the family g with parent variable j is m in time t . α_{mj}^g is the fixed effect of category m of family g and X_{tjk}^g includes k controls describing household characteristics of family g with childhood socialization j and Z_j^g refers to the childhood socialization described in Table 1. The probability of husband and wife doing equal amount of housework is given as follows.

$$P(Y_{it}^g = 4) = \frac{\exp(W_{4it})}{1 + \sum_{j=1}^3 \exp(W_{ji})} \quad (4)$$

4.2. Results

This section reports the results from the multinomial logistic regression described in equation (3). Table 3 reports the results of logistic regressions with each row representing a separate regression with the corresponding Z_j^g variable for family type g . First three columns refer to adult daughter's family and the last three columns refer to adult son's family, which are represented by g . I discuss the results in order of the three variables describing childhood socialization (Z_j^g).

The Effect of Working Mothers. Working mothers have strong and significant effects

on the division of housework between adult sons and daughter-in-laws. If husband had a working mother during his pre-school ages, he is more likely to do majority of the housework relative to their wives with a log likelihood .482. This effect persists across other childhood periods such as having working mother during middle childhood and teenagehood. In addition, having working mothers during middle childhood and teenagehood increases adult's sons log likelihood of sharing an equal amount of housework with their wives .263 and .208, respectively. Similarly, wife having working mothers during preschool lowers the likely that she is the only one providing housework. Moreover, having working mother during middle childhood increases the adult daughter's probability of sharing equal amount of housework with their husband, in addition to increasing the likelihood that her husband does more housework than her.

The Effect of Only Mother Doing Housework. The strongest effect I find are the coefficients corresponding to mother only doing housework and how they affect the log likelihood of daughter's different arrangements in division of housework with their husbands. Adult daughter having a mother providing all of the housework lowers the log-likelihood of having her husband do more housework by 1.11 to .749 depending on the childhood period. The negative effect also applies to the case where the adult daughter and her husband share equal amount of housework. On the other hand, adult daughter having a mother who did all of the housework increases the daughter's likelihood of doing the same as her mother by .497 to 1.22 in log-likelihood. As for adult sons, having a mother who did all of the housework during his pre-school years increased his likelihood of sharing housework equally with his wife and lowered his likelihood of doing more housework.

The Effect of Father Doing Equal Amount of Housework. Variables describing father doing equal amount of housework or more housework increase likelihood of adult son providing equal amount of housework or more housework than their wife. Unexpectedly, father providing equal or more housework during middle childhood increases the likelihood of daughters doing all of the housework.

Table 3: The Effects of Parents' Behavior on the Division of Housework

| | Sons and Daughter-In-Laws | | | Daughters and Son-In-Laws | | |
|-----------------------|---------------------------|-------------------|-------------------------|---------------------------|-------------------|-------------------------|
| | (1) Wife Only | (2) Both Equal | (3) Husband Majority | (1) Wife Only | (2) Both Equal | (3) Husband Majority |
| Working Mothers 1-5 | -.093 (.19) | .136 (.095) | .482*** (.115) | -.321** (.155) | -.0448 (.113) | -.057 (.14) |
| Working Mothers 6-10 | -.140 (.19) | .263** (.101) | .33** (.122) | .187 (.151) | .039 (.112) | .307** (.147) |
| Working Mothers 11-15 | -.562** (.204) | .208** (.124) | .26** (.148) | .36 (.183) | .266** (.13) | .332** (.165) |
| Mother Only 1-5 | .097 (.238) | -.478** (.136) | -.784*** (.179) | 1.22** (.181) | -.292** (.172) | -1.11*** (.258) |
| Mother Only 6-10 | .061 (.240) | -.236 (.151) | -.119 (.180) | .921** (.180) | -.318 (.194) | -1.19** (.311) |
| Mother Only 11-15 | -.414 (.277) | -.241 (.154) | -.299 (.188) | .497*** (.194) | -.39* (.192) | -.749** (.259) |
| Father Equal 1-5 | .160 (.275) | .287** (.124) | -.005 (.156) | -.233 (.207) | .416** (.128) | .188 (.171) |
| Father Equal 6-10 | -.296 (.291) | .154 (.124) | .348** (.141) | .391** (.177) | .0604 (.133) | .002 (.180) |
| Father Equal 11-15 | .62** (.204) | .129 (.111) | .154 (.133) | -.082 (.165) | .024 (.122) | .052 (.158) |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Birth year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | N=3,435 | N=3,435 | N=3,435 | N=3,538 | N=3,538 | N=3,538 |

* p < 0.05, ** p < 0.01, *** p < 0.001

5. Conclusion

This study examined a channel where parents can socialize their children and how the socialization can persist in attitudes and behaviors of children through adulthood. Working mothers or having fathers that are more involved in housework translate to similar division of housework between adult children and their spouses. Additionally, the intergenerational effects also show up on the levels of housework hours of adult children and their spouses.

This study has several important caveats. First, the sample size is small due to the fact that I use longest standing data over the individual's life cycle. More robustness check is needed to ensure less severity of sampling and attrition bias. Second, though event-study approach can be used to identify causal effects, this study is far from providing causal inference. Instrumental variable is often preferred to get exogenous variation in childhood socialization. Third, more variations in constructing the variables regarding childhood socialization, especially the one describing father's involvement. The variable does not appear

to consistently capture what is intended in the analysis.

Appendix

A1. Division of housework as a crude proxy for gender norm and gender role attitudes

This section presents an exercise to show the relationship between housework hours of married couples and their corresponding subjective beliefs about gender roles in the family, attitudes towards working mothers and father's involvement. For this exercise, I use 563 families from the Child Development Studies conducted in 1997 as part of the PSID. The data collection included nationally representative 1,583 primary caregivers who had at least one 0-12 year old children in their households. Table 4 describes the list of explicit belief questions relating to family/ gender roles, working mothers and father's involvement in unpaid care work in addition to questions regarding the regularity of conflict over household duties and childcare. Using the list of questions, I create 4 composite indices that describe each question listed under each panel in Table 4. The answers to the list of questions for the first three indices are 4 for 'Strongly Disagree', 3 for 'Disagree', 2 for 'Agree' and '1' for Strongly Agree. Depending on the wording of the questions, some answers were flipped to represent higher score for each question represents more egalitarian view towards gender roles. Following Farre and Vella (2013), the indices are composed such that you sum up the values across all questions belonging to each index. In our case, Gender Role Attitudes index range from 7 to 28 whereas Working Mothers index and Father's Involvement index range from 4 to 16. Again, higher values in indices represent more egalitarian views held by the individuals.

After running an ordinary least squares regression with wife's weekly housework hours as the dependent variable and each indices separately, the correlation of each indices are shown in Panel A of Table 5. Wife's more egalitarian attitudes towards gender roles in the household and working mothers are associated with own lower housework hours. This is expected as more egalitarian views can impact many unobservables such as educational attainment, career choices and number of children she has. However, more egalitarian attitudes of the

Table 4: Distribution of Family Role Attitudes for Married Couples in the PSID CDS (1997)

| | Wife | Husband |
|--|-------|---------|
| A. Gender Role Attitudes (high score = more egalitarian attitudes) | | |
| 1 Most of the important decisions in the life of the family should be made by the man of the house | 0.84 | 0.74 |
| 2 Women are much happier if they stay at home and take care of their children | 0.73 | 0.68 |
| 3 There is some work that is men's and some that is women's and they should not be doing each other's | 0.85 | 0.75 |
| 4 It is much better for everyone if the man earns the main living and the woman takes care of the home and family | 0.69 | 0.69 |
| 5 It is more important for a wife to help her husband's career than to have one herself | 0.88 | 0.88 |
| 6 If a husband and a wife both work full-time, they should share household tasks equally | 0.96 | 0.93 |
| 7 Parents should encourage just as much independence in their daughters as in their sons | 0.96 | 0.94 |
| Index (four-point scale) | 22.1 | 20.93 |
| B. Attitudes Towards Working Women (high score=more egalitarian attitudes) | | |
| 1 An employed mother can establish as warm and secure a relationship with her children as a mother who is not employed | 0.81 | 0.73 |
| 2 Preschool children are likely to suffer if their mother is employed | 0.73 | 0.69 |
| 3 Mothers should not work full time if their child is younger than 5 years old | 0.61 | 0.58 |
| 4 It is fine for children under 3 years of age to be cared for all day in a daycare center or daycare home | 0.48 | 0.41 |
| Index (four-point scale) | 8.76 | 8.39 |
| C. Father's Involvement in Parenthood (high score= more egalitarian attitudes) | | |
| 1 A father should be as heavily involved in the care of his child as the mother | 0.93 | 0.93 |
| 2 Fathers are able to enjoy children more when the children are older | 0.76 | 0.72 |
| 3 If it keeps him from getting ahead in his job, a father is being too involved with his children | 0.93 | 0.92 |
| 4 In general, fathers and mothers are equally good at meeting their children's needs | 0.87 | 0.87 |
| Index (four-point scale) | 12.72 | 12.46 |
| D. Conflict Over Division of Unpaid Care Work (high score=less conflict) | | |
| 1 How often disagree about... (His/Her) completion of household chores/duties? | 0.55 | 0.6 |
| 2 How often disagree about...The amount of time (he/she) spends with children? | 0.76 | 0.87 |
| Index (four-point scale) | 5.7 | 6.11 |
| Observations | N=563 | N=563 |

Table 5: Relationship between Wife's Gender Role Attitudes and Housework Hours

| | | | | | |
|---|---------------------|------|--------------------|-------------------------|-----------------------|
| <i>Panel A. Own Housework Hours</i> | | | | | |
| | Family Attitudes | Role | Working Mothers | Father's Involvement | Household Conflict |
| | -0.448* | | -1.130*** | -0.539 | 0.675 |
| | (-2.13) | | (-3.59) | (-1.40) | (1.49) |
| Controls | yes | | yes | yes | yes |
| N | 737 | | 737 | 737 | 728 |
| <i>Panel B. Husband's Housework Hours</i> | | | | | |
| | Family Attitudes | Role | Working Mothers | Father's Involvement | Household Conflict |
| | 0.663 | | 0.415 | 0.35 | 0.0067 |
| | (1.18) | | (1.03) | (0.52) | (0.02) |
| Controls | yes | | yes | yes | yes |
| N | 566 | | 566 | 566 | 566 |

* p < 0.05, ** p < 0.01, *** p < 0.001

Table 6: Relationship between Husband's Gender Role Attitudes and Housework Hours

| | | | | | | |
|--|---------------------|------|-------------------------|----------------------|-----|-----------------------|
| <i>Panel A. Own Housework Hours</i> | | | | | | |
| | Family Attitudes | Role | Working Moth- ers | Father's vovement | In- | Household Conflict |
| | 0.203* | | 0.130 | 0.336* | | -0.398 |
| | (2.53) | | (1.01) | (2.07) | | (-1.74) |
| Controls | yes | | yes | yes | | yes |
| N | 566 | | 566 | 566 | | 566 |
| <i>Panel B. Wife's Housework Hours</i> | | | | | | |
| | Family Attitudes | Role | Working Moth- ers | Father's vovement | In- | Household Conflict |
| | -0.45* | | -0.932** | -0.178 | | 1.118* |
| | (-2.48) | | (-2.92) | (-0.43) | | (2.48) |
| Controls | yes | | yes | yes | | yes |
| N | 566 | | 566 | 566 | | 566 |

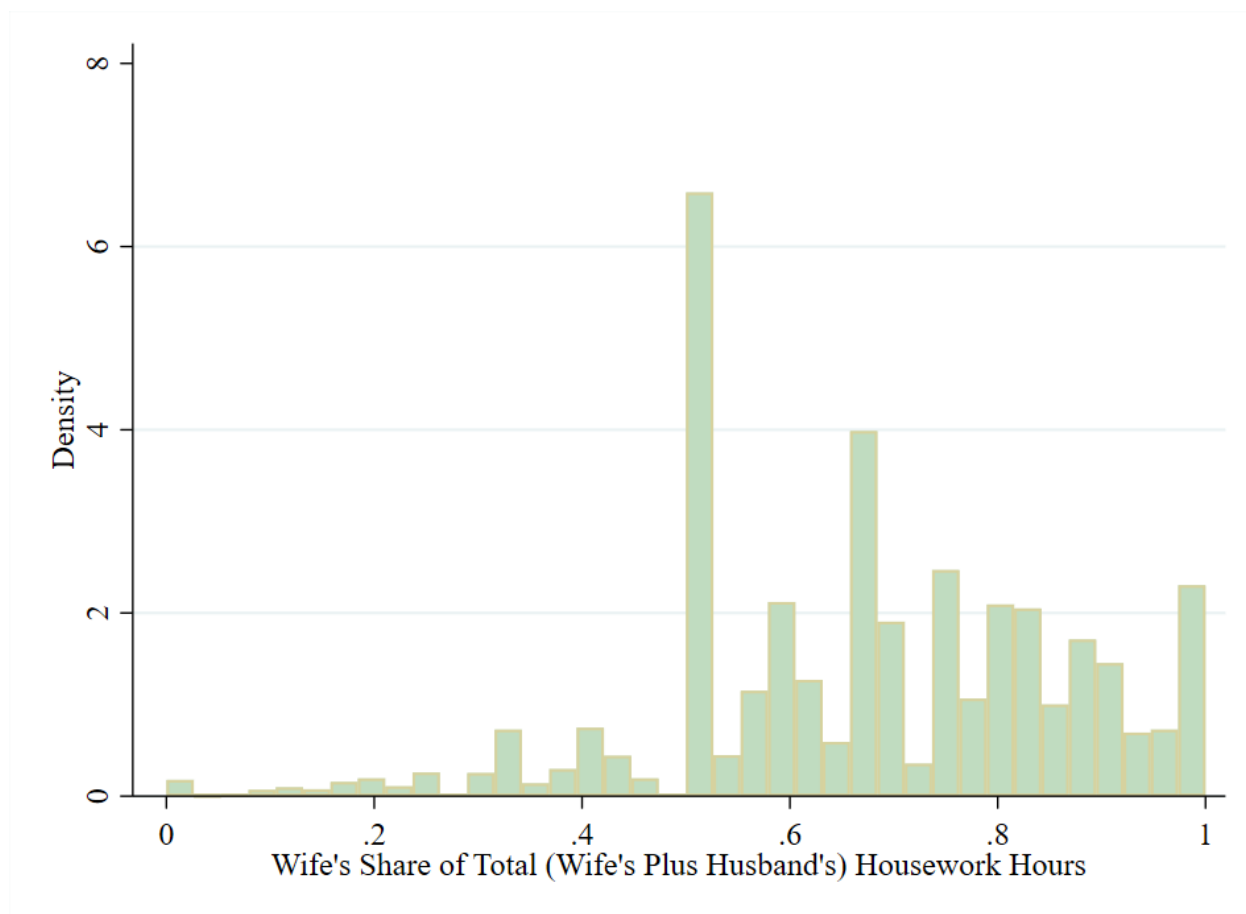
* p < 0.05, ** p < 0.01, *** p < 0.001

wife does not seem to have negotiation effects such that they would be associated with higher hours for the husband, as the associations are not significant in Panel B.

As for the husband's explicit beliefs, same analyses are conducted but with husband's variables and are shown in Table 6. Husband's more egalitarian attitudes towards father's involvement increased his own housework hours. The spousal effect of the husband's explicit beliefs are stronger such that husband's more egalitarian views about family roles and working mothers are associated with lower housework hours for the wife. Husband perceiving more conflict over household duties are associated with wife's higher housework hours. These results complement the analyses that women's or their parent's more egalitarian gender role attitudes affect positively female labor force patriation. My results show that not only women's more egalitarian gender role attitudes are associated with her lower housework hours but also their husband's more egalitarian gender role attitudes, in addition to increasing their own hours, are negatively associated with her housework hours.

A2. Histogram of Wife's Relative Share of Housework

Figure 4: The Histogram of Wife's Relative Share of Housework, Estimation Sample (N=7,068)



Notes: The sample includes the families of adult sons and adult daughters that were born to the original PSID core sample between 1969 and 1988. The selection criteria for the sample requires that the adult child is followed through their adulthood, formed their own household and married. Wife's share of housework is calculated as wife's housework hours over the sum of wife's and husband's housework hours.

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