

Trends in Fathers' Contribution to Housework and Childcare under Different Welfare Policy Regimes

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This article brings up to date welfare regime differences in the time fathers spend on childcare and core housework, using Multinational Time Use Study data (1971–2010) from fifteen countries. Although Nordic fathers continue to set the bar, the results provide some support for the idea of a catch-up in core housework among Southern regime fathers. The results also suggest an increasing polarization in Liberal countries, whereby fathers who were meaningfully involved in family life were increasingly likely to spend more time doing core housework and, particularly, childcare. Fathers living in Corporatist countries have been least responsive to change.

Introduction

In this article, we focus on trends in fathers' contributions to housework and childcare, with an emphasis on the differences in such trends by welfare policy regime type. The empirical focus on fathers' family work contributes to an agenda that seeks to bring the recognition of men's care work into the gendered analysis of welfare state policies (Orloff 2009; Shaver 2002; Sullivan et al. 2009). The way in which fathers contribute to domestic work and caring is important for families, and for policies directed at families, in two, related, ways. Firstly, fathers' time investments in caring for children have been shown to positively affect child outcomes. Through their daily activities and interactions with children, fathers directly affect children's psychological wellbeing and cognitive development (Lamb 2010). Secondly, men's contribution to domestic work is a long-standing topic of interest in relation to issues of gender equality in the division of labor. Involved fathers provide emotional and instrumental support to mothers, which also benefits children indirectly (Bornstein 2002; Lamb 2010). Fathers' contributions to routine domestic work and care have also been shown to be an important factor in

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enabling women to sustain their own employment trajectories (Langer 2015; Seiz 2014).

Research from the 1990s and the first decade of the twenty-first century found systematic variation in men's contributions to domestic labor according to welfare policy contexts (for recent research, see e.g. Prince Cooke and Baxter 2010; Craig and Mullan 2010; Davis and Greenstein 2004; Esping-Andersen 2009; Hook 2010; Kan, Sullivan, and Gershuny 2011). This body of research suggested that men in Scandinavian countries contributed more to the domestic economy than others, in particular men from southern Europe. The contributions of men from Liberal (Anglophone) countries and the Corporatist countries of continental Europe fell somewhere in between. Interpretations of these institutional differences in men's contributions to domestic labor have focussed on two related causes. Firstly, the direct effects of policies that act in support of these different models of welfare—in particular, in respect of parental leave policies (Kamerman and Moss 2009); secondly, differences in the gendered institutions governing the division of employment and care, reflecting different normative models of the gender division of labor.

Much recent research has focussed on multilevel models, aiming to distinguish policy effects at the institutional level from individual effects such as couples' relative resources. However, relatively little cross-national comparative analysis to date has also focused on long-term trends in men's contributions to family life. By analyzing not only differences but also trends, we investigate whether we can identify *changing differences* (Sullivan 2010) in fathers' childcare and core housework between clusters of countries identified according to their welfare policies. For example, we are interested in whether we can identify any evidence for a "catch-up" effect in the participation of fathers of young children in the most gender-traditional cluster of countries. Alternatively, if we can identify different trends in core housework and childcare across different regimes this may shed light on existing interpretations of why men's involvement in childcare, for example, is increasing more rapidly than their contributions to housework.

We have three main aims. Firstly, we assess forty-year trends in the time fathers spend on both housework and childcare across welfare policy regimes. In this way, we link the time use literature on historical trends with multi-level comparative analyses which have tended to focus more on cross-sectional contextual differences. We bring the evidence up to date by including available time use surveys from the latter part of the first decade of the twenty-first century (most published research in this area to date is based upon time use data series that end in 2005 or 2006). Secondly, we analyze long-term trends in both housework and childcare within the same analytic frame. Most analyses of domestic labor and care focus on either housework or childcare as their primary dependent variable, or combine them into an unpaid work variable. Our approach enables the direct contrasting of trends in housework and childcare (Sullivan 2013), a contrast that can yield insights for

explanatory processes (e.g. where childcare time is increasing much more strongly than housework within a particular regime type, but these trends are more similar in another regime type). Finally, we separate trends in the average time the fathers of young children spend doing housework and childcare from trends in the *proportion* of fathers of such children who are involved in these activities. In this way, we are able to assess whether trends are being driven by the greater contributions of a group of involved fathers or, rather, reflect a wider change in the time spent on these activities across all fathers. This distinction has implications for the focus of policies aimed at supporting greater paternal involvement in childcare.

Background

In the last decade of the twentieth century and the first decade of the twenty-first century cross-national, cross-time analyses based on time use diary data showed that there was a small increase in men's housework time accompanying the widespread decrease in women's housework time (Altintas and Sullivan 2016). Mothers' childcare time was rising steeply and fathers' childcare time, although at a much lower level than that for mothers, was increasing more steeply than their contributions to housework. These trends appeared to be similar for the United States (Sandberg and Hofferth 2005; Sayer, Bianchi, and Robinson 2004), and Western Europe, Canada, and Australia (Craig, Powell, and Smyth 2014; Evertsson and Neramo 2004; Gauthier, Smeeding, and Furstenberg 2004). The growing cross-national focus of this research led to a substantial shift in the explanatory emphasis, away from individual-level determinants of the amount of time women and men devoted to housework and childcare, to include comparative contextual variables, focussing particularly on the impact of welfare regimes on employment and childcare.

In this article, we select four types of such regimes (see Esping-Andersen 1999; Ferrera 1996; Goodin et al. 2003 for a more detailed description of these regime clusters). Countries that belong to the *Liberal regime* are characterized by "liberal politics, capitalist economics and residualist social policies" under which means-tested assistance, modest universal transfers, or modest social-insurance plans predominate (Goodin et al. 2003, 40–45). In terms of gender ideology, countries of the liberal regime follow a *modified male-breadwinner* model, where women are expected to do the lion's share of domestic work despite their large-scale participation in the labor market. There is no, or very limited, provision of public childcare. As a result, parents who cannot provide childcare themselves rely either on market-based or on employer-provided childcare solutions. Anglo-Saxon countries, such as the United Kingdom, the United States or Canada, are generally regarded as representative of the Liberal model. In contrast, countries of the *social democratic, or Nordic, regime*

are characterized by an emphasis on redistributive policies, including generous and universal welfare benefits. The state takes a strong role in providing public services, which are based on citizens' rights rather than demonstrated need. The state also takes an active role in increasing the labor force participation of both men and women according to a *dual-earner family* model. Gender equality in the labor market is actively supported through the provision of paid parental leave and public childcare. Denmark, Norway, Finland and Sweden are generally classified as countries belonging to the social democratic, or Nordic, regime.

Continental European countries such as the Netherlands, France and Germany are considered as representatives of the *Corporatist/conservative* policy regime. Status segmentation and family-centered state policy are the main attributes of the Corporatist regime countries. Welfare provision depends on work performance with respect to previous earnings, reinforcing status and occupational differentiation through the provision of separate programs for different social strata. Public policies are oriented towards a traditional *male-breadwinner/female homemaker family* model, and state benefits are the prerogative of families, rather than of individuals. The final regime type, the *Southern or Mediterranean* regime, is Ferrera's (1996) addition to Esping-Andersen's original welfare regime typology. This regime is most similar to the Corporatist regime, but it is also characterized by distinct social policy traits such as a mix between public and nonpublic institutions in the provision of welfare, a generally low efficiency of state services, and relatively underdeveloped social security systems. The relevant gender ideology is traditional and puts an emphasis on women's family responsibilities. As a result, women's participation in the labor market is limited, and childcare is mostly considered the responsibility of a mother (or other family members). Southern European countries such as Italy, Spain and Portugal are considered as representative of the Southern regime.

A large body of research has been devoted to investigating the effect of these differing policy contexts on work and care in the household as well as in the public sphere (for general references, see Esping-Andersen 2009; Gauthier 1996; Goodin et al. 2003; Kamerman and Moss 2009; O'Brien 2009; Sainsbury 1999). This literature provides significant evidence of the important constraining effects of institutional settings such as employment and welfare policies on individual decisions regarding the allocation of time and family organization. The development of multi-level modeling encouraged researchers to address empirically the respective contributions and the articulation of macro-level (e.g. policy and ideology) and micro-level (e.g. individual education and employment status) variables (Prince Cooke and Baxter 2010; Craig and Mullan 2010; Davis and Greenstein 2004; Fuwa 2004; Fuwa and Cohen 2007; Hook 2010; Knudsen and Warness 2008; Sayer and Gornick 2011; Voicu, Voicu, and Strapcov 2008). For example, recent research has documented the importance of relevant policies, and ideological and

institutional structures for: decisions regarding time spent in paid and unpaid work (Hook 2010; Knudsen and Warness 2008; Pettit and Hook 2005; van der Lippe and Djik 2001); the domestic division of labor (Prince Cooke and Baxter 2010; Davis and Greenstein 2004; Fuwa and Cohen 2007; Geist 2005); men's unpaid work and care (Hook 2010; Smith and Williams 2007) and women's employment and education (Korpi, Ferrarini, and Englund 2013).

Overall, this body of research clearly supported the idea that institutional settings governing welfare policies and provisions were highly influential in affecting the individual-level factors determining the gender division of housework and care. However, the focus of much research using multi-level modeling has tended to be on the contribution of overall contextual effects, relative to individual-level effects. This approach has two potential disadvantages when it comes to assessing the broader-based determinants of change. Firstly, due to journal word limits, little space can usually be devoted to describing individual national policy contexts, or, particularly, changes in those contexts. Secondly, the focus on contextual as against the individual-level variables makes it difficult to assess how these disparate national policy contexts might be organized into more coherent policy-related groupings. On the other hand, detailed comparisons of gendered time use in selected individual countries (Bianchi et al. 2014; Craig and Mullan 2013; Gracia and Esping-Andersen 2015) can provide more finely-tuned information on national policy contexts. However, these studies can also suffer from the difficulties of reconciling disparate national policy contexts into wider explanatory frames, and frequently resort to both selecting and analyzing specific individual countries as representative of different welfare state regimes. We argue that analyses focussing on the main clusters of countries identified as belonging to these regimes—as a middle way between large multilevel models comparing individual-level and contextual variables and detailed comparisons of disparate individual countries—are still relevant. Geist (2005), for example, found clear evidence for independent regime differences in the division of household labor, arguing that a documentation of welfare regime effects is necessary in order to clarify the contours of a taxonomic approach useful in the identification of specific causal mechanisms.

In this article, we build on general findings from the existing literature, examining, as our initial research question, whether over the past forty years the involvement of Nordic fathers in both childcare and housework remains consistently the highest, and that of Southern fathers the lowest, with fathers from the Corporatist and Liberal regimes remaining intermediate between the two.

However, long-term trends that are systematic and consistent across countries, such as the trend in the direction of greater gender egalitarianism, suggest the operation of something wider than the effect of just institutional influences and policies governing employment and welfare. They also point to widespread (albeit differently timed) changes in gender ideologies in the direction of greater gender equality, perhaps reflecting changes in gender attitudes

among younger and more highly educated cohorts (Braun and Scott 2009; Pampel 2011). Processes of social diffusion are familiar from the classical sociological literature. At the macro-level, it has been argued that less unequal and less stratified societies are likely to produce diffusion processes that are both more rapid and which penetrate more broadly through the social strata (Esping-Andersen and Billari 2015). This might help account for the fuller and more rapid development of gender egalitarian attitudes and behavior in the Nordic countries. Echoing Breen and Prince Cooke (2005), Esping-Andersen and Billari (2015) have also proposed, however, that these processes of diffusion accelerate more rapidly once a “critical social mass” has been reached. This might indicate that trends would be more rapid in more traditional countries where the diffusion of gender-egalitarian attitudes has occurred most recently, leading to a process of cultural convergence. Some evidence for this process was found by Geist and Cohen (2011). In an analysis of ISSP data, they found that national institutional context affects patterns of change over time in the division of housework. In particular, they found evidence that more gender-traditional countries move faster towards egalitarianism over time. In support of this idea, a comparative study of the domestic and care contributions of fathers from the Southern regime cluster found evidence of significant recent increases, from a very low base, in the contributions of younger, more highly educated, fathers compared to fathers from other regime clusters (Sullivan, Billari, and Altintas 2014). Our second research question arises from these suggestions: we investigate the proposition that fathers from the most gender-traditional countries—the Southern regime cluster—starting from a lower base, have been “catching up” with fathers from other regime clusters,

The effect of education on the time men spend with children has received much attention in the U.S. literature. Using the U.S. time use data series, Bianchi drew attention to this trend in 2000, reporting a “dramatic change” in fathers’ overall average childcare time, and a continuing increase for women. Sayer, Bianchi, and Robinson (2004) underlined this trend by analyzing overall time spent on childcare, participation in childcare and time spent by those participating, concluding that the U.S. time use data series showed evidence of a sustained behavioral change in parenting, involving particularly increases for fathers. Explanations for this trend have mainly focused on the role played by more highly educated, middle-class, parents in the transmission of human capital to their children via “concerted cultivation” (Lareau 2003), or, more directly, in the focussing of energies of highly educated parents into assisting their children into prestigious colleges (Ramey and Ramey 2010). It may be, however, that there is something specific to the United States and the United Kingdom about the connection between fathers’ educational level and strong increases in father care (Altintas 2015, 2016; Sullivan 2010); other research has shown educational factors to be weaker for fathers in other European countries (Sayer, Gauthier, and Furstenberg 2004). This leads us to our third

research question: whether childcare has increased particularly dramatically among fathers in the Liberal regime cluster of countries.

For this article, we select fifteen countries based on their data quality and series, representing between them the Nordic, Corporatist, Liberal and Southern regime clusters. We take as our research focus the contributions of the fathers of young children. This is the group for whom the impact of policies such as paternal leave is particularly relevant, and whose contributions to the domestic economy are likely to be most significant in supporting their female partners' employment trajectories (Langer 2015; Seiz 2014). During early childhood, the time demands of childcare are at their peak (Monna and Gauthier 2008), which makes paternal contributions at these ages particularly significant to mothers' well being. Furthermore, the involvement of fathers has been shown to be particularly important during early childhood—a critical period for children's cognitive and socio-emotional development (Bornstein 2002; Edwards and Liu 2002). We also know that gender attitudes to the division of work and family responsibilities are changing particularly rapidly among younger cohorts, who are more likely to be the parents of younger children (Braun and Scott 2009; Thornton and Young-Demarco 2001).

Data, Sample and Measurement

The data we use comes from the Multinational Time Use Study (MTUS), an international archive of cross-national time use surveys dating from the 1960s to the current day. We use data from fifteen countries between 1971 and 2010, chosen on the basis of their data series and quality. The countries are classified into four regime clusters: Canada, the United Kingdom, the United States and Australia in the Liberal cluster; Denmark, Finland, Norway and Sweden in the Nordic cluster of countries; Italy, Spain and Israel in the Southern cluster; and France, Germany, the Netherlands and Slovenia in the Corporatist cluster. Table A1 of the Appendix shows the surveys included in the analyses by regime cluster, country, and number of diaries.

The sample is limited to married/cohabiting men aged between 20 and 49 years old living with at least one child under the age of five years. Where we refer to fathers in the sections below we refer to these fathers of young children. The MTUS does not provide direct information on the relationship between the respondents and children, so married men living in a household with young children are assumed to be the fathers of those children. Although it is likely that a small proportion of those men do not have a parental relationship with those children, we believe that proportion to be negligibly small.¹

We were interested in fathers' involvement in family life in two domains: primary childcare and core housework. Childcare as a primary activity refers to the total minutes spent in all forms of childcare activities (e.g. physical care,

reading or playing with children, and supervision of children) and reported as the main activity at a specified time on a given diary day. Core housework refers to the routine and traditionally feminine-defined housework activities of food preparation, cooking, laundry and cleaning. Household chores that are traditionally masculine or gender neutral such as home maintenance, car repairs or shopping, are excluded. Traditionally feminine chores are more resistant to change and are therefore considered more reliable indicators of changing gender norms than more gender-neutral tasks. The relative time spouses spend on these types of feminine-defined activities has long been recognized as an important indicator of marital power (Davis and Greenstein 2013).

There are two sets of dependent variables. The first is a continuous measure of minutes spent in the activity (childcare or core housework), while the second is a binary variable taking the value of 1 if the respondent reported at least fifteen minutes spent in core housework or childcare over the diary day. The decision to code fathers who reported less than fifteen minutes over the day as nonparticipant is both data- and theory-driven. Attention has already been drawn by Pacholok and Gauthier (2010) to the methodological issues related to reported nonparticipation in childcare. For several surveys included in our sample, fifteen minutes is the minimum reporting period (see table A1 of the Appendix), while for others (notably those surveys that are part of the Harmonized European Time Use Survey, and the ATUS) there is no restriction on the number of minutes that may be recorded for an activity period. Including those fathers who reported spending less than fifteen minutes over the day on domestic work or childcare as “participants” in these activities would thus bias the estimates of participation in favor of this latter group of countries. Second, given that the sample is limited to fathers with young children in the household, we considered that only those reporting at least fifteen minutes spent daily on childcare or domestic work could be regarded as making some meaningful contribution to the activity. For example, fifteen minutes is long enough to change a baby’s nappy or to read a few pages of a book or to engage in some meaningful interactive play with a child. To distinguish these fathers from the standard definition of “participating” fathers (who might only be doing one minute of childcare), and also to reference the literature on “involved fathers” (Marsiglio and Roy 2012; Pleck and Masciadrelli 2004), we refer to fathers participating for 15 minutes or more in these activities per day as *involved* fathers.² By comparing fathers’ overall average contributions to those of “involved” fathers across regime clusters, we hope to address whether (i) any increases we find are a result of all fathers spending more time on childcare, or whether they primarily involve fathers who are doing more, and (ii) whether these increases hold cross-nationally or are confined to a certain cluster of countries.

In order to measure the general trend over time, we use a time series variable calculated by an ascending linear sequence of numbers starting from 1

for the earliest survey year in 1971. Included as control variables in our models are: a control for weekend/weekday completion of the diary (1= weekday, 0= weekend), educational attainment (1= college-educated, 0= below);³ age and age squared; employment status (1= employed, 0= not employed); and number of children aged under eighteen years in the household. The number of children and the age of both parents and children are important determinants of domestic work and childcare time (Monna and Gauthier 2008; Sayer, Bianchi, and Robinson 2004). Employment decreases domestic work and childcare time for both parents (although the effects are much stronger for mothers than fathers: Coltrane 2000; Shelton and John 1996). Education, on the other hand, is positively and strongly associated with time spent on childcare (Altintas 2015; Guryan, Hurst, and Kearney 2008; Sayer, Gauthier, and Furstenberg 2004; Sullivan 2010).

Statistical Models and Analytic Strategy

In our models, we examine trends and differences across regime types in: (i) minutes spent on childcare and domestic work by all fathers using Gamma regression; (ii) the probability of involvement in childcare and domestic work using logistic regression; and (iii) minutes spent on childcare and domestic work by involved fathers using Gamma regression. The use of Gamma models is relatively recent in the time use literature but is growing because in many cases the distribution of errors can be assumed to be positively skewed. Furthermore, in this particular case, linear regression results produced some negative predicted minutes, suggesting an inappropriate model selection.

The generalized linear model (GLM) equation can be written as $g(E[Y|X, \theta]) = X\theta$, where Y is the dependent variable, X is a vector of covariates, and θ is an accompanying parameter vector. When the dependent variable is binary a linear combination of explanatory and control variables is connected to the dependent variable via a logit link function: $\ln(\mu_i/(1 - \mu_i)) = X\theta$, where μ_i is the probability of observing a positive relationship for observation i . When the dependent variable is continuous (e.g. minutes spent in activity), and errors are assumed to be Gamma distributed, a log link function, $\ln(\mu_i)$, is employed to map the mean μ_i (Andersen, Grabb, and Curtis 2006). The (unconditional) distributions of all the dependent variables are shown in the Appendix (figure A1).

We first ran the Gamma model to estimate all fathers' time spent on childcare and core housework according to welfare regime clusters of countries. Second, logistic regression was used to test whether fathers' involvement in these activities has changed differentially over time for the different regime clusters. Finally, we re-ran the Gamma model to estimate the minutes spent on the activity by involved fathers only (i.e. those who reported spending at least fifteen minutes on the activity).

One limitation of the data relates to the fact that the surveys were undertaken in different countries in different years. As a robustness check for this limitation, we re-ran the models (for all fathers' minutes spent on childcare/core housework) with an interaction between welfare regime and period dummy. We also ran four separate models for each regime type with country dummies controlling for country fixed effects. The predicted minutes spent on childcare and core housework based on the three sets of models were consistent. The only noticeable difference was that Liberal fathers were predicted to spend more time on childcare and housework in the most recent period in the separate regime-based models. This difference is likely, at least in part, to be due to the fact that we have more recent observations for Liberal regimes (2005 or later) than for other regimes. Overall, these comparisons give us reasonable confidence that the model we use is quite robust to different specifications of the time variable, and to the variations between countries within regimes.

Results

Table 1 shows the raw data for our two dependent variables by regime clusters across successive decades. Focusing first on childcare, increases are observed across successive decades. Features of particular note in relation to recent changes are as follows: (i) a relative stagnation in the rate of increase in all the indicators for childcare among Nordic fathers in the 2000s, over a period when the other regime clusters continued to show clear increases; (ii) considerably higher mean minutes per day spent on childcare among involved fathers in the Liberal cluster of countries than among the other regime clusters from the 1990s on, even though the percentage of involved fathers was equivalent to those of Corporatist fathers and considerably lower than that among Nordic fathers. This suggests a selective process in operation in the Liberal countries, whereby those fathers who were involved were increasingly likely to spend considerable amounts of time doing childcare. General increases in all indicators are also observed in relation to core housework, with the exception of the Liberal cluster of countries, for which there were decreases in the overall mean, median and percentage of involved fathers from the 1990s through into the 2000s. By the 2000s, Nordic fathers were noticeably more likely to be involved in core housework than were fathers from all other regime clusters, and the median time they spent on housework was also higher. The median time spent on core housework by Southern fathers did not rise above zero until the 2000s. However, during the 2000s, both the percentage of involved Southern fathers and the mean time involved fathers spent on core housework was only slightly less than that among Corporatist and Liberal fathers.

Because it is difficult to discern general trends in a table of this kind, and, in addition, no other socio-economic and demographic factors are taken into account, we next ran multivariate models. Models 1a and 1b of table 2 show

the coefficients for the Gamma regression model estimating overall mean minutes spent on childcare and core housework for all fathers. However, overall mean minutes spent on an activity is composed of two distinct elements: the participation rate for the activity and the mean minutes spent on the activity by those who participated. Hence Models 2a and 2b of [table 2](#) show the log odds from the logistic regression model estimating the percentage of fathers involved in childcare and core housework. Models 3a and 3b show coefficients from a second Gamma regression modeling the mean minutes per day spent on the activity by involved fathers.

The results of the models for childcare indicate that there was an overall average increase in the time that fathers spent on this activity over the period studied, when holding other factors constant. This reflects both an increase in involvement in childcare, and an increase in the average time spent on the activity by involved fathers (Models 1a, 2a and 3a for childcare on [table 2](#)). Furthermore, compared to Nordic fathers, the overall average time that fathers from all the other regime clusters spent on childcare was lower. However, there are some differences between the regime clusters in the proportions of involved fathers and the time spent by those who were involved. While fathers from the Liberal cluster were less likely to be involved than Nordic fathers (shown in Model 2a), there was no statistically significant difference between the amount of time spent on childcare between those Liberal and Nordic fathers who were involved (shown in Model 3a). Fathers from the Southern cluster of countries, in contrast, were both less likely to be involved, and those who were involved spent less time on childcare than Nordic fathers.

The results for the control variables were mostly as expected. College education was associated both with an increase in the likelihood of involvement in childcare, and with the time spent on childcare by those who were involved. For example, holding other factors constant, having a college degree increased the odds of reporting childcare by 79 percent. A strong negative association was found for employment. In relation to there being only one child in the household, the presence of two was associated both with an increased likelihood of involvement and a greater amount of time spent by those fathers who were involved in childcare. There being three children had a somewhat puzzling negative association with the likelihood of involvement in childcare (perhaps related to the fact that age was also controlled for), but the expected positive association with the amount of time spent among involved fathers. The diary day being a weekday was associated with less childcare, both in terms of involvement and time spent, than a weekend day.

As the next step in our analysis, we added the interaction between regime cluster and survey year. This interaction enables us to examine the change in the regime effect on fathers' contribution to childcare over time. The model coefficients for these analyses are shown in [tables A2](#) and [A3](#) of the Appendix. However, as we cannot interpret the interaction effect straightforwardly in nonlinear models ([Ai and Norton 2003](#); [Norton, Wang, and Ai 2004](#)), we here

Table 1. Descriptive statistics

Childcare								
	Nordic (N=4825)			Southern (N=6549)				
	1970–1979	1980–1989	1990–1999	2000–2010	1970–1979	1980–1989	1990–1999	2000–2010
Mean (all)	45	52	72	82	NA	34	56	72
Median (all)	20	30	60	60	NA	5	30	50
% involved fathers*	58	62	75	78	NA	45	57	78
Mean (involved fathers*)	76	84	95	104	NA	75	98	109
	Liberal (N=14,242)						Corporatist (N=14,898)	
Mean (all)	22	48	67	83	32	44	56	67
Median (all)	0	15	35	57	15	30	30	45
% involved fathers*	35	57	65	68	51	63	68	71
Mean (involved fathers*)	62	84	103	121	62	71	82	94
Core housework								
	Nordic (N=4825)			Southern (N=6549)				
	1970–1979	1980–1989	1990–1999	2000–2010	1970–1979	1980–1989	1990–1999	2000–2010
Mean (all)	30	38	47	63	NA	13	23	38
Median (all)	10	20	30	50	NA	0	0	10
% involved fathers*	47	60	67	73	NA	22	31	48
Mean (involved fathers*)	59	62	68	85	NA	57	74	78
	Liberal (N=14,242)						Corporatist (N=14,898)	
Mean (all)	21	39	50	45	29	31	37	41
Median (all)	0	15	25	20	5	15	15	20
% involved fathers*	37	55	60	50	47	53	59	57
Mean (involved fathers*)	55	71	82	88	62	60	63	71

Note. *Involved fathers are defined as those who report at least 15 minutes per day in childcare or core housework, respectively.

Table 2. Gamma and logistic models estimating time spent in childcare and core housework; baseline models

	Childcare					Core housework		
	Model 1a (Gamma; all fathers)	Model 2a (logistic)	Model 3a (Gamma; involved fathers)	Model 1b (Gamma; all fathers)	Model 2b (logistic)	Model 3b (Gamma; involved fathers)		
Year	0.0249*** (0.000976)	0.0247*** (0.00145)	0.0147*** (0.000709)	0.0126*** (0.00118)	0.00639*** (0.00141)	0.00899*** (0.00094)		
Nordic								
Southern	-0.296*** (0.0293)	-0.591*** (0.0509)	-0.0657** (0.0222)	-0.523*** (0.0349)	-1.001*** (0.0482)	-0.0571* (0.0276)		
Liberal	-0.231*** (0.0258)	-0.601*** (0.0456)	0.00984 (0.0195)	-0.241*** (0.0276)	-0.654*** (0.0431)	0.0551* (0.0222)		
Corporatist	-0.231*** (0.0258)	-0.203*** (0.0473)	-0.154*** (0.0197)	-0.211*** (0.0307)	-0.315*** (0.0451)	-0.0777** (0.0243)		
College	0.285*** (0.0172)	0.580*** (0.0300)	0.106*** (0.0136)	0.155*** (0.0208)	0.343*** (0.0284)	0.0150 (0.0168)		
Employed	-0.475*** (0.0322)	-0.411*** (0.0627)	-0.337*** (0.0252)	-0.750*** (0.0387)	-0.612*** (0.0593)	-0.485*** (0.0310)		
Age	0.106*** (0.0147)	0.233*** (0.0239)	0.0174 (0.0110)	0.0624*** (0.0183)	0.118*** (0.0234)	0.00522 (0.0148)		
Age sq	-0.002*** (0.00021)	-0.003*** (0.00034)	-0.000245 (0.00016)	-0.0008** (0.00026)	-0.0015*** (0.00033)	-0.000005 (0.00021)		
Weekday	-0.366*** (0.0130)	-0.191*** (0.0222)	-0.312*** (0.0107)	-0.471*** (0.0155)	-0.440*** (0.0210)	-0.303*** (0.0129)		
2 child	0.0775*** (0.0183)	0.0905*** (0.0321)	0.0500*** (0.0139)	0.0407 (0.0233)	0.0177 (0.0312)	0.0366* (0.0182)		
3+ child	0.00502 (0.0238)	-0.139*** (0.0390)	0.0528** (0.0182)	0.106*** (0.0308)	-0.0241 (0.0379)	0.128*** (0.0248)		
Constant	2.126*** (0.253)	-3.868*** (0.417)	4.252*** (0.191)	3.116*** (0.315)	-1.306** (0.408)	4.460*** (0.255)		
Observations	43,574	43,574	28,238	43,574	43,574	23,616		

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

present graphs of the predicted probability of involvement in childcare and minutes spent on the activity by all and involved fathers calculated from the coefficients of these models (figures 1 and 2). This enables us to see the differences in fathers' contributions to childcare over time and across regimes. The predicted values are calculated from the coefficients of Models 1, 2 and 3 of table A2 based on the 'typical' values of the independent variables (sample means for continuous variables, and sample proportions for categorical variables). Figure 1a shows the model predicted minutes per day spent on the childcare by all fathers, figure 1b shows the model predicted probability of 'involvement' in childcare (i.e. participating for at least fifteen minutes), and finally, figure 1c shows the model predicted minutes spent on each activity by involved fathers. Figures 2a–c show the corresponding results for housework. Grey shadings represent 95 percent confidence bands estimated using robust and clustered standard errors.

The first thing of note from figure 1 is that all the trends for all the regime clusters are clearly positive, showing increases over time both in predicted involvement in childcare, and in predicted minutes spent on childcare among fathers. Yet, changing regime differences in fathers' predicted contribution to childcare are also evident. The childcare gap between all Nordic fathers and their Corporatist counterparts grew throughout the period (figure 1a). Liberal fathers showed the most rapid increase in overall contributions to childcare, almost catching up with Nordic fathers by the end of the period. In terms of their involvement (figure 1b), Nordic fathers were the most likely to be involved in childcare, although up until the mid-1980s there was no difference between those from the Corporatist and Nordic regime clusters. Thereafter, the involvement of Nordic fathers continued to increase, while that of Corporatist fathers leveled off. The modeled involvement of Southern and Liberal fathers, on the other hand, was considerably lower, but showed a similar increasing trend to that of Nordic fathers.

In relation to the predicted minutes spent on childcare by involved fathers shown in figure 1c, a different picture is evident. The most striking thing about figure 1c is the large increase in the predicted time childcare by involved fathers from the Liberal regime cluster. Predicted minutes spent on childcare per day by Liberal fathers more than doubled over the period, overtaking the Nordic fathers in the middle of the period, around 1990. So although the involvement of Liberal fathers was relatively low throughout the period (figure 1b), there was a remarkable increase in the amount of time spent on childcare by those who were involved. Figure 1c shows that there was almost no difference between involved Southern fathers and involved Nordic fathers in either the level or the trend in the amount of time that they spent on childcare. Finally, involved fathers from the Corporatist regime cluster spent the least amount of time on childcare throughout the period.

Turning to consider trends in core housework, table 2 showed that there was also an overall average increase in the time that fathers spent in this

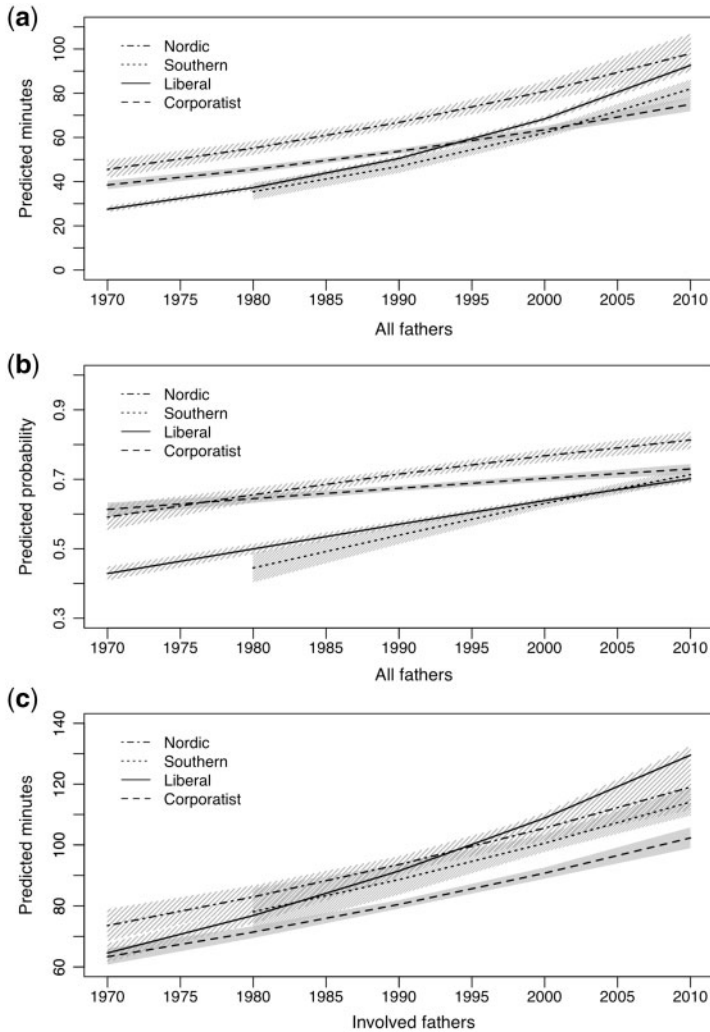


Figure 1. Predicted minutes and probabilities of fathers' childcare.

activity over the period. As was the case for childcare, this reflects both increases in participation in core housework over time and increases in the average time spent on the activity by participating fathers over time (Models 2b and 3b of table 2). Table 2 also showed significant regime differences in fathers' involvement in core housework. Fathers of young children in the Nordic countries contributed substantially more to core housework than those in Southern and Corporatist countries. Nordic fathers were also more likely to be involved in core housework than Liberal fathers (Model 2b of table 2). However, when

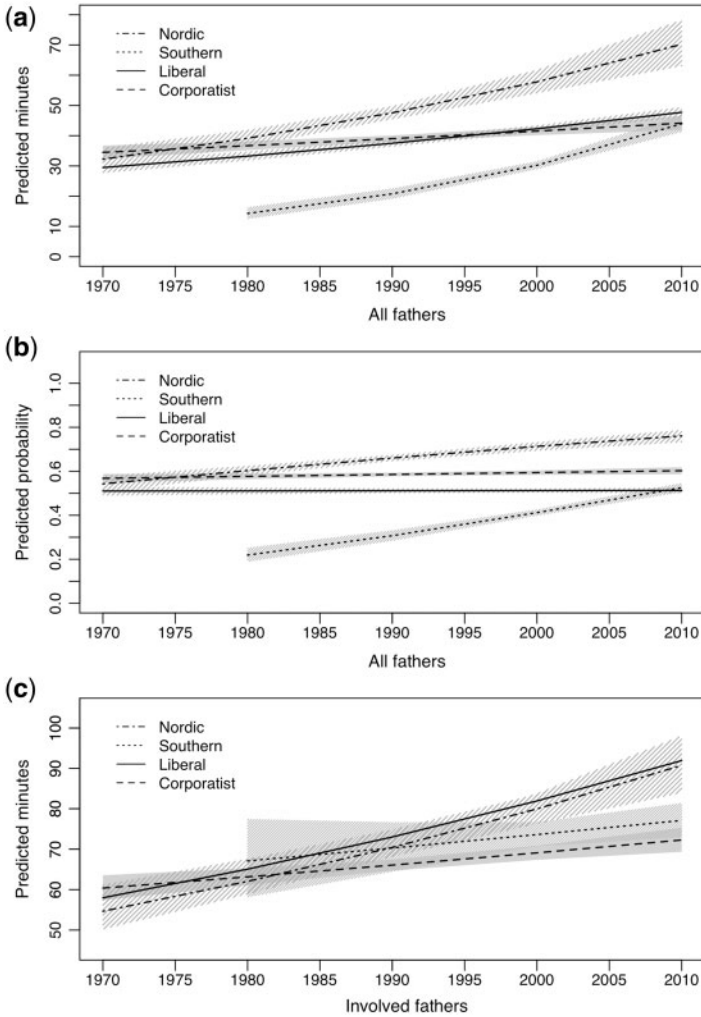


Figure 2. Predicted minutes and predicted probabilities of fathers' core housework.

the sample is limited to involved fathers only (Model 3b of table 2), involved Liberal fathers spent more time in core housework than involved Nordic fathers. Again, results for the control variables were mostly as expected. As was the case for childcare, college education was associated with an increased likelihood of involvement in core housework (although only by 41 percent, as opposed to 79 percent for childcare), while being unemployed was associated with both an increased likelihood of involvement and with a greater amount of time spent by involved fathers. The findings for number of children in

relation to core housework were somewhat different than those for childcare. There was no effect of there being two children in the household (as opposed to one), either in terms of the likelihood of being involved in core housework, or on the amount of time spent on it. However, there was a positive effect of having three or more children in the household (as compared to one) on the amount of time spent in core housework among involved fathers. As expected, there was a negative association between both involvement and time spent in core housework and a weekday diary day.

Table A3 (shown in the Appendix) shows the effect of entering the interaction between regime cluster and year into the models for core housework. As before, in order to present trends by regime type more clearly, figures 2a–c show, respectively, predicted minutes and the predicted probability of involvement for all fathers, and predicted minutes for involved fathers based on the models shown in table A3. The first thing of note is that, in contrast to the predicted trends for childcare, there was little increase in involvement in core housework over time by fathers from the Liberal and Corporatist regime clusters. This is evident both from the predicted minutes spent in the activity by all fathers (figure 2a) and, particularly, from the probability of contributing to housework for at least 15 minutes per day (figure 2b). In contrast, involvement among fathers from the Southern and Nordic regime clusters showed clear rates of increase, although starting at very different levels. In particular, the graphs for all Southern fathers (figures 2a and b) show a clear “catch-up” effect in core housework relative to fathers from the Liberal and Corporatist regime types. This effect is even evident in relation to Nordic fathers (refer to the coefficient for “Southern by year” shown in Models 1 and 2 of table A3). Figure 2c shows that the amount of time spent in core housework by involved fathers increased for all regime clusters, but that increase was more pronounced for involved fathers from the Liberal and Nordic regime clusters. As was the case for childcare, it seems that, although fathers from the Liberal regime cluster were less likely to be involved in core housework, there was a clear increase over time in the amount of time that involved fathers devoted to this activity.

Conclusions

By identifying and describing trends in the contributions of the fathers of young children to both childcare and core housework across four different regime clusters over forty years, we contribute to research that aims to bring the analysis of men's care work into the discussion of gendered welfare policies. Our results show that Nordic fathers continue to “set the bar” in terms of both types of family involvement. Fathers of young children in Nordic countries contributed substantially more overall to family work than those in Southern and Corporatist countries, and these contributions showed a steady

increase over time. Southern regime fathers' contributions over time started at low levels, but showed clear increases in core housework, particularly relative to Liberal and Corporatist fathers. This may lend some support to the idea of a social diffusion effect over the past few decades, in which less-traditional gender attitudes and behavior have been diffusing more rapidly in more gender-traditional societies (Esping-Andersen and Billari 2015; Geist and Cohen 2011; Sullivan, Billari, and Altintas 2014). Fathers in Corporatist countries, although starting from high levels at the start of period, have been least responsive to change; they showed very low time investments and only a modest increase in involvement over time. Liberal fathers showed an interesting selection effect over time; relatively few were "involved" but those who were involved were spending by far the longest time in childcare, and equaling Nordic fathers in core housework time. It appears that there was an increasing polarization over time between those fathers who were involved, and those who were not. Fathers who were involved seemed to be becoming more involved over time (i.e. spending more time in housework and, particularly, childcare).⁴ Two possible explanations to account for fathers' increasing contribution that have been advanced in the literature are as follows: (i) more highly educated parents are devoting increasing amounts of time to promoting their children's education. But in fact higher educational levels were also associated with increased time spent in core housework, suggesting that an interpretation relating to more gender-egalitarian ideologies among the highly educated (Lareau 2003) may have more salience than one based on more materially directed motivations; (ii) nonemployed and stay-at-home fathers spend longer periods of time on family work (both core housework and childcare). We know that the percentage of such fathers is increasing in these societies.⁵ This would have the effect of increasing mean durations of time spent in these activities among involved fathers. An initial examination of our data showed that involved fathers are less likely to be in employment across all the countries of the Liberal regime cluster, supporting the findings of Pacholok and Gauthier (2010), who found that highly involved fathers in the United States were nearly twice as likely not to be in employment as noninvolved fathers.⁶ Investigation of this phenomenon will be an important topic for future studies arising from this research, as these different interpretations potentially have rather different implications for the direction of policy aimed at increasing gender equality in the division of employment and care. The first suggests that promoting gender consciousness through education may be effective. The second suggests that policies focused directly at increasing the time available to fathers for family work is likely to promote their further engagement in care. This interpretation makes the assumption that there is an underlying demand for such involvement, and the fact that by 2014, 25 percent of all parental leave in Sweden was taken by fathers to some extent supports this (Swedish Institute 2016). In truth, the two explanations are not incompatible, and some combination of these policy directions is most likely to be influential. An

important limitation of this article is that we are not able to add directly to the discussion of equality in the division of domestic work and care, because we have focussed only on changes in fathers' contributions. However, in a recent article, we have also shown that the gender gap in housework continues to narrow cross-nationally (Altintas and Sullivan 2016).

In conclusion, we argue that there is still relevance to an approach that focuses on regime-based trends in housework and childcare. We also believe that, taking into account both the findings presented here and the weight of other relevant research, the direction and significance of the trends we describe will be confirmed as more data becomes available. However, there are inevitably limitations with the study related to this point. For example, we have not been able to access many surveys from the Scandinavian countries for the most recent period. It may be that had we been able to do so, the continuing rising trend for Nordic fathers' contributions may have been even steeper. In addition, the representation of surveys from the Southern regime countries is more limited than for other regimes. Although a small body of research now appears to support the "catch-up" hypothesis among Southern fathers, more research will be needed as additional surveys become available to confirm this finding.

Appendix

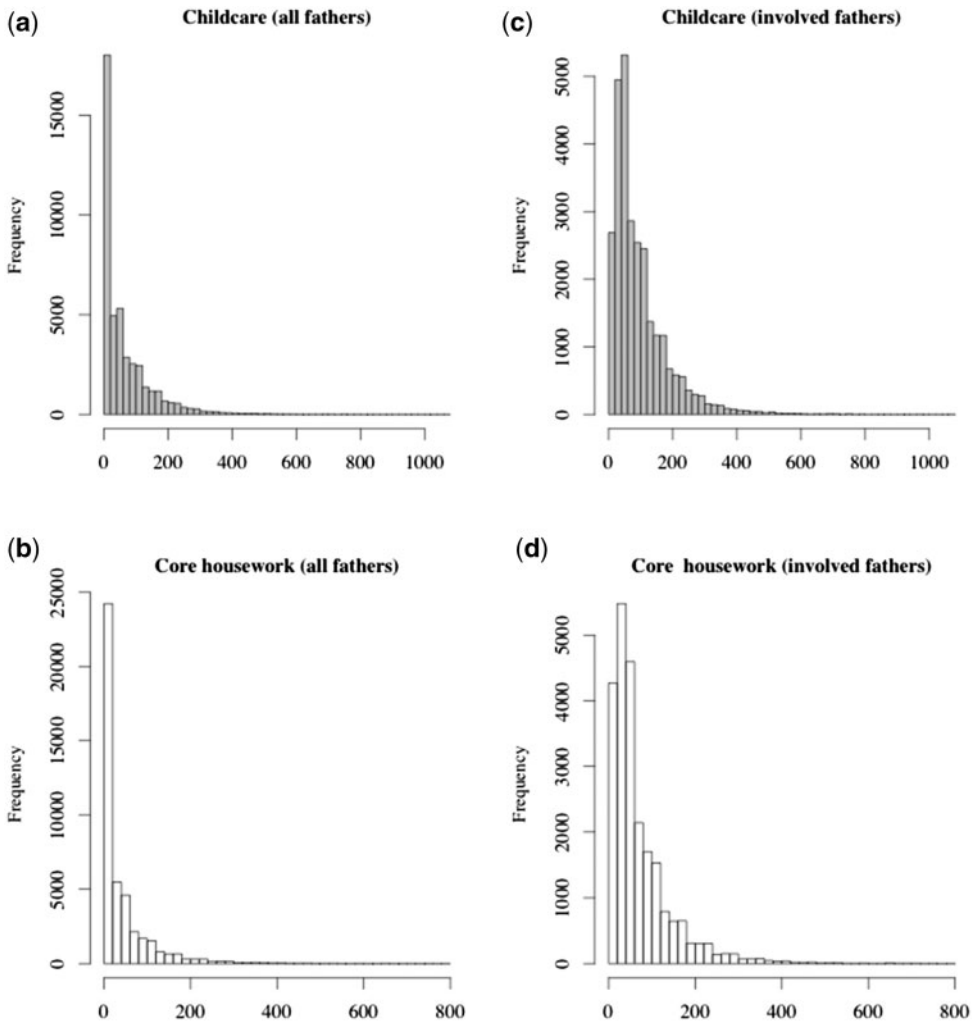


Figure A1. Frequency distribution of minutes spent in childcare and core housework by fathers of young children in all countries.

Table A1. Surveys included by year (*N* of diaries from fathers of children aged five years and under)**Liberal**Australia: 1974^a (184); 1992^b (860); 1997^b (838); 2006^b (682)Canada: 1971^a (224); 1981^a (198); 1986^a (638); 1992^a (525); 1998^a (484); 2005^a (712); 2010^a (682)U.K.: 1974^e (1193), 1983^c (607), 1987^c (401), 2000^c (829), 2005^c (193)U.S.: 1975^a (554), 1985^a (126), 1992^a (240), 2005^a (3687), 2009^a (3027)**Nordic**Denmark: 1987^c (170), 2001^d (386)Finland: 1979^c (806), 1987^c (846), 1999^c (440), 2009^c (288)Norway: 1981^d (541), 1990^d (474), 2000^d (486)Sweden: 1991^c (676)**Corporatist**France: 1974^b (514), 1998^c (781), 2009^c (1468)Germany: 1991^b (1941), 2001^c (1292)Netherlands: 1975^d (861), 1980^d (1291), 1985^d (1758), 1990^d (1563), 1995^d (1668), 2000^d (559), 2005^d (713)Slovenia: 2000^b (489)**Southern**Israel: 1991^{d/e} (469)Italy: 1989^a (822), 2002^c (901), 2008^c (1494)Spain: 2002^a (829), 2009^a (962)

Note. For more detailed information, see the MTUS User Guide: <http://www.timeuse.org/sites/ctur/files/858/mtus-chapter1-overview-of-mtus-july-2013.pdf>.

^a1-minute interval diary.^b5-minute interval diary.^c10-minute interval diary.^d15-minute interval diary.^e30-minute interval diary.

Table A2. Gamma and logistic models estimating time spent in childcare; models including regime by year interactions

	Model 1 (Gamma; all fathers)	Model 2 (logistic)	Model 3 (Gamma; involved fathers)
Year	0.0196*** (0.00224)	0.0283*** (0.00452)	0.0123*** (0.00180)
Ref: Nordic			
Southern	-0.548*** (0.116)	-0.912*** (0.176)	-0.113 (0.0876)
Liberal	-0.551*** (0.0728)	-0.679*** (0.118)	-0.161** (0.0541)
Corporatist	-0.199** (0.0690)	0.138 (0.120)	-0.203*** (0.0522)
Ref: Nordic* year			
Southern* year	0.00316 (0.00373)	0.00329 (0.00590)	-0.00151 (0.00288)
Liberal* year	0.0115*** (0.00261)	0.000975 (0.00490)	0.00558** (0.00203)
Corporatist* year	-0.00253 (0.00275)	-0.0147** (0.00526)	0.00000442 (0.00214)
College	0.280*** (0.0172)	0.575*** (0.0300)	0.104*** (0.0136)
Employed	-0.478*** (0.0319)	-0.419*** (0.0630)	-0.339*** (0.0249)
Age	0.110*** (0.0147)	0.238*** (0.0242)	0.0189 (0.0110)
Age squared	-0.00157*** (0.000207)	-0.00340*** (0.000340)	-0.000263 (0.000154)
Weekday	-0.367*** (0.0130)	-0.187*** (0.0222)	-0.314*** (0.0107)
Ref: One child			
Two children	0.0705*** (0.0182)	0.0807* (0.0323)	0.0485*** (0.0139)
Three or more children	-0.00464 (0.0238)	-0.149*** (0.0392)	0.0496** (0.0182)
Constant	2.174*** (0.257)	-4.017*** (0.428)	4.282*** (0.193)
Observations	43,574	43,574	28,238

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A3. Gamma and logistic models estimating time spent in core housework; models including regime by year interactions

	Model 1 (Gamma; all fathers)	Model 2 (logistic)	Model 3 (Gamma; involved fathers)
Year	0.0199*** (0.00253)	0.0247*** (0.00445)	0.0130*** (0.00203)
Ref: Nordic			
Southern	-0.992*** (0.149)	-1.712*** (0.162)	0.150 (0.119)
Liberal	-0.0828 (0.0746)	-0.114 (0.111)	0.0601 (0.0591)
Corporatist	0.0803 (0.0858)	0.115 (0.117)	0.108 (0.0689)
Ref: Nordic* year			
Southern* year	0.0121* (0.00469)	0.0158** (0.00597)	-0.00775* (0.00372)
Liberal* year	-0.00751** (0.00291)	-0.0244*** (0.00481)	-0.00118 (0.00231)
Corporatist* year	-0.0136*** (0.00337)	-0.0211*** (0.00519)	-0.00839** (0.00268)
College	0.155*** (0.0208)	0.351*** (0.0286)	0.0126 (0.0167)
Employed	-0.744*** (0.0386)	-0.606*** (0.0591)	-0.490*** (0.0308)
Age	0.0653*** (0.0185)	0.122*** (0.0234)	0.00590 (0.0148)
Age squared	-0.000789** (0.000260)	-0.00158*** (0.000330)	-0.0000105 (0.000209)
Weekday	-0.467*** (0.0155)	-0.430*** (0.0210)	-0.305*** (0.0128)
Ref: One child			
Two children	0.0285 (0.0233)	0.00767 (0.0314)	0.0338 (0.0181)
Three or more children	0.0966** (0.0305)	-0.0252 (0.0380)	0.121*** (0.0243)
Constant	2.908*** (0.322)	-1.745*** (0.414)	4.368*** (0.260)
Observations	40,514	40,514	21,633

Notes

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1. Previous studies that used MTUS also used a similar specification to identify parents (see, e.g., Guryan, Hurst, and Kearney 2008; Sullivan, Billari, and Altintas 2014).
2. Only 3 percent ($N=1232$) of all fathers in the sample reported spending between one and fifteen minutes on childcare. The corresponding percentage for fathers who reported housework was 5.8 percent ($N=2384$). We replicated the analysis with alternative cut-off points (5, 10 and 30 minutes), and the results proved robust to these alternatives.
3. The 1987 British data contains information on the education level of fathers only if they are employed and have already finished full-time education. Therefore, for this year, our sample is limited to employed fathers.
4. The robustness check we performed using a more stringent thirty minutes cut-off point as a definition of "involved" fatherhood underscored this point about polarization; the effect for Liberal fathers using this more severe definition of involvement showed an even steeper increase in the childcare and housework performed by these fathers relative to others.
5. The percentage of nonemployed fathers in our dataset more than doubled from 3 to 7 percent between the 1970s and the 2000s.
6. The definition of involved and highly involved fathers in Pacholok and Gauthier differs somewhat from our own, but the findings are consistent.

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