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Gender Inequality in the Welfare State: Sex Segregation in Housework, 1965-2003

Jennifer L. Hook*
Pennsylvania State University
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* Please direct correspondence to Jennifer Hook, Department of Sociology, Pennsylvania State University, 211 Oswald Tower, University Park, PA 16802; Telephone: (814) 867-0216, Fax: (814) 863-7216, Email: jenhook@psu.edu. I thank Becky Pettit and Nancy Folbre for their comments. This work was presented at the 2007 annual meeting of the Population Association of America, New York City.
Gender Inequality in the Welfare State: Sex Segregation in Housework, 1965-2003

Abstract

Recent research explores the social construction of gender in welfare states by documenting the influence of national practices and policies on men and women’s housework time. The author extends this research by focusing on how national context may influence the kinds of housework that men and women do, examining sex segregation within household tasks. She focuses on understanding how national context can have a two-pronged effect on individuals – one on pragmatic decision-making and the other on the normative context in which the decision-making is embedded. She analyzes 36 time use surveys from 19 countries (spanning 1965 to 2003) combined with original national-level data in multilevel models. She finds that men and women spend more time on sex-typical housework in nations where work hours and parental leave are long, and women are less involved in the labor market. They spend less time on sex-typical housework in nations where men are eligible to take parental leave and the public provision of childcare is greater. The results suggest that national context affects the character of gender inequality in the home through both individual- and national-level pathways.
GENDER INEQUALITY IN THE WELFARE STATE:
SEX SEGREGATION IN HOUSEWORK, 1965-2003

INTRODUCTION

Why men and women spend time in different activities is at heart of gender inequality in modern welfare states. Inequality in household labor is linked to inequalities in the labor market, and vice versa. Men and women’s mix of housework and paid work determines not only their daily experience of life, but also affects their economic standing, social relationships, and life outcomes. Increased specialization by sex at marriage and parenthood puts women at economic risk and men at social risk. Women’s responsibility for home limits employment and advancement, and men’s responsibility for breadwinning limits relationships with children (Goldscheider 2000).

Specialization occurs not only between the categories of unpaid and paid work, but within these categories as well. There are also important consequences to this within category specialization – that is the types of housework that men and women do. Female-typed housework and child care tasks are generally less discretionary, time-flexible, and enjoyable than male-typed tasks (Coltrane 2000). Tasks that are less discretionary and time-flexible are more likely to limit paid work and leisure opportunities than are tasks that can be put off or done at any time. Furthermore, routinely doing tasks that are less enjoyable makes housework a different experience for women. Because of the undesirable nature of some housework who does what is actually more important for spouses’ perceptions of fairness than is how much total time is spent on housework (Baxter 2000).

In response to the importance of household labor for understanding gender inequality, researchers have established a large literature focused on how individual and household processes generate inequality in the home (see Coltrane 2000). More recently, researchers have
begun to focus on how national context influences these processes. Researchers drawing on gender and welfare state theories are creating a growing body of cross-national literature that examines the influence of national context on housework, documenting that national context is consequential for men's share of housework vis-à-vis women and men's time spent on housework (Breen and Cooke 2005; Cooke 2006; Davis and Greenstein 2004; Fuwa 2004; Geist 2005; Hook 2006; Yodanis 2005). Men’s share of housework is greater in the social-democratic nations of Scandinavia (Geist 2005), in nations with stronger divorce cultures (Yodanis 2005), and where women’s economic and political power is greater (Fuwa 2004). Men spend more time on unpaid work where women’s labor force participation is greater, parental leave is shorter, and men are eligible to take parental leave (Hook 2006).

Previous cross-national work has analyzed a summary measure of housework - either total time on unpaid work (Hook 2006), or a summed measure gauging sharing in “female-typed” tasks on a scale of one to five (Fuwa 2004; Geist 2005; Yodanis 2005). These summations of housework have been instructive, but they obscure important dimensions of housework – specifically who does what and how national context influences the kinds of work that men and women do in the home. Extending the focus to task segregation is important because factors may affect the time spent on certain tasks and not others, or may even have countervailing effects on different types of housework (Kroska 2004).

In this paper I turn the spotlight on how national practices and policies affect task segregation within households. I focus on unraveling how institutional arrangements may have a two-pronged effect on task segregation within households – one on individuals’ pragmatic decision-making, and the other on the normative gender arrangements in which the decision-making is embedded. I investigate how national practices and policies that either reinforce or
challenge gender differentiation influence men's and women's performance of routine and non-routine housework, and child care. I use 36 individual-level surveys spanning 1965 to 2003 combined with original national-level data on employment practices and polices in multilevel models. This approach allows me to tease out which features of national context affect sex segregation in specific types of family work.

**WELFARE STATES AND SEX SEGREGATION IN HOUSEHOLD LABOR**

The majority of research on the division of household labor has focused on the individual- and interactional-levels of analysis (see Coltrane 2000 for a thorough review). A prominent individual-level explanation, gender ideology, focuses on the influence of men and women's individual gender attitudes. Essentially there is a two-step process. Drawing on social learning theory, researchers posit that childhood socialization shapes attitudes about gender and housework, primarily through modeling of parental behaviors (Cunningham 2001; Gershuny, Godwin, and Jones 1994). These attitudes then endure into adulthood and inform behavior. The gender ideology perspective suggests that men and women who hold more egalitarian gender attitudes will more equally distribute household labor (Stafford, Backman, and Dibona 1977). As applied to task segregation, individuals with more traditional ideologies may not necessarily do more or less housework, but they should specialize in more sex-typical housework (Blair and Lichter 1991).

Another individual-level explanation, time constraints, focuses on individuals’ pragmatic allocation of work given availability and demand for housework, predicting that partners distribute workloads toward equilibrium (Blood and Wolfe 1960; Coverman 1985; Hook 2004). This perspective does not have distinct theoretical underpinnings, but arose from early studies concerned with the effect of women’s employment on the division of household labor (Blood
and Hamblin 1958; Heer 1958). Some researchers, however, have aligned this perspective with rational choice theory, or have extended this hypothesis to explicitly incorporate concepts from Becker’s (1981/1991) new home economics, such as comparative advantage (Blair and Lichter 1991; Greenstein 1996; South and Spitze 1994). Individuals are hypothesized to do less housework the more time they spend on employment, and more housework the more time their partner spends on employment and the more children they have. As applied to task segregation, individuals with more time available during the times of the day when routine, fixed tasks, such as cooking, need to be completed should be more likely to do these tasks (Blair and Lichter 1991; Presser 1994).

A prominent interactional explanation focuses on how partners may have conflicting interests, and may use their resources to negotiate out of doing housework. The greater the relative resources, the less housework an individual should do. The relative resources hypothesis is alternately derived from game theory in economics and social exchange theory in sociology (Blood and Wolfe 1960; Edwards 1969; Heer 1963; Manser and Brown 1980; McElroy and Horney 1981). Resources are generally conceptualized as economic advantage within and better alternatives to the relationship (England and Farkas 1986). As applied to task segregation, individuals with greater resources may not only bargain out of doing housework, they may bargain out of the worst chores and into the most preferred chores (Blair and Lichter 1991).

Another prominent interactional explanation, “doing gender”, focuses on gendered expectations for interaction and how individuals construct gender through housework (Berk 1985; South and Spitze 1994; West and Zimmerman 1987). Drawing on ethnomethodology (Garfinkel 1967) and extending gender display (Goffman 1977), West and Zimmerman (1987) posit that individuals continuously do gender in interaction because their behaviors are always
accountable to and assessed by their sex category. The most common hypothesis derived from this theory is that in counter-normative situations (for example, the wife is the primary breadwinner), women will do gender by doing more housework and men will do gender by doing less housework than individuals in normative situations. As applied to task segregation, individuals living in contexts with more traditional gender norms should specialize in more sex-typical housework.

All of these perspectives have received partial support. Socialization and attitudes about gender are relevant, but not deterministic (Cunningham 2001), and tend to me more salient for women than for men (Bianchi, Milkie, Sayer, and Robinson 2000). Individuals’ work hours decrease their housework, and their spouses’ work hours and the presence of children increase their housework. Women, however, are more affected by the presence of children than are men (Bianchi, Milkie, Sayer, and Robinson 2000; Shelton 1992). Relative income, a measure of bargaining power, also appears to play a role. As women’s relative income increases they do less housework, except in counter-normative situations, lending some support to doing gender (Bittman, England, Folbre, Sayer, and Matheson 2003; Brines 1993; Greenstein 2000). Overall research has shown that individuals sometimes allocate household labor in a manner that is consistent with pragmatic allocation based on time or money, but that their behaviors are informed by and interpreted in light of norms and individual attitudes about gender.

There is an emerging focus on how national context may produce, reinforce, or reflect structural and normative gender inequalities. Context is variously conceptualized as the welfare state, specific policy configurations, or cultural norms (Lewis 1992; Orloff 1993; Pfau-Effinger 2005; Sainsbury 1996). There are two threads in this conceptualization of national context: one focusing on how national context influences gender inequalities through access to concrete
resources and opportunities, and the other on how national context influences normative expectations about behavior. This dual-conception suggests that changes in national context can have a two-pronged effect on individuals – one on pragmatic decision-making and the other on the normative context in which the decision-making is embedded. For example, a government may decide to expand publicly-funded child care. From this expansion we could expect two distinct influences on work-family behaviors. On one hand, the policy provides a concrete economic resource to dual-earner and single-parent households. On the other hand, the policy provides a signal about the proper care of children and about the acceptable ways to mother.

But what causes a change in policy? That is, does a new policy (such as an increase in child care) simply reflect existing gender norms, or does it affect these norms? In contemporary welfare states, there are examples of policies that are enacted because they reflect existing norms, and examples of policies that are enacted because they serve a strategic purpose in spite of, or even in direct opposition to, existing norms. The latter is well-represented by the recent implementation of work-family policies within the European Union where supranational policy targets may conflict with a member country’s gender norms. Returning to the example of child care, in 2002 the European Union created the Barcelona targets, recommending that a minimum of 33 percent of children under age three and 90 percent of children ages three to school-age be covered by publicly-funded child care by 2010. This was preceded by the Lisbon targets in 2000, recommending that women’s labor force participation be raised to 60 percent by 2010. Although some members are deeply concerned with issues of gender equality, targets for women’s employment and child care more accurately reflect a response to Europe’s “threefold challenge: a shrinking working age population, low birth rates and a growing population of older people” (Commission of the European Communities 2006: 5). Although serving a strategic
purpose, the targets for the care of young children are in conflict with prevailing gender norms in countries such as Germany where home-based mother care is normative and facilitated by very long parental leaves (Ostner, Reif, Turba, and Schmitt 2003).

In this paper, I focus on unraveling how institutional arrangements may have a two-pronged effect on task segregation within households – one on individuals’ pragmatic decision-making, and the other on the normative gender arrangements in which the decision-making is embedded. Although I use a causal language, the available data allow me to examine whether different policy and normative contexts are associated with gender inequalities in household labor. I conceptualize national context as comprised of distinct practices and policies and focus on examining factors that are relevant to task segregation. This approach risks de-contextualizing policies, but it has the advantage of teasing out countervailing forces and providing specific directions for policy. I favor this approach over a typology or regime approach because of a regime approach may obscure variation between countries in the same ideal type, as well as contradictory policies within one nation. In the remainder of this section I consider which aspects of national context are likely to have importance for the division of household labor.

**Working-time Regimes and the Ideal Worker Norm**

The ideal worker norm refers to the unbending structure of full-time work. Essentially, waged work was and continues to be structured around an ideal of an unencumbered worker with full access to unpaid family labor, the ability to work overtime, odd hours, relocate, and travel (Williams 2000). Although this model does not fit most workers in advanced industrialized economies, it persists, codified in and supported by national working-time regimes.
National working-time regimes, set by national regulations and collective agreements on work time, can reinforce gender-differentiation (Rubery, Smith, and Fagan 1998). The characteristics of full-time work shape who is likely to work full-time, men or women, and how much time is “left-over” after work. Long standard workweeks are not conducive to gender equality (Mutari and Figard 2001; Rubery, Smith, and Fagan 1998), and longer hours are associated with more work/family conflict (Organization for Economic Cooperation and Development 2004). Although some countries have moved to more time-generous and family-friendly working-time policies (Gornick and Meyers 2003), researchers have noted an intensification of time demands in many occupations (Crompton, Brockmann, and Lyonette 2005; Jacobs and Gerson 2004), leading to "flexible hours, but boundless time demands" (Ellingsæter 2003:436). There is substantial variation across Europe in employed men’s work hours, which does not reflect workers’ preferences. Fifty percent of employed men in Denmark, for example, work less than 40 hours per week compared to only 17 percent of men in Austria, even though across countries men report that they would prefer to work fewer hours, ideally between 34 and 38 hours, even at reduced income (Fagan 2002).

An unbending structure of full-time work may keep men out of routine housework. At the individual-level they have little time and may not be available during the prime hours for routine housework. For women, this same structure may keep women out of the labor force or in part-time work because they cannot fit an unencumbered ideal-worker norm (Williams 2000), thus making them fully available for routine housework. Regardless of an individual’s employment situation, however, we can expect men in general to do less routine housework where normative work hours are long because of the gender norms associated with exhaustive full-time employment. This is best illustrated by imagining a change in institutional
arrangements. If national legislation or collective agreements reduce the length of the standard or maximum workweek, there is a direct effect number of hours a male-breadwinner has available outside of work to spend on family labor. Several studies show that lowering standard weekly work hours decreases average working hours by 75 to 100 percent of the amount of the reduction (Gornick and Meyers 2003; Organization for Economic Cooperation and Development 1998). There is also an effect on the norm of what it means to be a male-breadwinner. A reduced workweek is a signal that it is normative for a man to be invested in more than his job. Thus, we may observe a two-fold effect – one on pragmatic decision-making through time available or “left-over”, and the other on the norms in which the decision-making is embedded.

Women’s Employment, Parental Leave, Child Care, and the Social Constructions of Motherhood and Childhood

Although an ideology of intensive mothering has been dominant in Western countries in the latter half of the 20th century (Hays 1996), there is variation in how the ideal of intensive mothering and cultural conceptions of childhood have been combined with women’s increasing employment. The response to women’s rising employment in Europe has been described as falling into three ideal-types of gender arrangements. In the male breadwinner/female part-time carer model men continue to perform full-time waged work, but women combine responsibility for children with part-time employment. In the dual breadwinner/state carer model both men and women work full-time, and the government is primarily responsible for the care of children. In the dual breadwinner/dual carer model men and women are equally responsible for work and family. At any point in time a nation may be a pure type, a mix of types, or in transition to another type (Pfau-Effinger 1999). We could add a fourth model of dual breadwinner/market carer, primarily to capture the United States, in which men and women work full-time and rely
on paid caregivers with little assistance from the state. Within these models, the ideal of care may also vary. Parents (or states) may seek to replicate full-time mothering with home-based, mother-like care by grandmothers, nannies or child-minders; to keep care home-based by bringing fathers in as dual carers; or to turn to professionals under the discourse that professional settings provide something special to children, such as socialization or education (Kremer 2002).

The *male breadwinner/female part-time carer* model is a compromise between need for women's employment and the expectation that women should be primary caregivers. This model is supported by states in two key ways – through the promotion of part-time work and through the availability of long-term parental leave or “cash for care” schemes. In 1997 the European Union issued a directive on part-time work, mandating that part-time work be guaranteed the same wages and working conditions as full-time work. A main rationale for improving the conditions of part-time work was to allow workers to better combine work and family responsibilities. Although some gender equality advocates hoped that increasing the attractiveness of part-time work might draw men into it, part-time work remains an overwhelmingly female response to work/family conflict (Bleijenbergh, de Bruijn, and Bussemaker 2004).

Although women’s part-time work can be a solution to work/family conflict, where women’s part-time work is pushed as a solution we can also expect gender inequality to endure. On an individual-level, Steir and Lewin-Epstein (2000) find that women who work part-time do not have a more equitable division of household labor than do housewives. Women’s income from part-time work is still substantially less than men’s and part-time work means that women are available to do routine household labor. In contrast, full-time employment provides more substantial resources and decreased time available for housework, promoting equal sharing in
even female-typed housework tasks. On a normative-level, women’s part-time work signals that women’s primary responsibility is in the home. Thus, sex specialization in housework remains unchallenged both within households and on a cultural level.

Long parental leaves further extend the compromise between women’s employment and women’s responsibility for primary caregiving. Parental leaves are up to three years long in some European countries, including Germany, Finland, and France. These leaves generally provide job security and compensation. Employers, however, are generally not required to provide the same job, and compensation tends to be low and paid at a flat rate (Gauthier and Bortnik 2001). Take-up rates tend to be high. In Austria, for example, 95 percent of eligible mothers take a two-year parental leave, with a minority returning to work immediately after leave (Badelt 1991).

Parental leave provides a concrete resource to women – job security and some financial compensation for lost work. It also provides, however, a normative message to women that they should be at home with their children. Again thinking about a change in policy, an increase in length of parental leave, we could expect two effects. On one hand women who utilize leave have more time available for housework and child care, and more time during routine hours of housework. As parental leave is a form of specialization, we may also expect men married to these women increase their work time, if possible, to supplement the loss of income, making these men more unavailable for routine housework. On the other hand, the availability of this leave may create expectations among new mothers that they should use this leave. That is, it is “right” for “good mothers” stay home to care for their children because the state is making this benefit available. As the birth of a child is a critical time of household renegotiation (Sanchez and Thomson 1997), patterns formed during leave may endure well beyond the leave. Where
leave is long we can expect sex specialization in housework to be reinforced. Conversely, modest, highly-paid leave, promotion of full-time work for women (or reduced hours for both men and women), and restrictions on the ideal-worker norm challenge gender differentiation in the labor market and in the home.

A key policy component of the dual-breadwinner/state carer model is publicly-provided child care. Most European children between the ages of zero and one are cared for by parents. Provisions for children aged one to two are much more varied, with 74 percent of children in Denmark covered to only 5 percent in Germany (Gornick and Meyers 2003). Publicly financed child care provides a concrete resource—affordable and quality care for children, but it also shapes norms about the proper care of children. Governmental provision of child care shapes perceptions of what is good or bad for children and provides a powerful signal to women about who should be caring for their children (Ellingsæter 2003). In Denmark, for example, although the extensive provision of child care does facilitate women’s employment, the discourse is child-centered, focusing on the rights of children and their need for socialization (Borchorst 2002).

Again, thinking about an increase in publicly supported child care we could expect two effects. For parents that utilize child care, there should be a reduction in the routine child-associated housework, such as cooking lunches and cleaning up after repeated messes. There is mounting evidence to suggest that employed mothers spend only slightly less time on physical and interactive child care than do non-employed mothers, but they do perform less routine child-associated housework in children’s presence (Bianchi 2000; Nock and Kingston 1988). Similar to parental leave, however, there should also be a normative signal about what it means to be a mother. Where publicly-funded child care is common we can expect women’s responsibility for care, and thus sex specialization in housework, to be challenged.
Paternity Leave and the Social Construction of Fatherhood

Ideal images of fatherhood have also shifted over time, with an increasing focus on “involved” fathers or “new” dads. Practice and institutional supports, however, have not kept pace with the evolving discourse (O'Brien 2004). Fathers’ seeking high levels of involvement may face reluctance from employers, co-workers, and even their partners. At the extreme, men who fully embrace fatherhood as househusbands face social isolation and disapproval (Smith 1998). Men today are caught between norms and policies that support a traditional breadwinning role and a new involved fathering discourse.

In an effort to provide concrete support for this new ideal, several nations have extended the availability of parental leave to fathers and even an exclusive right to paid paternity leave. Many countries revised parental leave policies in 1980s and 1990s to give fathers at least a legal right to leave. In Austria, for example, parental leave available to mothers since 1956 became available to fathers in 1990 (Gauthier and Bortnick 2001). In the United States, the first national leave law, the Family and Medical Leave Act of 1993, provided fathers an individual entitlement. The lack of wage replacement, or low level of payment, is a major disincentive for new fathers to use leave (Gornick and Meyers 2003). Because most men were not making use of parental leave, Scandinavian countries pioneered paid paternity leave, a cornerstone of the dual-breadwinner/dual-carer model. Scandinavian countries offer men paid leave for between two and four weeks (with exception of Iceland which offers three months). Several other European countries have followed suit, France offering two weeks as of 2002 and the United Kingdom offering two weeks as of 2003 (Gornick and Meyers 2003).

Paternity leave provides a concrete resource to fathers that they can use to negotiate with employers, co-workers, and partners. Fathers generally use paternity leave when it is available,
an exclusive right, and well-compensated, especially in Norway where fathers’ take up rates are 85 percent (Rostgaard 2002). In addition to a short-term boost in family work, paternity leave may provide a long-term boost as it develops men’s skills as primary caretakers and fosters father-child attachment (Haas 1992). In addition to being a concrete resource for fathers, leave signals that father involvement is normative (Leira 1998). It challenges both the ideal-worker norm in the labor market, and mother’s sole responsibility for child care in the home. Thus, parental leave for men should reduce sex specialization in household labor. Studies suggest, however, that when men take leave they engage in child care and some housework, but do not fully embrace routine housework (Brandth and Kvande 1998).

In this paper, I examine how national practices and policies affect task segregation within households, investigating gender differences in time devoted to routine and non-routine housework, and child care. I focus on unraveling how institutional arrangements may have a two-pronged effect on task segregation within households – one on individuals’ pragmatic decision-making, and the other on the normative gender arrangements in which the decision-making is embedded.

RESEARCH STRATEGY

Individual-level Data

I use data from the Multinational Time Use Study (MTUS; versions 5.0.1, 5.5.1, and 5.5.2), which is a collection of over 50 harmonized time-use datasets from over 20 countries spanning five decades. In time use or time diary studies respondents are asked to either keep a paper diary of their daily activities or are asked by interviewers to reconstruct their previous day. Respondents record or report what they were doing in their own words and then survey staff members code all of the activities using an activity lexicon. The MTUS provides standardized
background and time expenditure variables for individuals ages 20 to 59. Time expenditures are measured in a 40-category typology (Gauthier, Gershuny, and Fisher 2002; 2003). I use 36 surveys conducted between 1965 and 2003, from 19 countries (listed in Appendix A).

The MTUS is uniquely appropriate to investigate this topic. It is the only cross-national dataset with detailed measures of time use. An advantage of national time diary studies, especially for sensitive topics like parenting, is that respondents are not primed or on-guard for specific topics, so social desirability bias is minimized (Pleck and Stueve 2001). This is especially important for cross-national research where cultural differences might influence responses to survey questions. The time-diary format is also widely recognized as the most valid and reliable measure of time use. It is generally robust to variations in data collection, facilitating cross-national comparison (Harvey 1993; Juster 1985; Marini and Shelton 1993; Robinson 1985).

I limit the sample to married (or cohabiting) men and women because these respondents have the possibility of sex-specializing in household work. Cohabitation is not analyzed as a separate marital status because only eleven surveys included it as a distinct category. Most post-1970 surveys grouped cohabitation with marriage, but in several it is unknown whether cohabiting respondents identified as married or single. Thus, there is slight variation in sample selection because of differences in survey design. The surveys contain information on 66,376 men and 74,587 women. I lose 5.9 percent of the cases (n = 8,332) because of missing information. Comparisons of these cases to the full sample show no major distinctions between the omitted group and the rest of the sample. The resulting sample size is 62,458 men and 70,173 women.
Because MTUS is an archive of surveys collected using different methods, there are several issues that may affect comparability (see Appendix A for a discussion and detailed information on the methodology of each survey). I include a control variable to address the most consequential comparability issue – that the length of the time slots in which respondents could report their activities varies across surveys. Twenty-one of the surveys have no fixed time slots; three have five-minute; six have 10-minute, and six have 15-minute intervals. Studies show general comparability among these different formats, but short-duration activities lasting under 10 minutes, such as personal care and childcare episodes, are less likely to be captured with long time slots (Harvey 1993). Sensitivity analyses show that surveys with five-minute time slots are more likely to capture participation in an activity than are the other formats, and the fifteen-minute time slots are more likely to capture more time on an activity among those reporting participation. I include variables in the analyses to control for the influence of time slot length.

In addition to comparability issues, in much cross-national and longitudinal research there is a tension between maximizing the surveys included and maximizing the level of detail in the individual-level analyses. In this analysis, I favor maximizing the number of surveys (36 of over 50 surveys) and using sensitivity analyses to examine the robustness of results to richer individual-level data. In spite of its limitations, the MTUS is the best data available to investigate these questions and its limitations can be lessened with careful attention to comparability issues and sensitivity analyses.

**Measures**

The dependent variables are performance of routine housework (1 = yes), minutes spent on routine housework, performance of non-routine housework (1 = yes), and minutes spent on non-routine housework, performance of child care (1 = yes), and minutes spent on child care.
Routine housework is created from two MTUS time-use categories - cooking and cleaning. It includes preparing food, setting the table, washing and putting away dishes, doing laundry, ironing, putting away groceries, making beds, dusting, vacuuming, general tidying, and outdoor cleaning. Non-routine housework is created from two MTUS time-use categories – odd jobs and gardening. It includes repairing clothes, heat and water supply upkeep, "do it yourself", decorating, household repairs, vehicle maintenance, car washing, paperwork, pet and houseplant care, caring for adults, and gardening. Child care is one MTUS time-use category. It includes feeding, bathing, playing, reading, teaching, and supervising. A finer classification is not possible with such a large group of surveys, and an aggregated measure has the advantage of minimizing variation that may arise from small differences in survey coding.

It is important to note the limits of the MTUS for measuring housework and child care. First, multitasked or secondary activities are not included. Because women more likely to multitask than are men, women may do more housework and child care than is captured in the surveys (Budig and Folbre 2004; Sayer forthcoming). Second, diaries do not capture responsibility for household tasks. As women are not only more likely to perform, but to be responsible for and manage housework and child care, their efforts may be further underestimated (Merderer 1993; Zimmerman, Haddock, Ziemba, and Rust 2001). Third, child care tasks, such as cleaning up after children, are often recorded as housework; this confounds attempts to separately analyze child care from housework as reflected in the above discussion of publicly funded child care (Budig and Folbre 2004).

Table 1 presents the means and standard deviations for the variables used in the analyses. Measures of independent individual-level variables include factors identified by individual-level
theories, including children, employment status, and educational attainment. Child under five is coded to one if the respondent is living with at least one child under the age of 5. Child over five is coded to one if the respondent is living with at least one child age 5 but under age 18. The omitted category is not living with a child. Hours of paid work (on diary day) is the number of hours spent in paid employment on the diary day, including paid work at home and at a second job, and excluding travel time. Although there is concern that including paid work hours on the diary day is inappropriate for predicting unpaid work on the diary day because of endogeneity (Jenkins and O'Leary 1995), I include this variable because I include national-level measures of work hours. This variable accounts for a substantial proportion of variance explained at the individual-level. Not employed is coded to one if the respondent is not employed. Full- or part-time work is the omitted category. Low education is coded to one if the respondent has less than a secondary education. I am unable to use a finer classification with all 36 surveys. I include age, measured as the respondent’s age in years minus 20, as a control variable.

Measures of survey-level variables include year and conditions hypothesized to reinforce or challenge gender differentiation. Although each of these areas could be operationalized by a number of variables, the analyses are constrained by degrees of freedom as well as ability to construct comparable measures across time and space. I include the year of the survey as a linear measure. I use a linear measure as opposed to period dummies because each dummy would contain varying sets of countries, adding a substantial degree of error to the time trend.

I use two measures to gauge married women’s employment practices. The percentage of married women employed is the percentage of married women reporting employment in the MTUS surveys. Married, employed women’s national work hours is the mean paid hours reported on the diary day by married, employed women multiplied by seven. Work regulations
are measured by employed men’s national work hours. I chose a measure of the outcome of the work regulations and not specific policy measures because of the complexity of work regulations and the close link between regulations and hours worked. Employed men's national work hours is calculated the same way as married, employed women’s national work hours.

Policy measures are compiled from over 35 primary and secondary sources (available from author upon request). The percentage of children aged 0-2 in publicly supported childcare measures enrollment rates in publicly subsidized childcare facilities. Weeks of parental leave is the sum of maternity, parental, and extended childcare leave weeks available at the national level, including paid and unpaid leave, although most of the leaves are paid. The measure gauges the maximum length of time that mothers or parents can be absent from the labor market with job protection and usually some level of wage replacement. Parental leave available for men is a binary variable indicating whether men are eligible to use a portion of parental leave. Although availability does not equal use, it is a significant legislative turning point, marking the first time that men are entitled to any child-related leave. I do not include paternity leave because it is too recent to be reflected in more than two of the surveys.

**Method**

There is contention over how to properly model time diary data. The crux of the issue is how to deal with the unique distributions of dependent variables generated from the data. Most variables are right skewed with a significant amount of zeros (representing people not engaging in the activity on the diary day). Thus, a linear model using the full sample violates assumptions that the error term is normally distributed with a mean of zero. An additional complication is that within these zeros it is not possible to distinguish people who never do an activity from people who happened not to do the activity on the day of the survey. As a solution to too many
zeros some researchers use Tobit models for censored data (Flood and Gråsjö 1998), which assume that we do not observe the dependent variable over its full range. As applied to time use data, the Tobit specification assumes that some zero values are real and that some zero values represent negative values that were not observed (Long 1997). The theoretical underpinnings of the Tobit do not fit time use variables which are clearly bounded between zero and twenty-four hours per day.

I address the unique distribution of time use variables by using two models for each activity - participation in the activity on the diary day and time spent on the activity among those participating. The analyses show the additional insights such a modeling strategy provides, especially when making cross-national and over-time comparisons. I use individual and national-level variables in hierarchical logistic models to predict men’s and women’s participation in routine housework, non-routine housework, and child care. I estimate the models with the pseudo-quasi-likelihood method. The same variables are then used in hierarchical linear models to predict men’s and women’s log time spent on these activities among those participating in each type of activity. Even after removing non-participators from the linear regression, I log time to correct for a long right tail in the residuals. It is important to note that the logistic regressions for participation reflect the probability of participating in an activity on a random day, not of belonging to stable group that never participates.

Multilevel models allow the estimation of one model that contains two or more sub-models representing different levels of analysis. I chose a multilevel model because it addresses dependence between respondents in the same survey, captures unmodeled differences between surveys, and allows intercepts to vary across surveys. I use a two-level model with individuals
nested within surveys or country-years. I estimate a random-intercept model and do not include random-coefficients, constraining the individual-level coefficients across the surveys.

I weight descriptive statistics to account for both population distribution and daily variation. I use a post-hoc weight for known age-sex-employment distributions multiplied by a day-of-the-week weight for data from MTUS 5.0.1. For data from MTUS 5.5.1 and 5.5.2, I use a post-hoc weight for known age-sex distributions multiplied by a day-of-the-week weight. I do not weight the multivariate analyses; instead I include age, employment status, and day-of-the-week as control variables (Winship and Radbill 1994). The day-of-the-week variables are dummy variables for Saturday and Sunday, with weekdays omitted. I also include control variables for survey design as discussed in the data section. In logistic regressions I include a dummy variable for surveys with five-minute time slots, and in linear regressions I include a dummy variable for surveys with fifteen-minute time slots.

RESULTS

Figure 1 displays participation rates and time spent among participators on three types of family work, by sex. It shows dramatic variation across surveys and between married men and women. As shown in panel A, men are most likely to participate in routine housework on a daily basis, followed by non-routine housework, and then by child care (child care is restricted to fathers). The spreads of the distributions are dramatic, especially for participation in routine housework, which ranges from 20 to over 80 percent. Among participators, however, men spend the most time on non-routine housework, followed by child care, and then by routine housework, as shown in panel B. Men are most likely to do routine housework, but spend the least time on it. The pattern is very different for women. Almost universally, women participate in routine housework on a daily basis, and they spend substantial amounts of time on it. There is dramatic
variation in the amount of time women devote to routine housework, ranging from around 100 to over 300 minutes per day. Women are less likely to engage in child care on a daily basis (child care is restricted to mothers), and least likely to do non-routine housework. Women spend the most time on routine housework, followed by child care, and then by non-routine housework. Appendix B presents men’s and women’s participation rates and time spent on family work by survey.

<INSERT FIGURE 1>

Figure 2 shows how participation rates and time spent on housework and child care have changed over time. Panel A shows that across countries women have slightly decreased their participation in routine housework while men have substantially increased their participation from approximately 40 to 70 percent. In the 1960s women were more likely to participate in non-routine housework than were men, but by 2000 men were more likely to participate. Although both men and women decreased their participation in non-routine housework, women’s participation declined more quickly. Mothers’ child care remained fairly flat, whereas fathers have increased participation over time. Panel B shows time spent on housework and child care by those participating on a given day. Women’s routine time drops by nearly half over the 40-year span, whereas men’s non-routine time increases from about 95 to 140 minutes per day. Men’s routine and women’s non-routine time remained fairly flat throughout the period, whereas both men’s and women’s child care time increased slightly. The descriptive analyses show that decreases in women’s participation in and time on routine housework and child care, and increases in non-routine housework can be interpreted as a decrease in sex specialization, and vice-versa for men.

<INSERT FIGURE 2>
Table 2 shows the results of the multilevel models predicting men’s and women’s participation in and time spent on the three activities. I do not report the linear regressions for men’s routine and non-routine housework or the models for women’s child care because there are no statistically significant results at the survey level (results available from author upon request). In essence, for men the influence of national-level context is concentrated on the propensity to engage in the three types of family work and the time spent on childcare, whereas for women the influence of context is concentrated on housework. I find that women’s participation and time spent on child care is fairly stable, despite increases in women’s employment as suggested by other researchers (Bianchi 2000; Gauthier, Smeeding, and Furstenberg 2004; Sayer, Bianchi, and Robinson 2004). The absence of statistically significant effects, however, does not mean that there is no effect (especially with a sample of 36), but that we cannot reject the null hypothesis that the effect may be zero. Additionally, I do not report tests of cross-level interactions because I test the same model across the twelve regressions. Some national-level measures may be more effective at explaining why the effects of individual-level predictors vary across surveys.

The variance components reported at the bottom of Table 2 show the intraclass correlation coefficient (ICC) for each model. It indicates how much of the overall variance is between surveys as opposed to within surveys. I calculated the ICCs by dividing the between-group variance by between-group plus within-group variance from the random intercept model. Variation between surveys accounts for 41 percent to 13 percent of overall variance for the logistic models, and for 14 percent to 5 percent of overall variance for the linear models. Women’s housework is more influenced by national context than is men’s; this is reflected in the larger intraclass correlation coefficients. In addition, women’s routine housework is more
responsive to national context than is women’s non-routine housework. Although most of the variance is at the individual-level, the variation across countries and time is substantively important, especially given our current understanding of household labor. Additionally, national-level effects working through individual-level processes are in the within-group variance.

<INSERT TABLE 2>

Beginning with the individual-level effects and looking across the four models for men, men with young children are no more likely to do routine housework than are men without children. They are, however, less likely to participate in non-routine housework. Men with small children are more likely to participate in and spend more time on child care than men with older children. It appears that small children cause less sex specialization in men’s housework.

Looking across the four models for women, however, women with children are more likely to do routine housework and spend more time on routine housework, but they are less likely to do and spend less time on non-routine housework. This is consistent with findings that children are associated with increasing sex specialization in the home (Sanchez and Thomson 1997).

Each additional hour of paid work is associated with a decreasing likelihood of participating in both types of housework and child care and less time spent on housework and child care. This finding is consistent with a time constraints perspective or the adding up of a 24-hour time period. Controlling for hours worked, however, men who are not employed are less likely to do non-routine housework and child care. This finding is consistent with a negative effect for men’s long-term unemployment reflecting gender performance (Brines 1994). For women, each additional hour of paid work is associated with a decreasing likelihood of participating in both types of housework and less time spent on housework. This finding is consistent with the effect of work hours on men’s housework. Controlling for hours worked,
however, women who are not employed are just as likely to do both types of housework as women who are employed, but non-employed women spend more time on routine housework and less time on non-routine housework. This finding suggests that wives who remain out of the workforce are more sex specialized within the home.

Men with low educational attainment are less likely to participate in routine housework and child care and spend less time on child care, but they are more likely to participate in non-routine housework. Older men are slightly less likely to participate in routine housework and child care and more likely to participate in non-routine housework. Older and less educated men are more sex specialized, which is consistent with research concluding that education and age are proxies for gender ideology reflecting more traditional gender attitudes (Coltrane 2000). This finding is echoed for women. Women who are older and have low educational attainment are more likely to participate and spend more time on both types of housework.

Turning to the national-level effects, year is important, but less consequential than we might predict. There is a substantial increase in men’s participation in routine housework over time, as shown in Figure 1, but the multilevel models show that the trend is explained not by time, but by other individual- and national-level variables. Men are less specialized over-time, however, because with each increase in year the odds of men participating in non-routine housework decrease, whereas the time participators spend on child care increases. Women are also less specialized over-time; with each increase in year the odds of women participating in any type of housework decrease, as does time on routine housework.

Women’s employment, at the country-level, is also important, especially for men. Men are more likely to do routine housework in contexts where married women’s labor force participation is higher. I conducted sensitivity analyses to test if this effect is robust to the
inclusion of spouse’s employment at the individual level for the subset of surveys in which this information is available; I find that it is (see Appendix C). Because levels of women’s employment affect all men, there is clear evidence that the influence of women’s employment goes beyond the individual negotiations of husbands and wives and shapes gender norms more broadly. Women’s employment hours also positively influence men’s child care time. Again, this is robust to the inclusion of women's employment at the individual-level (see Appendix C). These results suggest that men's child care is informed by gender norms related to women’s employment. Individual women are also influenced by national characteristics of women’s employment. For each additional hour in women’s employment hours, women’s non-routine housework time increases. It appears that where women are more invested in the public sphere they spend more time on sex-atypical, schedule-flexible types of housework (the coefficient for routine housework is negative, but not statistically significant). This suggests the importance of gender norms because this coefficient does not reflect women’s time availability as their individual employment time is controlled for at individual-level.

Long national workweeks for men increase men’s specialization in housework. Controlling for work hours at the individual-level, men are less likely to do routine housework in contexts where long workweeks are the norm. The odds of men participating in routine, but not non-routine, housework decrease for each additional hour in men’s national average workweek. There is a similar specialization effect on women. Each hour increase in men’s workweek increases women’s routine housework time.

Publicly-funded child care decreases specialization through an interesting route. Men are less likely to perform non-routine housework with increases in publicly-funded child care, and
women spend less time on *routine* housework. Men and women spend less time on sex-typical housework where the state provides care. As expected, they do not reduce their child care time.

Long parental leaves appear to increase sex specialization in both routine housework and child care. Men are less likely to do child care when parental leave is long, and long parental leaves increase both women’s probability of performing and their time on routine housework. This is consistent with the idea that long parental leaves encourage women’s specialization in routine housework and child care.

Men are more likely to perform non-routine housework and child care where men are eligible to take parental leave. The results for the availability of parental leave for men are highly consistent with qualitative research on men's use of parental leave. Studies show that men use leave time for child care and "masculine" housework or projects, but do not generally include "feminine" housework in their conceptions of leave-taking (Brandth and Kvande 1998). Men’s eligibility to take leave, however, also influences women’s non-routine housework. Where parental leave is available to men women are also more likely to participate in non-routine housework and spend more time on it. This might suggest that women are less sex specialized where there is greater equality in policies towards parental leave. But because men also get a boost in non-routine work, another possibility is that where the state advocates gender equality in family life, men and women are more likely to spend time on housework together. This is a promising avenue for future work.

**DISCUSSION**

Across countries women are more heavily invested in routine housework and child care, and men are more heavily invested in non-routine housework. The trends, however, show a sizable decrease in this specialization since the 1960s. In multivariate analyses, each advancing
year decreases women’s probability of engaging in routine or non-routine housework on a daily basis, and decreases the amount of time spent on routine housework, whereas for men, it increases the amount of time spent on child care. There is not a one-to-one tradeoff, however, between men and women’s time; the use of market services (Bittman, Matheson, and Meagher 1999; van der Lippe, Tijdens, and de Ruijter 2004) and the adoption of lower standards are clearly part of the story (Robinson and Milkie 1998).

Women’s disproportionate responsibility for routine, inflexible forms of family work, however, remains. This may be problematic on two fronts. For individuals and households, sex specialization in household tasks is actually more important to perceptions of fairness, and thus marital quality and women’s health, than is total time spend on housework (Baxter 2000). For some nations, within the European Union for example, sex specialization is seen as a barrier to desired levels of gender equality, employment, and fertility (Commission of the European Communities 2006).

This study is the first to situate task segregation in household labor within national context. As hypothesized, national conditions do reinforce or challenge sex specialization in the home. It is noteworthy that models, controlling for individual level factors, find contextual effects on specialization within types of household labor. Recent research documents similar national-level effects for women’s employment (Mandel and Semyonov 2005; Pettit and Hook 2005) and time spent on and share of housework (Davis and Greenstein 2004; Fuwa 2004; Geist 2005; Hook 2006; Yodanis 2005), but effects on even the types of housework that men and women engage in clearly demonstrates the long reach of national context on gendered divisions of labor.
The findings add to the growing concern that the ideal-worker norm requires modification before men can be more fully incorporated into family life (Gornick and Meyers 2003; Williams 2000). Men’s working-time regimes are associated with sex specialization in housework. Longer normative work hours for men decrease the probability of men’s routine housework and increase women’s routine housework time. It is important to remember that this national-level effect for men is found after controlling for men’s daily work time at the individual-level.

The findings also suggest that the promotion of part-time work, if primarily taken-up by women, increases sex-specialization in household labor. At both an individual (see Stier and Lewin-Epstein 2000) and national-level, part-time work does little to discourage specialization in housework and child care. Greater involvement of women in employment, both in terms of participation and work hours, is associated with less sex specialization. Greater participation increases the probability of men’s routine housework and greater commitment of hours increase fathers’ child care time and increases women’s time on non-routine housework. The effects of women’s employment at the national-level are robust to individual-level employment, again suggesting that the effect of women’s employment goes beyond the individual-level, influencing normative arrangements in general.

Theoretically, these results suggest that national context has a two-fold effect – one on individuals’ pragmatic decision-making, and the other on the gender normative arrangements in which the decision-making is located. As detailed in the prior two paragraphs, I find an individual-level effect for employment time and a national-level effect for employment time. The effect of employment at the individual-level supports a time availability or rational choice perspective, but the effect of working-time regimes at the national-level, controlling for
individual-level employment time, suggests that working-time regimes have an additional influence on individuals. This additional effect at the national-level supports the perspective that normative arrangements about paid work and gender influence individual- and household-level decisions about housework.

The findings also support concerns about the implications of long parental leaves for gender equality (Højgaard 1997; Moss and Deven 1999). Long parental leaves increase sex specialization. Parental leave does not appear to affect men’s housework, but it increases women’s probability of and the time spent on routine housework, and it decreases men’s probability of engaging in child care on a daily basis. Long parental leave makes women available for routine housework during a critical time of household renegotiation and it sends a clear message about who should care for small children. This adds to research showing that long parental leaves depress women’s labor force participation (Pettit and Hook 2005).

Inequality generated through long parental leaves, however, may be lessened by policy design, specifically men’s eligibility to take parental leave. Men’s eligibility has a positive effect on men’s participation in child care. Where men are at least eligible to take parental they are more likely to participate in child care on a daily basis. We would expect paternity leave to have an even greater effect on men’s investment in child care. As more countries extend paid paternity leave to new fathers and data become available, this policy innovation will provide further opportunities to explore the relationship between national policy and individual family behaviors.

Men’s eligibility to take parental leave has a curious effect on housework. It increases both men’s and women’s non-routine housework. One explanation is that when gender equality is advanced at the national-level men and women are more likely to spend time on housework.
together. Future work, using data on matched couples, should explore the relationship between national context and joint time in household labor.

Finally, public provision of child care for young children is associated with less sex specialization in housework. Where child care is greater men are less likely to do non-routine housework and women spend less time on routine housework. It reduces men’s and women’s housework primarily in sex specialized arenas. As expected, child care services replace housework, not direct child care (Bianchi 2000; Nock and Kingston 1988).

It may be surprising that publicly-funded child care has no effect on women's child care time, and that in general, women's child care time appears immune to measures of national context. The variance in women's child care between countries and years is a fraction of the variance in routine and non-routine housework and there is not a significant trend in women's child care time. As suggested by others, forces influencing women's child care time are complex, with some factors, such as increased employment, working against others such as rising standards for good parenting (see Sayer et al. 2004 for a thorough review). There is, however, some between group variation that remains to be explained. Future work should consider additional factors that may account for some of this variation.

It is particularly interesting that for men routine housework and child care time follow similar trends and even share similar national-level predictors, but this is not true for women. Trends in and predictors of women's housework are distinct from those of child care. This echoes previous work suggesting limits to the conception of all or most non-market work as negative, or something that individuals want to negotiate out of (Thompson and Walker 1989). In fact, if women do place a premium on the time they spend with their children and the time their partners spend with their children, women might negotiate out of routine housework and into primary
child care, and bargain more child care time from fathers, possibly to the sacrifice of increases in men’s routine housework time. Future work should explore this possibility with couple-level data.

Future work should continue to investigate the relationships between context and family processes. Research is needed with couple-level data to examine how household-level processes play out in different contexts, and how workplace conditions at the meso-level mediate the relationship between nations and households. The integration of research on states, markets, and families offers us the potential to better understand the reproduction of gender inequality across divergent contexts.
REFERENCES


Figure 1. The distribution of mean participation rates (panel A) and mean time spent among participators (panel B), by activity type and sex (N = 36)

Note: The boxplots display the minimum, first quartile (lower half of box), median (horizontal line), third quartile (upper half of box), maximum, and outliers of each distribution.
Figure 2. Trends in mean participation rates (panel A) and mean time spent among participators (panel B), by activity type and sex (N = 36)
Table 1. Means and Standard Deviations of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (Women N=70,173)</th>
<th>SD</th>
<th>Mean (Men N=62,458)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Routine housework (1=yes)</td>
<td>.97 (.18)</td>
<td></td>
<td>.53 (.50)</td>
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<tr>
<td>Routine housework (minutes)</td>
<td>207.03 (140.03)</td>
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<td>33.29 (61.83)</td>
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<tr>
<td>Non-routine housework (1=yes)</td>
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<td>.45 (.50)</td>
<td></td>
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<tr>
<td>Non-routine housework (minutes)</td>
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<td></td>
<td>51.63 (101.05)</td>
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<tr>
<td>Child care (1=yes, parents only)</td>
<td>.71 (.45)</td>
<td></td>
<td>.40 (.49)</td>
<td></td>
</tr>
<tr>
<td>Child care (minutes, parents only)</td>
<td>82.45 (102.26)</td>
<td></td>
<td>29.01 (56.82)</td>
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<tr>
<td><strong>Independent</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Child under five (1=yes)</td>
<td>.23 (.42)</td>
<td></td>
<td>.24 (.43)</td>
<td></td>
</tr>
<tr>
<td>Child over five (1=yes)</td>
<td>.35 (.48)</td>
<td></td>
<td>.36 (.48)</td>
<td></td>
</tr>
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<td>Hours of paid work (on diary day)</td>
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<td>5.84 (4.47)</td>
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<tr>
<td>Not employed (1=yes)</td>
<td>.40 (.49)</td>
<td></td>
<td>.09 (.29)</td>
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</tr>
<tr>
<td>Low education (1=yes)</td>
<td>.42 (.49)</td>
<td></td>
<td>.39 (.49)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>19.69 (10.58)</td>
<td></td>
<td>21.11 (10.25)</td>
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</tr>
<tr>
<td>Sunday (1=yes)</td>
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<td>.14 (.35)</td>
<td></td>
</tr>
<tr>
<td>Saturday (1=yes)</td>
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<tr>
<td><strong>Survey</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>1982.53 (12.85)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married women employed (%)</td>
<td>58.40 (16.61)</td>
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<td>Employed women's weekly paid hours</td>
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<td>Employed men's weekly paid hours</td>
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<td>Children age 0-2 in child care (%)</td>
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<td>Weeks of parental leave</td>
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<td>Parental leave available to men (1=yes)</td>
<td>.44 (.50)</td>
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Table 2. Multi-level Models Predicting Men’s and Women’s Participation in and Time Spent on Family Work

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<thead>
<tr>
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<tr>
<td></td>
<td>Routine Housework</td>
</tr>
<tr>
<td></td>
<td>Logistic</td>
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<td>( \beta )</td>
</tr>
<tr>
<td><strong>Individual-level variables</strong></td>
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<td></td>
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<tr>
<td>Hours of paid work (on diary day)</td>
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<tr>
<td></td>
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<td></td>
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<td>(.021)</td>
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<tr>
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<td>(.001)</td>
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<td>Year</td>
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<td>(.111)</td>
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<td>% of married women employed</td>
<td>.034</td>
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<tr>
<td></td>
<td>(.008)</td>
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<td>Employed women's weekly paid hours</td>
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<td>% of children age 0-2 in child care</td>
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<td></td>
<td>(.009)</td>
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<td>Weeks of parental leave</td>
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<td>Parental leave available to men (1=yes)</td>
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<td>(.251)</td>
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<tr>
<td>Within-group</td>
<td>.997</td>
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<tr>
<td>Psuedo R²</td>
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Table 2. Continued

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<td>(.026)</td>
<td>(.020)</td>
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<td>Hours of paid work (on diary day)</td>
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<td>1.085 ***</td>
<td>.092 ***</td>
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<td>-.004</td>
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<td>.003</td>
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<td>(.003)</td>
<td>(.010)</td>
<td>(.004)</td>
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<td>Employed women's weekly paid hours</td>
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<td>-.012</td>
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<td>Employed men's weekly paid hours</td>
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<td>(.041)</td>
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<td>% of children age 0-2 in child care</td>
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<td>.997</td>
<td>-.005 +</td>
<td>-.001</td>
<td>.999</td>
<td>-.001</td>
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<td></td>
<td>(.012)</td>
<td>(.003)</td>
<td>(.011)</td>
<td>(.004)</td>
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<td>Weeks of parental leave</td>
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<td>.002 ***</td>
<td>-.003</td>
<td>.997</td>
<td>.000</td>
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<td>(.002)</td>
<td>(.001)</td>
<td>(.002)</td>
<td>(.001)</td>
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<td>Parental leave available to men (1=yes)</td>
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<tr>
<td></td>
<td>(.338)</td>
<td>(.082)</td>
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<td>(.117)</td>
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Variance components

- Between-group intercept only: .693
- Within-group intercept only: .979
- Intraclass correlation coefficient: .414
- Between-group: .281
- Within-group: 1.021
- Psuedo R^2: .222
- N: 70,173

Notes: ***p<=.001, **p<=.01, *p<=.05, +p<=.10, two-tailed tests. All models include additional control variables for survey design (Saturday, Sunday, five-minute time slots (for logistic), and fifteen-minute time slots (for linear)).
## Appendix A. Details of Time Diary Studies

<table>
<thead>
<tr>
<th>Survey</th>
<th>Collector</th>
<th>Format</th>
<th>Minutes</th>
<th>Level</th>
<th>Day</th>
<th>Months</th>
<th>Response</th>
<th>Version</th>
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<td>House</td>
<td>1 March &amp; Sept</td>
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<td>open</td>
<td>Ind</td>
<td>1 Autumn</td>
<td>63</td>
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<td>House</td>
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<td>83</td>
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<td>Recall</td>
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<td>House</td>
<td>1 12</td>
<td>.</td>
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<td>Canada 1971</td>
<td>Dalhousie University</td>
<td>Left-behind</td>
<td>open</td>
<td>House</td>
<td>1 Oct to May</td>
<td>72</td>
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<td>1 Sept to Nov</td>
<td>46</td>
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<td>Statistics Canada</td>
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<td>open</td>
<td>Ind</td>
<td>1 Oct to Dec</td>
<td>80</td>
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<td>Ind</td>
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<td>Left-behind</td>
<td>open</td>
<td>Ind</td>
<td>1 Nov to Dec</td>
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<td>Left-behind</td>
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<td>1 .</td>
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<td>Left-behind</td>
<td>open</td>
<td>Ind</td>
<td>1 Sept to Oct</td>
<td>90</td>
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<td>House</td>
<td>2 4 seasons</td>
<td>Quota</td>
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Appendix A. Continued

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<th>Survey</th>
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<th>Format</th>
<th>Minutes</th>
<th>Level</th>
<th>Day</th>
<th>Months</th>
<th>Response</th>
<th>Version</th>
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<td>House</td>
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<td>12</td>
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<td>United States 1965</td>
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<td>open</td>
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<td>Nov to May</td>
<td>74</td>
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Notes: Gauthier, Smeeding, and Furstenberg (2004); Fisher (2004); Gauthier, Gershuny, and Fisher (2003).

1 In “Left-behind” diaries respondents are given a blank diary to fill-in during the course of a day. In “Recall” diaries respondents are asked to recall their activities on the previous day. Studies show great similarity between the two methods, with recall diaries typically showing 5 to 10% fewer diary entries, which may affect reports of short-duration activities (Harvey 1993).

2 A discussion of non-comparability resulting from this difference appears under the “Data” section. I include control variables for five-minute and fifteen-minute time slots.

3 “Ind” indicates an individual-level survey and “House” indicates a household-level survey. Possible dependence is not addressed in household-level surveys because so few households include two or more men aged 20 to 59.

4 I include only the first day of two-day surveys.

5 The period of data collection varied from one to twelve months. This affects comparability if housework varies seasonally. Studies show that estimates from autumn are most similar to 12-month averages (Harvey 1993). The studies conducted in only one season are typically conducted in autumn, contributing to comparability. There are two exceptions – the UK 1987 (July) and the UK 1995 (May) – that require caution.
6 Response rates varied across the studies. Nonrandom nonresponse can lead to biased coefficients and variance estimates. I use appropriate weighting procedures as provided by MTUS.

7 These studies were part of the Multinational Comparative Time-Budget Research Project, which followed standardized guidelines for data-collection.

8 These studies were part of the Harmonised European Time-use Studies (HETUS) project, which followed standardized guidelines for data-collection.

9 Each respondent was interviewed four times, once each season, but only the diaries from Wave 1 are included in the MTUS data.

10 The United Kingdom 1975 survey was omitted because it has 30-minute intervals. Additionally, the six surveys from the Netherlands series were omitted because they are weekly averages of seven-day diaries, and the United States 1998 was omitted because the sample size is too small for the level of detail in this analysis.
Appendix B: Men’s and Women’s Participation Rates in and Time Spent on Routine and Non-Routine Housework and Child Care, by Survey

<table>
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<th>Country and year</th>
<th>MEN</th>
<th>Routine Housework</th>
<th>Non-routine Housework</th>
<th>Child care</th>
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<td>Mean minutes participants</td>
<td>Participation rate</td>
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<td>Austria 1992</td>
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## Appendix B. Continued

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### Appendix C: Sensitivity Analyses for the Inclusion of Spousal Employment, Men

#### Logistic Predicting Routine Housework

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<th>Variable</th>
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<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
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**Individual-level variables**

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<th>% of married women employed</th>
<th>1.036 **</th>
<th>1.031 *</th>
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<td>Employed women's paid hours</td>
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**National-level variables**

| Intraclass correlation coefficient | .311 | .311 | .308 | .308 | .031 | .031 |
| Between-group | .235 | .242 | .325 | .327 | .027 | .027 |
| Within-group | 1.000 | 1.000 | .998 | .998 | .896 | .896 |
| Psuedo R2 | .148 | .143 | .083 | .082 | .102 | .102 |
| N - individual-level | 25,708 | 25,708 | 12,660 | 12,660 | 6,940 | 6,940 |

**Variance components**

employed remains similar in magnitude and statistical significance (DF = 10) after controlling for wives’ employment at the individual level. As shown in models 3 and 4 this remains true when using a finer classification of wives’ employment, although the result is not statistically significant with only 6 degrees of freedom. Finally, as shown in models 5 and 6, wives’ employment at the individual-level has no effect on fathers’ child care time, and the national-level effect of married women’s weekly paid hours remains unchanged moving from model 5 to 6. Note that this variable is not statistically significant in either model on 10 degrees of freedom. In this group of 12 countries the intraclass correlation coefficient is smaller than in the main models indicating that there is less between-group variation in this subset of surveys than in the full analyses.