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Demography, Vol. 25, No. 4 (Nov., 1988), 537-552.

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Historical Changes in the Household Division of Labor

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A number of studies published in the 1970s asserted that the amount of time women spend doing housework shows no historical decline. This article draws on evidence from time-budget surveys—three from the United States (1965, 1975, and 1985) and three from the United Kingdom (1961, 1974, and 1984)—to investigate the evolution of housework time for men and women over the last three decades. Clearly much other than housework has changed over this period. More women have paid jobs, more men are unemployed, and families have gotten smaller on average. Even having controlled for such sociodemographic changes, we conclude that in the two countries, women in the 1980s do substantially less housework than those in equivalent circumstances in the 1960s, and that men do a little more than they did (although still much less than women). These changes correspond closely to developments in four other countries (Canada, Holland, Denmark, and Norway) for which historical time-budget evidence is available.

The Housework Time Debate

Contemporary discussion about women's housework roles is almost unrelievedly pessimistic. The central image is the housewife imprisoned by and in the home. Women in traditional households are maintained in an inferior position in society through their role in the processes of social reproduction, quite apart from their childbearing functions. Their special responsibilities in managing household production (cleaning, cooking, child care, and marketing) are held to take priority over paid employment.

Women's entry into paid employment depends at least in part on their making satisfactory alternative arrangements for household production. These operations not only prevent some women from taking jobs but add differential domestic responsibilities to those who take on a paid job. Their work performance once on the job suffers accordingly—they work fewer hours, they are more frequently absent, and they have less energy to invest than do men, who are unhampered by domestic responsibilities. With power in modern societies increasingly defined by position in the paid labor market, therefore, women's housework responsibilities perpetuate their inferior status.

This theoretical synopsis of women's societally disadvantaged position has in the past been supported by empirical evidence from time-budget studies. In this article we review available evidence from a series of time-budget surveys collected in the United Kingdom and the United States between 1960 and 1985. These more recent time-budget materials continue to support the "greater responsibility/inferior status" view, but mainly as a *static* description of *current* circumstances. The "cross-sectional" comparisons, in other words, demonstrate that women continue to do considerably more housework than men.

At the same time, this historical material permits direct comparisons of cross-sections at successive decades in this century. Evidence of an important *change* in gender differentials emerges from the cross-time analysis. Women are now doing less domestic work than before, and men are doing more. Several explanations are suggested for these historical changes, ranging from the normative (based on perceptions of the equity and propriety of particular divisions of domestic responsibilities) to the technological (related to innovations in household equipment and service provision). Irrespective of these explanations, however, the evidence does suggest that the gender differential in housework is shrinking across historical time—and in strikingly similar fashion in the U.K. and the U.S.

Normative Explanations

Two distinct lines of argument underlie the pessimistic responsibility/status argument described earlier. The first, initially proposed by Young and Wilmott (1973), is the “no escape” argument (as described in Meissner et al., 1974). Women entering employment do reduce their domestic work time, but their paid work requires far more time than they can give up from domestic work. Thus even though employed women’s paid work time is on average shorter than employed men’s, their domestic work time is considerably longer. Entry into formal employment does not mean an escape from housework.

A less pessimistic explanation was recently proposed by Berk (1985). Her argument is based on a model of household production as a “gender factory,” an organization of activity that has as one of its major, though latent, functions the provision and perpetuation of traditional role responsibilities and rewards. These traditional roles define a sort of “territory” with clear demarcations to reduce role ambiguity and promote a sense of purpose and meaning in life. Such a model may explain why relatively few women overtly complain about their husbands’ failure to share in doing basic (role-related) household work, even when the wife takes on an outside job or has more children for whom to care (Robinson, 1977).

Technological Explanations

A second line of empirical argument follows the findings of American household efficiency researchers (e.g., Frederick, 1920), whose experimental methods were used to explore the consequences of the mechanization of housework. This argument seeks to demonstrate that the introduction of new technologies into the household does not in general reduce the amount of housework time but, instead, increases the quality of household services. More recently the same point was argued using time-budget evidence. The argument often relies on the lack of cross-sectional differences in housework time between households with varying degrees of access to domestic technology, but it can also be extended to societal comparisons. For example, on the basis of evidence from the 12-nation Multinational Time-Budget Study, Robinson and Converse (1972) asserted that there is “a fully counterintuitive” relationship between domestic equipment and domestic work time—the more technology, the more time spent.

Of perhaps more significance than such cross-sectional analyses are the attempts to look at longitudinal change in domestic work times over historical periods during which new domestic equipment diffuses to households. A number of studies (Gershuny, 1979; Robinson, 1985; Robinson and Converse, 1972; Vanek, 1974; Walker, 1968) comparing evidence at different historical junctures concluded that domestic work tends to remain constant or even to increase over time.

In none of these articles do the authors claim that there is anything inherent in the idea of installing equipment in the home that leads to the paradox of labor-saving devices that maintain or increase domestic work time. Explanations for the paradox are instead sought in

the social systems that produce the domestic technologies, in the processes of design and marketing, and in the set of household relations that determine the use of the technologies. Such explanations often rely on notions of patriarchy or of conflict between men and women. Domestic equipment and work spaces may be designed (by men) to improve the quality of domestic production without necessarily reducing domestic work time. Given the existing patterns of domestic work responsibility, then, new technology protects men's position in the formal labor market by maintaining the scale of women's domestic responsibilities.¹

The present analysis, however, based on a careful reworking of original survey data in combination with more recent survey evidence, shows that certain sorts of domestic work time have in fact decreased markedly over recent decades. Factors underlying this decrease are (a) the low status and satisfaction attached to housework relative to other daily activities, as documented independently in several studies by Robinson (1977) and Juster and Stafford (1985); (b) the normative support from various women's movements, with their emphasis on gender equality; and (c) the time-saving features of new household appliances such as dishwashers and microwave ovens (though the lack of direct evidence of reduced housework in households with such technology suggests that such effects may be long term and subtle; Robinson, 1977).

Methodology

The basic measures of time use in this article are derived from time-budget surveys in which the respondents report all their daily activities within a structured diary format. There are several reasons why the time diary is an appropriate self-report method for collecting time-use information. First, the diary minimizes the reporting burden on the respondents by allowing them to report behavior straightforwardly in their own words and in its naturally occurring order. The respondents need only provide a verbatim listing, or "script," of their daily activities and not more extensive reconstructions of (or rationales for) "typical" daily behavior.

In addition to minimizing the respondents' burden and allowing them to describe their daily behavior in their own words, the time diary's structure forces the respondents to respect the important measurement features of the time variable, namely, that all 24 hours of the day must be accounted for, that at every point in time "everybody has to be somewhere," and that activities occur in a series of sequences (including the preparation, waiting, and clean-up times necessary for work or other tasks and the travel necessary to perform an activity in a particular location). At the same time, a properly designed time diary form allows the respondents the opportunity to report on the periods of the day when more than one activity is occurring or is the subject of attention.

A number of methodological studies have established the stability and reliability of the time diary method. Comparisons of "retrospective" and "prospective" approaches, of national and single community studies (Robinson, 1977), of telephone and home interviews (Juster and Stafford, 1985), and of varying diary formats (Walker, 1968; Chapin, 1974) all produce very high correlations between aggregate time use estimates. Parallel evidence of reliability has been found for other countries in which different samples were studied (Gershuny and Jones, 1985, 1986; Hedges, 1986; Niemi, 1983; Scheuch, 1972; Szalai, 1966).

There is also considerable evidence of the basic validity of time diary data, although it is difficult and expensive to get verifiable and independently obtained observations of everyday behavior. "Beeper" studies, in which diary reports and reports produced in response to randomly generated prompts from an electronic paging device are compared, as reported by Csikszentmihalyi and Kubey (1982) and Robinson (1985), and comparisons between the respondent's and the spouse's reports of the presence or absence of the marital partner during

Table 1. Methodologies Features of 1960-1985 U.K. and U.S. Time Diary Studies

Year	Organization	Total sample size	Months	Method	Diary method	Recording period	Respondents per household	Age range
1961-1973	British Broadcasting Corporation	1,902	Spring	Personal	Prospective	Week	All	14 and older
1974	British Broadcasting Corporation	2,452	Summer/ winter	Personal	Prospective	Week	All	14 and older
1983-1984	SPRU, University of Sussex	1,172	November-February	Personal	Prospective	Week	All	14 and older
United Kingdom								
1965-1966	Survey Research Center, University of Michigan	1,244	November-December	Personal	Prospective/retrospective	Day	One	18-65
1975	Survey Research Center, University of Michigan	2,409	March-April	Personal	Retrospective	Day (+ spouse)	One	18 and older
1985	Survey Research Center, University of Maryland	2,200	November-January-June	Mail-back/telephone	Prospective/retrospective	Day	All	18 and older
United States								

the day (Juster and Stafford, 1985) produce better than 0.80 correlations between time use estimates. Hill (1985) found a 0.95 correlation between diary reports of energy-intensive activities and utility meter data. Further evidence of validity can be found in the observational studies of Michelson (1978) in Canada and in "behavior setting" studies conducted in Norway (Aas, 1978) in which aggregate time-expenditure data were collected at particular community sites (e.g., stores and churches).

What these methodological studies show most clearly is the time diary's superiority over other time use measurement methods, especially the familiar shortcut method of general respondent estimates. Although many respondents can give fairly reasonable general estimates of the time they have spent in highly structured and routine activities (e.g., the length of the work week or the commuting time to work or the grocery store), the reporting burdens become considerably more difficult when it comes to household tasks and free-time activities. Respondents (as well as researchers) have diverse notions of what to include as hours of "housework," "child care," or "reading." How uniformly will respondents include (or exclude) reading while eating meals or television viewing while doing work or housework in estimating these hours of media attention?

This article examines respondent-reported time diary data that were collected in six national studies conducted in the United Kingdom and the United States between 1961 and 1985. Each study interviewed national probability samples, ranging in size between 1,200 and 2,700 respondents. In both countries, these national samples completed open-ended diaries using basically uniform diary coding procedures that included information about each primary activity, the secondary activities accompanying it, the social partners during the activity, the location of the activity, and the time of day during which it occurred. (The timing and various methodological features of the six studies are reviewed in Table 1.)

The studies do, however, differ because the U.K. respondents kept diary reports for (subsequent) seven-day periods whereas the U.S. respondents gave only single-day activity reports. Diaries were also kept under somewhat different reporting conditions (retrospective yesterday vs. prospective tomorrow; personal vs. mail back; for a university-based research project vs. a national broadcasting organization).

In an extensive methodological experiment with the 1983–1984 U.K. data, Hedges (1986) verified that the one-day and seven-day diary estimates (collected in the same study) provided similar results. This held true despite the much higher response rate obtained using the one-day diary approach. Gershuny and Jones (1986) showed that the one-day BBC-sponsored and the seven-day university-sponsored time diary studies also produced similar results. In addition, the reliability evidence just reviewed indicates that variation in the mode of administration produces little straightforward difference in the results.

In this study, attention is focused on the activity patterns of that portion of the population aged 25–49. This is done to achieve greater standardization and to reduce the effects of certain of the longer term sociodemographic shifts—such as later marriage or child-rearing commitments, increased years of education, or early retirement—that affect younger and older age groups throughout this period of history.

Behavioral Versus Compositional Change

Figure 1 (calculated from the "first activity" data from the six surveys) shows estimates of the overall pattern of change in unpaid work time for population groups aged 25–45 in the U.K. and the U.S.² Even in this summary form, we can see some apparent similarities and differences. Time spent in child care seems to be increasing in the U.K. but decreasing in the U.S. Most important for the present discussion, women's routine domestic work time seems to be declining in both countries.

Evidence presented in this way, however, does not really take us very far. For example, proponents of the no escape argument will observe that the decrease in women's routine

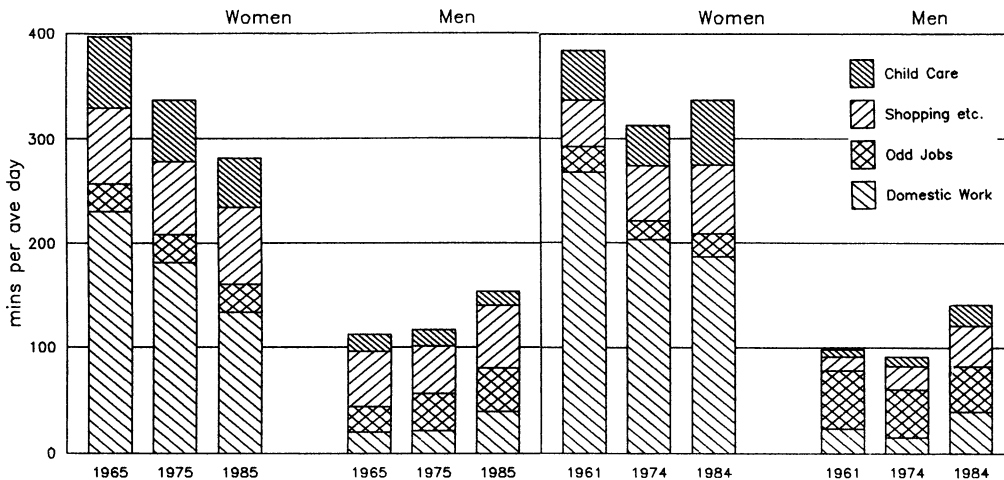


Figure 1. Estimates of the Overall Pattern of Change in Unpaid Work Time for Population Groups Aged 25-45 in the United States (left) and the United Kingdom (right)

domestic work may be explained by their increase in paid work. To put the proposition more generally, it may be argued that what we observe here is not so much a change in behavior as a change in the demographic or social structure. In other words, it may be the change in the composition of the population when classified according to employment categories that "explains" the variation in behavior.

Taking the long view, all structure is behavior. Having or not having a paid job (or a child) are actions, however chosen or constrained. There is nevertheless some point in identifying some such attributes as relatively stable structures on which the explanation of other aspects of behavior may be based. Table 2 shows that in fact a large part of the variance in the time spent in domestic tasks may be explained by employment status and the presence of dependent children in the household.

Of course, using these particular variables as "independent" for these purposes does not mean that they are necessarily to be taken as causally prior. In some cases the causal arrow may well point in precisely the opposite direction. The shorter time required for household chores could well cause or allow the individual to take a job; or the prospect of less paid work and more time in the home could lead to the decision to have a child. We know on a priori grounds, however, that having a job or a child shows less short-term instability—varies less from week to week—than does housework or shopping time. Therefore, it seems sensible to organize the data by using these as the structural variables.

The change in time use over a historical period can be viewed as having two components: the change in the composition of the population in terms of particular structural characteristics and the change in the behavior associated with those particular structural characteristics. Clearly there is a complex web of causal interactions between these two components. A change in the behavioral attributes of particular structural categories may induce a change in the structural composition (e.g., a reduction in domestic work, leading to more participation in paid employment) and vice versa. Nevertheless, between any two points in history, it is relatively straightforward to distinguish the relative contributions of these two components in terms of the changes in time use.

Thus for each such time point, we require two sorts of information: the distribution of the population between the various structural categories (i.e., the proportions in the various

Table 2. Analysis of Variance of Time-Use Predictors for the United Kingdom and United States, Respondents Aged 25–49 Years Old, Beta Coefficients

Variable	Men			Women		
	1960s	1970s	1980s	1960s	1970s	1980s
Routine Domestic Work						
United Kingdom						
Employment status	0.61	0.33	0.39	0.67	0.24	0.51
Family status	0.03*	0.19*	0.14*	0.14	0.15	0.22
Educational level	0.04*	0.04*	0.14*	0.07*	0.10**	0.19
United States						
Employment status	0.05*	0.19		0.43	0.36	
Family status	0.02*	0.08*		0.13**	0.21	
Educational level	0.07*	0.06*		0.11**	0.06*	
Child Care						
United Kingdom						
Employment status	0.25	0.20	0.12*	0.18	0.10	0.14
Family status	0.32	0.54	0.55	0.50	0.43	0.67
Educational level	0.19	0.12	0.19**	0.01*	0.06	0.12**
United States						
Employment status	0.04*	0.02*		0.21*	0.13	
Family status	0.27	0.29		0.53	0.45	
Educational level	0.11*	0.05*		0.08	0.09*	
Shopping						
United Kingdom						
Employment status	0.39	0.38	0.37	0.40	0.40	0.32
Family status	0.04*	0.15	0.13*	0.02*	0.11**	0.23
Educational level	0.20	0.05*	0.19*	0.06*	0.07*	0.04*
United States						
Employment status	0.07*	0.12**		0.08**	0.13	
Family status	0.09*	0.03*		0.15	0.07*	
Educational level	0.11*	0.12*		0.08*	0.08*	

* Not significant at the 0.05 level.

** Significant at 0.05, but not at the 0.01 level.

employment and family-status categories—the “composition” of the population) and the specific activity pattern associated with each category (i.e., the time spent in particular activities by people in each category—the “behavior”). If there is no behavioral change between the two historical points, we could estimate the overall population’s time allocation at the second historical point by combining the behavior data from the first time point with the composition data for the second. If, however, we find a difference between this prediction and the actual pattern of time allocation at the second historical point, this difference—the “residual”—would represent a behavioral change. In the next section, this very simple notion (sometimes known as “shift–share analysis”) provides a basis for estimating the behavioral change in the categories of domestic work.

We deal first with two preliminary issues: the choice of structural variables and the classification of unpaid work activities. Table 2 shows the influence of a number of potential structural variables on the time spent in unpaid work activities. Clearly, for women, having a job and having a child both have a substantial effect on their time allocation. Education

(and other social class factors) have a much smaller effect, so they are not included as structural dimensions in the following analysis.

Of the various ways of categorizing responsibility for children (numbers of children, ages of children, etc.), we use simply the presence and age of the youngest child in the household. Since the presence of children usually has little consequence for men's domestic work time, only a single structural variable, employment status, will be used in the estimation of their changes in behavior.

Unpaid work covers a wide range of rather different activities. We include in this category all of those activities that meet Hawrylyshyn's (1977) condition that it is "possible to pay some third party to engage in the activity yet still gain the same utility from it" (p. 17). According to this criterion, activities such as washing floors or cooking (in which the ultimate utility is considered to come from the consumption of the food) are included, but activities such as going to a concert or watching television are excluded. Thus whereas one might hire someone to do washing or cooking, paying a proxy to go to a concert would be ridiculous (except for those extremely averse to music).

Since different subcategories of unpaid work may change in quite different ways, we must subdivide this category to make sense of the material. The four-category division of unpaid work is derived from a number of distinct, theoretically derived expectations from different academic disciplines, ranging from economics to social psychology. Interest in these disciplines often may, in fact, converge on these same four classifications, although for disparate reasons. The economist may view *routine domestic chores* (cooking, cleaning, other regular housework), for example, in terms of the influence of the household's investment in consumer capital equipment, whereas the social psychologist may focus on the expressive, identity-generating functions of housework. We can similarly distinguish within *shopping and related travel* either the consumer consequences of techno-organizational innovation in the retail distribution industry or the expressive or social-networking functions of that activity. We distinguish *child care* (caring for and playing with children) either in response to economic theorizing about the family's investment in human capital or out of a concern about the symbolic or other social psychological meaning of child care activity. (We shall not, for the moment, discuss evidence concerning a fourth, residual, category of *odd jobs*, which includes pet care, gardening, and other nonroutine domestic activities, because of problems within the U.K. 1983-1984 data set.)

Changes in Unpaid Work Time

Cursory examination of Figure 1 suggests certain (albeit slow) convergences in men's and women's routine domestic work times. In both countries, women's routine domestic work has been reduced over the period. Does this really reflect a change in behavior or merely a change in the structure of the population? In the U.K., most of the reduction took place during the 1960s and early 1970s; in the U.S., most of the reduction happened during the later 1970s and early 1980s. In both countries, then, the major reduction in core housework took place over the period that women's participation in paid work increased most. Can one explain this decrease in domestic work by the increase in paid work time? Over these same two-and-one-half decades, moreover, family sizes have declined somewhat. Could the reduction in housework be explained in terms of a reduction in the responsibility for the care of young children?

We can make a first attempt at controlling for the effect of a "compositional" change by considering the various employment and child-status categories individually. Figure 2 illustrates separately full-time employed and nonemployed women, distinguishing among those with no coresident children, those with at least one coresident child below the age of 5, and those for whom the youngest coresident child is between 5 and 18 years old.

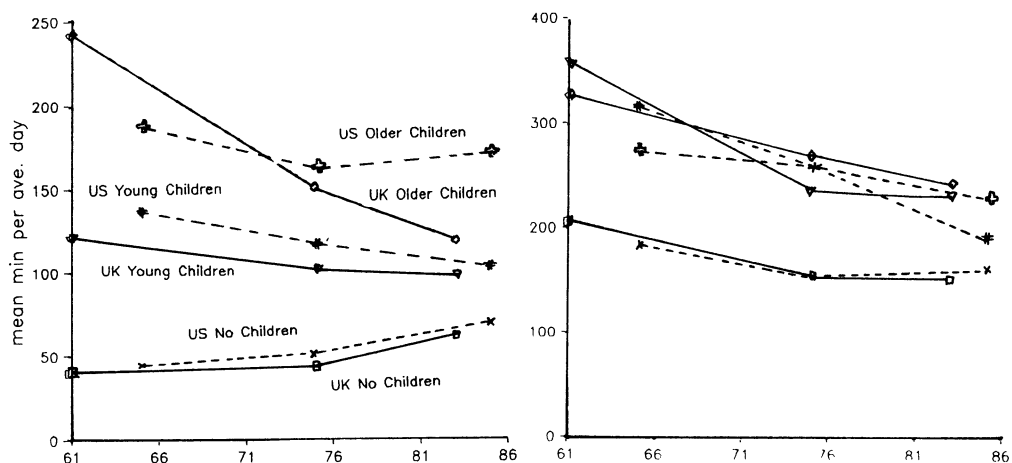


Figure 2. Amount of Time Spent in Performing Routine Domestic Chores for Full-Time Employed Women (left) and Nonemployed Women (right)

(Part-time employed women are excluded because of the small numbers of cases in some of the subcategories.)

The most striking characteristic of this figure is the very considerable cross-national similarity in these estimates. Women with no children in the two countries have virtually identical amounts of routine domestic work; the other two groups show a hardly less striking common pattern of change. In most cases, the trend of time allocation is downward; of the 24 cross-time changes (i.e., differences between adjacent pairs of surveys), 17 show a reduction in the time devoted to housework. Six of the seven cases in which housework time increases, furthermore, relate to women with no coresident children. So the simplest summary of Figure 2 would be that women with children reduced their housework through the 1960s, 1970s, and 1980s and those with no children increased it somewhat, particularly during the 1970s and 1980s.

This increase may be explained as a rather subtle compositional effect operating within the nonemployed, childless category. Women who are in this age group, have no children, and have no job tend to have some reason for not being employed—perhaps responsibility either for an elderly dependent relative who needs personal care or for a larger than average house. Other sources show that over the past 25 years, female employment rates have increased markedly. Those women with heavier household commitments are still less likely to be employed than those with lighter; but for any given level of commitment, employment is more likely in the 1980s than in the 1960s (Martin and Roberts, 1984:117–137).

Now consider, for example, the group of women with elderly dependents. Within this group, those whose dependents are more able to look after themselves are more likely to take a job than those whose dependents are less able. To put the case more generally, within the group of nonemployed childless women, those who take a paid job in the 1980s but would not have taken one in similar circumstances in the 1960s will have on average fewer domestic commitments than those who remain nonemployed in the 1980s. That is, those who leave the nonemployed group will have lower than average domestic commitments and hence will do less than the group's average of domestic work. By the same argument, those who enter the work force will have more than the employed women's average of domestic work. Since those leaving the nonemployed group have less than the average domestic work, the average domestic work for the nonemployed group rises as more women enter employment. Similarly, since those newly entering employment have on average more domestic

responsibilities than those previously employed, the average domestic work done by employed women *also* increases as more women enter employment.

This must of course remain a hypothesis, since there is not adequate information consistently across the six surveys to control for all of the relevant categories of domestic commitment. It is clearly the case, however, that the apparent increase in domestic work for childless women *could* be explained by compositional changes within the two subcategories. The general decline in domestic work time shown in Figure 2 might well be revealed as more consistent if we were able to distinguish among more categories in the data. What appears to be an increase may well mask a behavioral decline in domestic work time.

Discussing each of a multitude of different subcategories is a rather cumbersome way to describe change over time. In the next section we will introduce a more sophisticated, regression-based attempt at summarizing change. For the moment, though, we adopt a simpler approach: shift-share analysis. Figure 3 illustrates its application to women's domestic work in the two countries. For the purpose of this analysis, we have defined nine structural categories, developed by cross-tabulating the three employment status categories (full-time employed, part-time employed, and non/unemployed) by the three family status categories (child below 5 in household, child 5-18 in the household, no children).³ The results of the shift-share analysis are shown graphically in the figure.

The horizontal line in Figure 3 is a reference constant representing no change from the estimated women's mean domestic work time in the earliest survey from each country. The line marked with "x" symbols represents the shift-share *prediction*—the amount of routine domestic work that would be expected if there is only change in the employment and family structural composition of the female (young adult) population since the date of the first survey. The line marked with inverted triangles shows the *actual* change in the mean time spent in routine domestic work by this group. The gap between the reference constant and the shift-share prediction thus represents the compositional component of the change in routine domestic work time. The gap between the shift-share prediction and the actual line, on the other hand, represents the behavioral component left unexplained by structural factors.

In the U.K., quite clearly, about 9/10ths of the reduction in domestic work shown in Figure 3 is attributable to this behavioral component; only 1/10th can be attributed to changes in the structural variables. In the U.S., the increase in women's employment was particularly fast between 1975 and 1985, and a larger proportion of the change is attributable

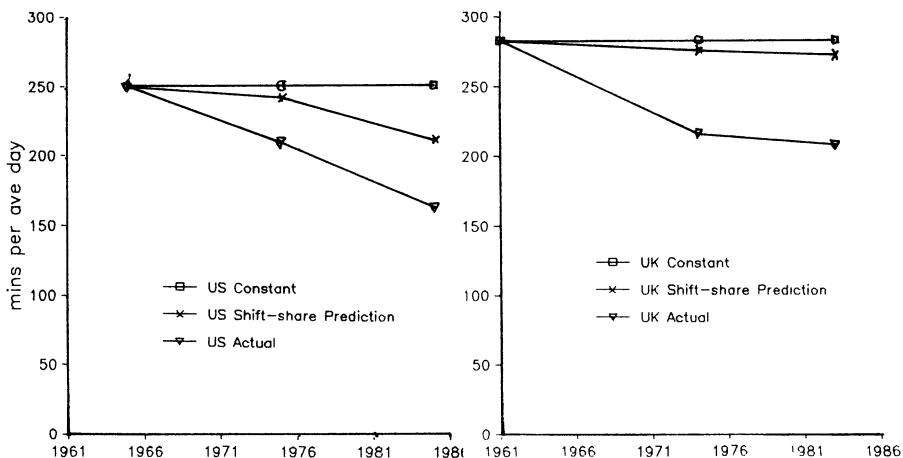


Figure 3. Shift-Share Analysis of Routine Domestic Chores

to these structural variables. Even in the U.S. data, however, nearly 60 percent of the reduction comes in the behavioral component. In short, the majority of the reduction in time devoted to routine domestic work by women remains, even when we control for changes in employment and family composition.

An alternative way of using the same data is to weight the actual time use patterns of the nine categories of women and three categories of men in each survey by the population proportions in the first survey. The “weighted” estimates in Figure 4 show the change in routine domestic work time for men and women, excluding the effects of the compositional change (1985 estimates for the U.S. men are not available). A clear pattern emerges. Women do less routine domestic work over time, and men do more (though the absolute level of men’s domestic work remains well below women’s).

There are two possible explanations for the decline in women’s work time. The arrival of new domestic equipment in the household during this period may have increased the productivity of domestic labor at a faster rate than the household increased its “output” of domestic services. Alternatively, output may have fallen, with households adjusting their standards downward to achieve reduced housework time. The studies do not include indicators of household output to test these alternative propositions directly, but it appears that the levels of domestic service provision have remained constant or have risen since the start of the 1960s in both countries, supporting the “productivity growth proposition.” Men’s *increase* in domestic work time over the same historical period must presumably reflect a change in norms.

The initial evidence in Figure 1 also suggested that women’s overall child care times have been moving in opposite directions in the two countries—increasing markedly in the U.K., declining substantially in the U.S. The shift-share analyses, however, provide evidence of a similarity in the behavioral shift. Comparison of the shift-share and actual lines for both countries reveals that the latest actual value lies substantially above the equivalent shift-share value. This means that once structural change is controlled, child care time actually increases in both countries. It is the very substantial effect of the increase in paid employment in the U.S. that has served to hide this change, since employed women tend to spend much less time in child care than do nonemployed women.

The estimates, reweighted in Figure 5 to take account of the change in the structural variables, show the underlying upward trend of the behavioral changes in child care time. Much of the explanation for this must lie in changes in the activity rewards and preferences

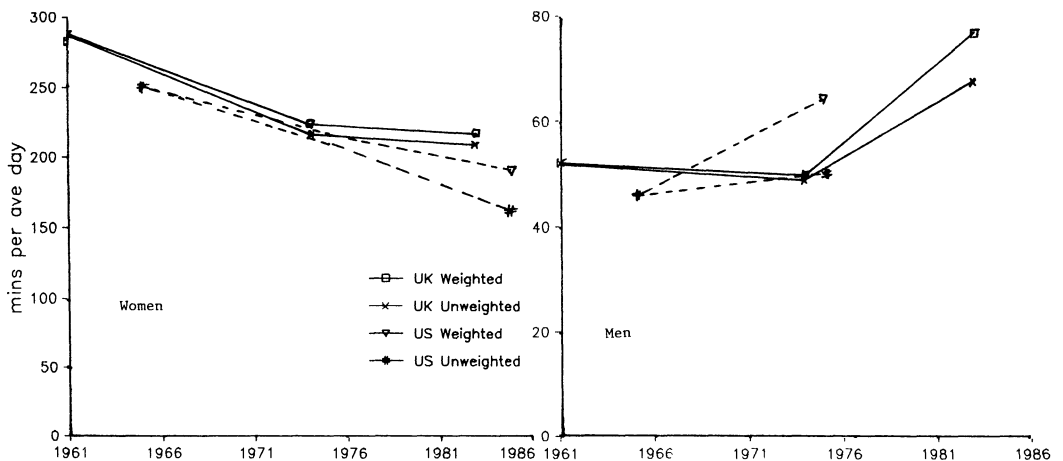


Figure 4. Weighted and Unweighted Patterns of Routine Domestic Work Time

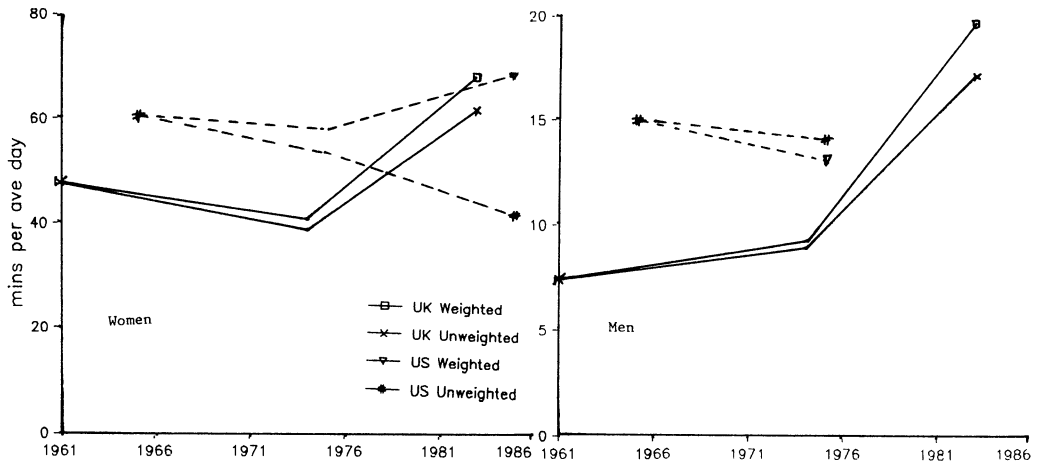


Figure 5. Weighted and Unweighted Estimates of Time Spent in Child Care

and in the specific child care norms (perhaps fostered in the U.K. by the later diffusion of Dr. Spock-inspired childrearing practices). An additional ecological element may also be involved: with increases in the number of motor vehicles on the roads and in the reporting of violent crime, an additional perceived requirement for the supervision of children emerges.

It is also possible that part of the apparent change in this activity may be an artifact of the diary method used in time-budget research. In earlier studies (collected when domestic work took longer) child care could well have been hidden in the diary accounts as a "second activity" recorded as taking place simultaneously with domestic work. In later studies (carried out when domestic work time is reduced) it may then be "revealed" as a first activity. Thus the woman in the 1960s who was washing clothes and talking to a small child might have recorded her clothes washing as the "first activity" and her child care as the "second activity;" a 1980s woman in otherwise similar circumstances records child care as her only activity while the clothes are in the automatic washing machine.

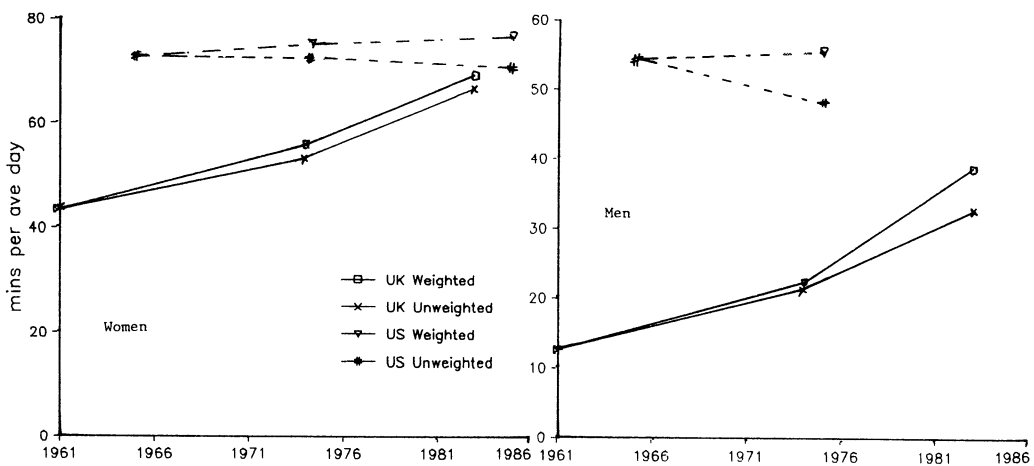


Figure 6. Weighted and Unweighted Estimates of Time Spent in Shopping, Including Travel Time

Figure 6 shows markedly different patterns of change in the time devoted to shopping and related activities in the two countries. In both countries the structural shifts would lead to a modest reduction in shopping time, but the U.K. data show a massive upward behavioral shift. One explanation for this shift lies in the greater purchasing power of consumers and the greater variety of goods to purchase. In addition, there have been significant technological innovations in British retailing establishments. Relatively few neighborhood supermarkets had replaced the traditional corner shop (or local “shopping parade”) in the early 1960s. The diffusion of larger supermarkets has meant that “self-servicing” in shops can reduce labor and handling costs by allowing the shopper to substitute unpaid labor for some of the warehouse activities that might previously have provided employment in the wholesale distribution industry. As a result, money costs to the consumer may also be reduced.

Even though bigger stores may serve more shoppers, they must also be located at a greater distance from the average shopper. The reduction in money costs is, in effect, often “purchased” by an increase in nonmonetary transactions—more time spent in travel to the shops and in selecting from the larger range of goods available. The supermarket system was developed in the U.S. long before the U.K. In the convergence of shopping times shown in Figure 6, we may be seeing an Americanization of the British shopping patterns.

An Alternative Analysis

We have used shift–share reweighting procedure to distinguish between structural shifts in the population and changes in the behavior of particular groups. A more sophisticated (though not necessarily more revealing) technique for the same purpose may be developed through variance decomposition using multiple classification analysis (MCA; Andrews, Morgan, and Sonquist, 1973).

An analysis of variance indicates how much of the variation in a dependent variable can be accounted for by the membership of particular population subcategories. Table 2, for instance, shows what proportions of the variation in the total hours of routine domestic work for women in the U.K. and U.S. can be “explained” by employment status, family status, social class, and education. The beta statistics tell us how *important* the effects of belonging to a subcategory are in determining the value of a dependent variable. The MCA provides estimates of the *size* of the effects.

We have applied this technique to the three unpaid work activity categories discussed in the previous section, adding to the U.K. and U.S. material evidence from four other countries from the Multinational Time-Budget Data Archive at Bath University.⁴

Table 3 is straightforward to read. The first row gives the overall mean minutes per day of domestic work for each country. Overall in the six countries, the women do on average about 214 minutes of routine domestic work per day; in the U.K., 201 minutes; in the US, 185 minutes. In the previous section we controlled for employment status by using a threefold employment variable. Here a continuous “minutes of paid work per day” estimate is a covariate; the “slope” therefore gives the effect of a marginal minute of paid work on the amount of domestic work. The estimates for the U.K. and the U.S. are quite similar: twenty-eight minutes less of domestic work for each 100 extra minutes of paid work in the U.K.; 21 minutes less in the U.S.

Each of the two sets of MCA effect parameters have been adjusted both for the effect of work time and for the effects of the other variables. The family status parameters give the effect on domestic work time of belonging to a particular sort of household, controlling for paid work time and the year of the survey. Again, the U.K. and U.S. estimates are quite similar. Women in households with no children do substantially less domestic work than the

Table 3. Domestic Work: Decade and Family Effects in Six Countries

Measure	All countries	Canada	Denmark	Holland	Norway	United Kingdom	United States
Women							
Grand mean	214	181	224	210	227	201	185
Effect of marginal work time (slope)	-0.31	-0.30	-0.33	-0.39	-0.28	-0.28	-0.21
Decade effects							
1960s	65		34			61	33
1970s	2	22	-45	1	32	1	-10
1980s	-44	-23		-1	-32	-13	-29
Family effects							
No children	-32	-36	-41	-4	-58	-28	-44
Children <5	2	7	24	-10	-3	1	24
Children 5+	16	18	8	14	19	17	8
R^2	0.36	0.38	0.32	0.25	0.37	0.36	0.24
Men							
Grand mean	27	35	18	27	30	31	25
Effect of marginal work time (slope)	-0.06	-0.08	-0.03	-0.13	-0.05	-0.08	-0.03
Decade effects							
1960s	-2		-2			-2	-5
1970s	-4	-6	2	1	-5	-14	-5
1980s	5	5		0	5	6	13
Family effects							
No children	0	0	0	-1	0	0	2
Children <5	0	0	1	1	1	-1	-1
Children 5+	-1	0	-1	-1	-2	2	-1
R^2	0.11	0.10	0.04	0.23	0.11	0.18	0.05

average for the year and employment group; women with older children do substantially more than the average.

The decade parameters yield the effect of belonging to the year categories, once the effects of the employment and family status categories have been taken into account. Having adjusted for the effects of the main structural variables, the residual effect of the decade variable gives a direct estimate of that part of the historical change in the allocation of time to activities that is attributable to an alteration in behavioral proclivities.

In the case of routine domestic work, the results are particularly visible. For women in the six countries, there is a reduction in routine domestic work of one or one and one-half hours per day between the 1960s and the 1980s—even after the effects of the increasing rates of women's paid employment and the decreasing family commitments are taken into account. The same analysis carried out for men in the multinational sample shows a corresponding (though small) increase in routine domestic work. The MCA effect parameters give results that correspond closely with the weighted estimates of change in the preceding section.

Where Does This Leave Us?

The results of this U.K./U.S. cross-time comparison seem unequivocal, at least with respect to routine domestic work. Contrary to the conventionally accepted wisdom, domestic work time has been declining for women. Evidence for this decline remains even when we control for structural changes—in women's employment and family status—that might have explained it. Over this same period, men's domestic work has increased. These changes have taken place in both countries. Indeed, the similarity, both in the size of the changes and in the absolute levels of time use in the two countries, reinforces our confidence in both data series. The patterns of *change* in the other two unpaid work categories considered, shopping and child care, are less similar in the two countries, but there is a convergence in the absolute levels of time spent in these activities. Again, the two sets of evidence seem mutually reinforcing. The conclusions are still further reinforced by the similar evidence of historical change in four other developed countries.

We have not sought to present evidence that explains the trends, although work with the two data sets has led each of us independently to the conclusion that trends toward the sharing of unpleasant domestic work, the increasing participation of women in paid work, and the diffusion of domestic equipment into households have all had some effect in reducing domestic work time. For the moment, we would rest with a rather less ambitious proposition: that it is the trends that we have outlined—the declining totals of domestic work, with a marginal redistribution from women to men—rather than the previously assumed constancy of domestic work over historical time, that constitute the facts to be explained by theorists of domestic production.

Notes

¹ There is also a substantial and influential economic literature on time allocation (Becker, 1965; Gronau, 1977; Kooreman and Kapteyn, 1987) that emphasizes the male/female wage-rate differentials in the explanation of gender differences in time allocation patterns. Kooreman and Kapteyn used the 1975 U.S. data to explain the cross-sectional difference in time allocation. We have no wage data that are consistent for the six surveys, so this variable is not controlled for in our discussion.

² The U.S. data cover only a single day for each respondent. Therefore, in Table 1, and subsequent tables and figures, the U.S. estimates have been reweighted to ensure equal numbers of each day of the week.

³ The age of the youngest child is the best single indicator to use for this purpose; however, some additional variance in time use patterns is explained by the number of children in the household. Ideally both should be used; but for the present analysis, this would result in some very small cell sizes. The same general trends in time use emerge irrespective of which variables are used.

⁴ The six-nation data set is described in Gershuny and Jones (1986).

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