ECONOMIC AGENCY, BARGAINING, OR GENDER DISPLAY? THE RELATIONSHIP BETWEEN MARRIED WOMEN'S EARNINGS AND HOUSEWORK

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INTRODUCTION

This paper presents a critique of, and an alternative to, the two dominant theoretical models of the relationship between women's earnings and their time spent on housework. Both of these models propose an association between spouses' relative earnings and housework in heterosexual married couples. The first describes it as a straightforward "economic exchange" in which the partner with the lower earnings, typically the woman, spends more time on domestic labor, because she is economically dependent on her husband. The second hypothesizes gender-specific deviations from this inverse linear relationship that facilitate "gender display." For example, women whose earnings exceed their husbands' will spend more time on housework than other women, in order to affirm their gender identities in the face of their gender-atypical relative incomes. The exchange and display models have inspired a large body of research over the last two decades (Bittman et al. 2003, Blair and Lichter 1991, Brines 1994, Coverman 1985, Davis and Greenstein 2004, Evertsson and Nermo 2004, Farkas 1976, Greenstein 2000, Parkman 2004, Ross 1987).

In this paper I argue that both the exchange and display models are fundamentally flawed. Despite their differing predictions, both of these theories derive their explanatory power from the notion that housework is affected by the earnings of one partner *relative* to the other's, usually operationalized as one partner's share of the couple's total earnings. I show that the relationship between money and housework can be described more accurately and parsimoniously by a model employing women's *absolute* earnings, considered separately from their husbands'. Using a sample of married women in the second wave of the National Survey of Families and Households (NSFH) who reported full time, year round employment, I demonstrate that the measures of women's relative earnings employed by both the economic exchange and gender display models of housework time are redundant. Their predictions can be reproduced by a simpler and more direct model employing only women's own incomes. This is

not merely a methodological issue: the superiority of women's absolute earnings to their relative incomes as a predictor of their housework hours has important substantive implications.

BACKGROUND

Economic exchange and gender display

The existing research on the relationship between money and domestic labor has been dominated by the "economic exchange" and "gender display" accounts. Both of these models focus on the relationship between individuals' housework time and their earnings compared to their partners'. As shown in Table 1, the findings have been quite mixed. It is of course possible that these inconsistencies are due to differences in samples, national contexts, or time periods. I argue, however, that they have a more fundamental theoretical and methodological origin, namely their use of women's relative earnings as an explanatory variable. This approach has obscured the relationship between individuals' *own* earnings and their time spent on housework, especially in the case of women. In the following discussion, I summarize the exchange and display theories of the relationship between income and housework time, and then present an alternative.

The first of these has also been referred to as the "economic dependence" or "relative resources" perspective. It proposes that the smaller a partner's share of the couple's total income, the more time s/he spends on domestic labor. This may be due to the economic dependence of individuals with lower earnings on their partners, or a sense of reciprocal obligation on their part. The allocation of domestic labor can also be viewed as the product of the distribution of power in households, which in turn may depend on the relative economic resources of their members (Blumberg and Coleman 1989; Huber and Spitze 1983). Recent game-theoretic approaches in economics arrive at similar conclusions, though from a different starting point. They treat the performance of housework as the result of a bargaining process whose outcome is a function of the economic resources of the partners (see Bittman et al. [2003] for a discussion.) Earlier scholarship theorized the general relationship between labor market

outcomes and domestic labor in terms of role specialization based on differential skills. In Becker's (1991) view, for example, household members concentrate on the activities in which they are most productive, or which offer them the greatest returns to effort. Though Becker articulated his model in terms of employment hours and wage rates rather than earnings, his argument can be readily cast in terms of relative earnings.

Given that men's earnings are higher on average than women's, the economic exchange hypothesis helps explain the gender gap in housework. However, it can be stated in an ostensibly gender neutral form: partners' time spent on housework is predicted to vary inversely with their shares of total income, regardless of their gender. By contrast, the "gender display" argument, also known as the "doing gender" or "deviance neutralization" hypothesis, suggests gender-specific departures from economic exchange. It states that partners with income shares that are unusually high or low for their gender compensate by exaggerating their gender-normative housework performance. In this view, the compulsion to affirm gender identity overrides the logic of economic exchange in the face of gender-atypical economic circumstances. Greenstein (2000) suggested a modified version of this argument, namely "deviance neutralization," to describe the norm-affirming housework behavior of individuals with gender-atypical relative earnings.

The idea that housework could serve as a demonstration of gender identity was articulated by West and Zimmerman (1987), who argued individuals perform gender through their daily activities, especially in situations involving interactions with individuals of the opposite gender. In one of the first tests of the gender display hypothesis as it applies to domestic labor, Brines (1994) found a gender asymmetry in housework responses to relative earnings. Though women's housework time did vary inversely and linearly with their relative earnings, that of men was described by an upside-down parabola: husbands who contributed less than their wives to the couple's incomes did less housework than husbands who contributed equally. Brines concluded that these husbands were practicing gender display. Because their

economic situation was gender-atypical, they did less housework than other husbands in order to affirm their normative gender identities.

Table 1 shows that tests of the economic exchange and gender display hypotheses have yielded conflicting findings, especially in the case of women. Contrary to Brines (1994), Evertsson and Nermo (2004) reported a gender display pattern for women in multiple waves of the same longitudinal survey that Brines used, the Panel Study of Income Dynamics (PSID). However, they found no such tendency in the relationship between relative earnings and housework among Swedish women, whose behavior was consistent with the exchange model. Greenstein (2000) reported a gender "deviance neutralization" pattern in the effect of women's share of couples' earnings on their share of total housework. Bittman et al. (2003) were unable to replicate this result for U.S. women using the same data as Greenstein, but did find some evidence of gender display in the case of Australian women. Their analysis showed that Australian women's housework followed the predictions of economic exchange up to the point where their earnings were equal to their husbands', but deviated in the direction suggested by the gender display hypothesis if their earnings exceeded their husbands'.

An alternative model: the importance of women's own earnings

The possibility that women's absolute rather than relative earnings may affect their time spent on housework has received scant attention in the research to date. Perhaps the most straightforward mechanism for such an effect is through the use of earnings to purchase market substitutes for housework. A new study by de Ruijter et al. (2005) shows that in both single and couple households, the earnings of the "consumer unit" are positively associated with expenditures on services intended to defray time spent on housework. Though they do not disaggregate the earnings for couple households into partners' separate incomes, an earlier study by Cohen (1998) found that women's incomes were directly associated with household spending on housekeeping services and on eating out. This result is particularly noteworthy in light of the fact that cleaning and cooking are the two most time-consuming routine household

chores. Moreover, Cohen showed that the association of housekeeping expenses with women's earnings was nearly twice as large as their association with husbands' earnings. Oropesa (1993) also reported a link, for women employed full time, between their own incomes and the likelihood of paying someone to clean the home; there was no association, however, between their own earnings and expenditures on substitutes for cooking. And Soberon-Ferrer and Dardis (1991) found that women's wage rates, but not men's, were positively associated with spending on housework substitutes.

This research on gender differences in spending suggests that married women's housework time is affected differently by their own incomes compared to their husbands' earnings. In particular, it suggests that every additional dollar earned by wives will matter more to their housework time than every additional dollar earned by their husbands. By contrast, both the exchange and display models implicitly assume that the associations of wives' and husbands' earnings with their housework time are equal, and that what matters are the relative magnitudes of their earnings. Consider two married women with annual earnings of 15 and 30 thousand dollars, with husbands' incomes of 30 and 60 thousand dollars respectively. If women's housework time is affected equally by both partners' earnings, as is implicitly assumed by the exchange and display models, what will matter is that they both earn half as much as their husbands. But if women's own earnings affect their housework much more than do their husbands', what matters is that the second woman earns twice as much as the first.

To date few studies have examined the link between women's absolute incomes and their housework time. Among the exceptions is an early study by Maret and Finlay (1984), who found that women's wages had an independent and negative effect on their housework responsibilities. But because they used different categorical measures for the two partners' earnings, they did not determine the actual associations between earnings and housework. Ross's (1987) study also examined the separate effects of wives' and husbands' earnings on housework, but because the dependent variable did not measure the actual time spent on household chores, the study did

not determine the association between earnings and housework time. A subsequent study by Shelton and John (1993) found that the effect of women's own earnings on their housework hours was ten times greater than that of their partners' earnings. However, their focus was on housework differences between married and cohabiting women, and they did not pursue the implications of their finding for the bargaining and gender display theories of housework. Finally, Gupta (2005) showed that the association between women's housework time and their own earnings was much larger than its relationship with their partners' incomes. However, the study did not explicitly test its hypothesis against the exchange and display models.

In this study I determine for the first time what matters more to women's housework, their absolute or relative earnings. Further, I determine whether it is possible to reproduce the relationship between women's relative earnings and housework characterized as gender display in some earlier studies, but using only women's absolute incomes as the explanatory variable. I also examine the consequences for their housework of the relationship between women's absolute and relative incomes, an association which has been ignored in the quantitative housework literature.

DATA AND METHOD

Sample

The data used here come from the second wave of the National Survey of Families and Households (NSFH), which employed a national probability sample of housing units; one adult per household was randomly selected as the main respondent (Sweet, Bumpass and Call 1988). Members of racial and ethnic minorities were oversampled, as were single-parent families and cohabiting couples. The survey was initiated in 1987; the second wave used in the present study was conducted in the period 1992-94. Although a third wave became available recently, it consists of a highly restricted subset of the sample from the first two waves. (See the NSFH website, http://www.ssc.wisc.edu/nsfh/home.htm, for a complete description of the three waves.) Therefore I have chosen the second wave, which has already been extensively used in

the housework literature. The first wave of the survey had a response rate of 74 percent, with 13,007 respondents. The second wave retained 10,005 of these original respondents. The NSFH provides individual case weights that adjust for sampling stratification, nonresponse and attrition; these are described in detail at ftp://elaine.ssc.wisc.edu/pub/nsfh/cmapp_0.001. All models in this analysis employ these weights. The models also incorporate the complex survey design of the NSFH in computing standard errors for the regression coefficients reported here.

The sample consists of 914 married women from the second wave of the NSFH who reported working outside the home for 35 or more hours per week, for 50 or more weeks in the preceding year. The restriction to women employed full time around the year increases the representation of women with high relative earnings, i.e. those who according to previous research are most likely to provide evidence for gender display. It also reduces the impact of variation in employment hours on the relationship between earnings and housework, and diminishes the potential influence of unobserved characteristics that may be related to housework performance, such as preferences for domestic versus market labor.

Following earlier studies, the ages of the women are restricted to the range 18 to 65, inclusive. The sample is a subset of the 3,127 married and cohabiting women in the second wave of the NSFH who were between 18 and 65 years of age. Of these, 1,300 reported being employed full time, year round. The single largest reduction of cases from this number is due to the nonresponse of male partners: information on partner characteristics is available for 1,059 of these women. The implications of partner nonresponse and missing values are discussed at the end of the results section. I compare the results for married women with those for a sample of 918 single women who reported full time, year-round paid employment. This sample is a subset of the 1,865 single women under age 65 for whom valid data is available on all variables.

Dependent variable

The dependent variable in this analysis is women's absolute number of weekly housework hours. Though a few studies have used individuals' share of couples' total housework hours (e.g. Blair

and Lichter 1991, Greenstein 2000), such measures make it difficult to determine whether some women do a greater proportion of couples' total housework than others because they spend more time on housework or their partners spend less, or both. The measure used here is the total number of hours women reported spending per week on four tasks: cooking, washing the dishes, house cleaning, and laundry. Time spent on these chores has become the focus of the quantitative housework literature because they have to be performed often, perhaps daily. Other tasks, such as yard work, are relatively discretionary.[1]

It should be noted here that respondents are known to overestimate time spent on housework in retrospective surveys like the NSFH, compared to time diary data (e.g. Bianchi et al. 2000, Juster and Stafford 1991). However, no study to date has documented systematic variations in this tendency by gender, income, or other important substantive variables. Moreover, the NSFH contains a richer set of covariates than most contemporaneous sources of time diary data; crucially, it contains matched data on respondents' partners. Accordingly, the first two waves of the NSFH have been used widely in studies of domestic labor; a partial listing is available at http://www.ssc.wisc.edu/nsfh/bib.htm#householdtask.

Independent variables

The main independent variables are women's own annual labor market earnings and their partners', measured in thousands of dollars, from the year preceding the survey. The other variables in the model are those employed routinely in housework models, namely employment hours, race or ethnicity, education, household composition, and type of union. Where applicable, both spouses' measures are present in the model. A dummy variable identifies home ownership. Employment hours are included as continuous measures. Age is present in the

[1] To account for the implausibly high values for housework hours reported by some respondents I adopt a procedure used by South and Spitze (1994). Values higher than the 95th percentile are recoded to that percentile for each of the four chores before summing them to obtain the dependent variable. To maximize the number of usable cases, the mean number of hours for each task is imputed for women who did not specify or did not know how many hours they spent on that task. Also, zeros are substituted for men who did not answer the survey question for a particular task but reported hours for at least five other tasks.

model as a continuous variable. Both spouses' educational levels are measured by years of education. I add race/ethnicity in the form of two indicator variables for African American and other non-white, with white being the reference category. Household composition is represented by three indicators for the presence of adult women other than the respondent, adult men other than her husband, and children under the age of 18. For all the household composition variables, using interval measures rather than categorical ones makes no difference to the substantive results.

Finally, I control for women's family role attitudes with a scale that has been used in earlier housework studies using the NSFH data (Greenstein 1996, 2000), constructed from responses to six questions in the survey about mothers' employment, housework, and children's upbringing. The composite scale, with Cronbach's $\alpha = 0.64$, is constructed by summing the standardized responses (mean 0, s.d. 1) with responses to individual items arranged so that lower values correspond to more liberal family role attitudes, and higher ones to more traditional views.[2]

Analytic strategy

1. First I determine how the models employed in previous research fare upon the addition of women's own absolute earnings. The typical form of these models is:

$$Y_i = \beta_0 + \beta_1 X_i + \beta_2 X_i^2 + \beta_T T_i + \varepsilon_i \qquad (1)$$

Here Y_i is a woman's housework hours and X_i is her share of the couple's total earnings, a commonly used measure of relative resources. (Some studies have used the equivalent ratio of the difference between partners' earnings and the sum.) The linear term represents the exchange effect. Its coefficient is expected to be negative if partners' housework hours are

[2] Two of these asked respondents on a scale of 1 to 7 if they approved of mothers with children under age 5 who worked full time and part time, respectively (1 = strongly approve, 7 = strongly disapprove). In another set of three questions on women's employment, all scaled from 1 (strongly agree) to 5 (strongly disagree), respondents were asked if they agreed with the following statements: whether preschool children suffer if their mothers work, if it is better for families if men are breadwinners and women are responsible for domestic affairs, and whether housework should be shared equally between spouses if both work full time. The last question concerns parental socialization of children, and asks if parents "should encourage just as much independence from their daughters as in their sons."

inversely related to their shares of couples' total earnings. The second-order term captures the curvilinearity in the relationship between relative earnings and housework that characterizes gender display. In the case of women, the coefficient will be positive if women with unusually high relative earnings do more housework than other women. The model controls for total couple or household income, T_i, which is typically equal to the sum of the two partners' earnings, $W_i + M_i$.[3] In my alternative model, I replace this term with its constituents, wives' and husbands' own, separate, incomes:

$$Y_i = \beta_o + \beta_1 X_i + \beta_2 X_i^2 + \beta_w W_i + \beta_m M_i + \varepsilon_i \quad (2)$$

2. Next, I compare model (2) to a reduced model employing only wives' and husbands' absolute earnings:

$$Y_i = \beta_o + \beta_w W_i + \beta_m M_i + \varepsilon_i \quad (3)$$

Because model (3) is nested in model (2), we can test the null hypothesis that $\beta_1 = \beta_2 = 0$ upon the addition of women's absolute earnings (and their husbands') to the model. A rejection of this hypothesis would imply that the relative earnings terms X_i and X_i^2 do not add significantly to the variance in housework hours explained by a simpler model employing only the absolute incomes W_i and M_i.

3. If the null hypothesis in step 2 is rejected, the predictions of the conventional model (1) can be compared with those of the reduced model (3) employing only the absolute incomes W_i and M_i. Based on the results of step 2, I compare the predicted values of housework time of the two models (1) and (3) by plotting them against women's income shares. The predictions of the gender display model (1) will display the curvilinearity documented by earlier studies if $\beta_2 > 0$. If the predicted values of the absolute earnings model (3) also display the same pattern, it will be further evidence that it performs at least as well as model (1), but without relying on the relative

[3] Note that by including couples' total earnings as a single term, this model implicitly assumes that the effects of the two partners' earnings on women's housework are identical: $\beta_T T_i = \beta_T(W_i + M_i) = \beta_T W_i + \beta_T M_i$. Gupta (2005) showed that this assumption is invalid, because the coefficient of women's earnings is substantially larger than that of husbands' incomes.

earnings measures. The analyses are weighted and standard errors corrected for the complex survey design of the NSFH.

RESULTS

Descriptives

Table 2 shows weighted means and standard deviations for all the variables. There is considerable variation in the two variables that are the focus of this analysis, women's annual earnings and their housework hours. Separate calculations show that women at the high end of the housework distribution, the 90th percentile and above, spent nearly five times as many hours on housework per week than women at the 10th percentile or below. Though all the women in this sample reported working full time for 50 or more weeks per year, the dispersion in this distribution is quite high. The annual earnings of a woman at the 90th percentile of this income distribution were a little over 4 times larger than the earnings of a woman at the 10th percentile. This is almost identical to the same ratio among partnered men in the sample working full time, year-round. There was greater variation in the annual earnings of the women's male partners, among whom the ratio of the 90th and 10th percentiles was 7.5. However, this group included men who were not employed or working part time, or who had zero earnings. The mean of women's share of couples' total earnings was 47 percent in this sample of married women working full time, substantially higher than its value of 33 percent for all married women.

Multivariate results

Table 3 shows the results of the conventional economic exchange/gender display model (Model I). Among these women, the coefficient of the square of their shares of total earnings is positive and significant. As argued by some earlier studies, this is evidence for the gender display argument: women whose earnings substantially exceed their partners' are predicted to spend more time on housework than women whose incomes are comparable to their partners'. The coefficient for couples' total earnings is negative and significant.

Model II displays the results of the alternative model, in which spouses' separate earnings are substituted for couples' total earnings. We observe two important changes to the results compared to those in Model I. First, the terms in women's relative earnings are no longer statistically significant. Once women's absolute earnings are added to the model, their relative incomes lose their association with women's housework time. Second, the negative coefficient of women's absolute earnings is larger than the effect of couples' total earnings observed in Model I. The conventional model forces the coefficient of women's and partners' earnings to be equal, by folding both into one term for the sum of their incomes. This dilutes the coefficient of earnings. When the sum is disaggregated, as in Model II, it is clear that the coefficient of women's own earnings is much larger than that of partners' incomes.

Additionally, I perform an *F*-test for the joint significance of the two terms in relative earnings in model (2). The result (*p*-value 0.63) confirms that the additional variance in housework hours explained by that model, compared to that explained by a reduced model which excludes these terms, is minimal. (The results of the reduced model are omitted for the sake of brevity because they are virtually identical to those of Model II.) Once women's absolute earnings are present in the model, their relative earnings are of little value in predicting their housework hours.[4]

Finally, it appears that the reduced model, using only women's absolute earnings, can reproduce the gender display phenomenon without using the relative earnings measure at all. Figure 1 shows a comparison of the predicted values from both the reduced and conventional models, superimposed on a scatterplot of housework versus income share, or relative earnings. In both cases, the values are obtained while holding the other independent variables constant at their means or modes, and are connected in the figure by median splines. The curves overlap

[4] Model II in Table 2 is overdetermined because it includes both spouses' absolute earnings *and* women's share of the total. This multicollinearity leads to somewhat inflated standard errors for the earnings variables, though it does not bias the coefficients. A better specification is one that excludes husbands' earnings, which are not significant in Model II. This model (not shown) yielded nearly identical results to Model II.

almost completely, despite the fact that the reduced model does not use the crucial variables of the gender display model, namely the linear and square terms in women's income share. Although my sample is restricted to women working full time around the year, this finding obtains among all women.

DISCUSSION

The results presented here invalidate the economic exchange and gender display theories of the relationship between married women's earnings and housework. Women's housework time does not depend on their incomes compared to their husbands', on their husbands' earnings, or on total household income. Only their own earnings matter. At first glance, the results in Table 3 appear to be consistent with a modified version of the economic exchange model, but one that derives its explanatory power from women's own rather than relative earnings. That is, women with high absolute earnings may be less dependent on their partners than women with low earnings, regardless of how large their incomes are relative to their partners', and therefore spend less time on housework. From the bargaining perspective, women with higher absolute earnings may have greater bargaining power in heterosexual households, independently of their partners' earnings, and consequently spend less time on housework than women with lower earnings.

To assess this modified version of the economic exchange hypothesis, I applied the same model shown in Table 3, excluding partner characteristics, to a sample of *single* women working full time, year round. If the impact of earnings on women's housework is largely the consequence of dependence on or bargaining with their male partners, the housework responses to own earnings of the two groups of women should be quite different. By definition, single women do not have partners with whom they bargain or on whom they are dependent. However, in a multivariate analysis of their housework hours, the coefficient for own earnings for single women was almost identical to the one reported in Model II, as confirmed in a model applied to a pooled sample with an interaction term between marital status and earnings (results available

from the author). To put it another way, so far as the relationship between money and housework is concerned, married women may as well be single.

My analysis also suggests that the gender display pattern documented in some earlier studies may be spurious. The evidence for gender display is usually provided by the square of women's incomes relative to their partners'. But Model II shows that neither the linear nor the square term in women's relative incomes is statistically significant once women's absolute earnings are explicitly specified in the model. Further, Figure 1 shows a convergence of the predictions from the absolute and relative earnings models. These findings suggest that there is a link between women's relative and absolute earnings that has gone unnoticed in the housework literature to date, and may be responsible for the gender display pattern observed in some earlier studies.

This connection is depicted in Figure 2, in which mean housework hours and annual earnings are both plotted against women's income shares, or relative earnings. (The lowest and highest ranges of share are broader because of the small number of cases in these categories.) We observe that the mean housework hours first decline with women's income share and then increase, as predicted by the gender display model. But we also see that women's mean incomes decline past the 60 to 70 percent range; the average earnings of women in the highest range, 80 to 100 percent, are actually lower than those of women whose earnings are comparable to their male partners'. In other words, women at the high end of the share distribution are poorer, in terms of their own earnings, than women in the equality range. A plausible inference is that women with unusually high relative earnings spend more time on housework than other women not because of gender display, but because their absolute earnings are lower than those of other women.

The results presented here are open to multiple interpretations. Perhaps the simplest is that women defray their housework time by using their earnings to purchase market substitutes, or services, for domestic labor. This possibility is consistent with earlier research showing a link

between women's incomes and household expenses on such substitutes. Unfortunately, I cannot perform a direct test of this hypothesis because the NSFH, like other datasets used frequently in the housework literature, does not have detailed data on household expenses. And the datasets employed in the research on household expenditures have expense data but lack time use information. A complete analysis of the link between income, time use, and expenses will have to await a dataset with quality measures of all three variables.

To the extent that the negative association of income with housework documented here does capture women's use of income to substitute for housework through purchased goods and services, they appear to be largely drawing from their own earnings rather than their partners' for this purpose. That inference is corroborated by the finding that the housework responses of partnered women to their own incomes are similar to that of single women, who do not have to bargain with partners. It is consistent with the literature on intrahousehold resource allocation, which has documented gender differences in spending on certain household outcomes. Women's non-wage incomes have larger effects on children's health and nutrition in some developing countries than do men's (Thomas 1990). Lundberg, Pollak and Wales (1997) found that government cash payments to mothers in the U.K. in the late 1970s were associated with greater expenditures on women's and children's clothing, compared to expenditures on men's. And Brandon (1999) showed that in the U.S., mothers' own earnings increased the odds of their choosing market child care over parental care; fathers' incomes affected child care choices only if husbands and wives pooled their incomes.

If women do use their earnings to reduce their housework time independently of their male partners' earnings, the strategy may ease the friction associated with negotiations over the allocation of domestic labor documented in the classic study by Hochschild and Machung (1989). In this way it may be complementary, or provide an alternative, to the kind of bargaining implicit in the economic exchange model. To put this another way, women's use of their own earnings to reduce their housework may mitigate what Treas (1993) described as the

"transaction costs" of decision-making in households, or the efforts required to coordinate, negotiate and monitor their members' activities. Treas found that couples organized their finances in ways that minimized these transaction costs. For some couples this meant separate bank accounts, while others pooled their financial assets. Although Treas's study did not deal directly with the organization of expenses, it raises the possibility that partners do not pool their earnings for purposes such as housework substitution. Perhaps women feel freer to buy out their housework if they themselves earn more. Or couples may segregate their expenses by type and delegate responsibility for different types of expense separately to each partner, so that women's own earnings have a larger impact on housework related expenditures than do their male partners'. A satisfactory resolution of these issues would require detailed data not only earnings, expenses, and time use, but also on financial arrangements. No such data exist.

The findings presented here are also consistent with other explanations. For example, it is possible that the association between women's earnings and housework time reflects a reduced sense of obligation on the part of higher-earning women to do domestic labor, even if they do not use their earnings to substitute for it. Because there is no direct measure in the NSFH regarding preferences or taste for housework, it is difficult to evaluate this explanation directly. However, the survey did gather data on gender role beliefs, including those having to do with the division of domestic labor. The addition of these measures to the model in Table 3 reduced the earnings coefficient slightly but did not otherwise change the results, and an interaction between earnings and attitudes was not statistically significant (results available from the author). Another possibility is that the male partners of women with high earnings spend more time on housework than the partners of women with lower earnings. However, that is not the case in this sample (results available from the author).

Further, it may be that the housework time of married women is determined by some combination of all three processes: the use of their own earnings to substitute for domestic labor, bargaining over the allocation of this work, and the practice of gender display. A principal

limitation of this analysis is that it cannot sort out the relative importance of these factors. In particular, it cannot establish the extent to which the negative effect of women's own income on their housework is due to their purchase of market resources to substitute for housework. As stated earlier, a definitive resolution of these issues would require a dataset with comprehensive information not only on housework hours and earnings, but also on financial arrangements, household expenses, and the allocation of responsibility for specific aspects of household life.

Finally, it could be that the relationship between women's earnings and housework time operates in the reverse direction from the one suggested here. Recent work has documented a negative effect of housework time on women's wages (Hersch 1997, Hersch & Stratton 2002, Noonan 2001). The results presented here are, in a sense, consistent with those of this research: I find the same negative association between women's earnings and time spent on "female" housework.[5] Further, like Hersch and Stratton (2002), my analysis shows that this inverse relationship obtains among both single and partnered women, and that it is most pronounced for the two tasks of cooking and cleaning (results available from author). Though my analysis does not resolve the question of causal direction in the relationship between women's housework and earnings, the restriction of the sample to women working full time around the year limits the variation in time spent in labor market activity, which should reduce the possibility of an effect of housework time on earnings mediated by time available for employment. Noonan (2001) states that a definitive resolution of the question of causality would require several waves of longitudinal data collected at short intervals. To my knowledge there is no such longitudinal survey with quality data on both housework hours and earnings. The survey used here, the NSFH, has three waves of data, but these are separated by five or more years.

[5] These studies used hourly wage rate rather than earnings as their measure of income, and excluded employment hours as an independent variable. Using wage rate in my model, and omitting employment hours, I get a coefficient of -0.31 for wage rate that is highly significant. That is, every additional dollar per hour earned in the labor market is associated with -0.31 fewer hours spent on housework.

The results of this analysis challenge the economic exchange and gender display models of housework based on women's earnings relative to their partners', and emphasize the importance of their own incomes. More broadly, they contribute to our understanding of the degree to which partners in heterosexual households are independent actors in the realm of household production. Researchers have examined this question from several angles, such as couples' organization of their finances, the extent to which partners pool their incomes, and gender differences in expenditures, including spending on substitutes for housework. Some of their findings indicate that the economics of marital and cohabiting relationships is segregated in ways that go beyond gender differences in earnings and employment. The earnings of male and female partners appear to have independent consequences for some aspects of household life, separate from the effects of their combined resources. Domestic labor is a deeply gendered activity not only along the dimension of time, but also that of money.

REFERENCES

Becker, Gary S. 1991. *A Treatise on the Family*. Cambridge: Harvard University Press.

Bianchi, Suzanne M., Melissa A. Milkie, Liana C. Sayer, and John P. Robinson. 2000. Is Anyone Doing the Housework? Trends in the Gender Division of Household Labor. *Social Forces* 79, no. 1:191-228.

Bittman, Michael, Paula England, Nancy Folbre, Liana Sayer, and George Matheson. 2003. When Does Gender Trump Money? Bargaining and Time in Household Work. *American Journal of Sociology* 109, no. 1:186.

Blair, Sampson L. and Daniel T. Lichter. 1991. Measuring the Division of Household Labor: Gender Segregation of Housework Among American Couples. *Journal of Family Issues* 12, no. 1:91-113.

Blumberg, Rae L. and Marion T. Coleman. 1989. A Theoretical Look at the Gender Balance of Power in the American Couple. *Journal of Family Issues* 10, no. 2:225-50.

Brandon, Peter D. 1999. Income-pooling arrangements, economic constraints, and married mothers' child care choices . *Journal of Family Issues* **20**, no. **3**:350-370.

Brines, Julie. 1994. Economic Dependency, Gender, and the Division of Labor at Home. *American Journal of Sociology* 100, no. 3:652-688.

Cohen, Philip N. 1998. Replacing Housework in the Service Economy: Gender, Class, and Race-Ethnicity in Service Spending. *Gender and Society* 12, no. 2:219-231.

Coltrane, Scott. 2000. Research on Household Labor: Modeling and Measuring the Social Embeddedness of Routine Family Work. *Journal of Marriage and the Family* 62, no. 4:1208-1234.

Coverman, Shelley. 1985. Explaining Husbands' Participation in Domestic Labor. *Sociological Quarterly* 26, no. 1:81-97.

de Ruijter, Esther, Judith K. Treas, and Philip N. Cohen. 2005. Outsourcing the Gender Factory: Living Arrangements and Service Expenditures on Female and Male Tasks. *Social Forces* 84, no. 1:305-322.

Evertsson, Marie and Magnus Nermo. 2004. Dependence within families and the division of labor: Comparing Sweden and the United States. *Journal of Marriage and the Family* 66, no. 5:1272-1286.

Farkas, George. 1976. Education, Wage Rates, and the Division of Labor between Husband and Wife. *Journal of Marriage and the Family* 38, no. 3:473-483.

Greenstein, Theodore N. 2000. Economic Dependence, Gender, and the Division of Labor in the Home: A Replication and Extension. *Journal of Marriage and the Family* 62, no. 2:322-335.

Hersch, Joni and Leslie S. Stratton. 1994. Housework, Wages, and the Division of Housework Time for Employed Spouses. *The American Economic Review Papers and Proceedings*

of the Hundred and Sixth Annual Meeting of the American Economic Association 84, no. 2, Papers and Proceedings of the Hundred and Sixth Annual Meeting of the American Economic Association:120-125.

Hersch, Joni and Leslie S. Stratton. 1997. Housework, Fixed Effects, and Wages of Married Workers. *Journal of Human Resources* 32, no. 2:285-307.

Hochschild, Arlie and Anne Machung . 1989. *The Second Shift: Working Parents and the Revolution At Home*. New York: Viking .

Huber, Joan and Glenna Spitze. 1983. *Sex Stratification: Children, Housework, and Jobs*. New York: Academic Press.

Juster, F. Thomas and Frank P. Stafford. 1991. The Allocation of Time: Empirical Findings, Behavioral Models, and Problems of Measurement. *Journal of Economic Literature* 29, no. 2:471-522.

Lundberg, Shelly J., Robert A. Pollak, and Terence J. Wales. 1997. Do Husbands and Wives Pool Their Resources? Evidence from the United Kingdom Child Benefit. *Journal of Human Resources* 32, no. 3:463-480.

Maret, Elizabeth and Barbara Finlay. 1984. The Distribution of Household Labor among Women in Dual-Earner Families. *Journal of Marriage and the Family* 46, no. 2:357-364.

Noonan, Mary. 2001. The impact of domestic work on men's and women's wages. *Journal of Marriage and the Family* 63:1134-1145.

Oropesa, R. S. 1993. Using the service economy to relieve the double burden: female labor force participation and service purchases. *Journal of Family Issues* 14, no. 3:438-474.

Parkman, Allen M. 2004. Bargaining Over Housework: The Frustrating Situation of Secondary Wage Earners. *American Journal of Economics and Sociology* 63, no. 4:765-794.

Ross, Catherine E. 1987. The Division of Labor at Home. *Social Forces* 65, no. 3:816-833.

Shelton, Beth A. and Juanita Firestone. 1989. Household Labor Time and the Gender Gap in Earnings. *Gender and Society* 3, no. 1:105-12.

Shelton, Beth A. and Daphne John. 1993. Does Marital Status Make a Difference? *Journal of Family Issues* 14, no. 3:401-420.

Shelton, Beth A. and Daphne John. 1996. The Division of Household Labor. *Annual Review of Sociology* 22:299-322.

Soberon-Ferrer, Horacio and Rachel Dardis. 1991. Determinants of Household Expenditures for Services. *Journal of Consumer Research* 17, no. 4:385-397.

South, Scott J. and Glenna Spitze. 1994. Housework in Marital and Nonmarital Households. *American Sociological Review* 59 , no. 3:327-347.

Sweet, James, Larry Bumpass, and Vaughn Call. 1988. The Design and Content of the National Survey of Families and Households. *NSFH Working Paper*, no. 1.

Thomas, Duncan. 1990. Intra-Household Resource Allocation: An Inferential Approach. *Journal of Human Resources* 25, no. 4 :635-664.

Treas, Judith. 1993. Money in the Bank: Transaction Costs and the Economic Organization of Marriage. *American Sociological Review* 58, no. 5:723-734.

West, Candace and Don H. Zimmerman . 1987. Doing Gender. *Gender and Society* 1, no. 2:125-151.

Winkler, Anne E. 1997. Economic decision-making by cohabitors: findings regarding income pooling. *Applied Economics* 29, no. 8:1079-1091.

TABLE 1: Recent studies based on the economic exchange and gender display perspectives

Study	Women	Men	Data
Bittman et al (2003)	US: exchange	US: display	National Survey of Families and Households, 1987-88
	Australia: both	Australia: neither	Australian Time-Use Survey, 1992
Brines (1994)	US: exchange	US: display	Panel Study of Income Dynamics, 1985
Evertsson and Nermo (2004)	US: neither	US: display	Panel Study of Income Dynamics, 1973
	US: display	US: exchange	Panel Study of Income Dynamics, 1981, 1991
	US: display	US: neither	Panel Study of Income Dynamics, 1999
	Sweden: exchange	Sweden: exchange	Swedish Level of Living Survey, 1974, 1981, 1991, 2000
Greenstein (2000)	US: display	US: display	National Survey of Families and Households, 1987-88

Note: Bittman, Brines, and Evertsson and Nermo use absolute hours. Greenstein uses both; above based on distributional measure.

TABLE 2: Weighted means and standard deviations of variables used in analysis (*N* = 914)

	mean	s.d.
Housework hours	20.72	12.54
WOMEN'S CHARACTERISTICS		
Annual earnings ($ thousands)	21.59	14.05
Share of couple's total earnings (percent)	47.26	20.45
Weekly employment hours	41.79	4.84
Age	40.75	9.27
Race		
White	0.85	
African American	0.08	
Other	0.07	
Education (years)	13.57	2.42
HUSBANDS' CHARACTERISTICS		
Annual earnings ($ thousands)	27.14	20.72
Employment hours	41.06	16.05
Education (years)	13.57	2.42
HOUSEHOLD TYPE AND COMPOSITION		
Children present (1 = yes)	0.54	
Adult males present (1 = yes)	0.16	
Adult females present (1 = yes)	0.13	
OTHER CONTROLS		
Owns home (1 = yes)	0.84	
Gender ideology scale	-0.29	0.57

TABLE 3: Multivariate results for women's housework hours (*N* = 914)

	Model I		Model II	
	b	**s.e.**	**b**	**s.e.**
Earnings share	1.891	0.883 *	0.648	1.304
Earnings share squared	1.281	0.611 *	0.805	0.706
Couple's total earnings (thousands)	-0.058	0.018 **		
Women's earnings (thousands)			-0.112	0.038 **
Husbands' earnings (thousands)			-0.024	0.032
Weekly employment hours	0.178	0.109	0.190	0.110
Age	0.178	0.053	0.184	0.052 **
Race				
White	reference		reference	
African American	2.435	1.582	2.447	1.574
Other	2.887	1.945	2.929	1.958
Education (years)	-0.224	0.228	-0.212	0.227
Husbands' employment hours	0.025	0.035	0.027	0.034
Husbands' education (years)	-0.830	0.227 **	-0.810	0.227 **
Household type and composition				
Children ages 0-17 present	4.615	0.854 **	4.677	0.846 **
Adult males present	-0.115	1.320	-0.237	1.313
Adult females present	0.714	1.228	0.630	1.224
Owns home (1 = yes)	-0.384	1.297	-0.363	1.299
Gender ideology scale	0.855	0.801	0.811	0.806
Constant	20.270	5.869 **	19.036	5.796 **
R-squared	0.139		0.140	

* $p < 0.05$, ** $p < 0.01$

FIGURE 1: Comparison of predictions of display and separate income (reduced) models

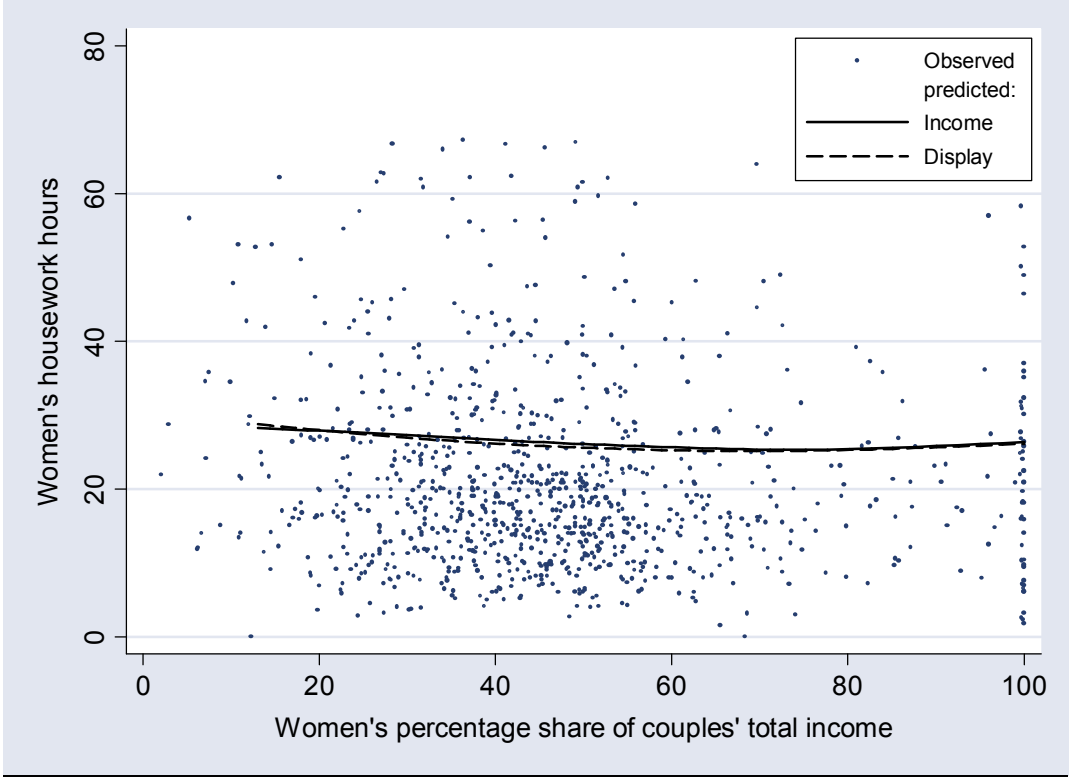

FIGURE 2: Relationship between predicted housework, women's absolute earnings, and relative earnings