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Unemployment in Families: The Case of Housework

Unemployment has consequences for individuals, but its impacts also reverberate through families. This paper examines how families adapt to unemployment in one area of life—time in housework. Using 74,881 observations from 10,390 couples in the Panel Study of Income Dynamics, we estimate fixed effects models and find that individuals spend between 3 and 7 hours more per week in housework when unemployed than when employed, with corresponding decreases of 1 to 2 hours per week in the housework hours of unemployed individuals' spouses. We are the first to show that unemployment is associated both with a reallocation of housework to the unemployed spouse and an increase in the family's total household production time. The results also provide evidence for gender differences in adjustments to the division of labor during unemployment, with wives' unemployment associated with an increase in housework hours that is double the increase for unemployed husbands.

Paid labor is an integral part of many Americans' lives, and unemployment can have a devastating effect on individuals' financial stability, career trajectories, and mental and physical health (Burgard, Brand, & House,

2007; Jacobson, LaLonde, & Sullivan, 1993). Unemployment—the state of being not currently employed, but seeking employment—is not limited to isolated individuals but also affects the well-being and daily routines of families. For example, job loss is associated with increased probability of divorce (Charles & Stephens, 2004). For those who remain married, the experience of unemployment may alter specialization decisions within the household. The question of whether spouses (mostly wives) of individuals who become unemployed increase their labor supply (the “added-worker effect”) has been extensively studied and debated (Heckman & MaCurdy, 1980; Lundberg, 1985; Maloney, 1987). Stephens (2002) found large increases in wives' labor supply following husbands' job losses, which in the long term compensated for one fourth of their husbands' lost income. But the literature on changes in wives' labor supply in response to their husbands' unemployment has typically ignored changes in spouses' time in nonmarket productive activities following a job loss. Just as changes in one spouse's employment hours may affect the employment hours of the other spouse, so too may job loss motivate the unemployed spouse to increase household labor, whereas the other spouse may decrease time in household labor, particularly if she is employed.

The effects of unemployment on household labor may not be limited to reallocation of tasks from one spouse to another. In addition to changing who does housework, unemployment may change the total amount of housework the couple does. For example, unemployment is expected to reduce the household's financial resources, which may reduce the outsourcing of housework

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and increase the household's total housework burden. In this paper we ask whether unemployment leads to both a rise in the couple's total time in housework and a shift of housework to the unemployed spouse.

Furthermore, we hypothesize that responses to unemployment will vary according to the gender of the unemployed spouse. Time spent in housework is a normative way in which women "do gender," whereas men do gender through housework avoidance (West & Zimmerman, 1987). Thus, we expect that while unemployed a wife may pour additional time into housework, whereas an unemployed husband may be reluctant to take on additional housework if he believes that housework is the realm and responsibility of his wife. This belief may be intensified during periods of unemployment, if his inability to fulfill the gendered, socially normative role of breadwinner makes further deviation from gender norms through participation in female-typed tasks especially distasteful (Brines, 1994). In this way, we hypothesize an interactive effect between gender and time availability, with gender affecting the "starting points" of employed men's and women's housework time and the degree to which they reallocate effort to domestic labor in the face of a sudden reduction in paid labor time.

We use data from the Panel Study of Income Dynamics (PSID, 2009) and estimate the effect of shifts into unemployment on both the reallocation of housework hours between spouses and the amount of total household production. The PSID is a uniquely appropriate data set for answering this question because it has asked household respondents to report the housework hours of both the head of the household (by default the husband for married couples) and his wife for more than two decades. Thus, for many members of the PSID sample, we have repeated annual measures of both spouses' housework time and can estimate the changes in a couple's housework time that occur when either spouse experiences unemployment.

LITERATURE REVIEW

The changes in spouses' housework time that we expect during periods of unemployment depend on our prior assumptions about how spouses make decisions about household labor. Job loss provides husbands the potential to reduce their working wives' "second shift" (Hochschild,

1989) by assuming more housework and child care responsibilities at home. Alternatively, husbands may find increased time in homemaking socially uncomfortable and undesirable, due to gendered norms of behavior that define housework as women's work. In the former situation, spouses may be able to smoothly reallocate tasks in the event of a husband's job loss, but in the latter case husbands' unemployment may increase the burden on wives to participate in paid labor without offering any relief from household labor. These competing responses illustrate two of the literature's main theoretical perspectives on housework division: time availability theory and gender-based perspectives of household labor.

Time availability theory suggests that couples rationally allocate time in housework on the basis of spouses' relative hours in the paid labor market and the amount of housework to be done (Bianchi, Milkie, Sayer, & Robinson, 2000; England & Farkas, 1986). Therefore, the spouse with less time spent in paid labor is expected to take on the greater responsibility for housework. Past research into time availability has run into a temporal ordering problem. By assuming that couples allocate time in housework based on their relative labor market hours, time availability theory implicitly assumes that couples first decide how to allocate each spouse's time in the paid labor market and then decide how to allocate each spouse's time in household labor based on the number of hours each spends in paid labor. Thus, it has been common in empirical work to test time availability or to account for time availability by including measures of spouses' market work time as an independent variable in models of housework hours (Bianchi et al., 2000; Bittman, England, Sayer, Folbre, & Matheson, 2003; Brines, 1994; Evertsson & Neramo, 2004; Greenstein, 2000). If housework and labor force hours are jointly determined, with gendered expectations about the allocation of housework influencing spouses' time in paid labor, modeling time spent in housework in a way that takes the labor force decision as given may understate the effect of gender and overstate the effect of time availability. Because of the potential for joint determinacy, time in the labor force is endogenous to time in housework.

The involuntary and sudden nature of job loss allows us to address these shortcomings. In our study, we can exploit the fact that job loss is an exogenous shock to labor force hours and examine how couples respond to this shock. The

involuntary nature of job loss provides us with a rare situation in which it is appropriate to view labor market outcomes as determined prior to, rather than jointly with, decisions about time in household labor.

Along with altering the relative time availability of spouses, job loss changes their relative earnings. The theory of relative resources suggests that spouses allocate housework based on the relative resources (monetary or otherwise) each contributes to the family. The spouse contributing the larger share of resources to the family is expected to spend less time in housework than the spouse contributing the smaller share, as the advantaged spouse is expected to view housework as undesirable and to use resources to bargain out of housework time (Bittman et al., 2003; Brines, 1994; Evertsson & Nermo, 2004). Thus, the relative resources theory of housework division implies that job loss will result in a shift of some additional household labor to the unemployed spouse, above and beyond the effect of time availability, because of this spouse's loss of income.

The loss of income associated with unemployment may also affect housework time in absolute terms. Given that wives' earnings are negatively associated with their own time in housework, and that these reductions do not appear to be offset by increases in husbands' housework time (Gupta, 2007), we expect that a wife's unemployment, in particular, will lead to an increase in the couple's total housework hours due to the reduction in income. This earnings-housework association may arise because wives' earnings are used to outsource housework. The positive association between expenditures on market substitutes for wives' own time in housework and both total family income and wives' earnings (Cohen, 1998; Oropesa, 1993) is consistent with this hypothesis and suggests that the loss of income from unemployment may lead couples to use their own labor to produce household goods that they previously purchased.

Time availability and relative resources have been criticized for ignoring the potential role of gender in the allocation of housework tasks within families. The "doing gender" perspective in the housework literature suggests that housework is a space for the symbolic enactment of gendered behavior (Berk, 1985; West & Zimmerman, 1987). Cultural norms about which spouse should dedicate time to the labor force and which should dedicate time to domestic

labor (husband and wife, respectively) also influence individuals' time in housework. These norms may act as disincentives for couples to adopt nontraditional divisions of household labor, as couples may fear being stigmatized or experience psychological unease (Atkinson & Boles, 1984; Brines, 1994; Hochschild, 1989; Tichenor, 2005).

For wives, unemployment leads to changes in time availability that are compatible with gendered norms of behavior, whereas for husbands the predictions of time availability and relative resources are at odds with norms of behavior for men. Thus, we expect that gender will condition and constrain the extent to which individuals adjust their time in household labor in response to unemployment, with greater increases in housework time for unemployed wives than unemployed husbands.

With the loss of the financial provider role for unemployed husbands, it is possible that husbands will resist housework even more strongly than when they were employed, leading to declines in husbands' housework time when they are unemployed. This is consistent with the theory of gender display (Brines, 1994) and its similar counterpart, gender deviance neutralization (e.g., Greenstein, 2000), which suggests that when the wife is the primary breadwinner husbands will do less housework, and wives more, than if the spouses had earnings parity: Spouses compensate for nontraditional labor force outcomes with a traditional division of labor at home. Existing evidence on gender display is mixed (Bittman et al., 2003; Brines, 1994; Evertsson & Nermo, 2004; Greenstein, 2000; Gupta, 2007; Killewald & Gough, 2010), with critics having argued that it is wives' own earnings that determine their time in housework, rather than wives' earnings relative to those of their husbands (Gupta, 2007; Killewald & Gough). Unemployment provides a special case in which to examine couples' responses to a female breadwinner and, as a result, our study provides a test of whether the predictions of gender display hold in the context of unemployment. Brines (1994) is one of the few researchers to examine this case with unemployed husbands; she found that recently unemployed husbands spent more time in housework than fully employed husbands, but long-term unemployed husbands spent no more, and perhaps less, time in housework than fully employed husbands. She suggested that these long-term

unemployed husbands resisted housework in response to their dependency on their wives.

Although Brines (1994) found resistance to housework among unemployed husbands, other researchers have not found these differences. Burda and Hamermesh (2010), using cross-sectional data from the American Time Use Survey, estimated that unemployed men and women spent about 10.5 more hours per week in household production than employed men and women. A weakness of this study, however, is that if the unemployed are different from others in ways that are correlated with housework time but not observed in the data, such as in their gender ideology or health, these results may be biased.

Two studies have used short longitudinal data sets to examine the relationship between unemployment and housework. Shamir (1986) studied a small sample of Israelis who had registered as unemployed with the Employment Service of the Israeli Ministry of Labor and Welfare and their spouses. He found that both men and women who became unemployed increased their share of household tasks modestly during the period of unemployment and then reduced their share of household tasks following re-employment. More recently, Ström (2002) studied Swedish couples using the Swedish Longitudinal Study among the Unemployed and the Swedish Level of Living survey. She found that men who were unemployed at the first wave had higher housework hours at the second wave than continuously employed men, even if they had been re-employed by the second wave. Women who were unemployed at the first wave spent more time in housework than continuously employed women at the second wave, but there were no significant differences if the women had been re-employed by the second wave (Ström).

THE PRESENT STUDY

Our work contributes to the literature in four ways. First, we employ fixed effects models, which allow us to examine how the housework hours of both spouses differ during periods of unemployment from those during periods of employment. These models net out time-invariant differences, so results are unbiased even in the case of unobserved time-invariant characteristics of individuals that are correlated with both their likelihood of unemployment and their housework time. Previous panel studies

of the relationship between unemployment and housework time have been limited by small sample sizes and short durations of the panels.

Second, we note that the existing panel studies of couples' housework responses to unemployment come from countries other than the United States. Given evidence of significant cross-national variation in the division of household labor (Cooke, 2010; Gupta, Evertsson, Grunow, Nermo, & Sayer, 2010; Sayer, 2010; van der Lippe, 2010), rates of female labor force participation and hours worked by women (van der Lippe), rates of unemployment, and unemployment benefits (Baker, Glyn, Howell, & Schmitt, 2005), it is unclear whether the results would translate directly to the United States. Thus, we contribute to the literature by estimating the relationship between unemployment and housework hours specifically within the United States.

Our third contribution is our most significant. Unlike most past research, we specifically consider the family context in which both unemployment and housework occur. In doing so, we look at the housework time of both the individual who becomes unemployed and his spouse. In this way, we are able to test whether changes in housework time result primarily from a reallocation of housework between spouses or from a change in the total amount of housework the couple performs. Unemployment reduces the opportunity cost of housework, as time spent in housework does not come at the cost of foregone time in paid labor. Additionally, unemployment lowers household income, reducing the family's ability to outsource household labor. Thus, we expect that the total time spent in household labor will rise for households with an unemployed spouse. Furthermore, the unemployment of one spouse alters the relative labor force commitments of spouses, as well as their relative bargaining positions, both of which should tend to shift household production to the unemployed individual and away from his spouse. We expect to see both reallocation of housework time toward the unemployed spouse, consistent with the time availability and resource-based theories, and increases in total household production. Our study is unique in considering changes in total household production as well as substitution of one spouse's time for another.

Although we expect to see both reallocation of housework and increases in household production, we acknowledge that couples' accustomed division of labor may have "stickiness":

Couples may change their division of housework less than would be expected on the basis of purely economic motives. Either because of gender norms, because spouses have developed routines and patterns of housework that require effort to renegotiate, or because spouses have developed task-specific skills that make reallocation of housework difficult, we expect changes in spouses' household labor time during periods of unemployment to be moderate in size.

Furthermore, again acknowledging the importance of examining unemployment and housework in the context of total family decisions, we expect that changes in spouses' housework hours will vary according to the family employment context in which they occur, a possibility ignored in previous research. Given that much of the research on housework has focused on the role of spouses' *relative* endowments of time and resources in shaping the allocation of household labor, this neglect is puzzling. We expect that when the spouse of an unemployed individual is heavily committed to the labor force, couples will have a greater incentive to shift housework to the unemployed spouse in order to reduce the disparity between spouses in total work hours (paid labor plus household labor). In other words, the response of a partnered individual to his job loss will not be purely individual, but will depend on what makes sense in the context of the couple's joint decisions about employment and housework. Specifically, we examine how husbands' responses to unemployment in housework time vary by the employment status of their wives.

Finally, we contribute to the literature by testing the extent to which gender conditions time availability, either by further boosting the increase in housework time for unemployed wives or by attenuating the increase expected because of time availability for unemployed husbands. In particular, we can examine whether there is evidence for compensatory gender display in the face of unemployment as Brines (1994) found using cross-sectional models.

METHOD

We use data from the 1979–2007 waves of the PSID. The PSID is a longitudinal study conducted by the University of Michigan that began in 1968 with a sample of 4,800 American households. It has since reinterviewed members of those original households and their descendants

annually or biannually (beginning in 1997). Our period of study begins in 1979 because it was the first year that the PSID collected reports of both spouses' employment statuses. The panel nature of the PSID makes it an ideal data set for evaluating how couples change their time spent in household labor in response to changes in their labor force participation and rewards.

We restrict the sample to married and long-term (1 or more years) cohabiting couples, with both partners present in the household, censoring them once one partner is over the age of 60 so that we avoid including couples who are approaching the normative age of retirement. We exclude couples who have been cohabiting for shorter periods of time because in these cases the PSID does not collect housework hours for both partners. For simplicity, we refer to all partners as "spouses," "husbands," and "wives," even though some are not married. Responses to survey questions are provided by the household member who is better able to answer the array of questions on financial and other matters in the study (Achen & Stafford, 2005). The percentage of respondents who are wives increases over the period of study to about 50%.

We estimate match-specific individual-level fixed effects models, which allow us to control for time-invariant unobserved heterogeneity in housework hours that may be correlated with unemployment status. By *match-specific* we mean that fixed effects for the individual are fixed only within the context of one specific couple, and we treat subsequent marriages as separate observations. As a result, our estimates of the relationship between unemployment and housework hours are identified based on the difference between average housework hours during spells of unemployment and average housework hours during periods of employment, net of other controls, for those who are employed in at least one year and unemployed in at least one year. Under the fixed effects framework, we assume that individuals' (i) housework hours ($hswk$) across time (t) can be modeled as a function of time-varying predictors (X), individual-level match-specific fixed effects (α), and time-varying individual-level variation (ε), as follows:

$$hswk_{it} = X'_{it}\beta + \alpha_i + \varepsilon_{it}$$

Dependent Variables

We use two dependent variables: the weekly housework hours of the husband and those of the wife. The question reads, "About how much time do you spend on housework in an average week? I mean time spent cooking, cleaning, and doing other work around the house." For the question about the spouse, "do you" is replaced with "does she" or "does he." Time in direct child care is not explicitly included in this measure, although it is possible that some respondents included time in child care when giving their answers. We recode values above the 99th percentile to take the value of the 99th percentile to guard against outliers that would unduly influence the results. Absolute time spent in housework is frequently used as the dependent variable in studies of household labor, including for married couples (Baxter, Hewitt, & Haynes, 2008; Bianchi et al., 2000; Bittman et al., 2003; Brines, 1994; Gupta, 1999, 2007). Alternatively, for those primarily interested in questions of the allocation of housework time between partners, the share of total housework done by each spouse may be more appropriate (Coltrane & Ishii-Kuntz, 1992; Gershuny, Bittman, & Brice, 2005; Greenstein, 2000; Shamir, 1986). In our work, it is most appropriate to use absolute housework time, as we wish to highlight the effects of unemployment on the total amount of time the couple spends in housework as well as the allocation between spouses. We present results of models of the share of housework done by each spouse in the "Alternative Specifications" section.

Stylized questions about the number of hours spent in housework, such as the question employed in the PSID, consistently yield higher estimates of time in housework than time diary measures (Juster, Ono, & Stafford, 2003). Yet, such single summary measures may be less susceptible to double counting than measures asking about time spent in specific tasks, given that many respondents multitask (Geist, 2010). Will measurement error bias our results? First, we note that any consistent upward bias in housework time by a given couple—even if the amount of bias varies across couples—will be absorbed by the fixed effects. Thus, if all respondents overestimate, and some respondents overestimate more than others, the coefficients will remain unaffected, provided that the extent of overestimation is constant for any given couple. Even if there is variation across years in the extent of overestimation by a couple, if the

measurement error is classical the coefficients will remain unbiased. Thus, the coefficients will only be biased if the measurement error in the reports of housework time is correlated with the time-varying component of employment status. For example, if individuals truly experience no change in housework time when they become unemployed, but those who are unemployed want to appear productive during their unemployment spell, they may overreport housework time more than they did when employed. In this case, our coefficients would be biased upward.

Independent Variables

In our first model, we estimate the average change in spouses' housework hours associated with transitions to unemployment for either spouse. Two dummy variables for employment are created. The first is set to 1 if the husband reports being unemployed at the time of the survey, and the second is set to 1 if the wife reports being unemployed at the time of the survey. Thus, both husbands' and wives' housework hours are allowed to vary with changes in the employment status of either spouse. In this model, we aggregate together the experiences of all unemployed persons of the same gender, assuming that the relationship between unemployment and housework does not vary with the employment status of the unemployed individual's spouse.

Our second model relaxes this assumption. In this model, the dummy variable for the husband's unemployment is interacted with the employment status of his wife in the year prior to the start of the current unemployment spell. Wives may be homemakers, part-time workers (less than 35 hours per week but more than 0), or full-time workers (at least 35 hours per week) in the year prior to the husband's job loss. We retain controls for other groups, such as unemployed wives, but do not allow separate interactions of these groups with the unemployment status of the husband. We do not interact the variable for the wife's unemployment with the employment status of the husband in the year prior to the beginning of her unemployment spell because the sample of husbands working less than full time is small and highly selective.

Because our primary interest is in comparing housework time during periods of unemployment to periods of employment, we construct a series of dummy variables for whether either

spouse is a student or out of the labor force, where the latter category includes those who report keeping house and those who report that they are retired at the time of the survey. Employment is the omitted category. We are particularly concerned with estimating the effect of being involuntarily unemployed on spouses' housework time, as it is in this case that nonemployment can be viewed as an exogenous shock to individuals' time in paid labor.

Control Variables

In both models, we control for the same set of time-varying covariates that may be correlated with both unemployment and the amount of housework each spouse performs, but may be plausibly treated as exogenous to unemployment. Because the presence of children in the household is associated with increases in housework time, particularly for women (Baxter et al., 2008; Bianchi et al., 2000; Sanchez & Thomson, 1997), we control for the presence of at least one, at least two, and at least three children in the household, using individual indicator variables, as well as the age of the youngest child. We also include a linear measure of the year, to account for secular trends in spouses' housework time. We control for the state-level annual unemployment rate for the respondent's state of residence, as locally poor labor market conditions may affect spouses' decisions about household labor (Burda & Hamermesh, 2010). We control for whether the family owns the home in which they reside, as homeowners may have a larger amount of housework to be completed than nonhomeowners and may also have greater incentives to maintain their homes. Finally, we include a dummy variable to indicate whether the husband or wife provided the PSID interview, as previous research has shown that in the PSID married men report about 3 hours per week more time in core housework tasks than their wives report for them, although husbands and wives report similar levels of housework time for wives (Achen & Stafford, 2005).

We do not control for time-varying covariates that are potentially endogenous with unemployment, such as family income or mental health. As such, our results estimate the total average change in housework time resulting from unemployment, rather than the residual change that remains after controlling for possible causal pathways that link unemployment to housework.

For example, households are likely to have a lower family income when one spouse is unemployed than when both spouses are employed. Lower family income is expected to reduce the extent to which the household outsources domestic labor (through dining out or hiring a domestic worker). Reduced outsourcing is then expected to be associated with increased housework time for the couple. Controlling for family income in the regression will effectively net out any of the association between unemployment and housework that operates through reduced household income. Thus, it does not estimate the average real change in housework time experienced by couples with an unemployed spouse.

Although we include time-invariant variables such as race and education in the descriptive statistics, we do not include these variables in the fixed effects models, as time-invariant variables do not contribute to the fixed effects estimation, which capitalizes on within-couple changes over time. In order to examine variation by these characteristics, we conduct supplemental analyses based on the main models, as described in the "Alternative Specifications" section.

We weight the data according to the year-specific PSID household-level weights, which have been rescaled so that they average one in each year. Our sample includes both the Latino sample (1990–1995) and the immigrant sample (1997–2007) in the years in which they were included in the PSID sample, and the weights reflect this. For fixed effects models, it is necessary to assign each couple a single, time-invariant weight. Arbitrarily, we assign the couple their household sample weight from the first year in which they appear in the sample, although results using the sample weight from the last year in which the couple appears are similar.

We drop observations with missing values on the dependent variable (1,342 observations; 1.5%), observations for which the respondent's employment status is unknown (325 observations, 0.4%), and observations in which the respondent resides outside of the 50 states or the state of residence is unknown and, therefore, their state-level unemployment rate cannot be assigned (2,261 observations; 2.6%). We require information about the employment hours of the unemployed individual's spouse in the year prior to unemployment, so we drop observations in which respondents are unemployed during the first year in which they are observed (5,834 observations deleted; 6.7%). Finally, we drop all

observations for which the current year-specific weight (986 observations; 1.1%) or the longitudinal weight (1,141 observations; 1.3%) is equal to zero. Observations with zero weight pertain to households that were nonrespondents in the current wave of data collection but had valid responses in other years or were recontacted after a period of nonresponse (Gouskova, Heeringa, McGonagle, Schoeni, & Stafford, 2008). This leaves us with 74,881 observations on 10,390 couples, who were observed 7.2 times each on average.

RESULTS

The data in our sample span the period 1979–2007. Descriptive statistics for three

periods are shown in Table 1: 1979–1985, 1986–1992, and 1993–2007. The average age of husbands in the early period was 40.0 years, and increased to 41.8 in the late period. The corresponding ages for wives were 37.5 years in the early period and 39.8 in the late period. Median annual earnings for husbands (in 2009 dollars) declined across the period from \$50,190 in the early period to \$47,265 in the late period, consistent with stagnating men's wages during this period (Morris & Western, 1999). Conversely, median annual earnings for wives more than doubled from \$10,300 in the early period to \$21,750 in the late period, reflecting in part increases in married women's employment, as evidenced by the increase in wives' hours in paid labor across the period, from an average

Table 1. *Descriptive Statistics*

	1979–1985		1986–1992		1993–2007		Range
	Mean	SD	Mean	SD	Mean	SD	
Median husband earnings	\$50,190	\$47,221	\$48,569	\$62,832	\$47,265	\$82,928	\$0–\$339,200
Median wife earnings	\$10,300	\$18,111	\$15,617	\$22,441	\$21,750	\$30,702	\$0–\$96,000
Wife weekly work hours	19.35	16.85	23.67	17.00	26.06	17.11	0–60
Husband housework hours	6.40	6.82	7.16	6.94	7.01	6.72	0–35
Wife housework hours	26.95	16.01	22.48	14.38	19.13	13.15	0–80
Husband age	40.00	10.90	40.54	10.13	41.83	9.87	16–60
Wife age	37.53	10.58	38.21	9.83	39.81	9.70	15–60
Wife is respondent	0.20		0.35		0.50		0–1
Husband is respondent	0.80		0.65		0.49		0–1
Black ^a	0.07		0.07		0.07		0–1
Latino ^b	0.03		0.05		0.06		0–1
Immigrant ^c	0.03		0.03		0.07		0–1
Husband college degree ^d	0.27		0.27		0.32		0–1
Wife college degree ^e	0.19		0.21		0.27		0–1
Own home	0.79		0.77		0.79		0–1
Rent home	0.19		0.20		0.19		0–1
Husband unemployed ^f	0.02		0.02		0.02		0–1
Wife unemployed ^g	0.01		0.02		0.02		0–1
Husband total losses	1.25	0.59	1.47	0.93	1.49	1.08	1–12
Wife total losses	1.09	0.31	1.19	0.46	1.24	1.08	1–5
Husband keeping house ^h	0.02		0.03		0.03		0–1
Wife keeping house ⁱ	0.37		0.26		0.22		0–1
Husband is student	0.01		0.01		0.01		0–1
Wife is student	0.01		0.01		0.01		0–1

Note: All values are weighted. $N = 10,390$.

^aBlack: 0 = non-Black husband, 1 = Black husband. ^bLatino: 0 = non-Latino husband, 1 = Latino husband. ^cImmigrant: 0 = nonimmigrant husband, 1 = immigrant husband. ^dHusband college degree: 0 = no college degree, 1 = college degree. ^eWife college degree: 0 = no college degree, 1 = college degree. ^fHusband unemployed: 0 = not unemployed, 1 = unemployed. ^gWife unemployed: 0 = not unemployed, 1 = unemployed. ^hHusband keeping house: 0 = not keeping house, 1 = keeping house. ⁱWife keeping house: 0 = not keeping house, 1 = keeping house.

of 19.4 hours per week in the early period to 26.1 hours per week in the late period.

About 7% of families in the sample included a Black husband. Because the PSID asked only about the race of the head of the household prior to 1985 (and, for married couples, the head of the household is the husband by default), we used only the husband's racial identification. The percentage of families in the sample that included a Latino husband rose from 3% in the early period to 6% in the late period. A similar rise was seen for the percentage of families with a husband who was an immigrant—from 3% to 7% across the periods. The percentage of respondents holding college degrees increased over the period, from 27% of husbands in the early period to 32% of husbands in the late period, and from 19% to 27% for wives. About 80% of respondents owned the home in which they resided, with the majority of the remaining respondents living in rental dwellings. The percentage of respondents who are wives rose over the period from 20% in the early period to 50% in the late period, whereas the percent who are husbands declined over the period from 80% in the early period to 49% in the late period.

The trends in wives' average time in housework observed in this sample followed trends documented elsewhere (Bianchi et al., 2000; Gershuny & Robinson, 1988), declining from 27.0 hours per week in the early period to 19.1 in the late period. Yet, we found far less change in husbands' housework hours across the period, which averaged between 6.4 and 7.2 hours per week in each period. Others have documented a rise in men's housework time (Bianchi et al., 2000; Gershuny & Robinson, 1988; Juster et al., 2003), although some found a leveling out around 1990 (Bianchi et al.; Juster et al.). The small increase we did see over the period of study is consistent with the results from Juster and colleagues for the same time period and using the same data set. Averaged across all years in the sample, for husbands the distribution of the housework hours variable is such that the 25th percentile was 2 hours per week and the 75th percentile was 10 hours per week. The corresponding values for wives were 10 hours per week at the 25th percentile and 30 hours per week at the 75th percentile. Thus, three quarters of wives did as much or more housework than the three quarters of husbands who did the least housework.

On average, 2% of husbands and 1%–2% of wives were unemployed at the time of the survey over the three periods. Among those who experienced unemployment in at least one period, the average number of survey waves in which they were observed to be unemployed was slightly higher for husbands than wives, ranging between 1.3 and 1.5 for husbands and between 1.1 and 1.2 for wives. On average 2%–3% of husbands were keeping house or retired at the time of the survey over the three periods. Consistent with rising female labor force participation rates, the percentage of wives keeping house or retired dropped from 37% in the early period to 22% in the late period. In all years, approximately 1% of both husbands and wives were students at the time of the survey.

The results for the aggregate model are presented in Table 2. In the aggregate model, husbands spent an average of 3.2 hours ($p < .001$) per week more in housework when they were

Table 2. Summary of Fixed Effects Analysis for Variables Predicting Husband's and Wife's Housework Hours

Variable	Husbands		Wives	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Husband's unemployment	3.19***	.25	-1.29**	.38
Wife's unemployment	-1.55***	.23	6.39***	.46
Husband keeping house	3.91***	.36	-2.42***	.45
Wife keeping house	-1.59***	.10	9.71***	.22
1+ children	1.36***	.13	6.05***	.25
2+ children	0.07	.10	1.96***	.19
3+ children	0.04	.15	2.17***	.29
Age youngest child	-0.10***	.01	-0.31***	.02
Respondent is husband	2.11***	.14	N/A	
Respondent is wife	N/A		-0.98***	.23
Year	0.04***	.01	-0.14***	.01
State unemployment rate	-0.02	.02	0.04	.04
Rent home	-0.83***	.12	-1.22***	.20
Constant	5.20***	.24	18.12***	.38
R^2 overall	.06		.26	
Variance explained by fixed effects	.50		.52	

Note: Year centered on 1978. Models also control for student status of husbands and wives. All values are weighted. $N = 10,390$.

** $p < .01$. *** $p < .001$.

unemployed as opposed to employed, whereas they spent an average of 1.6 fewer hours ($p < .001$) per week in housework when their wife was unemployed than when she was employed. In the aggregate model for wives' housework hours, wives spent an average of 1.3 fewer hours ($p < .01$) per week in housework when their husband was unemployed than when he was employed, but they spent an average of 6.4 hours more per week ($p < .001$) in housework when they were unemployed than when they were employed.

Thus, consistent with the predictions of the time availability and relative resources perspectives, for both spouses unemployment increased housework time for the unemployed spouse compared to periods of employment and decreased housework for the other spouse. Furthermore, there was evidence of gender asymmetry in the responses of spouses to the experience of unemployment: Both husbands and wives increased their housework time if they became unemployed, but the increase for wives was twice as large. The reduction in housework hours of 1 to 2 hours per week experienced by the spouse of the unemployed individual was similar for both husbands and wives. Regardless of which spouse became unemployed, the total time in housework by couples increased during unemployment, consistent with our expectation that unemployment will reduce the opportunity cost of housework and the ability to pay for housework substitutes.

Turning to the covariates in our fixed effects models of husbands' housework time, a first child was associated with an increase of 1.4 hours ($p < .001$) per week in housework, and with each year the youngest child grew older there was a decline of about 0.1 hours (6 minutes; $p < .001$) per week in housework. Husbands' reported housework hours were an average of 2.1 hours ($p < .001$) per week higher in the periods in which they reported their own housework time, indicating that husbands reported significantly more housework time for themselves than did other members of the household. This was consistent with previous work on reporting of housework hours in the PSID (Achen & Stafford, 2005). Husbands' housework time increased yearly by about 0.04 hours (2 minutes; $p < .001$) per week. Thus, although husbands' housework hours have risen over time, the change was slight. Changes in the annual state-level unemployment rate were not significantly

associated with changes in husbands' housework time. Finally, renters spent about 0.8 hours (48 minutes; $p < .001$) per week less in housework than homeowners.

In the fixed effects model of wives' housework time, it was clear that children had a substantial effect on wives' housework hours. A first child was associated with a 6.1-hour ($p < .001$) increase in weekly housework hours, whereas a second child was associated with an additional 2.0-hour ($p < .001$) increase, and a third or higher-order birth was associated with an additional 2.2-hour ($p < .001$) increase. Wives' housework time declined by about 0.3 hours per week (18 minutes; $p < .001$) with each year the youngest child aged. Although both spouses spent more time in housework when children were present in the household, the effects were substantially larger for wives than for husbands. If the wife was the respondent she reported about 1.0 hour less housework per week than if another member of the household was the respondent. Interestingly, these results do not imply that each spouse overreported his own time in housework compared to the reports of other household members. Instead, it suggests that husbands reported more time in housework for both themselves and their wives than their wives reported. With each passing year, wives' housework time declined by 0.14 hours (8 minutes; $p < .001$) per week. Consistent with the results in Table 1, changes across time in wives' housework hours have been larger than changes in husbands' housework hours. As in the model of husbands' time, the state-level unemployment rate was not associated with wives' housework hours. Wives in families that rented their dwellings spent about 1.2 hours ($p < .001$) per week less in housework than those in families that owned their homes, also consistent with the results for husbands.

The results also indicated large differences between changes in housework time during unemployment and changes during periods of being voluntarily out of the labor force, particularly for wives. In the model of husbands' housework hours, his being voluntarily out of the labor force was associated with 3.9 more hours of housework per week ($p < .001$) than when he was employed and 2.4 fewer hours per week in his wife's housework time ($p < .001$). Recall, for comparison, that a husband's unemployment was associated with 3.2 hours per week more of his housework time and 1.3 fewer hours per week in his wife's housework time than during

periods in which he was employed. Thus, the changes associated with being voluntarily absent from the labor force were slightly larger than for unemployment. This effect was magnified in the results for wives' time. When wives were voluntarily out of the labor force, their housework hours were an average of 9.7 ($p < .001$) hours more per week than in periods when they were employed, compared to 6.4 hours more per week when they were unemployed. Given that neither group is working, what might explain this difference? First, wives who were voluntarily out of the labor force may have had more time available for housework than wives who were unemployed, if unemployed wives were spending some of their time seeking employment. Second, it is possible that some wives who voluntarily exited the labor force were motivated in part by a desire to increase household production (see e.g., Hochschild, 1989; Stone & Lovejoy, 2004). When wives were voluntarily out of the labor force, their husbands' housework hours were an average of 1.6 hours per week ($p < .001$) lower than during periods in which she was employed, similar to when she was unemployed.

Interactions by Wives' Employment Status

Table 3 shows the results for the models that interact the husband's job loss with the wife's employment status in the year prior to his transition to unemployment. Our

findings are consistent with the results from the aggregate model but bring the family context of unemployment and housework to the forefront. Husbands who were unemployed had the largest increases in housework time, as compared to when they were employed, if their wives worked full time (3.9 hours; $p < .001$) and the smallest increases when their wives were homemakers (2.2 hours; $p < .001$). In terms of changes in husbands' housework hours, unemployed husbands whose wives worked part time fall in between, although we cannot reject the null hypothesis that the husband's increase was the same as if the wife worked full time, $F(1, 10389) = 1.87$; $p = .17$. In some sense, these results are surprising, as homemakers have, on average, the highest household labor burden and therefore the greatest potential for reduction during periods of their husbands' unemployment. But couples with a traditional division of labor may be least likely to perceive increased household responsibility by the husband as an appropriate response to his job loss. The results suggest that the division of household labor responded to the relative market work commitments of each spouse: Unemployed husbands were more likely to take over household tasks for their wives when the wife's time was highly committed to the labor force.

Wives who worked part time saw a statistically significant 2.0-hour per week ($p < .001$) reduction in housework hours during periods of

Table 3. Selected Coefficients of Fixed Effects Analysis Predicting Housework Hours With Interactions for Wife Work Hours—Husbands, Wives

Variable	Interactions by Wife's Work Hours			
	Husbands		Wives	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Husband's unemployment/wife homemaker	2.18***	0.49	-0.50	0.94
Husband's unemployment/wife PT	3.17***	0.37	-1.98***	0.55
Husband's unemployment/wife FT	3.91***	0.40	-1.03*	0.49
Wife's unemployment	-1.55***	0.23	6.37***	0.46
Husband keeping house	3.92***	0.36	-2.42***	0.45
Wife keeping house	-1.59***	0.10	9.71***	0.22
Constant	5.20***	0.24	18.12***	0.38
R^2 overall	0.06		0.26	
Variance explained by fixed effects	0.50		0.52	

Note: Year centered on 1978. Models also control for student status of husbands and wives. All values are weighted. $N = 10,390$.

PT = engaged in part-time work. FT = engaged in full-time work.

* $p < .05$. *** $p < .001$.

husbands' unemployment, which was larger in magnitude than the reduction for either homemakers (0.50 hours) or wives working full time (1.0 hours; $p < .05$), although we cannot reject the null hypothesis that it is equivalent to the reduction seen by wives working full time, $F(1, 10389) = 1.73$; $p = .19$. It is possible that wives who worked part time decreased their housework time to a greater extent because they expected to increase their time in market work, which may not have been an option for wives already working full time.

Alternative Specifications

In order to examine whether there was heterogeneity underlying the results presented in the previous section, we performed subgroup analyses as well as a model with an alternative specification of the dependent variable. For simplicity, we confined our alternative specifications to the aggregate model.

First, we checked the consistency of our results for various subgroups: Black versus non-Black, Latino versus non-Latino, immigrant versus nonimmigrant, college degree versus no college degree, parents versus nonparents, cohabiters versus married couples (overall and only in years when they can be separately identified, i.e., post-1982), and by time period (1979–1985, 1986–1992, 1993–2007). In each case, we tested whether the three principal conclusions of our main analysis held: (a) that individuals' housework hours rose during unemployment, whereas their spouses' housework hours fell; (b) that the total time spent in household production increased during unemployment; and (c) that unemployed wives increased their housework hours more than unemployed husbands. All three conclusions held for all subsamples as well as the main sample, with three exceptions for conclusion (b): for cohabiters, for Latinos, and for immigrants. In the case of the female partner's unemployment, for all three of these groups, couples also experienced an increase in total household production, but in the case of the male partner's unemployment, couples experienced a small decrease in total household production as female partners reduced their time in housework more than their unemployed partners increased their time in housework. This may indicate real differences in the responses of these subgroups to unemployment, although we are cautious in

drawing conclusions from the relatively small numbers of unemployment spells observed in these groups (between 100 and 250 spells of unemployment for each gender within each subgroup). Future research, either qualitative or quantitative, may wish to explore variation by ethnicity and marital status in couples' household labor responses to unemployment.

Finally, although we believe absolute hours are more informative as a dependent variable for our research question because they allow us to identify changes in total household production along with changes in housework allocation, we estimated models using the share of housework hours completed by each spouse as the dependent variable. This allowed us to more closely test the deviance neutralization hypothesis as defined by Greenstein (2000) because the hypothesis rests on a relative measure of housework division. The patterns were consistent with our previous results in both sign and statistical significance, suggesting a lack of evidence for deviance neutralization: Spouses who became unemployed increased the share of the total housework they performed, regardless of their gender.

Limitations

As discussed in the Method section under "Dependent Variables," the stylized measure used in the PSID to report time in housework likely resulted in a slight overestimate of time in housework, although, for the reasons previously discussed, this will only lead to biased coefficient estimates in certain circumstances.

A second limitation related to the housework measure available in the PSID is that it emphasizes time in female-typed tasks. Therefore, we may have underestimated husbands' increases in housework time if they substantially increased their time in male-typed tasks such as yard work and home and vehicle maintenance. Estimates from the National Survey of Families and Households indicated that married men spent about 40% of their total household labor time in these male-typed tasks (yard and household maintenance and auto maintenance), compared to only 6% for married women (Noonan, 2001). The gender differences we observed in husbands' and wives' responses to unemployment might have resulted from men increasing their time in male-typed household responsibilities, which are underreported in the PSID. In the most extreme form, gender norms might not

affect the amount of time that unemployed husbands and wives add to their household labor responsibilities, but would greatly affect the type of work.

Because we are concerned with capturing measures of housework time during periods of unemployment and the housework data are collected only once per survey wave, we have limited our study to examine only unemployment at the time of the survey. In this way, labor force status and housework time were measured concurrently. This means that we did not observe the relationship between unemployment and housework for all spells of unemployment, only for those that were ongoing at the time of the PSID interview. This was a necessary limitation, as we did not know the housework time during unemployment for those whose unemployment spells fell between survey waves.

Finally, the data did not allow us to examine the influence of gender ideology on couples' responses to unemployment. The absence of data on gender ideology only matters in terms of our results if these attitudes are time-varying. If gender ideologies are consistent over time, these effects will be absorbed into the fixed effects and our estimation will be unbiased. There is some evidence, however, that gender ideology is not a time-invariant trait for individuals (Davis, 2007; Fan & Marini, 2000). Thus, we consider three cases whereby a relationship between gender ideology, job loss, and housework could occur and discuss their implications. First, we could suppose the experience of unemployment would change an individual's gender ideology (see Fan & Marini for a similar idea), which would have a subsequent impact on time in housework. This is not problematic for our study because in this case gender ideology is a mediating variable but not an omitted variable. Therefore, we would not want to control for it for the same reasons we do not control for mental health or income. Second, we could suppose a change in gender ideology leads to a job loss. Although possible, this seems unlikely. Third, an individual could have a change in gender ideology that results in quitting a job. This is possible, and this is why it is important to examine how *involuntary* changes in labor force participation affect time in housework. This case would also explain why the coefficients for our out-of-the-labor-force results were larger than the coefficients for unemployment. The

absence of a gender ideology measure, however, does prohibit a study of either the mediating or the moderating influence of gender ideology on spouses' responses to job loss.

DISCUSSION

In this study we have taken a closer look at the relationship between unemployment and couples' divisions of household labor using a large sample of couples followed over an extended period. Our results indicate that, at base, both men and women act rationally in the face of unemployment. Both unemployed husbands and unemployed wives increase their time in housework during the period of unemployment as compared to periods when they are employed; spouses of unemployed individuals decrease their time in housework during the unemployment period. Thus, we see evidence of a reallocation of housework in the direction of the unemployed spouse, consistent with both the time availability and relative resources theories. Furthermore, husbands' responses to unemployment vary with the wife's labor force status: Husbands whose wives are least available for housework increase their housework time the most.

Yet reallocation is only half of the change that occurs within couples. The total time in household production also increases. That is, the increase in housework time by the unemployed spouse is only partially offset by the decrease in housework time by the other spouse. This finding highlights the importance of studying unemployment within the larger family context rather than focusing only on shifting allocations between spouses or the effect of an event such as unemployment on the individual's time in housework. Absolute time in housework increases within the household during a spell of unemployment, a change that may be explained at least in part by the loss of income the family experiences, which reduces the ability to purchase substitutes for housework time, a possible mechanism that deserves further study.

At the same time, although individual couples may respond to unemployment differently, on average our results do not indicate a wholesale renegotiation of household roles during unemployment, perhaps because unemployment is perceived as only a temporary position. Spouses may only gradually reevaluate their division of labor as time passes to assess whether it is

reasonable under the new conditions of spouses' time availability.

Although the increases in housework time that we find for unemployed individuals and the corresponding decreases in housework time by their spouses are consistent with time availability and relative resources, our results indicate that even though both theories are posited as gender-neutral, their realization is gendered. Although unemployed husbands increase their time in housework an average of 3 hours per week, unemployed wives increase their time in housework by double that amount, an average of 6 hours per week. Our results indicate that time availability and gender-based explanations of the division of household labor cannot be treated additively; rather, they are interactive: It is not merely the case that wives do more housework than husbands, controlling for time in paid labor, but that wives' time in housework increases more rapidly with decreases in employment hours than does husbands'.

Our results might be interpreted in parallel to Brines' (1994) theory of gender display: She argues not that spouses' relative resources are irrelevant for their time in housework, nor that gender simply operates to give wives more housework responsibility than their husbands, even if they have equal resources, but that the relationship between relative resources and housework time is conditioned by gender. But, our results are *not* consistent with a gender deviance neutralization story. We see no evidence that husbands compensate for becoming unemployed by reasserting their masculinity through rejection of housework. Complementarily, our results provide no evidence that wives increase their time in housework when their husbands become unemployed as a way to emphasize their own femininity and preserve their husband's masculinity. On the contrary, husbands increase their time in housework during unemployment, whereas their wives decrease their time in housework. These results hold whether we use absolute housework hours as Brines (1994) used or the relative share of housework each spouse provides as Greenstein (2000) used.

Thus, our key findings are twofold. First, during periods of unemployment there is a reallocation of housework in the direction of the unemployed spouse as theory suggests should be true. Equally, if not more important, there is an increase in the total amount of housework within the household. This increase in total

household production is substantial as a fraction of changes in housework magnitude. Unemployed husbands increase their housework time by more than twice the amount that is necessary to offset declines in their wives' housework time. For unemployed wives, housework increases are four times the amount needed to compensate for their husbands' reductions. Thus, viewing unemployment primarily as ushering in a reallocation of housework responsibilities between spouses is inappropriate: The larger change is in the total amount of household production.

Second, although the pattern of increases and decreases seen in the results is consistent with the supposedly gender-neutral time availability and relative resources theories of housework division, the magnitudes of the increases indicate that these responses are gendered, but the results are not supportive of a gender deviance neutralization explanation. Wives increase their housework time during unemployment on average at a magnitude of twice the increase of unemployed husbands, a phenomenon that requires further study.

Our findings suggest that we should move away from purely individual-level or divisional analyses in the study of housework. Just as the added-worker literature developed in economics to better understand the patterns of labor force participation within the family that followed unemployment, so too must we study the relationship between unemployment and housework within the broader family context. Time in housework is not only about the relationship between spouses. Rather it is also about the complex relationships between market labor, home production, outsourcing, and standards of cleanliness within the household. We hope that as data become available for researchers to examine features of the relationship between unemployment and nonmarket labor during the recession at the end of the 2000s, which produced high rates of unemployment, they will incorporate the family context into their studies, going beyond the level of the individual and the reallocation-only study of the spousal dyad.

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