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Life Course Transitions and Housework: Marriage, Parenthood, and Time on Housework

*We examine the effects of transitions in marital and parenthood status on 1,091 men's and women's housework hours using two waves of data from an Australian panel survey titled *Negotiating the Life Course*. We examine transitions between cohabitation and marriage, and from cohabitation or marriage to separation, as well as transitions to first and higher-order births. We find extraordinary stability in men's housework time across most transitions but considerable change for women in relation to transitions in parenthood. Our results suggest that the transition to parenthood is a critical moment in the development of an unequal gap in time spent on routine household labor.*

Time spent on household labor is not static across the life course. Although previous research suggests men's and women's time on housework varies at different life course stages, we know little about how transitions between life course

stages affect housework time. There is good reason to examine this issue closely. Over the last few decades Australia has experienced major changes in life course patterns. Men and women are marrying later, having fewer children, separating more often, and spending more time in cohabiting relationships (De Vaus, 2004). The percentage of couples in Australia who are cohabiting at any one point in time has doubled between 1986 and 2003 from just below 6% to almost 13% (Australian Bureau of Statistics, 2005), whereas the percentage of marriages preceded by a period of cohabitation has risen from 16% in 1975 to 75% in 2003, with approximately 40% of these proceeding on to marriage (De Vaus, 2004). These trends are similar to those in the United States (Bumpass & Lu, 2000), Canada (Bourdais & Lapierre-Adamcyk, 2004), Britain (Murphy, 2000), and other parts of Europe (Kiernan, 2002). Consequently, not only have pathways through the life course become more varied with individuals spending more time living outside the "traditional" family unit, but the resources and experiences that individuals bring to relationships have changed. A life course approach is necessary, therefore, to better understand how gendered patterns of housework time are reinforced or altered as individuals move through increasingly complex marriage and family trajectories.

Examination of these patterns has been limited because of the lack of longitudinal data on time spent on domestic labor. Most research relies on

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cross-sectional studies that compare individuals and households with differing characteristics (Sayer, 2005; South & Spitze, 1994). Even studies specifically examining the effect of life cycle transitions on housework have tended to use cross-sectional data (Coltrane & Ishii-Kuntz, 1992). Only a handful of studies have used longitudinal data to compare changes over time in housework hours as individuals experience life course transitions (Artis & Pavalko, 2003; Gupta, 1999; Sanchez & Thomson, 1997).

Our study contributes to this small, but growing, body of literature by examining panel data to further investigate the relationship between life course transitions and men's and women's time on housework. We make two main contributions. First, we draw on key theoretical explanations for the gendering of time on domestic labor, including an exchange bargaining perspective and a gender perspective, to develop hypotheses about change in housework time resulting from transitions in marital and parental status. Second, we extend previous longitudinal work by examining both marital and parenthood transitions in our regression models, enabling a more precise understanding of the effects of life course transitions on men's and women's time on housework. Previous longitudinal work examines one or another of these transitions, thus possibly conflating the effects of transitions in marital status and parenthood status. We use two waves (1996/97 and 2000) of data from an Australian panel survey to investigate change in housework hours as men and women transition across two life course events, marriage and parenthood.

Life Course Transitions and Time Spent on Household Labor

Few empirical studies examine the effect of marital and parental transitions on housework time using longitudinal panel data. Gupta (1999) examined the effect of transitions in marital status on women's and men's time on housework using two waves of the National Survey of Families and Households (1987/1988, 1992/1993). He found that a transition from cohabitation to marriage has no significant effect on men's or women's housework hours. On the other hand, Gupta reported that exit from a cohabiting or marital union had a significant effect on time spent on housework in clearly gendered ways. Men increase their time on stereotypically female housework tasks when they become separated, divorced,

or widowed. In contrast, women reduce their time on female type tasks after separation or widowhood.

Households with dependent children have more traditional divisions of household labor, but among the few studies using panel data, the findings are mixed as to whether transitions in parental status change the amount of time women and men spend doing housework. Gjerdingen and Center (2004), using U.S. data from 128 couples interviewed during their first pregnancy and then again 6 months postpartum, found no differences pre- and postpartum in time spent on housework, although women did appear to spend extra time on meal clean-up after the arrival of a child. Other research found that women increase their time spent on housework after the transition to parenthood (Kluwer, Heesink, & van de Vliert, 2002; Sanchez & Thomson, 1997). Sanchez and Thomson examined data from two waves of the National Survey of Families and Households and found a significant increase in wives' housework time after the birth of their first child (about 2 hours per week), but no additional increase for higher-order births. For men, on the other hand, most research shows that the transition to parenthood does not lead to a significant increase in housework hours (Gjerdingen & Center, 2004; Sanchez & Thomson, 1997), and in some studies men have been found to reduce their time in housework after the birth of children (Kluwer et al., 2002).

In sum, previous research suggests that transitions in marital and parenthood status lead to variations in time spent on housework and the distribution of work between husbands and wives. But there are inconsistencies across studies regarding the effect of these transitions on housework hours. Even though cross-sectional research has found that cohabiting couples have more egalitarian arrangements than married couples (Baxter, 2005; South & Spitze, 1994), Gupta's (1999) examination of panel data indicated that the formation of a union results in the same patterning of gendered time on housework regardless of the kind of union. Additionally, findings for the effects of transitions in parenthood on time spent on household tasks are inconsistent, with Sanchez and Thomson (1997) reporting that motherhood increases women's time on housework, but only after the birth of the first child, and Gjerdingen and Center (2004) reporting no change in housework hours after the transition to parenthood.

How can we explain these various findings? The first step must be to consider what different theoretical approaches would suggest about the relationship between life course transitions and time spent on housework. Contemporary research on the gender gap in time on domestic labor is dominated by two broad theoretical approaches, exchange bargaining explanations and explanations based on a gender perspective. Despite their differing philosophical bases, however, both perspectives offer similar predictions about outcomes for housework hours as individuals move through marital and parenthood states. The exchange bargaining perspective emphasizes relative access to economic resources as important for determining power differentials in the household. Depending on the level of resources individuals contribute to the household they will have more or less bargaining power over the allocation of housework time. Time spent in paid employment may also be used as a measure of resources. The assumption is that housework is undesirable work and the spouse with the fewer resources, most time, and least bargaining power will do most housework.

The finding that men and women in cohabiting unions spend, on average, more equal amounts of time on household labor compared to married men and women (Baxter, 2005; Shelton & John, 1993; South & Spitze, 1994) is partly attributed to differences in the economic contributions of cohabiting and married men and women, where cohabiting women tend to contribute a higher proportion of household income than married women, and conversely, cohabiting men contribute a lower proportion of household income than married men (Clarkberg, Stolzenberg, & Waite, 1995; Rindfuss & Vandenheuvel, 1990). If this is the case, then it follows that, when a cohabiting couple marries, women's access to resources will decline and therefore women's housework hours will increase whereas men's housework hours will decline. On the other hand, separation from a cohabiting or marital relationship removes any potential for bargaining, and, all else being equal, women's housework hours should decline whereas men's housework hours should increase.

What do we expect for the transition to parenthood? Research indicates that many women leave employment or have limited employment contact in the year after a first or higher-order birth (Hynes & Clarkberg, 2005). Within the exchange bargaining framework then, childbirth may reduce women's marital power because

women with young children typically have a lower level of involvement in paid employment, and hence less bargaining power, than women without children or women with older children (Budig & England, 2001; Sanchez & Thomson, 1997). Husband's work hours, on the other hand, remain the same (Gjerdingen & Center, 2004) or increase when children are born (Jacobs & Gerson, 2004). Furthermore, the birth of children is likely to increase the amount of basic housework, such as cleaning, washing, and meal preparation, that needs to be done, and, consequently, women may spend significantly more time than men on domestic labor after the birth of a child (Sanchez & Thomson, 1997).

In contrast, a gender perspective suggests that housework is not necessarily allocated efficiently or rationally according to who contributes the most resources or who has the most time (Ferree, 1990). From this perspective, normative and cultural expectations of appropriate masculine and feminine behavior point to the symbolic construction of housework as women's work and a display of love for her family and subordination to her husband (Berk, 1985). Men, on the other hand, display their masculinity, and reinforce their structural and cultural power, by limiting the time spent in household tasks, particularly those that are female-typed (Brines, 1994).

Empirical examinations of gender display typically rely on measures of gender attitudes to assess the strength of adherence to gender ideologies (Calasanti & Bailey, 1991; Greenstein, 1996). This is underpinned by the assumption that gender display is reflected in men's and women's gender attitudes. Given that values and beliefs of individuals are unlikely to change if they transition from cohabitation to marriage, then their housework hours should remain the same. Why then, on average, do married men do less and married women do more housework hours than their cohabiting counterparts? One possibility suggested by previous research is that men and women with more traditional attitudes are more likely to enter marriage, whereas those with less traditional attitudes will remain cohabiting (Clarkberg et al., 1995). Another explanation points to the normative and cultural expectations of the institution of marriage that may influence attitudes and, in turn, behavior. Drawing on Cherlin's (1978) work, this argument suggests that it is the institution of marriage, with clearly structured norms and values about appropriate husband and wife behavior, that promotes conformity to

traditional gender display. Under this scenario, when women transition from cohabiting to married, their housework hours should increase, and when men transition from cohabiting to married, their housework hours should decrease. Similar to exchange bargaining theories, men and women who separate from cohabiting or marital unions have no gender dynamic within which to "do gender," and therefore their housework hours should narrow.

From a gender perspective, parenthood is likely to be associated with an increased production or display of gender, as doing housework is a major component of being a good mother, and the birth of children is likely to generate a greater amount of housework (Shelton, 1992). For men this is likely to be expressed in terms of greater involvement in paid work, whereas for women it is likely to be expressed in terms of greater involvement in domestic work.

We can thus formulate the following hypotheses:

Hypothesis 1: Women's time on routine domestic labor will increase and men's time on domestic labor will decrease following a transition from cohabitation to marriage.

Hypothesis 2: Women's time on routine domestic labor will decrease and men's time on routine domestic labor will increase following separation from cohabitation or marriage.

Hypothesis 3: Women's time on routine domestic labor will increase and men's time on routine domestic labor will decrease following the birth of a first or higher-order child.

This paper seeks to further our understanding of the associations between marital and parenthood transitions and time spent doing housework. Unlike previous research, we simultaneously account for the effects of both marital and parenthood transitions on time spent in female-type household tasks, including cleaning, meal preparation, and washing. We also improve on previous analyses by analyzing men and women together in the same models with gender interactions to examine gender differences, providing greater statistical power to the models. Using a linear mixed regression model with random effects, our study examines changes in housework hours in association with marital status transitions from cohabitation into marriage, and separation from cohabitation and marriage, and parenthood transitions in first and higher-order

births. The longitudinal data and statistical models that incorporate random effects help account for unobserved differences between individuals that are assumed to remain constant over time.

In addition, controls are included for a range of factors that previous research has identified as important for explaining time spent on housework. These variables include relative income, employment hours, education, and gender attitudes. Within an exchange bargaining approach, relative income, time spent in paid employment, and education are important measures of resources. Research has shown that access to these resources reduces time spent on domestic labor (Brines, 1994; Presser, 1994; South & Spitze, 1994). Gender attitudes are often used as the empirical indicator to assess a gender display perspective. The results of previous studies indicate that adherence to traditional attitudes is associated with more time on housework for women and less time on housework for men (Coltrane, 2000; Greenstein, 1996).

METHOD

We use two waves (1996/97 and 2000) of an Australian longitudinal panel study, *Negotiating the Life Course: Gender, Mobility and Career Trajectories* (Baxter, McDonald, & Mitchell, 2003; McDonald, Jones, Mitchell, & Baxter, 2003). Wave 1 was collected in late 1996 and early 1997, with a sample comprising 2,231 respondents between the ages of 18 and 54 randomly selected from listed telephone numbers in the electronic white pages. Each respondent was randomly selected from all eligible adults in the household. The data were collected using computer-assisted telephone interviewing, with a response rate of 63% (McDonald, Evans, Baxter, & Gray, 2000). The overall sample is comparable to the Australian population for age, marital status, family status, and employment status, but has a higher representation of women, 56% versus 50% (McDonald et al., 2000). Wave 2 was collected in 2000 with a sample size of 1,768 respondents and a response rate of 79%. Nonresponse between Wave 1 and Wave 2 was not random, with those not responding to Wave 2 more likely to be younger, male, unmarried, unemployed, and childless compared to those who responded to both waves.

We include all people who were married or in a cohabiting relationship in Wave 1 ($n = 1,115$).

Respondents not in a relationship at Wave 1 were not asked questions about time on domestic labor and hence were ineligible for inclusion in the current analyses. Some respondents were excluded from the final sample ($n = 24$, 2.2%) because they had missing data on one or more of the predictor and control variables included in the model. The final analytic sample comprises 1,091 men and women. In a random effects model, an individual (or cluster) is permitted to remain in the analysis when only a single observation on the dependent variable exists. This explains why the number of observations on housework hours at Wave 1 ($n = 1,073$) and the number of observations at Wave 2 ($n = 1,061$) are less than the total number of individuals in our subsample ($n = 1,091$). That is, observations were missing for 18 individuals at Wave 1 and for 30 individuals at Wave 2.

Variables

The dependent variable is the respondent's weekly hours spent undertaking household tasks, including preparing meals, doing dishes, shopping, laundry, vacuuming, and cleaning reported at both Wave 1 and Wave 2. Even though these items do not cover the full range of housework tasks, they are the tasks that must be regularly performed in most households regardless of season or household type (Gupta, 1999). Earlier research has indicated that self-reported summary measures of housework provide estimates similar to those obtained from more detailed time-diary methods (Baxter & Bittman, 1995). Preliminary diagnostics indicated that the distribution was skewed to the right. We have therefore taken a log transformation of housework hours so that the data are better approximated by a normal distribution.

Consistent with previous research on life course transitions and housework hours, we examined a measure of the absolute amount of time spent on housework. Even though proportional measures are ideal for examining couple dynamics (Greenstein, 2000), in the current study we were examining transitions out of cohabitation and marriage into a single state and therefore an absolute measure is more appropriate. Further, in our data only one person from each household was interviewed. Although proxy data on the housework hours of spouses was collected, we found these to be unreliable. For example, men reported that their partner's housework hours

rose significantly between waves, even when there was no change in marital or parental status. On the other hand, women reported that men's hours of housework declined significantly between waves, even when there was no change in status.

The two primary independent variables categorize marital and birth transitions from Wave 1 to Wave 2. The marital status transition measure has five categories: 1 = *Married at Waves 1 and 2*, 2 = *Cohabiting at Waves 1 and 2*, 3 = *Cohabiting at Wave 1 to married at Wave 2*, 4 = *Married at Wave 1 to separated at Wave 2*, and 5 = *Cohabiting at Wave 1 to separated at Wave 2*. Married at both Wave 1 and Wave 2 is the reference group. Note that there were no transitions from cohabiting to single as these were included in the category cohabiting to separated. And there were only 6 respondents who transitioned from married to cohabiting. These respondents were dropped from the analyses.

Birth transition has five categories: 1 = *No children and no birth between Waves 1 and 2*, 2 = *Birth of first child between Waves 1 and 2*, 3 = *Have at least one child and no birth between Waves 1 and 2*, and 4 = *Higher-order birth between Waves 1 and 2*, 5 = *Child left home or no longer dependent*. This last category includes both children who have left home and children who have turned 18 and are thus no longer defined as children according to the definition used here. Respondents with no children and no birth between waves are the reference group. Note that for some marital status and parenthood transitions only a small proportion of the sample experienced the transition. This results in small cell sizes for some of those transitions and thus a higher probability of a Type II error. Table 1 shows the percentage of people experiencing each transition. In a small number of cases, respondents experienced both a marital and parenthood transition between waves ($n = 18$).

We also include controls for factors identified as important by exchange bargaining and gender perspectives. Two measures for income are included: a measure indicating the relative proportion of gross financial year income that the respondent contributes to the household and a continuous measure for household income. We include hours per week in paid employment and whether the respondent has a tertiary education qualification. Gender attitudes are measured by level of agreement with the statement: "It is

Table 1. Means and Standard Deviations^a for All Variables, by Wave and Gender

	Wave 1				Wave 2			
	Men		Women		Men		Women	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Dependent variable								
Housework hours (weekly)	8.58	6.8	24.09	14.0	9.00	6.6	23.62	13.3
Independent variables								
Marital Transitions ^b								
Still married	0.86		0.81		0.86		0.81	
Cohabiting-married	0.04		0.03		0.04		0.03	
Cohabiting-separated	0.02		0.02		0.02		0.02	
Still cohabiting	0.05		0.08		0.05		0.08	
Married-separated	0.03		0.06		0.03		0.06	
Birth transitions ^b								
No child – no birth	0.24		0.28		0.26		0.28	
Child – no birth	0.35		0.36		0.35		0.36	
No child – first birth	0.07		0.06		0.06		0.06	
Child – higher order birth	0.10		0.10		0.10		0.10	
Child left home	0.24		0.20		0.23		0.20	
Controls								
Age of respondent	39.11	7.8	38.49	8.3	42.57	7.8	41.87	8.3
Household income (in \$10,000)	6.95	4.3	6.09	3.6	9.23	13.9	7.06	4.8
Income gap	70.74	23.5	37.49	25.2	73.71	25.1	42.18	30.4
Work hours (weekly)	43.78	20.7	21.32	20.5	46.01	16.9	23.20	19.0
Bachelor degree (1 = yes)	0.23		0.19		0.25		0.21	
Gender attitude ^c	3.32	1.2	3.41	1.2	3.32	1.1	3.28	1.3
N	453		620		442		619	

^aStandard deviations are only reported for continuous measures. ^bMeasure uses information from both Wave 1 and Wave 2; proportions may vary over waves due to slightly different sample sizes in each wave. ^cIt is better for the family if the husband is the principal breadwinner ...” (scale: 1 = *Strongly agree*, 5 = *Strongly disagree*).

better for the family if the husband is the principal breadwinner and the wife has responsibility for home and children.” Responses ranged from 1 = *strongly agree* to 5 = *strongly disagree*. In addition we control for age and include indicators for gender and wave in the models. The means and standard deviations of all variables by gender and wave are presented in Table 1. We did find moderate level correlations between gender, income gap, and paid work hours.

Analytic Approach

Given that our dependent variable is continuous and the log transformation of the data is well approximated by a normal distribution, we used a linear model to examine the association between the independent variables and house-

work hours at each time point. As the data include repeated measures on the same individuals, observations over waves are not independent. Rather, the responses are correlated, because factors that predispose individuals to self-report their housework hours in a particular way at Wave 1 are likely to encourage similar responses over time. Because of this temporal dependence, a standard ordinary least squares regression model that assumes independent observations is not appropriate. We employed an alternative method of analysis that assumes an individual represents a cluster of repeated observations over time, and the variation in the data can be separated into two components measuring both the variation between clusters of observations (between individuals) and the variation within clusters (or individuals). This is known as a random effects approach (Johnson, 1995; Singer &

Willett, 2003) and assumes that unobserved differences between individuals that are not captured by variables included in the model are random variables rather than fixed quantities. We utilized this approach rather than the fixed effects model because we are interested in the between-individual variation associated with time-invariant variables such as gender and gender attitude (collected at Wave 1 only), which are important predictors of housework hours, as well as the within-individual variation associated with a marital or birth transition. Both time-invariant and time-variant variables are permitted in the random-effects model. The random effects model that we used takes the form of a linear regression model with random intercept to analyze the association between housework hours and marital transitions, birth transitions, and other variables of interest, accounting for both between- and within-individual variation over two waves of data (see Johnson, 1995, for a detailed discussion on the choice of a fixed or random effects model).

In the random effects model, observed covariates may be correlated with the random intercept term because of the omission of unknown variables that are correlated with covariates included in the model, leading to biased estimates of the covariate effects (endogeneity). In our analysis we identified endogeneity by assessing the correlation among the random intercept and covariates and addressed this issue by including cluster means for these variables in the model (Skrondal & Rabe-Hesketh, 2004, pp. 52 – 53). Household income and hours worked in paid employment were identified as likely endogenous variables, and hence cluster means for these measures were also included as variables in the model. We used a Hausman specification test to investigate whether the random effects model is misspecified due to omitted variables that may lead to endogeneity. For the model including all main effect variables and the two variables representing cluster means for household income and hours worked, the Hausman test showed that the coefficients from the fixed and random effects models were not significantly different ($\chi^2_7 = 5.03, p = .66$), indicating that the random effects approach was a good choice (Johnson, 1995).

We also checked for multicollinearity by examining the variance inflation factors (VIF) for all covariates in the main effects model. The highest VIF was 1.90, well below an inflation

factor that indicates any major concern for multicollinearity. We did, however, find that gender was relatively highly correlated with income gap (Pearson's $R = -.52$) and work hours (Pearson's $R = -.50$), but we retained all variables in the final model because the correlations were not so high that they could be considered proxy measures for each other and it is therefore important to control for their partial effects on housework hours.

Because we were primarily interested in gender differences and changes in housework hours over time with various transitions in marital and birth status, we arrived at a model where all explanatory variables were interacted with gender and, in addition, the transition variables were interacted with wave (taking Values 1 at Wave 1 and 2 at Wave 2). Three-way interactions of each of the transition variables with gender and wave were also included to capture the differences in housework hours before and after a transition (and hence across waves) and between men and women. We present two separate models. The first excludes the controls for gender attitudes and bargaining theory and the second model includes all controls. We do this to investigate the extent to which the measures we have for these theories influence the changes in housework in addition to the transitions.

RESULTS

Table 1 shows that women spend approximately 3 times the number of hours on routine housework compared to men. Women report an average of 24 hours per week on these tasks compared to men's average of 9 hours per week. In contrast women spend only about half the amount of time in paid work and contribute just over a third of the household income compared to men.

The results of the regression models with random intercept for predicting housework hours are shown in Table 2. Because the dependent variable in the model is the logarithm of housework hours, the coefficients, denoted b , must be exponentiated to obtain the estimated multiplicative effect, $\exp(b)$, of a variable on housework hours. In a random intercept model the variation in the data is separated into two components: between and within individual. The Rho statistic at the bottom of Table 2 for Model 1 indicates that unobserved differences between individuals account for 50% of the total

Table 2. Estimated Regression Coefficients of Two Linear Random Intercept Models for the Logarithm of Weekly Housework Hours^a

Variables	Housework Hours (ln)			
	Model 1		Model 2	
	β	SE	β	SE
Primary independent variables				
Still married (ref)	—		—	
Cohabiting – married	–0.21	.29	–0.31	.28
Cohabiting – separated	0.37	.40	0.22	.39
Still cohabiting	–0.18	.25	–0.18	.24
Married – separated	–0.21	.29	–0.31	.28
No Child – no birth (ref)	—		—	
Child – no birth	–0.03	.14	0.006	.14
No child – first birth	0.11	.23	0.29	.22
Child – higher order birth	0.38	.20	0.42*	.19
Child left home	–0.005	.15	0.04	.15
Controls (all models)				
Wave	0.12	.07	0.13*	.07
Age	–0.002	.004	–0.002	.004
Female (1 = yes)	0.68**	.25	1.10***	.26
Controls (bargaining)				
Family income			0.006**	.002
Mean income (2 waves)			–0.01**	.004
Income gap			–0.002	.0008
Hours paid employment			–0.005***	.001
Mean employment hours (2 waves)			–0.003*	.001
Bachelor degree (1 = yes)			0.15**	.05
Controls (gender attitudes)				
Gender attitude			0.11***	.01
Two-way interactions: gender and wave				
Female \times cohabiting – married	–0.30	.39	–0.04	.37
Female \times cohabiting – separated	–0.54	.50	–0.50	.49
Female \times still cohabiting	0.10	.29	0.15	.29
Female \times married – separated	0.32	.34	0.33	.33
Female \times child – no birth	0.47**	.18	0.28	.18
Female \times no child – first birth	–0.62*	.30	–0.73*	.29
Female \times child – higher order birth	–0.03	.26	–0.22	.25
Female \times child left home	0.46*	.20	0.34	.19
Female \times wave	–0.18*	.09	–0.19*	.08
Female \times age	0.006	.005	0.006	.005
Female \times family income			–0.004	.005
Female \times income gap			–0.0002	.001
Female \times hours paid employment			–0.001	.001
Female \times bachelor degree			–0.24***	.07
Female \times gender attitude			–0.14***	.02
Wave \times cohabiting – married	0.02	.16	0.03	.16
Wave \times cohabiting – separated	–0.18	.24	–0.10	.24
Wave \times still cohabiting	0.11	.14	0.09	.14
Wave \times married – separated	0.34*	.16	0.37*	.16

Table 2. *Continued*

Variables	Housework Hours (ln)			
	Model 1		Model 2	
	β	SE	β	SE
Wave \times child – no birth	–0.08	.08	–0.09	.08
Wave \times no child – first birth	–0.10	.13	–0.17	.13
Wave \times child – higher order birth	–0.32**	.11	–0.31**	.11
Wave \times child left home	–0.10	.09	–0.10	.09
Three-way interactions: gender, wave, and marital status				
Female \times wave \times cohabiting – married	0.12	.22	0.07	.22
Female \times wave \times cohabiting – separated	0.06	.29	0.09	.29
Female \times wave \times still cohabiting	–0.16	.17	–0.13	.17
Female \times wave \times married – separated	–0.43*	.20	–0.34	.20
Female \times wave \times child – no birth	0.07	.10	0.12	.12
Female \times wave \times no child – first birth	0.51**	.17	0.50**	.17
Female \times wave \times child – higher order birth	0.40**	.15	0.39**	.14
Female \times wave \times child left home	0.06	.12	0.06	.11
Constant	2.05		2.12	
Within individual R^2	0.04		0.08	
Overall R^2	0.43		0.51	
Rho ^a	0.50		0.46	
Person-years	2,134		2,134	
N	1,091		1,091	

^aModel 1 includes primary independent variables, age, and all two- and three-way interactions with gender and wave. Model 2 includes primary independent variables, two- and three-way interactions between primary independent variables and age with gender and wave and additional controls.

* $p < .05$, ** $p < .01$. *** $p < .001$.

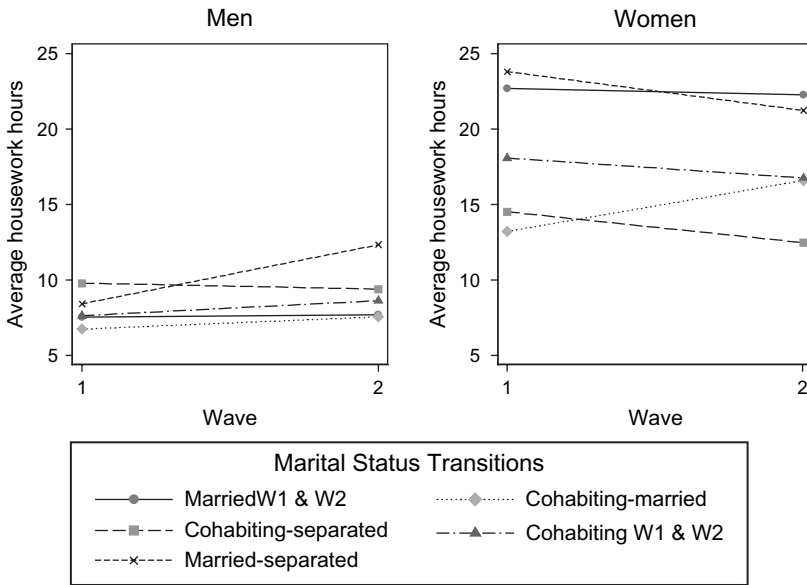
unexplained variation in housework hours. The remaining 50% of unexplained variance is due to within-individual residual variation. In this analysis the overall estimate of R^2 is .43 and the estimated within-individual R^2 is .04, indicating that the explanatory variables and interactions included in the model provide a weak goodness of fit to the data. In Model 2, by adding the controls for bargaining and gender attitudes we explain more of the within-individual variation and improve the overall goodness of fit to the data. The effects of all controls are significant. Although for both models the variance explained is lower than we would have liked, there is nevertheless evidence of significant associations between housework hours and some of the explanatory variables and interaction terms included in the model. Moreover the low variance may be due to sample size limitations as well as the omission of variables from the model.

For ease of interpretation we report the predicted means for time on housework at each wave

in graph form. We only report the results of Model 2 because we are mainly interested in the effects of transitions net of the control variables. The graphs in Figure 1 plot changes in the predicted mean hours spent per week on housework for men and women according to marital transitions while controlling for all other variables in the model. As expected, there is no change in housework hours if there is no marital status transition. The data show a slight increase in housework hours for women who move from cohabiting to married, but the change in hours is not statistically significant. Note though, that married women who remain married between waves do considerably more housework than cohabiting women who remain cohabiting between waves (24 hours per week compared to 17 hours per week, respectively). There is no significant difference between hours of housework for married and cohabiting men.

The only change in marital status that significantly changed men’s housework hours is the transition from married to separated, where

FIGURE 1. MARITAL STATUS TRANSITIONS AND CHANGE IN HOUSEWORK HOURS BETWEEN WAVE 1 AND WAVE 2 FOR MEN AND WOMEN (PREDICTED MEANS FROM REGRESSION MODEL).



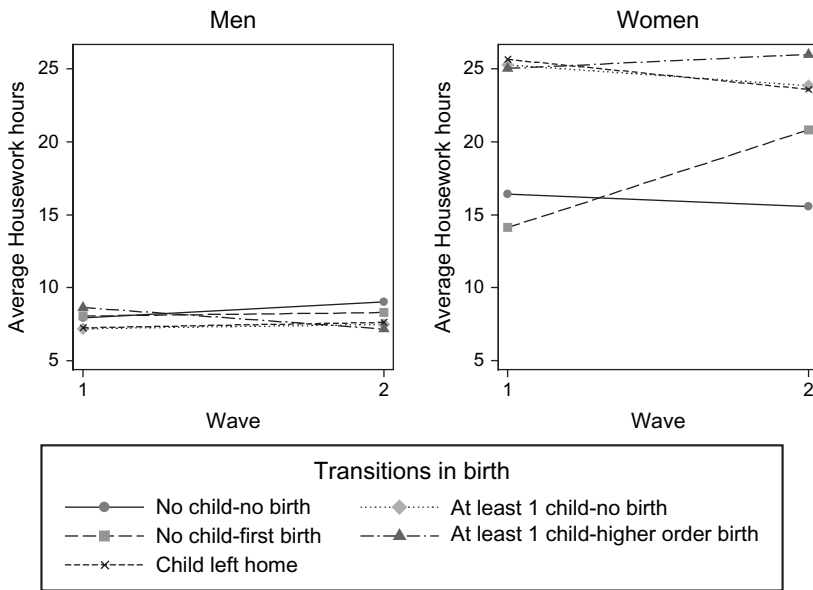
housework hours increased from an average of 8 hours per week to an average of 13 (8×1.632) hours per week. While holding the values of other variables in the model constant the multiplicative effect of men moving from married at Wave 1 ($\exp[0.12 + 0.37] = 1.632$) to separated at Wave 2 ($\exp[0.24 + 0.74] = 2.66$) is $2.664/1.632 = 1.630$. (Note that coefficients are included only for terms containing wave). A change from cohabitation to separation reduces men’s housework hours, but not enough to be statistically significant. In contrast, women who separate from their marital partner between Waves 1 and 2 experienced a decline in housework hours, but again not enough to be statistically significant. These results do not support Hypothesis 1, although the trend is in the expected direction for women. We find only partial support for Hypothesis 2, where we find that men who separate from marriage significantly increase their housework time.

The results for transitions in parenthood status are shown in Figure 2. What is immediately striking here is the enormous variation in women’s housework hours with transitions in birth compared to the flat and static average housework hours for men. As expected, there is no change in housework hours over time for either men or

women when no births occur between waves. On the other hand, women who experienced a first birth or higher order birth between waves have a significant increase in housework hours. The multiplicative effect of women having no children at Wave 1 ($\exp[0.12 - 0.18 - 0.17 + 0.51] = 1.323$) but experiencing a birth by Wave 2 ($\exp[0.24 - 0.36 - 0.34 + 1.02] = 1.751$) is $1.751/1.323 = 1.323$. For men a first birth has no effect on hours spent on housework, but the birth of an additional child led to a significant reduction in men’s time on housework. The multiplicative effect of men having no children at Wave 1 ($\exp[0.12 - 0.17] = 0.951$) but experiencing a birth by Wave 2 ($\exp[0.24 - 0.34] = 0.905$) is $0.951/0.905 = 1.051$. These results support Hypothesis 3, although we do not find a significant decrease in men’s housework hours after the birth of a first child.

The various controls in the model show consistent results with earlier research findings. There is no association between housework hours and household income, but there is a significant pattern associated with the proportion of household income contributed to the household. As proportion of income increases, time spent on housework declines significantly for both men and women. Similarly the longer hours spent in paid

FIGURE 2. BIRTH TRANSITIONS AND CHANGE IN HOUSEWORK HOURS BETWEEN WAVE 1 AND WAVE 2 FOR MEN AND WOMEN (PREDICTED MEANS FROM REGRESSION MODEL).



employment, the less time spent on housework for both men and women. There is evidence that men with a bachelor’s degree or higher spend more time in housework than less well educated men, whereas, for women, holding a bachelor’s degree or higher is significantly associated with fewer hours on housework. Similarly, there is a very strong and consistent relationship between gender attitudes and housework hours and a very clear gender difference in this relationship. Model coefficients show that for men, while holding the values of other variables in the model constant, the change in multiplicative effect of gender attitudes with each one unit increase in attitude score is $\exp[0.11] = 1.116$. That is, housework hours are 1.731 times greater for men with very liberal attitudes compared to men with traditional attitudes. The reverse is true but to a lesser degree for women with housework hours 0.905 ($=\exp[0.55 - 0.65]$) times lower for women with very liberal attitudes compared to women with traditional attitudes.

DISCUSSION AND CONCLUSION

In this study we have sought to further clarify the effects of transitions in two key life course events, marital status and parenthood, on housework

hours. Overall, the findings show that women spend considerably more hours on average doing housework than men do, regardless of marital or parenthood status. We find that the controls for bargaining and gender attitudes are all associated with housework hours. Net of these effects the transition to motherhood still results in an increase in women’s routine housework hours, a trend that is further increased when additional children are born. For men, on the other hand, we find considerable stability in housework hours across most life course transitions. Men’s time on housework is unrelated to changing household composition and structure. Perhaps even more importantly, we find evidence that men’s time on routine housework declines as more children are born, suggesting that the gender gap in housework time widens as the demand for time on domestic work increases.

In terms of marital status transitions, only the move from married to separated significantly changes men’s time on housework. Separation from a marital union almost doubles men’s time on routine housework from approximately 7 hours per week to approximately 13 hours per week on average. This implies that the absence of a female partner results in men taking on household chores that they otherwise would not

do. In contrast, in this sample, the transition from married to separated leads to less time on housework for women, although the result is not statistically significant. Taken together these findings are consistent with the expectations of both an exchange bargaining and gender perspective, both of which predict that the gap in men's and women's housework hours will narrow in the event of separation.

Our results support the only other longitudinal study on the effects of marital transitions on housework hours (Gupta, 1999). Like Gupta, we find no significant difference in the amount of time cohabiting and married men devote to housework and no significant change in either men's or women's housework hours when they move from cohabiting to married, although the trend is in the upward direction for women. In some respects this broad stability in housework hours across the transition from cohabitation to marriage is not surprising. Cohabitation rates have increased dramatically in recent years, and over 75% of married couples cohabit for a period prior to marriage in Australia (De Vaus, 2004). It is likely then that for most married couples the significant transition is from being single to living in a partnership, and, as Gupta argues, the form of the union is probably less consequential than the fact of the union. On the other hand, similar to previous cross-sectional work (Baxter, 2005; Shelton & John, 1993; South & Spitze, 1994), we also find that married women who remained married between waves perform, on average, considerably more housework than cohabiting women who remain cohabiting between waves. Together, these results suggest that the gender gap in housework hours does not occur immediately upon marriage, but imply that men and women gradually experience changes over the duration of their marriage. This dynamic could be better understood with longitudinal data on couple's housework hours over longer periods of time.

A significant increase in women's housework hours occurs with transitions in parenthood. Consistent with the study by Sanchez and Thomson (1997), we find the birth of a first child results in a dramatic increase in women's housework time, leading to approximately 6 additional hours of housework per week on average. But there is no corresponding effect for men. Men's housework hours are largely unresponsive to parenthood transitions. Moreover in contrast to Sanchez and Thomson, our results indicate that

having additional children continues to increase women's time on housework, but men tend to spend less time doing housework when higher-order births occur. As suggested by both economic exchange and gender display perspectives, our results indicate that additional children lead to a widening of the gap in men's and women's time on household labor, perhaps consolidated in part by the further withdrawal of women from paid employment with the birth of additional children.

For women the increase in housework time following parenthood will likely be in addition to increased hours devoted to child care. It is possible that the birth of a child also leads to increased hours for men on child care and in paid employment as opposed to housework. But both Sanchez and Thomson (1997) and Gjerdingen and Center (2004) find that men's paid employment hours remained the same after the birth of children. Becoming a father then does not appear to result in significant changes in men's time in either housework or paid work.

These results provide additional insight into research on the changing dimensions of fatherhood. Researchers have documented increased interest in the changing culture of fatherhood from father as provider to father as nurturer with greater acceptance of the view that parenting is no longer synonymous with mothering (Coltrane, 1996; LaRossa, 1997; Marsiglio, Amato, Day, & Lamb, 2000). But our data suggest that men's role as parent is tightly circumscribed and does not encompass additional housework associated with children. Admittedly, our data have not explored how parenthood affects men's time on child-care tasks or in paid employment; however, they do indicate that becoming a father does not increase the time men spend in routine domestic chores, work that undoubtedly increases after the birth of children. Rather, it seems that the transition to parenthood increases the gender gap in time on housework. The implication is that once partnered, the birth of children rather than the transition from cohabitation to marriage is a critical moment in the development of a gender gap in housework hours. As other studies have found, once these unequal patterns are in place, it may be difficult to renegotiate them as household structure changes later in the life course (Aldous, Mulligan, & Bjarnason, 1998).

Our study has some limitations. First, because of the small numbers of people who experienced some marital or parenthood transitions, the finding of no association, even when the effect size

seems quite large, may be the result of a Type II error. This would be less likely to occur if the sample were larger. This problem will be alleviated as more waves of data become available and more respondents experience these transitions. Second, we are unable to examine the change in housework hours for those who move from being single to living in a coresidential union because single people were not asked questions about housework hours in wave 1 of this study. Other research suggests the transition from never married to coresidence with a partner significantly decreases men's time on housework and significantly increases women's time on housework (Gupta, 1999). But we were unable to examine these transitions in the current study. Inclusion of this transition in the models may have increased the amount of variance explained. Nevertheless we are able to examine transitions between different kinds of coresidential unions and transitions out of a coresidential union. Further waves of data will enable examination of how the experience of separation affects housework hours in subsequent relationships.

Third, we confined our analyses to routine housework tasks, the "backbone of household life" (Gupta, 1999). In part this decision was guided by a desire to replicate, as closely as possible, earlier longitudinal studies (Gupta, 1999; Sanchez & Thomson, 1997) and also by the view that other forms of domestic work, particularly child care, may involve qualitatively different forms of work compared to housework. For example, child care is work that is much more closely bound up with feelings of love and affection than is cleaning the house, and, as such, is work that may respond quite differently to life course transitions. A more complete analysis would examine changes in all forms of work following parenthood, including paid employment, as well as child-care hours. But in this paper we are concerned specifically with the effect of life course transitions on routine everyday housework tasks, an area of work that appears largely resistant to broader social changes in gender patterns.

NOTE

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