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What Women Want (their men to do): Housework and satisfaction in Australian households

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What Women Want (their men to do): Housework and satisfaction in Australian households

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Abstract

The time allocated to household chores is substantial, with the burden falling disproportionately upon women. Further, social norms about how much housework men and women should contribute are likely to influence couples' housework allocation decisions and satisfaction. Using Australian data spanning the years 2001-2014, we employ a two-stage estimation procedure to examine how deviations from housework norms relate to couples' satisfaction. We find that satisfaction is negatively affected by predicted housework time, and that women's satisfaction, but not men's, is robustly affected by their partners' residual housework time. When he exceeds housework norms, she is happier with housework allocations, but less happy in broader dimensions. We suggest several reasons for our results, including that housework is more salient in women's lives than in men's, that housework in general is not a preferred activity, and that some degree of gender-norm conformity in regard to housework can positively affect women's life satisfaction.

JEL Code(s): D13, I31, Z13

Key Words: Satisfaction, Social Norms, Housework

INTRODUCTION

“I generally find that comparison is the fast track to unhappiness.” – Jack Canfield

People cannot help but compare their behaviors to the prevailing norms in their society. The results of social comparisons have been conjectured to drive dimensions of psychological welfare, and ultimately to motivate economic behaviors including investment, search, and resource allocation (see Basit Zafar 2011 for a review). Social comparison effects have been seen in data from around the world (America, Europe, and Asia) in an array of prior studies in economics and social psychology (e.g., Leon Festinger 1954; Heather Smith, Thomas Pettigrew, Gina Pippin, and Silvana Bialosiewicz 2012; Gerben van Kleef, Florian Wanders, Eftychia Stamkou, and Astrid Homan 2015), and with respect to outcomes ranging from pro-social behavior (Bruno Frey and Stephan Meier 2004) to personal identity (Marilynn Brewer 1991) to satisfaction (Nynke Frieswijk, Bram Buunk, Nardi Steverink, and Joris Slaets 2004; Abraham Buunk, Hinke Groothof, and Frans Siero 2007).

The social norms that form the basis of behavioral comparisons may be drawn from society “as a whole” (whether globally, as represented in the media, or within a particular country), and/or from groups closer at hand and known personally, such as close family members. Behavioral norms are unavoidably established over time, and social psychologists have recently produced evidence that whether these norms are met can directly impact individual well-being (e.g., Olga Stavrova, Detlef Fetchenhauer, and Thomas Schlösser 2013; Olga Stavrova and Detlef Fetchenhauer 2015). One behavioral dimension of a household’s circumstances that substantially impacts everyday life, and where significant variation across households exists, is the intra-household distribution of time spent on unpaid housework. Is this a dimension along which individuals might compare themselves, or their family members, to social norms (whether sourced from the broader society or from the household’s own history)? If so, might satisfaction or welfare effects arise from such comparisons? We approach this question by examining the relation between individuals’ satisfaction and the time they and their partners spend doing housework. In particular, we bifurcate the actual time spent on housework by men and women in mixed-gender couples into predicted and residual housework

time. We then separately test the associations of the predicted and residual portions of both his and her housework time with an array of measures of individual satisfaction. The logic behind this approach is that the predicted portion of housework time should proxy for social norms about how much housework time is appropriate for oneself and for one's spouse, and that individuals' mental comparison of actual behavior to those norms may in turn drive satisfaction.

Our approach is motivated in part by existing evidence from the sociology literature (Janeen Baxter 2000; Mikael Nordenmark and Charlott Nyman 2003; Caroline Henchoz and Boris Wernli 2013; Marisa Young, Jean Wallace, and Alicia Polochek 2015; Daniel Carlson, Sarah Hanson, and Andrea Fitzroy 2016) relying on data from Australia, Canada, the US, Switzerland, and Sweden indicating broadly that the more couples share domestic labor, the happier they are.¹ While these results are intriguing, the level of "sharing" against which partners' judge each other's allocation of time to housework is not immediately obvious. Our innovative approach uses predicted housework time to proxy for the ambient social expectation of the amount of housework that "should" be done by a particular person in a particular setting – i.e., the benchmark level against which that person, and that person's partner, may compare their actual performance. Our focus on estimating the economic importance of social norms is shared by the authors of several recent papers in economics (e.g., Steffen Huck, Dorothea Kübler, and Jörgen Weibull 2012; Marianne Bertrand, Emir Kamenica, and Jessica Pan 2015; Marianne Bertrand, Patricia Cortés, Claudia Olivetti, and Jessica Pan 2016; Gautam Bose, Evgenia Dechter, and Gigi Foster forthcoming). We then examine whether changes in people's deviations from social norms – which we proxy using changes in the unpredictable portion of actual housework time for men and women – are in fact associated with changes in their partners' stated satisfaction, measured in a variety of ways.

¹ For a review of the broader literature in sociology regarding household labor – its measurement, division within the household, and associations with economic and psychological outcomes – see Beth Shelton and Daphne John (1996).

Because women on average shoulder a disproportionate share of housework around the globe (OECD 2011), housework itself is arguably a more salient force in women's lives than in men's – driving more decisions on an everyday basis, taking up more conscious attention, and perhaps for these reasons creating more stress (as found in Rachel Connelly and Jean Kimmel 2015 and implied in Martha MacDonald, Shelley Phipps, and Lyn Lethbridge 2005). Consequently, one might expect that if the type of social comparison effects sketched above are present, they may be more evident for women than for men, whose stress levels appear to be more responsive than women's to aspects of paid work (Alison Booth and Jan Van Ours 2008). Specifically, relative to men, women may be more keenly aware of, and hence their satisfaction may be more responsive to, their spouses' housework behavior – and even their own housework behavior. This may be particularly true in Australia, the country whose data we analyze in this paper, due the disproportionate prevalence of part-time work by women (in Australia approximately 70 percent of part-time workers are female, and almost half of all working women work part-time, compared to fewer than 20 percent of working men (Kathy Tannous and Meg Smith 2013)), and the accompanying significant disparity in the time that men and women in Australia allocate to housework (Shun Ting, Francisco Perales, and Janeen Baxter 2016; Gigi Foster and Leslie Stratton 2018).

However, a related literature suggests that men who perform traditionally female unpaid tasks can suffer negative consequences in their relationships with the very females with whom they are sharing the burden. In the most famous recent example from this literature, Sabino Kornrich, Julie Brines, and Katrina Leupp (2012) find that both men and women in couples whose domestic chore allocation runs more strongly along traditional gender lines report higher sexual frequency than other couples. This implies that those with more egalitarian allocations have less sex. It could be that one or both partners in such couples prefers lower sexual frequency than is preferred by couples that adhere to more traditional gender norms, or that a preference for lower sexual frequency is more likely to be acted upon when norms are more egalitarian. However, another possible interpretation of this finding is that a woman's satisfaction in at least some dimensions may decline

when the amount of housework performed by her man is unusually large in comparison to social norms – norms which themselves reflect a strong degree of female-specificity in the performance of housework (Hung-Lin Tao 2011).²

METHOD

To test these ideas empirically, we use longitudinal data spanning the years 2001-2014 on couple households in Australia. We begin by presenting some basic descriptive information for our sample, including reported housework time as well as an array of satisfaction measures. These statistics are reported separately by gender, and we highlight the noticeable gender differences.

We proceed to examine separately by gender how the time couples allocate to housework relates to satisfaction using a two-stage approach, motivated by the invisible nature of social norms about how much housework Australian men and women “should” perform. In stage one, we model men’s and women’s housework time separately using OLS. We posit that predicted housework times from the OLS models, because they reflect the average population response, will capture social norms regarding housework time in Australia. The residual values, then, reflect deviations from these social norms. Motivated by prior literature highlighting the role of spouses’ assessment of “fairness” with the division of housework (e.g., Michelle Frisco and Kristi Williams 2003; Tao 2011), we assess the validity of this interpretation of our first-stage results by examining the relation between the residual housework measures and the degree to which a respondent perceives the division of housework to be “fair”. If one has a larger residual, then one should reply that one is doing more than one’s fair share, whereas if one’s partner has a larger residual then one should reply that one is doing less than one’s fair share – if, in fact, the first-stage residuals are capturing deviations from

² If, as beautifully articulated by West and Zimmerman 1987 (p. 126), “...the ‘doing’ of gender is undertaken by women and men whose competence as members of society is hostage to its production,” then by implication men who “do” more female-ness (for example, by allocating more time to housework) risk being perceived as being less competent members of society – even, presumably, by their partners.

social norms regarding housework time. Our results support this interpretation; giving us confidence that the residual housework measures constructed from our first stage are indicative of deviations from what would be considered socially appropriate.

In stage two, we use the predicted and residual housework measures for both partners to model, separately by gender, within-couple changes in satisfaction of various types. We focus on fixed-effects (FE) panel specifications of satisfaction (seeking to explain what accounts for the changes in satisfaction within couples across time) in order to control for idiosyncratic differences in reporting that, for example, might result in one person always reporting high levels of satisfaction and another always reporting low levels.

We examine satisfaction with the way in which housework is allocated, and also satisfaction in broader dimensions. Our second-stage models test whether a deviation from social norms by Partner A impacts the satisfaction of Partner B, motivated by the notion that if Partner A increases her/his contribution to housework time more than is the norm, then Partner B may be more satisfied with the bargain she/he is getting in the partnership or may be distressed by the departure from the social norm. Own effects may also arise if housework is considered unpleasant. All standard errors are bootstrapped, where the bootstrapping procedure wraps around both steps in the analysis.³

DATA

³ Bootstrapping in this case is necessary to correct the standard errors of the coefficients in the second-stage models, because four variables used in those models (namely, his and her predicted and residual housework times) are in fact values that we predict in the first stage. We draw repeated random samples from our data with replacement, and generate successive estimates of the predicted and residual housework values from stage one using each of those samples, that we then plug into our stage two models. The empirical distribution of standard errors for the second-stage coefficient estimates that we recover from repeating this procedure 100 times forms the basis for our bootstrapped standard errors.

We use household-level panel data taken from the 2001-2014 waves of the Household Income and Labour Dynamics in Australia, or “HILDA”, survey. This survey captured a representative sample of the Australian population in 2001, has followed this population annually since, and added a top-up sample in 2011 to retain cross-sectional representativeness (see Nicole Watson and Mark Wooden 2012 and Michelle Summerfield, Andrew Bevitt, Simon Freidin, Markus Hahn, Nathan La, Ninette Macalalad, Mark O’Shea, Nicole Watson, Roger Wilkins, and Mark Wooden 2017 for more details). Attrition rates are comparable to those of similarly designed surveys like the British Household Panel Study. Our sample is restricted to single-family, mixed-gender couple households (married or cohabiting when surveyed) of working age.⁴ These restrictions leave us with 46,487 couple-year observations on 7,703 couples. Observations in which either partner is missing data are then excluded, as are couples who appear in the sample only once and therefore do not contribute explanatory power in the context of panel estimation.⁵ This last restriction leads our estimation sample to favor Australian-born persons who have been together longer, and are more often married. In general, women in the estimation sample spend less time on housework, spend more time in market employment, and are less satisfied than those who are not in the sample. We

⁴ Persons younger than age 20, men older than age 64, women older than age 61, and 20-to-23-year-olds enrolled full-time in higher education are excluded. The different age restrictions by gender approximately reflect the different ages at which men and women are eligible to receive pensions in Australia. Fewer than 5 percent of couples are excluded due to inconsistent or incomplete information regarding the relationship.

⁵ Non-response by the household or individual, or failure to complete the self-reported questionnaire on which housework time is reported, together account for 60 percent of the lost couple-year observations and 27 percent of the lost couples. Singleton reports account for 12 percent of the lost couple-year observations and 60 percent of the lost couples. Couples who jointly report no time spent on housework or individually report more than 70 hours on housework are also dropped, as we judge these reports not to be credible. This criterion excludes only 421 outliers (less than 1 percent of couple-year observations).

proceed with an unbalanced panel consisting of 31,929 observations on 5,180 couples, performing all analyses separately by gender.

Time spent on housework is recorded as the response to the question, “How much time would you spend on housework (preparing meals, washing dishes, cleaning house, washing clothes, ironing and sewing) in a typical week?”⁶ These activities are routine tasks that every household has to complete in some way, and for the vast majority of households the time spent on these activities constitutes more than 40 percent of total reported time spent on a broader class of unpaid labor that includes running errands and performing outdoor labor, such as yard work.⁷

Fairness is assessed based on individuals’ responses to the question, “Do you think you do your fair share around the house?”. Responses to this question range from “I do much less than my fair share” (coded 1) to “I do much more than my fair share” (coded 5). We think of this measure as capturing the individual’s appraisal of his or her housework performance relative to prevailing norms, and use it to support a similar interpretation of our first-stage residuals. Larger numbers of this “share fairness” measure indicate that the individual is over-performing relative to norms and lower numbers indicate underperformance relative to norms.

The HILDA survey includes several measures of satisfaction. Satisfaction with “The way household tasks are divided between you and your partner” was recorded on a scale of 0 to 10, with higher measures indicating greater satisfaction. We use this variable as our measure of satisfaction with

⁶ This question is answered to the nearest minute in all HILDA waves except the first; in 2001, it is answered to the nearest hour. In our models, any difference in average measured quantity of housework caused by this change in granularity across reporting years is captured by year dummies.

⁷ At both the individual and household levels, hours spent on housework are positively associated with hours spent on these other forms of unpaid labor.

respect to housework. This question was introduced beginning in 2005.⁸ We also examine two broader measures of satisfaction that are available annually from 2001: specifically, satisfaction with the relationship with one's partner and satisfaction with life overall.

Table 1 presents household-level sample statistics for our full sample. The top portion of this table indicates that while there are on average 6.2 observations per couple in the full sample, the distribution is skewed towards shorter durations. The bottom portion of the table provides information on household composition and residence type and location.

< Table 1 here: Partial page >

Table 2 shows the individual-level sample characteristics calculated at the person-year level, separately by gender. On average, men report spending over 11 hours per week (64 percent) less time on housework than women, and about 17 hours per week (72 percent) more time on paid work. The gender division of housework that we see in our data, with 26.4 percent of hours contributed by men and 73.6 percent by women, is very similar to the corresponding 28 percent and 72 percent, respectively, that Tao (2011) finds (after complex parametric estimation) to reflect the feasible "fair" gender division of housework labor. This lends further credibility to the view of population averages as indicative of ambient social norms, a view that underpins our approach in this paper. As reported in another recent paper (Foster and Stratton 2018), summary statistics calculated from the HILDA measures of time spent on housework are quite similar to those calculated using data from the most recent Australian Time Use Survey, run by the Australian Bureau of Statistics in 2006, giving us some confidence that the HILDA survey questions do a reasonable job of capturing time spent on housework. As regards share fairness, fifty-nine percent of women, as compared with only 15 percent of men, report that they do "more than [their] fair share" of

⁸ Analysis of satisfaction-with-housework is consequently restricted to 22,322 observations (4,240 couples).

These individuals have characteristics very similar to those of the full sample, though they do tend to be a bit younger and more educated.

housework, while only 36 percent of women but 57 percent of men report that they do their fair share – indicating a gender difference in perceptions of the fairness of the household’s division of housework (also found in Tao 2011). Table 2 also displays information on respondents’ ethnicity, age, disability status, education, and other income sources.

< Table 2 here: Full page >

Table 3 shows the distribution of our measures of satisfaction, separately for men and women. As noted above, the answer scale for the three satisfaction measures runs from 0 to 10, with 0 being “completely dissatisfied” and 10 being “completely satisfied”. The distribution of women’s satisfaction with the division of household tasks contains more density at the lower end of the scale, from 0 up to and including the value of 7, compared to the men’s distribution; only 51 percent of women, but 67 percent of men, report a high satisfaction level (8, 9, or 10) with the division of household tasks. A similar pattern, though far less pronounced, is also evident in the gender-specific distributions of reported satisfaction with the relationship with one’s partner. Hence, the data indicate that women in general are less satisfied both with the division of household tasks and with their partner relationships, than men. This pattern is weakly reversed in the distributions of overall life satisfaction, with more women than men reporting a 9 or 10 on this scale.⁹

< Table 3 here: Partial page >

An examination of the simple correlations amongst our key variables (available upon request) indicates that share fairness is positively related to own housework time, and own satisfaction with the division of household tasks is also positively related to partner’s housework time, though only

⁹ Christopher Ambrey, Jennifer Ulichny, and Christopher Fleming (2017) report evidence generated using the same data set that the satisfaction of both Australian men and Australian women has fallen over time (attributing this fall to a decline in social connectedness). We also find a decline over time for both genders in our broader satisfaction measures.

significantly so for women. Apart from this, the reported time spent on housework by both oneself and one's partner is negatively correlated with satisfaction and share fairness, for both genders.

FIRST-STAGE MODEL

Housework time

We begin by estimating simple OLS models of housework time separately by gender as a function of all the household- and individual- level observable characteristics summarized in Tables 1 and 2 as well as year and state-of-residence by urbanicity dummies¹⁰. The number, ages, and disability status of household members are included in recognition that the demand for home production rises with household size, that other adults or older children may serve as substitutes in production, and that there are other demands apart from housework on householders' unpaid time. Own and partner disability status are included to capture differences in housework productivity. Ethnicity, residential characteristics (urbanicity and housing type), state-of-residence by urbanicity, and year dummies are included to adjust in part for different social norms across these dimensions.

Much of the literature on housework uses relative earnings as a key determinant of housework time allocation within couples (for example, Janeen Baxter, Belinda Hewitt, and Michele Haynes 2008; Arnstein Aassve, Giulia Fuochi, and Letizia Mencarini 2014). This approach requires limiting the analysis to dual-earner couples (a sample for which we provide sensitivity analysis later in the paper). To avoid this limitation, we include a raft of measures to capture own and partner's opportunity costs and power. These measures include both own and partner's education, age, non-labor income (the sum of interest, dividend, and royalty income) and gift income (the sum of inheritances, gifts, and other irregular income), and the couple's marital status.

¹⁰ The incidence of individuals responding that they spend no time on housework is sufficiently uncommon (less than 0.4 percent for women and less than 7 percent for men) to make nonlinear estimation unnecessary.

The estimated parameters from these models of the time spent on housework (see Appendix A) are clearly jointly significant (with p-values of 0.0000 for both men and women), but the model explains a larger fraction of the variation in women's housework time ($r\text{-squared}=0.18$) than of the variation in men's ($r\text{-squared}=0.04$). His age is significantly positively associated with his and her housework time, disabled men report spending almost an hour longer on housework, and men with more non-labor income report spending less time on housework. His characteristics have little association otherwise with housework time. Her characteristics, by contrast, are more strongly conditionally associated with housework time. When she is more educated, he spends more time and she spends less time on housework. Older women report spending more time on housework, while their partners (conditional on their own age) report spending less. When women are disabled, both they and their partners report spending more time on housework. When women report receiving more non-labor income, their partners report spending less time on housework. Several household characteristics also have significant conditional associations with housework time. Married men report spending on average 30 minutes less per week, while their partners report spending about 85 minutes more per week, as compared to those in cohabiting relationships. The presence of children of all ages significantly increases the housework time of both men and women, though the magnitude of the effect is six to ten times greater for women.

Using these first-stage models, we generate measures of his and her predicted and residual housework times. The average of predicted housework time is, of course, equal to the average of actual housework time (6.2 hours for him and 17.2 hours for her); the standard deviations of predicted housework time are 1.1 hours for men and 5.0 hours for women. Residual housework time necessarily has a mean of zero; its standard deviation is 5.8 hours for men and 10.6 hours for women. To more readily interpret the results of our subsequent analyses across specifications (Donald Marquardt 1980), we normalize, for men and women separately, the dependent variables, the residuals, and the predicted housework hours such that each of these variables has a standard deviation of one. We posit that the standardized predicted values represent the socially expected

housework time for an individual with his/her characteristics, while the standardized residual values reflect each individual's deviation from the relevant (gender-specific) social norm.

Fairness

In order to test the above interpretations of our first-stage results, we examine how our predicted and residual housework measures relate to each partner's perception of the fairness with which household tasks are allocated. These results are reported in Table 4. We first estimate, separately by gender, a simple OLS model of fairness that includes both the predicted and the residual variables from our fitted housework equations; we then re-run these specifications adding couple-specific fixed effects.

If people assesses housework share fairness by considering the deviations of both householders' actual housework time from the corresponding gender-specific social norm regarding housework, and if the residual values from our housework equations reflect those deviations, then higher own (partner) residual values should lead respondents to be more likely to say they are doing more (less) than their fair share. Each estimated coefficient from our OLS model (the first and third rows of Table 4) can be interpreted as the impact that a one-standard-deviation increase in the corresponding variable has on perceptions of fairness, measured in standard deviations at the sample level. The estimated coefficients from our FE models (the second and fourth rows of Table 4) can be interpreted as the impact that a one-standard-deviation increase in the corresponding variable has on perceptions of fairness, measured in within-person-couple standard deviations.

< Table 4 here: Partial page >

The results from these models are remarkably robust in sign, significance, and magnitude across both OLS and FE specifications in a manner that strongly supports our interpretation of the residuals as indicative of departures from the social norm. Our OLS estimates indicate that those who exceed the social norm for housework correspondingly feel they are doing a greater share (and their partners feel themselves to be doing a lesser share); our FE estimates indicate that people of both

genders whose residual housework time increases across time report feeling as though their share of housework is rising (and their partners report feeling their own share to be falling). Men appear particularly sensitive to their own residual housework time. Focusing on the FE results, a one-standard-deviation increase in men's housework residual (small as it is) leads to a 0.22 standard deviation decrease in their report of share fairness. Yet men are not nearly as sensitive to their partner's residual housework time, as a one-standard-deviation increase in that residual leads to only a 0.07 standard deviation change in their share fairness report. Women, by contrast, are about equally sensitive to their own and their partner's deviations from the norm, and their level of sensitivity falls in the mid-range, with a one-standard-deviation change in either residual shifting their report of share fairness by between 0.12 and 0.14 standard deviations in the FE results. These results are robust to specifications including only the residual measures and to specifications including the residual measures and, instead of the predicted values, all the covariates included in the housework models.

Furthermore, men's sense of housework share fairness is not significantly related to the predictable part of either his or his partner's housework time once we include fixed effects, whereas women's is. This result indicates that unlike men, women give responses to the fairness question that are sensitive to within-couple changes over time in the characteristics included in the first stage (such as the presence of children) that affect the norms about the amount of housework done by each person. Put another way, our fixed-effects specifications indicate that women's sense of housework share fairness is sensitive to not only deviations from social norms, but also to the changing norms that households face as they evolve. It appears that just as they mentally push back against deviations from social norms regarding the division of housework (i.e., by judging that a deviation not in their favor represents comparative unfairness), women also push back against the gendered norms themselves. We see this in the fact that changes in observable characteristics that are predictive of her doing more and him doing less housework (such as, for example, getting married) increase the chance of her reporting doing more than her fair share.

SECOND-STAGE ESTIMATION RESULTS

Table 5 shows results, separately by gender, using each of our three measures of satisfaction. As discussed above, also included in these models are couple-specific fixed effects.¹¹ Hence, each estimated coefficient can be interpreted as the impact that a one-standard-deviation increase in the corresponding variable has on satisfaction responses, measured in standard deviations of within-person-couple satisfaction responses.

The results in Table 5 indicate no strong association between own or partner's residual housework time and men's satisfaction with the division of housework time, with their relationship with partner, or with life. Thus, while men appear to recognize deviations from social norms with respect to housework when asked to assess the fairness of their share of housework, these deviations do not appear to influence significantly their satisfaction - even the dimension of satisfaction related to the division of housework.

For women, this is not the case. Women's residual housework time is significantly negatively associated, while their partner's residual housework time is significantly positively associated, with women's satisfaction with the division of housework. The magnitude of these effects is modest: a one-standard-deviation change in either residual shifts satisfaction by between 0.04 and 0.07 of a standard deviation. These residual housework measures are not significantly associated with women's satisfaction with their relationship with partner, but the residual portion of partner's housework time is negatively and significantly associated, and her residual portion is weakly positively associated, with her satisfaction with life. Hence, when their men do more than is expected according to our first-stage housework models, women are more satisfied with regard to the intra-household division of household tasks, but they are a bit less satisfied with their lives

¹¹ These satisfaction measures are recorded on an ordinal scale. Ada Ferrer-i-Carbonell and Paul Frijters (2004) note that fixed effects models of satisfaction generally produce similar results to ordinal latent-response models (e.g., logit or probit).

overall. Once again, these results are robust to specifications including only the residual measures, and to specifications including the residual measures and all the covariates included in the housework models.

< Table 5 here: Full page >

Both men and women are also significantly less satisfied in all dimensions represented here when he is predicted to spend more time on housework (i.e., when the social norm proscribes that he should do more housework). Her predicted housework time also negatively influences some dimensions of both partners' satisfaction, though the effects are less robust and weaker than for men. These results suggest that gendered housework norms (cf. Candace West and Don Zimmerman 1987) are important, such that both men and women lose utility when men in particular are expected by society to do more housework. However, the scattered negative effects on his and her satisfaction of women's predicted housework time suggest that couples may be happier when each partner is expected to do less housework. Such an effect could reflect a social norm according to which spending more time on housework indicates lower social status, or it could simply reflect the added stresses imposed by busy schedules¹² or a general dislike of housework (Valerie Ramey 2009; Elena Stanca and Leslie Stratton 2014).

¹² The within-couple variation in predicted housework driving these results is for women attributable primarily to changes in household composition. Approximately 70% of the within-couple variance in women's housework is explained by changes in the number of children age 0 to 4 – i.e., new births. For men this factor accounts for only 12%, while changes in his or her disability status explain 22%. That onset of a disability would decrease satisfaction, at least in the short run, is in line with prior results from the literature on life satisfaction (e.g., Ricardo Pagán-Rodríguez 2010). Andrew Clark, Ed Diener, Yannis Georgellis, and Richard Lucas (2008) and Paul Frijters, David Johnston, and Michael Shields (2011) find that births are associated with increases in life satisfaction in the short run, but are also anticipated, such that the actual birth may precipitate a decrease in life satisfaction because satisfaction is temporarily higher directly prior to a birth.

SENSITIVITY TESTS

As discussed below, these results are remarkably robust to several alternative first-stage models of housework, but vary slightly by specification and with sample composition. Also discussed below is a simple check for reverse causality. Where not tabulated, the results of all sensitivity tests discussed in this section are available from the authors upon request.

To examine the sensitivity of our results to our first-stage model of housework, we estimate separately by gender three alternative specifications. In one, we add controls for each partner's labor market activity (employment status, industry, occupation, and employment hours) in recognition that societal expectations regarding housework time may differ for individuals employed in different sectors and facing different time constraints. In the second, we include couple-specific fixed effects to capture couple-specific norms regarding housework responsibilities. In a third, we estimate a first-stage model of her *share* of housework (her time divided by the sum of his and her time) using all the covariates from our baseline model, in recognition that social norms may relate more closely to relative shares than to absolute time measures.¹³

Residual housework time/share from these alternative specifications shows the same relation to reports of housework share fairness observed in Table 4. The magnitude of the effect is about 30 percent smaller when controlling for couple-specific fixed effects and, perhaps not surprisingly, the results from the share-based specifications more closely relate to share fairness than the absolute

¹³ The share of household housework time supplied by women in two households may be the same (say 70 percent) when the hours spent are quite different (say 7 hours in a household reporting 10 hours of housework, versus 21 hours in a household reporting 30 hours of housework). Spending 21 hours on housework constitutes a much greater burden than spending 7 hours on housework, which may have important implications for satisfaction. This is why in our baseline first-stage results we predict reported hours spent, rather than share.

measures of time spent. As before, when her residual time/share increases, he perceives that he is doing a lesser share of housework, while she perceives she is doing a greater share, and vice versa.

The second-stage satisfaction results are also quite robust to these modifications. For men, neither his nor her residual housework *time* has a significant effect on any measure of satisfaction. However, her residual *share* of housework time is positively but weakly (in terms of magnitude and significance) related to his satisfaction with his relationship with partner. These results are consistent with our findings above that men's satisfaction appears to be largely unresponsive to residual housework time measures.

Her results when adding controls for employment status in the models of housework time are also broadly the same. She is less satisfied with the division of housework time when she does more housework than expected, and more satisfied when he does more than expected. She is also less satisfied with life overall when his residual housework time is larger. When housework time is modelled with couple-specific FE rather than OLS, she becomes less satisfied with her relationship and with life but not with the division of housework when her partner's residual housework time increases. When modeling satisfaction as a function of her residual share of housework rather than her residual housework time, we find she is less satisfied with the division of housework time but more satisfied with life overall when her residual share increases (and hence when his residual share falls). These results are in broad accordance with our main findings and interpretations.

In light of the possibility that our baseline measure of his residual housework time may be greater for men experiencing more unemployment, and that it is this experience with unemployment rather than nonconformity with social norms that reduces her satisfaction, we estimate our two-stage model including controls in the first stage for both the local unemployment rate and the percent of time that each partner was unemployed in the previous year. While it is the case that men who spend more time unemployed contribute more time to housework, taking this component out of the

residual housework measure via this additional first-stage control does not change the fact that her satisfaction with life is negatively related to his residual housework time.

Next, we examined whether positive and negative deviations from the norms estimated in the first stage have symmetric effects on satisfaction. To investigate this, we estimated our second-stage models including separate measures of positive and negative standardized residuals from the baseline first-stage model of housework time. The results indicate that share fairness is about four times more sensitive to negative residuals as it is to positive residuals, for both men and women. Neither positive nor negative residuals are predictive of men's satisfaction with the division of housework time, but women's satisfaction is affected between two and five times more strongly by negative as compared to positive residual housework time. Thus, perceptions of housework share fairness and (for women) satisfaction with the allocation of housework are much more sensitive to deviations below than to deviations above the social norm – a result reminiscent of findings in the behavioral economics literature that individuals are more sensitive to disadvantages than to advantages (see Amos Tversky and Daniel Kahneman 1991). We also find that when he spends less time on housework than is the social norm, he is significantly more satisfied with his partner, but otherwise deviations in either direction have no significant effect on his satisfaction. She reports being somewhat more satisfied with her partner when he does less housework than is the norm and less satisfied with life when he does more housework than is the norm – results in line with our findings that in terms of broader measures of satisfaction, she prefers her partner to do less housework.

Our baseline approach in the first-stage models of housework, where we control linearly for observable variables, assumes that social norms regarding housework time differ only in level across different segments of the populations. It may be that social norms differ more substantially. We explore this possibility by examining how sensitive our results are to sample composition. First, we repeat our analysis restricting the sample to dual-earner couples – i.e., 2,188 couples (11,881 observations) in which each partner was always employed whenever observed in the sample. Social

norms regarding housework may differ for dual-earner as compared to single-earner households because dual-earner households are more focused on market rather than home-based activities. They may also differ because of time constraints. As noted by the time availability theory posited in sociology research (Aassve, Fuochi, and Mencarini 2014), more time spent on paid employment likely means less time available for housework. The relation between residual housework time and perceived share fairness for these dual-earner couples remains highly statistically significant, though the magnitude of the effect of his residual is between 25 and 40 percent smaller. As before, his satisfaction with the division of household time is not sensitive to any residual, while compared to our full-sample results, hers is a bit more sensitive to her residual and less sensitive to his. As regards satisfaction in other dimensions, the key difference for dual-earner couples is that her satisfaction with life is not significantly related to either his or her residual housework time. This result may arise because working women are less focused than non-working women on home life when it comes to evaluating their overall life satisfaction.

Australia welcomes immigrants from many nations and fully one-third of the couples in our sample (1,744 couples) include a partner born elsewhere. Social norms regarding housework time may be more homogenous for persons brought up in the same country. Thus, we next reran the analysis for the 3,436 couples comprised only of native-born Australians. The results are robust in all dimensions to this sample.

To check for the possibility that social norms may change over time or be different depending on socioeconomic status, we re-ran the analysis separately for younger and older (both born before 1965) cohorts and for less and more educated couples (where a “less-educated couple” is one in which the woman has no more than twelve years of education and the man has no more than a vocational degree).

As compared to the full-sample results, there is little difference in the estimated relation between *residual* housework and perceived share fairness in terms of either statistical significance or

magnitude for any of these samples. As before, individuals whose residual housework time increases report doing an increasing share of the housework. Younger men, and to a lesser extent more educated men, however, appear to be more sensitive to her *predicted* housework time - being significantly more likely to report doing less than their fair share when her predicted time increases – suggestive of a mental push-back against gendered norms that we found previously for women. Furthermore, it is older rather than younger women who are particularly more likely to report doing less than their fair share when their partner's *predicted* housework time increases, perhaps because older women are more likely than their younger counterparts to perceive housework as women's work. These results suggest that expectations regarding what is fair may change across the lifecycle, or may be evolving over time, such that housework is becoming a less gendered activity.

Tables 6 and 7 present second-stage results for the broader satisfaction measures by couples' age and education levels, respectively. These results are broadly consistent with the full-sample estimates. In particular, men's satisfaction with the division of housework time remains insensitive to both residual and predicted housework measures, while women's remains sensitive for all samples. However, younger individuals appear to be more likely to report lower satisfaction with their relationship than older individuals when either partner is predicted to spend more time on housework, and lower satisfaction with life when the man is predicted to spend more time on housework. These results may indicate that housework is evolving to be a less-preferred activity in general over time, and/or that signals of lesser social station embodied in higher predicted housework time, particularly for men, are felt more keenly by younger people. Meanwhile, her predicted housework time is positively associated with his satisfaction with the relationship when he is less educated, but negatively associated with that same dimension of his satisfaction when he is more educated. This contrasting pattern by education level also holds for women's own satisfaction with their relationship with their partner. These results are consistent with an impact of education on norms related to housework that then drive couples' relationship satisfaction, with more-educated people preferring (in terms of relationship satisfaction) the woman to be in a position in

which less housework is expected, and less-educated people preferring the opposite.¹⁴ Importantly for our main focus in this paper, however, the comparisons implicit in the estimated effects of residual housework on broader measures of her satisfaction – whereby she is less satisfied with life overall when he does more housework than expected, and more satisfied when she herself does more housework than expected – hold across most sub-samples we analyze, though with varying degrees of statistical significance.

< Tables 6 and 7 here: Full page >

Finally, we ran some tests to examine whether reverse causality is driving our results. It could be that if women become less satisfied over time, their partners respond by increasing their efforts in the household. It also may be that the additional stress (or whatever is causing the lowered satisfaction) causes the women themselves to spend more time on housework. To check for this possibility, we ask whether changes in women’s satisfaction from one year to the next are predictive in a regression model of subsequent changes in the residual portion of housework time. We model changes in both his and her residuals as a function of past changes in both his and her satisfaction measures. We run specifications including only lagged changes in his and her satisfaction measures, plus a constant. None of the measures of past changes in the satisfaction measures are significantly associated with changes in the residuals. The results are similar when we add to the regression lagged changes in additional covariates. Reverse causality, from satisfaction to housework, does not appear to be a problem.

DISCUSSION

We explore the way in which the time allocated to housework by oneself and one’s partner affects own satisfaction in a number of dimensions. Our analysis of this question exploits panel data on

¹⁴ This story is consistent with the findings in Foster and Stratton (2018) that document different gendered norms by education when it comes to housework responsibilities.

mixed-gender couples from the 2001-2014 waves of the Australian HILDA survey. We apply a novel two-stage modelling approach in which we view the portion of an individual's housework time that is predictable in the first stage – based on models estimated separately by gender that include a large set of individual and household-specific covariates, as well as year and urbanicity/state effects – as a proxy for the amount of housework time that society expects the individual in question to perform. Residual housework time as calculated from these models then captures deviations from those social norms. In stage two, we predict individual satisfaction in a range of dimensions based on the residual and predicted portions of own and partner's housework time as estimated in stage one. We first document a strong and intuitive relationship between the residual housework time of both genders and the perceived fairness of the share of housework that each person reports. These results lend credibility to our interpretation that the residual housework measures from the first stage contain information about the degree to which individuals deviate from ambient expectations about how much housework they should do. Our subsequent analysis of satisfaction with the division of household tasks suggests that social norms regarding housework time robustly influence women's satisfaction in this dimension. We find that her satisfaction with the division of household tasks falls as either her predicted or her residual housework time rises, and rises as her partner's residual housework time rises. These effects are in line with our original hypothesis that she would respond positively to extra help he offers around the house over and above what is expected of him. However, this result does not carry over to her satisfaction with her relationship with her partner, and she is actually less satisfied with her life as a whole when her partner does more housework than expected. By contrast, women's residual housework has no significant effect on either housework-related or broader measures of men's satisfaction, with this striking difference in sensitivity by gender perhaps due to the stronger salience of housework in women's lives. Our main results are robust to using different specifications (including couple-specific fixed effects) for the first stage, and are also broadly confirmed when we use separate subsamples of the data. Sensitivity testing indicates some nuances when we split our sample by education level, age cohort,

and whether both partners are employed. We also find some evidence of heightened responses to negative housework residuals (i.e., doing less than expected), as compared to positive housework residuals (i.e., doing more than expected).

In sum, we are the first to suggest and apply a two-stage econometric procedure in which we specify first-stage models of housework time to recover proxies for social norms related to housework which are then linked, in the second stage, to satisfaction measures. We find strong evidence that social norms about housework are associated with female satisfaction with intra-household housework allocations, but that other measures of satisfaction do not respond positively (and sometimes respond negatively) when men do more housework than is predicted by our first-stage models. Based on these results, we conjecture that in a broader sense, women want their men to conform somewhat to social stereotypes in regard to time spent on housework, even if in a more immediate or narrow sense they are more satisfied when their partners shoulder more of the housework burden than society expects. If true, the wider implication of this conjecture is that conforming with ambient social norms about male and female behavior in the home – norms that are driven by what is typically done in a society – can positively feed overall satisfaction levels of individuals even if at some level those same individuals resist those norms.

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