# WORK AND FAMILY IN THE MODERN ERA: PERCEIVED JOB INSECURITY, GENDERED RELATIONAL CONTEXTS, AND THE OCCUPATIONAL STRUCTURE

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

By

Jocelyn Abigail Fischer

December 2021

WORK AND FAMILY IN THE MODERN ERA: PERCEIVED JOB INSECURITY, GENDERED RELATIONAL CONTEXTS, AND THE OCCUPATIONAL STRUCTURE

Jocelyn Abigail Fischer, Ph.D.

Cornell University 2021

This dissertation examined gender inequality in the contemporary context, focusing on the roles of perceived job insecurity, gendered relational contexts, and the occupational structure. The first chapter used panel data and fixed-effects models to examine how changes in different-sex, dual-earner partners' levels of perceived job insecurity are related to changes in their division of housework time. The empirical results showed that when couples enter a scenario in which both partners perceive their jobs to be insecure, men's housework contributions decrease. This pattern suggests that, in these circumstances, men's jobs get prioritized and gender inequality in partners' divisions of housework time deepens. The second chapter compared economic predictors of housework time between people in same-sex couples and people in different-sex couples. Nationally representative, time-diary data from the American Time Use Survey was used to estimate relationships between paid work time, earnings, and time spent in various types of housework tasks. Some of the relationships between economic factors and housework time were larger in magnitude for men in same-sex couples compared with men in different-sex couples. Among women, the couple-type differences in the associations of interest varied across the different types of housework tasks. I argued that the results suggest that the sex composition of couples affects how they divide housework: values, beliefs, and expectations about the gendered division of household labor that allocate labor based on sex differences

between partners might influence the housework of different-sex couples, but are less applicable to same-sex couples. The final chapter analyzed inequality in the growth of flexible paid work hours from 1989 to 2018 as well as the structural sources of this growth, focusing in particular on the role of changes in the occupational structure of the labor market. Using harmonized data from the Current Population Survey and the American Time Use Survey, it estimated linear probability models of flexible work hours and performed Kitagawa-Duncan-Blinder-Oaxaca-type decomposition analyses of the growth of flexible work hours. Results showed that the proportion of workers with flexible work hours grew for all occupations, but that it grew at a slower rate among education, healthcare, and traditional blue-collar occupations as compared with other occupations, such as management and other professional occupations, and that inequality in the proportion of workers with flexible work hours across occupations increased over time. Additionally, changes in workers' job and personal characteristics, including their occupations, accounted for part of the growth of flexible work hours, but most of the growth occurred because the propensities of workers to have flexible hours changed. The finding that inequality in the proportion of workers with flexible work hours by occupation grew over time informs the literature seeking to understand unevenness in trends in family behaviors and gender inequality at work and at home. However, the finding that the proportion of workers with flextime grew within all occupations suggests a broad-based growth in the flexibility of work time. This in turn provides evidence that conditions may have become more favorable for achieving gender equality throughout the labor market.

## BIOGRAPHICAL SKETCH

Jocelyn Fischer has a Bachelor of Arts in Economics from Smith College and a Master of Arts in Sociology from Cornell University. Her research interests include issues related to gender, family, work and economic security, and social stratification. Prior to entering graduate school, she served as Special Assistant to the President at the Institute for Women's Policy Research.

ACKNOWLEDGEMENTS

I gratefully acknowledge the feedback and support I received from numerous people in the development of this dissertation. First, I thank my doctoral committee members: my chair Kelly Musick, my co-chair Kim Weeden, and Daniel Lichter. Their expert feedback and guidance strengthened my dissertation and shaped the researcher I have become. Kelly was exceedingly generous with her time and clearly invested in providing me with top-rate guidance and support. I deeply appreciate her thoughtful feedback and assistance with time management. Kim provided me with incisive feedback on my written work and much practical guidance in navigating my research. I am so grateful for the important role she played in the development of my research and skills. Dan offered wonderful ideas for my papers and was always a joy to work with. I also received input and guidance from countless other professors in the development of this dissertation. I do not list them here, as I would surely unintentionally omit some names, but I am very grateful for their feedback. I additionally thank the members of my student work group for their support and feedback, including Chris, Lauren, and Yuanyuan. They were patient in listening to my concerns about my work and helpful in their suggested solutions to those concerns.

I thank my family for all their support. I appreciate my parents' understanding of the time and energy required to write a dissertation, their generous assistance with cooking and other personal chores, and their encouragement of me. I thank Aunt Ali, Jonathan, and Abra for their support of my work and understanding of my time constraints. And I thank Amalia and the newly-arrived Ayla because the sunshine they bring to my life kept my spirits up.

My dear friend Sophie was constantly encouraging and understanding. I appreciate her support.

Finally, I am so grateful to Chris. He helped me to mull over methodological issues, provided me with a great deal of affirmation, and was understanding of the time and energy required to write a dissertation. He also added balance to my life, helping me to escape my work and bringing security, passion, and fun to my life.

TABLE OF CONTENTS

# CHAPTER 1:

# PERCEIVED JOB INSECURITY AND THE DIVISION OF HOUSEWORK IN COUPLES

## Introduction

Women continue to spend more time on housework than men, despite a period of marked progress from the 1960s to the 1990s when women's housework time decreased and men's increased (Sayer, 2016). This gender inequality is particularly pronounced among married and cohabiting men and women (South and Spitze, 1994; Sayer, 2016). Because time spent in housework has negative implications for personal earnings (Hersch, 2009; Qi and Dong, 2016) and the unequal division of housework is negatively related to relationship satisfaction and quality (Lavee and Katz, 2002; Stevens, Kiger, and Riley, 2001), inequalities in housework raise concerns about women's economic well-being and the degree to which women are able to achieve their goals both inside and outside the family.

A large and established literature examines the division of housework within couples and how it is determined (e.g. Bittman et al., 2003; Brines, 1994; Killewald & Gough, 2010; Pailhé et al., 2019; Schneider, 2011). The major perspectives guiding the study of housework include, relative resources, time availability, and gender, all of which assume that partners' economic characteristics, such as their earnings and work hours, affect how couples divide housework.

I argue that perceived job insecurity might also affect how partners divide housework, as well as their earnings and work time. Over the past several decades, liberal labor markets transformed from those that offer stable work to those that offer much less stable work. Levels of perceived job insecurity have grown over the past several decades in liberal labor markets such as in the United States and the United Kingdom (Choonara, 2019; Gallup Economy, 2013;

Kalleberg, 2011; Lowe, 2000). Perceived job insecurity in the proposed study is defined as an individual's estimate of how likely it is that they will lose their job in the near future.

On one hand, the relative resources perspective posits that self-interested partners leverage their perceived job insecurity in order to negotiate out of doing housework. On the other hand, a view of partnerships as cooperative and collaborative (e.g., Goldscheider et al., 2015; Oppenheimer, 1994) suggests that partners might work together to weather bouts of job insecurity.

Specifically, the relative resources perspective views the division of housework between partners in a couple as a function of the resources each partner brings to the relationship and predicts that the balance of power in a relationship will favor the partner with more resources relative to the other partner. This power allows the partner with more resources relative to their partner to be able to attain more desirable outcomes for themselves through bargaining. Because the relative resources perspective assumes that housework is unpleasant, the partner with more resources is predicted to use those resources to bargain out of housework. The relative resources perspective is typically studied in the housework literature by examining the role of partners' relative earnings and educational levels (e.g., Bianchi et al., 2000; Bittmann et al., 2003; Davis and Wills, 2014). I argue that perceived job security is a resource as well: it not only facilitates large purchases, such as a house, but provides assurance that one partner will continue to pull his or her weight, economically, within the partnership. I expect that the partner with more job security will use this resource to bargain their way out of housework.

The relative resources perspective assumes that partners are self-interested and act in ways to maximize their own outcomes. An alternative view sees partnerships as involving more mutual cooperation and support (Becker, 1991; Esping-Andersen and Billari, 2015; Goldscheider

et al., 2015; Oppenheimer, 1994), wherein both partners work toward a shared goal. In this view, partners might join forces to weather periods of job insecurity. Specifically, if one partner's job insecurity increases relative to that of the other partner, the other partner may increase their housework contribution in order for the partner experiencing greater job insecurity to focus more of their efforts on keeping their job. However, if both partners experience high levels of job insecurity, the couple may reallocate housework time so that the partner with lower earnings or earnings potential does more housework, because it may be impossible for both partners to perform a reduced housework load to focus on keeping their jobs.

The current study investigates the relationships between women's and men's perceived job insecurity and their division of time spent in housework among dual-earner, different-sex couples using nationally representative, panel data from the United Kingdom. It describes how couples' divisions of time spent in housework change with the levels of perceived job insecurity of the partners.

## Perceived Job Insecurity and Family Life

A basic conceptual distinction made in the literature on perceived job insecurity is between cognitive job insecurity and affective job insecurity (Kiem et al. 2014; Chung and Mau 2014). Cognitive job insecurity is an individual's estimate of how likely it is that they will lose their job in the near future, while affective job insecurity is the fear, concern, or stress an individual feels about their likelihood of losing their job in the near future (Chung and Mau 2014). Another conceptual distinction differentiates job insecurity from labor market insecurity (Kiersztyn 2017). The former refers to the possibility of losing one's current job and the latter refers to the possibility of finding a comparable job in the labor market if one were to lose his/her

current job (Kiersztyn 2017). Finally, *employment insecurity* combines one's (cognitive or affective) job and labor market insecurity (Chung and Mau 2014), identifying people who anticipate a job loss and difficulty finding a comparable job (Kalleberg, 2011). Notably, all of these forms of job and labor market insecurity are subjective, meaning that two individuals in the same job and with the same skills may perceive different levels of job and labor market insecurity (Kiem et al. 2014). Perceived insecurity can, of course, change throughout the career and within the same job spell.

This paper focuses on cognitive job insecurity, the most frequently used conceptualization in the literature. However, all forms of insecurity have risen over the past several decades in liberal market economies, with the possible exception of labor market insecurity (Choonara, 2019; Fullerton and Wallace, 2007; Kalleberg, 2011). The general trend of increased perceived job insecurity goes hand-in-hand with evidence that objective job conditions have become less secure in terms of higher rates of non-permanent jobs (e.g., temporary contracts) and lower average job tenure (Kalleberg and Vallas 2017) even as job tenure of mothers has increased (Hollister 2014). Perceived job insecurity fluctuates with the business cycle, but average levels have increased in liberal market economies such as the United States and the United Kingdom after adjusting for cyclical labor market conditions and changes in the sociodemographic composition of the labor market over the past few decades, suggesting a secular increase in levels of perceived insecurity (Kalleberg 2011). For example, the General Social Survey asks how likely you think it is that you will lose your job in the next 12 months (answer options include: "very likely," "fairly likely," "not too likely," "not at all likely"). Adjusted for the unemployment rate, the proportion of respondents who answered "not at all likely" fell from about .65 to about .55 between 1977 and 2002 (Fullerton and Wallace 2007).

The effect of perceived job insecurity on family life is a burgeoning area of research (Mauno and Lim, 2017). Mauno and Lim (2017) reviewed the literature on the relationships between job insecurity and family-related outcomes, including studies that defined job insecurity as related to the threat of losing one's job as well as related to the threat of losing specific characteristics of one's job. They found that perceived job insecurity is associated with higher work-to-family conflict, higher family-to-work conflict, poorer marital quality (more dissatisfaction, more tension, and poorer adjustment), and poorer family functioning (Mauno and Lim, 2017). Moreover, fathers' cognitive and affective job insecurity might be negatively related to their time spent with children in some activities (Roeters et al., 2009; Lim and Loo, 2003; Zhao et al., 2012; though see Roeters et al., 2010), while mothers' cognitive and affective job insecurity might not be related to their time spent with children, at least controlling for other characteristics of mothers (Roeters et al., 2010; Roeters et al., 2009; Lim and Loo, 2003). At the same time, (cognitive and affective) perceived job insecurity might increase paid work time (Bluestone and Rose, 1998; De Cuyper et al., 2008; Richter et al., 2010; Stewart and Swaffield, 1997; though see Fischer et al., 2005).

Research on how partners' perceived job insecurity affects how they *divide* paid and unpaid work is very limited. Gerson (2017a, 2017b) examined the role of job insecurity in the division of paid work and child care among people in the Silicon Valley and the New York City Metropolitan area through in-depth interviews. Among couples, the partner with the more stable and more time-demanding job was usually assigned the role of the main breadwinner, while the other partner focused on care work. This study did not examine housework. Nelson and Smith (1998), who conducted in-depth interviews and a random survey of two-parent families in rural

Vermont, compared the division of paid work, child care, and housework between "good job" families (those in which at least one family member was able to find steady, full-time, permanent work) and "bad job" families (those in which the members could only find insecure or part-time work). They found that the good job families were more likely to have both partners engage in paid work, as compared with the bad job families, because the steady job in the "good job" families often comes with the time flexibility and job security to allow the partner with that job to take time off work for their family responsibilities without getting fired as well as the resources necessary to keep two partners employed such as a second car. They also found that although women partners are primarily responsible for housework and child care in both household types, the men in the "good job" families do less housework than their partners because they work more hours, while the men in the "bad job" families simply resist doing housework even though they do not have the employment to absolve them from housework responsibility. The authors suggest that these men assert their claim to traditional privileges because they have low self-esteem due to their economic situation. A limitation of this study was that a number of factors were confounded with job insecurity (low wages; part-time status, etc.), so it did not offer clear insight into the effects of job insecurity. Given this limitation, there is little research that has systematically examined how job insecurity is related to how couples divide housework.

## Theoretical Frameworks on Perceived Job Insecurity and Housework

The below discussion outlines theoretical expectations regarding the causal role of partners' relative levels of cognitive perceived job insecurity on the relative time they spend on housework.

The relative resources perspective views the division of housework within couples as a result of (verbal or non-verbal) negotiations between self-interested partners (Bittman et al., 2003; Coltrane, 2000). Specifically, partners use the resources they bring to the relationship to bargain for desirable outcomes for themselves in the relationship (Geist and Ruppanner, 2018; Shelton and John, 1996). If partner A has more resources (relative to what partner B would have absent the relationship) than partner B (relative to what partner A would have absent the relationship), then partner A will have more power in these negotiations and will be able to bargain for more desirable outcomes for themselves than partner B will be able to do (England and Farkas, 1986, p. 96).[1] This is because partner B has more to lose than partner A if the relationship ended (England and Farkas, 1986). Specifically, what happens in exchanges between partners is that B is not likely to end or decrease exchanges with A when B has limited access to resources outside their relationship with A. A knows that and so does not have to give as much as B during their exchanges, and B will keep exchanging with A under these conditions (Bittman et al 2003). The relative resources perspective assumes that housework is unpleasant and empirical evidence confirms that most people do not like doing housework (Coltrane, 2000, p. 1210). Given this, the relative resources perspective predicts that partners will use their resources to try to bargain out of doing housework.

What constitutes a "resource" in these negotiations? According to the relative resources perspective, "A resource may be defined as anything that one partner may make available to the other, helping the latter satisfy his needs or attain his goals." (Blood and Wolf, 1960, p. 12).

[1] Another way of putting this is that, if the gains to B of being in the relationship with A are bigger than the gains to A of being in the relationship, A will have more power in negotiations.

The relative resources perspective assumes that partners' earnings are a resource. The relative resources perspective predicts that partners' relative earnings affect partners' relative housework time (Bittman et al., 2003). Relative earnings increase power because, for example, if partner A's relative earnings increase, holding all else equal, partner A gains even more resources (relative to what partner B would have absent the relationship) and partner B loses resources (relative to what partner A would have absent the relationship).

I argue that the relative resources perspective similarly predicts that partners' relative levels of job insecurity affect partners' relative housework time. Let's say B has an unstable job and A has a stable job. B's job insecurity means that he/she is less likely to be able to contribute to the household's stock of economic resources in the future. As such, the more relative job insecurity B has, the less power B has relative to A because, for example, if B's relative job insecurity increases, holding all else equal, B loses resources (relative to what partner A would have absent the relationship) and partner A gains resources (relative to what B would have absent the relationship). Therefore, the relative resources perspective predicts that increases in one partner's level of job insecurity, relative to the other partner's job insecurity, will result in the first partner increasing their share of the housework.

The relative resources perspective clearly views housework as the result of negotiations between self-interested partners seeking to maximize their own outcomes. However, partners can also act cooperatively. For example, Oppenheimer (1994) suggests that partners pool their resources together in order to increase the family's total wealth and that partners' dual employment serves as a kind of insurance in case something happens to one of the partners. Similarly, Becker's (1991) model of specialization assumes that partners

are magnanimous in sharing their earnings with each other. Indeed, several authors argue that partnerships are increasingly becoming more collaborative and cooperative as families and social institutions have started to adjust to women's increased labor force participation (Esping-Andersen and Billari, 2015; Goldscheider et al., 2015). In these partnerships, men and women both contribute to paid and unpaid work and both partners do housework to support each other's paid work responsibilities (Esping-Andersen and Billari, 2015; Goldscheider et al., 2015).

In this collaborative view of partnerships, perceived job insecurity would affect housework quite differently than in the relative resource model. If one partner's perceived job insecurity increased relative to that of the other partner, the first partner might temporarily decrease their share of housework and/or increase their paid work time in order to hold on to their job while it is under threat. Similarly, the partner with more job security may devote more time and energy to housework to allow the job-insecure partner to devote more time and energy to paid work.

However, when a couple enters a circumstance in which both partners experience high (and equal levels of) job insecurity, an alternative strategy is also consistent with the view of couples as collaborative and working toward a shared goal. They might reallocate housework responsibility away from the partner with higher earnings or earnings potential in order to let that partner focus more on their work in an effort to keep their job. Although housework could be reallocated such that both partners spend less time on housework than they would when they each have low job insecurity by relaxing their housework standards (in which case relative housework time would not change, as the logic presented in the prior

paragraph predicts), such a strategy might not allow each partner to decrease their housework time substantially, given that every couple has a certain amount of housework that needs to be completed. As such, when partners enter a situation in which both partners have high job insecurity, they might, instead, choose to decrease the relative housework time of the partner with higher earnings or earnings potential (and to increase the other partner's relative housework time) in order to maximize the couple's chances of economic survival. One exception to this prediction occurs if, when both partners' jobs become insecure, the relative job insecurity of the partner with higher earnings or earnings potential decreases. This would be the case, for example, if a couple transitions from the breadwinner having high job insecurity and the other partner having low job insecurity in time 1 to both partners having high job insecurity in time 2. In this case, it's unclear if the relative housework of the partner with high earnings or earnings potential would decrease or stay the same because these couples might have already been prioritizing that partner's job in time 1, given their higher relative job insecurity in time 1. So their relative housework time might not change or it could decrease if, when these couples enter a precarious economic situation, they double down on a strategy to give the breadwinner an even better chance at keeping their job, given the couple's more precarious situation.

In summary, the relative resources perspective predicts that increases in a person's perceived job insecurity relative to that of their partner will positively affect their relative housework time because it decreases their bargaining power. However, an alternative view suggests that increases in a person's perceived job insecurity relative to that of their partner will negatively affect their relative housework time because they will focus their energy on

work while the partner with the more secure job will provide support by increasing their relative housework time. However, if both partners' jobs become insecure, this view also predicts that the partner with greater earnings or earnings potential might decrease his/her housework contribution in an effort to hold on to his/her job (though, if the relative job insecurity of the partner with higher earnings or earnings potential decreases when they enter this precarious situation, their relative housework time would either stay the same or decrease).

## Other Predictors of Housework

Several other key variables are thought to influence relative housework time. Couple's total usual weekly earnings affect couples' ability to purchase market substitutes for housework. Partners' relative time spent in paid work might affect their relative housework time (Blood & Wolf, 1960; Coverman, 1985). Age and partner's age capture potential life-cycle effects on housework (Coltrane, 2000), though the relationships might be curvilinear (Schneider, 2011). Of course, partner's relative earnings might be a relative resource (Coverman, 1985). Partners' educational levels are also thought to affect their relative housework time because education affects gender attitudes (Brines 1994). And the presence of children in the household, especially young children, increases specialization (Jaspers & Verbakel, 2013).

## Data and Methods

### Data:

This chapter investigated whether changes in relative levels of own and partner's perceived job insecurity are associated with changes in the division of housework among dual-earner couples using fixed-effects models. It used data from Understanding Society, a nationally representative household, panel survey of the United Kingdom that started in 2009 (University of Essex, Institute for Social and Economic Research, 2021). Understanding Society collects data from all household members ages 10 and over. It interviews all households once a year, though information on the current study's key independent variable (partners' relative levels of perceived job insecurity) is only collected every other year in Wave 2 (2010-12), Wave 4 (2012-14), Wave 6 (2014-16), and Wave 8 (2016-2018). The Understanding Society dataset is an expansion of the British Household Panel Survey, which started in the early 1990s. An expanded sample size was added when Understanding Society was started in 2009, but panel data dating back to the early 1990s is available for the original households of the British Household Panel Survey.

The analytical sample of the current study is limited to dual-earner, different-sex couples in Waves 2, 4, 6, and 8 for whom both partners are between the ages of 18 and 70 and for whom there is not missing data on any of the dependent or independent variables as well as gender. Specifically, individual-level data from Waves 2, 4, 6, and 8 were pooled together in order to estimate the fixed-effects models. In order to get the data to the couple-level, the data was then limited to men ages 18 to 70 in a different-sex, dual-earner relationship with a partner age 18 to 70 without any missing data on the variables used in the analysis. I then dropped men who switched live-in partners between waves of the data (0.98% of the analytical sample). Finally,

only men who completed full interviews every wave from Wave 2 through Wave 8 were kept in the analytical sample because the appropriate weights provided by the Understanding Society dataset for longitudinal analyses that correct for non-response between all waves of the data in the analytical sample is only available for this group.

5.5% of the couples that met the sample criteria (excluding that regarding missing data) have missing data on at least one variable.[2] Dropping cases with missing values on any variable in the analysis does not bias the estimates of regression coefficients if the probability of having missing data on the variables does not depend on the values of the dependent variable (Allison, 2001; Fox, 2008), which is relative housework time in the current analysis. In a supplemental analysis, I did not find evidence that cases with and without any missing data differed in their relative housework time (among cases without missing data on relative housework). However, I have no way of testing whether or not missingness on relative housework depends on the values of relative housework and 1.55% of cases have missing data on this variable. Therefore, the current analyses could certainly be biased from the decision to use listwise deletion. It is hard to predict the direction of the bias, but the bias is likely small, given that only 5.5% of cases were dropped due to missing data.

As with any panel dataset, Understanding Society has attrition. Specifically, in Wave 2 there were 5,788 different-sex couples of partners ages 18 to 70 with no missing data and with full interviews, in Wave 4 there were 4,108 such couples with full interviews in Wave 2 and Wave 4, in Wave 6 there were 2,961 couples with full interviews in Wave 2 through Wave 6,

[2] This percentage does not take into account the 90 cases that were already dropped due to missing data (from either partner) on gender, age, and employment.

and in Wave 8 there were 2,333 couples with full interviews in Wave 2 through Wave 8.[3] The weights used in the current analysis attempt to correct for correlates of non-response between each wave from Wave 1 through Wave 8.

**Dependent Variable:**

Each household adult in Understanding Society is asked, "About how many hours do you spend on housework in an average week, such as time spent cooking, cleaning, and doing laundry?" Relative usual hours of housework, the current study's dependent variable, was calculated by dividing the man's usual housework hours per week by the total usual housework hours per week reported by both partners. Time diary measures of housework time are more accurate than questionnaire ("stylized") measures of housework time such as those collected in Understanding Society. In particular, compared with time-diary measures, stylized measures are thought to be affected more substantially by biases stemming from recall error, social desirability, and differences in respondents' definitions of what activities are considered housework (Kan 2014). Past research has suggested that stylized measures produce higher estimates of housework time than do time diary measures and that the size of the difference between stylized and diary estimates, the measurement error, is related to gender, education, and total housework time (Kan 2014, p. 2969), but that most of the measurement error is random (Kan 2014, p. 2980; Kan and Pudney, 2008). In models of housework time based on stylized

[3] Although the current analysis only used cases with full interviews from Waves 2 through 8, the analytical sample contained 3,637 couples (and 10,408 couple-years). The reason why there were 2,333 couples in Wave 8 with full interviews from Waves 2 through 8 and 3,637 such couples in the full sample is because the sample criteria (different-sex, dual-earner couples in which both partners are ages 18 to 70) meant that not all couples in my analytical sample stayed in my analytical sample across all 4 waves of the data. Therefore, the number of couples in a given Wave in my analytical sample will be less than the number of couples in my analysis.

estimates, this measurement error will bias the coefficients of independent variables that are associated with this error (e.g., gender and education), but the bias is small because most of the measurement error in the dependent variable is random (Kan, 2014, p. 2970, Kan and Pudney, 2014).

**Key Independent Variable:**

Relative perceived job insecurity was constructed using information from the question, asked of both partners, asking, "How likely do you think it is that you will lose your job in the next 12 months?" The answer options included: *very unlikely, unlikely, likely, very likely*, and *don't know*. Self-employed respondents were not asked this question. Relative perceived job insecurity is coded through a set of dummy variables indicating the job insecurity of each partner, with the reference category being couples in which both the man and woman partner answered "unlikely" or "very unlikely" to the job insecurity question. Eight dummy variables covered all other combinations of partners' responses to the job insecurity questions. The first dummy variable indicates whether the men answered "unlikely" or "very unlikely," hereby referred to as simply "unlikely" or as having "low job insecurity" and whether the woman answered "likely," "very likely," or "don't know," hereby referred to simply as "likely" or as having "high job insecurity." The second indicated whether the man had low job insecurity and the woman was self-employed. The remaining dummy variables covered all other combinations of partners' levels of job insecurity including: "man likely/woman unlikely," "man likely/woman likely," "man likely/ women self-employed," "man self-employed/women unlikely," "man self-employed/woman likely," and "man self-employed/woman self-employed." Comparing the coefficients for "man unlikely/woman likely," "man likely/woman unlikely," and "man

likely/woman likely" will clearly provide information of how changes in partners' relative job insecurity are related to changes in relative housework time. Although the concept of perceived job insecurity is not completely applicable to self-employed individuals because they can't be fired, by comparing the coefficients for "man self-employed/woman unlikely" and "men self-employed/woman likely" as well as "man unlikely/woman self-employed" and "man likely/woman self-employed," the current study is able to analyze how changes in partners' relative levels of job insecurity are related to their relative housework time. Supplemental analyses discussed in the results section re-estimated the models after dropping cases for which either the man or woman answered "don't know" to the job insecurity question. These analyses showed that the main results were not influenced by the decision to categorize the "don't know" job insecurity category as having high job insecurity. Further supplemental analyses discussed in the results section estimated models that operationalized relative job insecurity by placing the "unlikely" and "very unlikely" answers in separate categories. Those estimates showed that the coefficients associated with the "unlikely" and "very unlikely" job insecurity categories did not differ and therefore justified the decision to combine those categories. A similar analysis was not performed for the "likely" and "very likely" categories because of the small sample sizes associated with those categories (Table 1).

Cognitive job insecurity is typically measured in one of two ways in the literature (Chung and Mau 2014). First, respondents are asked to rate how much they agree with the statement "my job is secure" (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree) (Chung and Mau 2014). Second, respondents are asked to rate how likely they are to lose their job in the near future, usually specified as within one year or six months (Chung and Mau 2014). These two main operationalizations produce different responses, possibly because

the first question is more abstract and may allow respondents more space to interpret "secure" in various ways, while the second operationalization refers to a more concrete outcome within a specific time frame and presumes a specific definition of job insecurity (Chung and Mau 2014). The measure in my dataset uses the second kind of measure of perceived job insecurity.

**Method:**

This analysis aimed to describe how partners' relative housework time changes when partners' relative job insecurity changes within couples. In order to describe these patterns, fixed-effect models were estimated with standard errors clustered at the couple-level, following Kan (2018). Because fixed-effects models examine within-couple changes in the variables of interest, they hold constant unobserved, time-invariant variables, such as partners' innate ability in market work and cultural backgrounds.

Three main models were estimated. Model 1 included my key explanatory variable, relative job insecurity. Model 2 added controls for possible confounders: age, partner's age, education, and partner's education.[4] Model 3 further added controls for variables through which relative job insecurity might affect housework (potential mediators), though some of these variables may also be potential confounders: partners' relative work hours per week, number of children in the household, relative earnings, and partners' total earnings.[5] Supplemental analyses

[4] Although partners' races/ethnicities are also possible confounders of the relationship between relative job insecurity and relative housework time, these variables are typically constant over time, and hence absorbed in the fixed-effects models.

[5] To clarify, the theoretical perspectives on the causal effect of relative job insecurity on relative housework discussed in the background section regard the direct effect of relative job insecurity on relative housework, net of these potential mediators. While the cooperative model does suggest that relative job insecurity could influence partners' relative paid work hours if the partner with increased relative job insecurity increased their work time (so

described in the results section also examined whether the relationships between relative job insecurity and relative housework differed by partners' relative earnings and educational levels in order to examine the predictions of the collaborative model involving couples decreasing the housework of the partner with higher earnings or earnings potential when both partners perceived their jobs to be highly insecure.

This analysis provides a rich description of how changes in partners' relative job insecurity is related to changes in their division of housework time. In doing so, it's also able to account for many potential time-varying confounders and all time-invariant confounders of the relationship between relative job insecurity and relative housework. However, it is important to understand that a number of time-varying potential confounders cannot be controlled for in the current analysis. For example, time-varying characteristics such as unmeasured labor market skills and job performance could affect the division of housework and relative perceived job insecurity. Similarly, strained relationships with work colleagues and managers could sap one's energy left for housework relative to one's partner as well as increase their relative perceived job insecurity. Partners' commitments to their relationship could also affect both relative perceived job insecurity and the division of housework. The coefficient estimates in the prior models could also be affected by reverse causality, stemming from the relationships between relative housework and several of the independent variables.[6] As such, the current analysis does not

relative paid hours would change), the predictions discussed in the background section regard the direct effect of relative job insecurity.

[6]Authors sometimes try to account for reverse causality in fixed-effects and random-effects models by lagging the independent variables. However, Bellemare et al. (2017) explain how this approach assumes that unobserved variables are serially uncorrelated (i.e., not correlated across waves of the data). Moreover, simulations have shown how this approach produces biased coefficient estimates (Leszczensky and Wolbring, 2019). Authors have also lagged the independent variables in the first-difference model in order to account for reverse causality. However, Vaisey and Miles (2017) found that the estimates are severely biased if the model does not match the real-world causal lags (e.g., if the model lags the independent variables by one year, but X affects Y contemporaneously).

estimate causal relationships, but paints a rich portrait of how the division of housework changes when partners' relative job insecurity changes.

## Descriptive Statistics

Table 1 presents descriptive statistics. Again, the estimates in the current study come from couple-level data pooled together from Waves 2, 4, 6, and 8. That is, these tables present statistics at the level of the couple-year. Table 1 shows that, for the greatest concentration of couples, 64 percent, both partners perceive the likelihood of job loss in the next year to be unlikely. In the next largest concentration of couples, 12 percent, the man is self-employed and the woman has low job insecurity. For a sizeable minority of the sample, one or both partners perceive their likelihood of job loss to be likely. This includes the 6 percent of couples for whom the man has low job insecurity and the woman has high job insecurity, the 6 percent of couples for whom the man has high job insecurity and the woman has low job insecurity, the 1 percent of couples for whom both partners have high job insecurity, the 0.36 percent of couples for whom the man has high job insecurity and the woman is self-employed, and the 1 percent of couples for whom the man is self-employed and the woman has high job insecurity.

---

Thus, this strategy will only work if lagged X affects Y and this is accurately specified in the model. Simulations have confirmed this result (Leszczensky and Wolbring, 2019). I can't use first-difference models to account for reverse causality in my study because I have X variables that might suffer from reverse causality, but they might contemporaneously affect Y. For example, this might be the case for relative perceived job insecurity as well as usual hours of paid work. Extensions to a model developed by Arellano and Bond (1991) as well as a cross-lagged panel model with fixed effects may be able to account for reverse causality (Leszczensky and Wolbring, 2019) and future work would do well to use these methods.

Table 1 also presents descriptive statistics of relative housework time. As expected, men do much less housework than their partners: on average, only 33 percent of a couple's total time spent on housework is completed by men.

**Table 1.** ***Sample Characteristics***

| | |
|---|---|
| ***N*** | 10,408 |
| **Relative Likelihood of Job Loss in Next Year** | |
| Man Unlikely/Woman Unlikely | 0.64 |
| Man Unlikely/Woman Likely | 0.06 |
| Man Unlikely/Woman Self-Employed | 0.05 |
| Man Likely/Woman Unlikely | 0.06 |
| Man Likely/Woman Likely | 0.01 |
| Man Likely/Woman Self- Employed | 0.00 |
| Man Self- Employed/Woman Unlikely | 0.12 |
| Man Self-Employed/Woman Likely | 0.01 |
| Man Self-Employed/Woman Self-Employed | 0.04 |
| **Mean Share of Couple's Housework** | 0.33 |

Notes: 2010-2018 Understanding Society Dataset. N's are unweighted; all else is weighted. "Likely" captures respondents or respondents' partners who indicated that it is "likely," "very likely," or they "don't know" how likely it is that they will lose their job in the next year. "Unlikely" captures respondents or respondents' partners who indicated that they "unlikely" or "very unlikely" to lose their job in the next year.

Table 2 presents average relative housework time by the relative levels of perceived job insecurity of partners. Overall, relative housework time varies modestly by relative job insecurity. Wald tests confirmed this. Most tests showed insignificant differences in average relative housework by partners' relative job insecurity.[7] So far, results do not provide strong evidence that there is a relationship between relative job insecurity and relative housework time.

[7] However, the "man self-employed/woman self-employed" group did less relative housework than all the other groups, except for the "man unlikely/woman self-employed," "man likely/woman likely," and "man likely/woman self-employed" groups. Similarly, the "man unlikely/woman self-employed" group did less housework than all groups except for the "man likely/woman likely," "man likely/woman self-employed," and "man self-employed/woman self-employed" groups.

Fixed-effects models were next estimated to examine how changes in relative job insecurity within couples are associated with changes to their relative housework time.

**Table 2.** ***Descriptive Table of Relative Housework Time by Relative Job Insecurity***

| N | 10,408 |
|---|---|
| **Relative Job Insecurity** | |
| Man Unlikely/Woman Unlikely | 0.333 |
| Man Unlikely/Woman Likely | 0.345 |
| Man Unlikely/Woman Self-Employed | 0.298 |
| Man Likely/Woman Unlikely | 0.342 |
| Man Likely/Woman Likely | 0.324 |
| Man Likely/Woman Self- Employed | 0.311 |
| Man Self- Employed/Woman Unlikely | 0.323 |
| Man Self-Employed/Woman Likely | 0.353 |
| Man Self-Employed/Woman Self-Employed | 0.280 |

Notes: 2010-2018 Understanding Society Dataset. N's are unweighted; all else is weighted. "Likely" captures respondents or respondents' partners who indicated that it is "likely," "very likely," or they "don't know" how likely it is that they will lose their job in the next year. "Unlikely" captures respondents or respondents' partners who indicated that they "unlikely" or "very unlikely" to lose their job in the next year.

## Multivariate Analyses

Tables 3 displays the estimates of the fixed-effects models of relative housework time. The reference category for the relative job insecurity measure is couples in which both partners have low job insecurity. This discussion will not focus on the estimates of the coefficients for couples in which at least one partner is self-employed because it is unclear what their relative job insecurity is compared to the reference category. Nevertheless, these coefficients are meaningfully analyzed through postestimation f-tests. Specifically, for each model, post-estimation f-tests compared the magnitudes of the following coefficients: “man likely/women unlikely” and “man likely/ woman likely,” “man self-employed/woman unlikely” and “man self-

employed/woman likely," "man unlikely/women likely" and "man likely/women likely," "man unlikely/woman self-employed," and "man likely/women self-employed."

**Table 3.** ***Estimates of Fixed-Effects Models of Relative Housework Time***

| VARIABLES | (1) | (2) | (3) |
|---|---|---|---|
| **Relative Job Insecurity (reference=man unlikely/woman unlikely)** | | | |
| Man Unlikely/Woman Likely | 0.01[MM] | 0.01[MM] | 0.01[MM] |
| | (0.01) | (0.01) | (0.01) |
| Man Unlikely/Woman Self-Employed | -0.03* | -0.03** | -0.01 |
| | (0.02) | (0.02) | (0.01) |
| Man Likely/Woman Unlikely | 0.01[WW] | 0.01[WW] | 0.01[WW] |
| | (0.01) | (0.01) | (0.01) |
| Man Likely/Woman Likely | -0.04**[MMWW] | -0.03*[MMWW] | -0.03*[MMWW] |
| | (0.02) | (0.02) | (0.02) |
| Man Likely/Woman Self-Employed | -0.03 | -0.03 | -0.01 |
| | (0.04) | (0.04) | (0.04) |
| Man Self-Employed/Woman Unlikely | 0.02* | 0.02* | 0.02 |
| | (0.01) | (0.01) | (0.01) |
| Man Self-Employed/Woman Likely | 0.02 | 0.01 | 0.00 |
| | (0.02) | (0.02) | (0.02) |
| Man Self-Employed/Woman Self-Employed | -0.01 | -0.02 | -0.01 |
| | (0.02) | (0.02) | (0.02) |
| **Man's Age** | | 0.00 | 0.01 |
| | | (0.01) | (0.01) |
| **Man's Age Squared** | | 0.00 | -0.00 |
| | | (0.00) | (0.00) |
| **Woman's Age** | | -0.01 | -0.01 |
| | | (0.01) | (0.01) |
| **Woman's Age Squared** | | 0.00 | 0.00 |
| | | (0.00) | (0.00) |
| **Man's Education (reference=less than higher education degree)** | | | |
| Higher Education Degree | | 0.03 | 0.03 |
| | | (0.03) | (0.03) |
| **Woman's Education (reference=partner has less than higher education degree)** | | | |
| Higher Education Degree | | 0.01 | -0.01 |
| | | (0.02) | (0.02) |
| Inapplicable | | 0.02* | 0.01 |
| | | (0.01) | (0.02) |
| **Relative Hours of Work Per Week** | | | -0.25*** |
| | | | (0.03) |
| **Number of Household Children** | | | -0.02*** |
| | | | (0.00) |
| **Couple's Total Monthly Income** | | | 0.00 |
| | | | (0.00) |
| **Relative Income** | | | -0.03 |
| | | | (0.02) |
| **Relative Income Squared** | | | 0.00 |
| | | | (0.02) |
| Constant | 0.33*** | 0.40*** | 0.42*** |
| | (0.00) | (0.10) | (0.11) |
| Observations | 10,408 | 10,408 | 10,408 |
| R-squared | 0.003 | 0.007 | 0.033 |
| Number of Couples | 3,637 | 3,637 | 3,637 |

Notes: 2010-2018 Understanding Society Dataset. N's are unweighted; all else is weighted. "Likely" captures respondents or respondents' partners who indicated that it is "likely," "very likely," or they "don't know" how likely it is that they will lose their job in the next year. "Unlikely" captures respondents or respondents' partners who indicated that they "unlikely" or "very unlikely" to lose their job in the next year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. A significant difference in the term with the other job insecurity category for men, based on a post-estimation F-test is indicated by: MMM p < .01. MM p < .05.M p < .10. A significant difference in the term with the other job insecurity category for women, based on a post-estimation F-test is indicated by: WWW p < .01. WW p < .05.W p < .10.

Model 1 just controlled for relative job insecurity and its coefficient estimates show how relative housework time changes, on average, when relative job insecurity changes. Overall, the results showed that changes in relative job insecurity were only associated with changes in relative housework when couples transitioned into a scenario in which both partners have high job insecurity. This transition is associated with decreases in men's relative housework. Specifically, the coefficient for "man likely/woman likely" is negative (p<.05) and can be interpreted to mean that, when relative job insecurity goes from both partners having low job insecurity to both partners having high job insecurity, the man's relative housework time decreases by 4 percentage points, on average. This result is not consistent with the relative resources perspective on housework, which predicts a null effect because relative job insecurity did not change, but might be consistent with the collaborative perspective, which predicts that the relative housework time of the partner with higher earnings or more human capital could decrease, given that men tend to earn more than their partners. The post-estimation tests similarly showed that the coefficient for "man unlikely/woman likely" and "man likely/woman unlikely" are larger than the coefficient for "man likely/woman likely." These results might again be consistent with the collaborative perspective on housework if the men's relative housework time decreases because they have greater earnings or earnings potential than their

partner.[8] By contrast, the relative resources perspective predicts that the "man likely/woman unlikely" coefficient would be larger than the "man likely/woman likely" coefficient, as men's relative job insecurity is larger in the former case, but does not predict that the coefficient for "man unlikely/woman likely" would be larger than that for "man likely/woman likely." Models 2 and 3 added controls for potential confounders and mediators, but the results largely did not change. In order to examine how partners' absolute housework time changes when they both experience high job insecurity, I re-estimated the main models, but for the man's absolute housework time and then the woman's absolute housework time (results not shown). The "man likely/woman likely" coefficients and their associated postestimation tests were not significant, but the point estimates showed that men decrease their absolute housework and women increase it when both partners' jobs become insecure. In summary, the estimates of the fixed-effects models indicated that, when couples enter into a precarious economic situation in that both partners have high job insecurity, the man's relative housework time decreases.

[8] I argued that the collaborative perspective predicted that, when couples enter into a situation in which both partners have high job insecurity, that partners' relative housework might decrease. Given that men, on average, have higher earnings than women, the finding that the coefficient for "man unlikely/woman likely" is larger than that of "man likely/woman likely" might be consistent with the collaborative perspective. I also argued that the collaborative perspective was ambiguous with regard to whether the partner with higher earnings or earnings potential would decrease his/her relative housework or whether it would stay the same in the case that, when a couple entered a precarious economic situation, the relative job insecurity of the partner with higher earnings or earnings potential also decreased because that couple might have already decreased the relative housework of that partner while they experienced a period of high job insecurity in time 1. Because I did not find that couples adjust their division of housework when just one partner has high job insecurity, the finding that the coefficient for "man likely/woman unlikely" was larger than that for "man likely/woman likely" is exactly what the collaborative model predicts given men's average higher earnings and earnings potential.

**Table 4.** ***Estimates of Supplemental Fixed-Effects Models of Relative Housework Time***

| | Main Model Plus Terms for Man's Lower Relative Earnings | | | Main Model Plus Terms for Man's Lower Relative Education and Higher Relative Education | | |
|---|---|---|---|---|---|---|
| VARIABLES | (1) | (2) | (3) | (1) | (2) | (3) |
| **Relative Job Insecurity (reference=man unlikely/woman unlikely)** | | | | | | |
| Man Unlikely/Woman Likely | 0.01[MM] | 0.01[M] | 0.01[M] | 0.01[MMAA] | 0.01[MMA] | 0.01[MMMAA] |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Man Unlikely/Woman Self-Employed | -0.03* | -0.03** | -0.02 | -0.03* | -0.03** | -0.01 |
| | (0.02) | (0.02) | (0.01) | (0.02) | (0.02) | (0.01) |
| Man Likely/Woman Unlikely | 0.01[WW] | 0.01[W] | 0.01[W] | 0.01[WWBB] | 0.01[WWB] | 0.01[WWWBB] |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Man Likely/Woman Likely | -0.04*[MMWW] | -0.03[MW] | -0.03[MW] | -0.06**[MMWW] | -0.06**[MMWW] | -0.06**[MMMWWW] |
| | (0.02) | (0.02) | (0.02) | (0.03) | (0.03) | (0.03) |
| Man Likely/Woman LikelyXMan Has Lower Relative Earnings than Woman | -0.00 | -0.01 | -0.01 | | | |
| | (0.04) | (0.04) | (0.04) | | | |
| Man Likely/Woman LikelyXMan Has Less Education than Woman | | | | 0.05 | 0.06 | 0.07* |
| | | | | (0.04) | (0.04) | (0.04) |
| Man Likely/Woman LikelyXMan Has More Education than Woman | | | | -0.00[HAABB] | -0.00[HAB] | 0.00[HHBBAA] |
| | | | | (0.04) | (0.04) | (0.04) |
| Man Likely/Woman Self-Employed | -0.03 | -0.03 | -0.01 | -0.03 | -0.03 | -0.01 |
| | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) |
| Man Self-Employed/Woman Unlikely | 0.02* | 0.02 | 0.02 | 0.02* | 0.02* | 0.02 |
| | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) | (0.01) |
| Man Self-Employed/Woman Likely | 0.01 | 0.01 | 0.01 | 0.02 | 0.01 | 0.00 |
| | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) |
| Man Self-Employed/Woman Self-Employed | -0.01 | -0.02 | -0.01 | -0.01 | -0.02 | -0.01 |
| | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) | (0.02) |
| **Man Has Lower Relative Earnings than Woman** | 0.01* | 0.01* | 0.00 | | | |
| | (0.01) | (0.01) | (0.01) | | | |
| **Man Has Less Education than Woman** | | | | 0.01 | 0.02 | 0.02 |
| | | | | (0.02) | (0.03) | (0.03) |
| **Man Has More Education than Woman** | | | | -0.01 | -0.02 | -0.01 |
| | | | | (0.02) | (0.02) | (0.02) |
| **Man's Age** | | 0.00 | 0.01 | | 0.00 | 0.01 |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Man's Age Squared** | | 0.00 | -0.00 | | 0.00 | -0.00 |
| | | (0.00) | (0.00) | | (0.00) | (0.00) |
| **Woman's Age** | | -0.01 | -0.01 | | -0.01 | -0.01 |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Woman's Age Squared** | | 0.00 | 0.00 | | 0.00 | 0.00 |
| | | (0.00) | (0.00) | | (0.00) | (0.00) |
| **Man's Education (reference=less than higher education degree)** | | | | | | |
| Higher Education Degree | | 0.03 | 0.03 | | 0.05 | 0.04 |
| | | (0.03) | (0.03) | | (0.04) | (0.03) |
| **Woman's Education (reference=partner has less than higher education degree)** | | | | | | |
| Higher Education Degree | | 0.01 | -0.01 | | -0.01 | -0.02 |
| | | (0.02) | (0.02) | | (0.03) | (0.03) |
| Inapplicable | | 0.02* | 0.01 | | 0.01 | 0.00 |
| | | (0.01) | (0.02) | | (0.03) | (0.03) |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Relative Hours of Work Per Week** | | | -0.26*** | | | -0.25*** |
| | | | (0.03) | | | (0.03) |
| **Number of Household Children** | | | -0.02*** | | | -0.02*** |
| | | | (0.00) | | | (0.00) |
| **Couple's Total Monthly Income** | | | 0.00 | | | 0.00 |
| | | | (0.00) | | | (0.00) |
| **Relative Income** | | | | | | -0.03 |
| | | | | | | (0.02) |
| **Relative Income Squared** | | | | | | 0.00 |
| | | | | | | (0.02) |
| Constant | 0.33*** | 0.39*** | 0.41*** | 0.33*** | 0.40*** | 0.42*** |
| | (0.00) | (0.10) | (0.10) | (0.01) | (0.10) | (0.11) |
| Observations | 10,408 | 10,408 | 10,408 | 10,408 | 10,408 | 10,408 |
| R-squared | 0.003 | 0.008 | 0.033 | 0.003 | 0.008 | 0.034 |
| Number of Couples | 3,637 | 3,637 | 3,637 | 3,637 | 3,637 | 3,637 |

Notes: 2010-2018 Understanding Society Dataset. N's are unweighted; all else is weighted. "Likely" captures respondents or respondents' partners who indicated that it is "likely," "very likely," or they "don't know" how likely it is that they will lose their job in the next year. "Unlikely" captures respondents or respondents' partners who indicated that they "unlikely" or "very unlikely" to lose their job in the next year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. A significant difference with term with the other job insecurity category for men, based on a post-estimation F-test is indicated by: MMM p < .01. MM p < .05.M p < .10. A significant difference in the term with the other job insecurity category for women, based on a post-estimation F-test is indicated by: WWW p < .01. WW p < .05.W p < .10. A significant effect for couples in which the man earns less than the woman, based on a post-estimation F-test, is indicated by: EEE p<.01. EE p<.05. E p<.10. A significant effect for couples in which the man has less education than the woman, based on a post-estimation F-test, is indicated by: LLL p<.01. LL p<.05. L p<.10. A significant effect for couples in which the man has more education than the woman, based on a post-estimation F-test, is indicated by: HHH p<.01. HH p<.05. H p<.10. A significant difference between the coefficient for "man likely/woman unlikely" and the sum of the coefficients for "man likely/woman likely" and "man likely/woman likelyXman has more education than woman", based on a post-estimation F-test is indicated by: BBB p < .01. BB p < .05. B p < .10. A significant difference between the coefficient for "man unlikely/woman likely" and the sum of the coefficients for "man likely/woman likely" and "man likely/woman likelyXman has more education than woman", based on a post-estimation F-test is indicated by: AAA p < .01. AA p < .05. A p < .10.

Table 4 presents estimates of models designed to examine the possibility that men's relative housework time might decrease when couples enter into a precarious situation because men tend to have greater earnings or earnings potential than their partners. First, I re-estimated the main models, but I also included a dummy variable indicating whether the man earned less than or equal to his partner and an interaction term between that variable and the "man likely/woman likely" variable.[9] These model estimates are presented in the left-hand panel of Table 4. They do not provide strong evidence that the effect of both partners having high job insecurity differs by whether the man earned less than or equal to his partner and, therefore, do not provide strong evidence that men's housework decreases in precarious economic situations

[9] I omitted the relative earnings and squared relative earnings terms in Model 3.

because they tend to have higher earnings than their partners. The interaction term was not significant and its point estimate was small in magnitude. Next, in order to examine whether men's relative housework decreases in precarious situations because they have more human capital than their partner, I included in the main models a dummy variable indicating whether the man had more education than his partner, another dummy variable indicating whether the man had less education than his partner, and interaction terms between each of these variables and the "man likely/woman likely" variable. These estimates are next presented in Table 4. They suggest that there might only be a relationship between partners' transitions into precarious economic situations and relative housework for couples in which the man has at least as much education as the woman. Men with at least as much education as their partner are likely to have higher combined measured and unmeasured human capital than their partner (due to fewer labor force interruptions and longer work hours) and couples in which the man has at least as much education as their partner constitute the majority of the sample (.648), so it is likely the case that the associations found in the main results were driven by men with higher human capital than their partners. The interaction term between whether the man has more education than his partner and "man likely/woman likely" was not significant and its point estimate was small in size. Moreover, postestimation tests provided evidence that the effect of "man likely/woman likely" is negative for couples in which the man has more education ($p<.10$) and that it is also more negative than the effect of "man likely/women unlikely" and "man unlikely/woman likely." These results suggest that the relationship between both partners having high job insecurity and relative housework time does not differ between couples in which the man has more education than his partner and other couples. The interaction term between whether the man is has less education than his partner and "man likely/woman likely" was not significant in Models 1 and 2

and was significant at the .10 level in Model 3 and its point estimate in all three models was positive and close in size to the magnitude of the main "man likely/woman likely" coefficient, suggesting that the relationship between both partners having high job insecurity and relative housework time might not apply to couples in which the man has less education than his partner. No postestimation tests associated with this interaction term were significant.

So far, the model estimates show that relative job insecurity is not related to relative housework time for the most part. However, the man's relative housework time decreases when partners both experience high levels of job insecurity. This decrease in relative housework might only occur for families in which the man has higher or equal education than the woman. These results are largely consistent with the collaborative model's predictions regarding the situation in which both partners have high job insecurity. The collaborative model predicts that, when couples enter into a particularly precarious economic situation in that both partners experience high job insecurity, they might allow the partner with greater earnings or earnings potential to decrease his/her housework time in order to focus on keeping his/her job. However, if, when the couple enters into a precarious economic situation, the relative job insecurity of the partner with higher earnings or earnings potential decreases, the collaborative model predicts that their relative housework time might decrease or stay the same (it might stay the same if, in time 1, the couple had already decreased the relative housework of the partner with higher earnings or earnings potential for him/her to focus on his/her job). My findings that, when couples enter a precarious situation, the men decrease their relative housework if they have as much or equal education as their partner are consistent with the collaborative perspective (men with equal education as their partner are likely to have more unmeasured human capital than their partner due to men's greater labor force experience because they work more hours than women and have

fewer labor force interruptions). Indeed, even the finding that, compared to the situation in which the man has high job insecurity and the woman has low job insecurity, men's relative housework decreases when both partners have high job insecurity, is exactly what the collaborative model would predict because couples in the former situation were not found to be prioritizing the man's paid work by lowering his housework contribution. These findings are not consistent with the relative resources perspective, which predicts that relative housework time would only decrease if relative job insecurity increased. The findings that, when couples enter a precarious situation, the man's relative housework does not change if he has less education than his partner are also not consistent with the relative resources perspective, which predicts changes in relative housework when relative job insecurity changes. They are also not consistent with the cooperative model, unless this is because these men's combined measured and unmeasured human capital, on average, does not differ from that of their partners.

In a supplemental analysis not shown, I estimated models after dropping cases for which the man or woman answered "don't know" to the job insecurity question. This analysis showed that the main results are not an artifact of the assumption that the "don't know" job insecurity category indicates high job insecurity. The point estimates were consistent with the main results, though they were less significant. Specifically, the coefficient for "man likely/woman likely" was significant at the .10 level in Models 1 and 3 and not significant in Model 2. Moreover, the "man unlikely/woman likely" and "man likely/woman unlikely" coefficients were significantly larger than the "man likely/woman likely" coefficient at the .05 level in Models 1 and 3 and at the .10 level in Model 2.

In a further supplemental analysis not shown, I estimated models that operationalized the "unlikely" and "very unlikely" job insecurity categories separately. The results justified the

decision to combine these categories in the main analyses. They were consistent with the main results and formal postestimation tests confirmed that the coefficients associated with the "unlikely" and "very unlikely" job insecurity categories did not differ.

## Discussion

The current study examined how changes to partners' relative levels of perceived job insecurity are related to their relative housework time among dual-earner couples using fixed-effects models. It found that within-couple changes in relative job insecurity were associated with changes in relative housework only when the family transitioned into a precarious situation in that both earners had high job insecurity. Specifically, when couples enter a situation in which both partners perceive their jobs to be insecure, men's relative housework time decreases. This pattern suggests that, when dual-earner families face a particularly precarious economic situation in that both partners have precarious jobs, the man's job gets prioritized. Supplemental analyses provided preliminary evidence that this pattern only holds for couples in which the man has at least as much education as his partner.

I argued that theory and prior research offer opposing predictions for the effect of relative job insecurity on relative housework time. On one hand, the relative resources perspective predicts that increases in one partner's job insecurity relative to the other partner's job insecurity will lead to a loss of bargaining power in negotiations over housework and more relative housework time. On the other hand, a view of couples as more collaborative predicts that increases in one partner's relative job insecurity will lead partners to reallocate housework away from the partner experiencing greater job insecurity in order to allow him/her to focus on his/her work, but if couples enter a situation in which both partners' jobs are insecure, the housework

contribution of the partner with greater earnings or earnings potential might decrease in order to maximize the couple's economic circumstances. The fixed-effects estimates of the relationship between relative job insecurity and relative housework time were largely consistent with the latter predictions of the cooperative model. The findings that, for couples in which the man has at least as much education as the woman, men's contributions to housework decrease when they enter precarious economic situations is consistent with the collaborative perspective, given that these men are likely to have higher combined measured and unmeasured human capital than their partners (due to, for example, fewer interruptions in work experience). So perhaps couples prioritize the job of the partner with more earnings potential when both partners have high job insecurity. The finding that, when women have more education than their partners, couples don't change their relative housework time when they experience a precarious economic situation is only consistent with the collaborative perspective if these women, on average, don't have different measured and unmeasured human capital than their partners due to, for example, more labor force interruptions. It is also possible that these women do have more human capital than their partners, but hegemonic gender beliefs discourage prioritizing women's paid work time relative to men's, even if it makes more economic sense for the family. If this is the case, the current study's results are in line with the cooperative model in that couples choose to prioritize the paid work of the partner with more human capital in precarious economic situations, though hegemonic gender beliefs might prevent such prioritization happening for women.

Regardless of why partners' relative job insecurity is related to their relative housework, the current study found that couple dynamics alter during economic crises in a way that reinforce

a gender-unequal division of housework.[10] Although there might be an economic rationale to the increase in women's housework contributions when both partners experience high job insecurity in that families might be trying to maximize their economic circumstances, it comes at the cost of potentially hurting women's economic independence. Because this increase in women's housework contribution coincides with a time when they perceive their jobs to be at risk, they are contending with a higher work load at home just when more of their energy might be needed at work. This finding echoes research showing that men's increases in unpaid work did not keep up with their decreases in paid work time during the Great Recession (Kongar and Berik, 2014), but adds that economic crises in terms of perceived job insecurity are also associated with greater gender inequality. Therefore, the current study's findings add to the emerging understanding that gender inequality within families becomes more entrenched during economic crises.

Although the current study did not estimate causal relationships, the finding that couples' transitions into precarious economic situations are associated with decreases in men's housework contribution raise the possibility that the increase in average levels of perceived job insecurity over the past several decades might have contributed to the stall in the convergence of men's and women's time in housework, after several decades in which men's housework time increased and women's decreased. This stall in movements toward gender equality raises concerns about women's economic well-being and the degree to which women can achieve their goals inside and outside the family, so researchers have been trying to understand why it is happening. However, only 1 percent of the couple-years in my sample were defined by both partners having

[10] Indeed, among couples in which both partners had high job insecurity in at least one wave, average relative housework during other waves was .354. Given the finding in the main results that, when couples enter precarious economic circumstances, the man's relative housework decreases, a gender-traditional division of housework is reinforced in these circumstances, since these couples have average relative housework of .354 in other waves.

high job insecurity and 3.7 percent of the couples experienced such a situation at least once during the study period. So the magnitude of the potential effect of the rise of perceived job insecurity on gender inequality in housework might have been modest.

Overall, the current study found that during economic crises, a gender-traditional division of housework is reinforced. This is possibly because men's outstanding advantages in paid work cause the family to turn to them during difficult economic times and/or outstanding gender beliefs prevent women from playing the same role. At the same time, the current study also found that economic crises of a lesser magnitude (such as when one partner has high job insecurity and the other does not) are not accompanied by changes in couples' division of housework. Indeed, these economic crises are more common. As such, the study found that families' divisions of housework are rather resilient when they experience high levels of perceived job insecurity. Given the stress associated with perceiving a high likelihood of job loss, this finding is surprising. Although it's encouraging that, in most circumstances, a gender-traditional division of housework does not become more entrenched when partners experience job insecurity, it is also problematic that when women experience high levels of perceived job insecurity, regardless of their partners' job insecurity, they continue to take on a disproportionate amount of housework and, if their partner also experiences high job insecurity, their housework contribution even increases. Women already have a higher total load of paid and unpaid work than men (Craig, 2007) and it is problematic that they are not relieved of work at home when they have trouble at work.[11] The fact that women continue to take on a disproportionate amount

[11] Prior authors have found that women's and men's total paid and unpaid workloads are similar, but Craig (2007) argues that these analyses have not included multitasked activities in their calculations of men's and women's workloads and that, when multitasked activities are counted, women's total paid and unpaid workload is larger than men's.

of housework when they perceive that their jobs are at risk (and their housework contribution even grows if their partner also has high job insecurity) illustrates the barriers that women continue to face relative to men in carving out their careers. As such, the current study shows another way in which gender inequality at home might exacerbate gender inequalities at work.

## Works Cited


Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The review of economic studies*, *58*(2), 277-297.

Becker, G. S. (1991). *A treatise on the family: Enlarged edition*. Harvard university press.

Bellemare, M. F., Masaki, T., & Pepinsky, T. B. (2017). Lagged explanatory variables and the estimation of causal effect. *The Journal of Politics*, *79*(3), 949-963.

Bianchi, S. M., Milkie, M. A., Sayer, L. C., & Robinson, J. P. (2000). Is anyone doing the housework? Trends in the gender division of household labor. *Social forces*, *79*(1), 191-228.

Bittman, M., England, P., Sayer, L., Folbre, N., & Matheson, G. (2003). When does gender trump money? Bargaining and time in household work. *American Journal of sociology*, *109*(1), 186-214.

Blood, R. O., & Wolf, D. M. (1960). Husbands and Wives: The Organization of Married Living. Glencoe, Illinois: Free Press.

Bluestone, B., & Rose, S. (1998). The macroeconomics of work time. *Review of Social Economy*, *56*(4), 425-441.

Brines, J. (1994). Economic dependency, gender, and the division of labor at home. *American Journal of sociology*, *100*(3), 652-688.

Choonara, J. (2019). *Insecurity, Precarious Work and Labour Markets: Challenging the Orthodoxy*. Springer.

Chung, H., & Mau, S. (2014). Subjective insecurity and the role of institutions. *Journal of European Social Policy*, 24(4), 303-318.

Coltrane, S. (2000). Research on household labor: Modeling and measuring the social embeddedness of routine family work. *Journal of Marriage and family*, *62*(4), 1208-1233.

Coverman, S. (1985). Explaining husbands' participation in domestic labor. *Sociological quarterly*, *26*(1), 81-97.

Craig, L. (2007). Is there really a second shift, and if so, who does it? A time-diary investigation. *Feminist review*, *86*(1), 149-170.

Davis, S. N., & Wills, J. B. (2014). Theoretical explanations amid social change: A content analysis of housework research (1975-2012). *Journal of Family Issues*, *35*(6), 808-824.

De Cuyper, N., Bernhard-Oettel, C., Berntson, E., Witte, H. D., & Alarco, B. (2008). Employability and employees' well-being: Mediation by job insecurity 1. *Applied Psychology*, *57*(3), 488-509.

England, P., & Farkas, G. (1986). Households, Employment, and Gender: A Social, Economic, and Demographic View. New York: Aldine.

Esping-Andersen, G., & Billari, F. C. (2015). Re-theorizing family demographics. *Population and development review*, *41*(1), 1-31.

Fischer, F. M., Oliveira, D. C., Nagai, R., Teixeira, L. R., Lombardi Júnior, M., Latorre, M. D. R., & Cooper, S. P. (2005). Job control, job demands, social support at work and health among adolescent workers. *Revista de saúde pública*, *39*, 245-253.

Fullerton, A. S., & Wallace, M. (2007). Traversing the flexible turn: US workers' perceptions of job security, 1977–2002. *Social Science Research*, *36*(1), 201-221.

Geist, C., & Ruppanner, L. (2018). Mission impossible? New housework theories for changing families. *Journal of Family Theory & Review*, *10*(1), 242-262.

Gerson, K. (2017a). Different ways of not having it all: Work, care, and shifting gender arrangements in the new economy. In *Beyond the Cubicle: Job Insecurity, Intimacy, and the Flexible Self*. Oxford Press.

Gerson, K. (2017b). The logics of work, care and gender change in the new economy. In *Work–Family Dynamics: Competing Logics of Regulation, Economy and Morals*. New York: Routledge.

Gallup Economy. 2013. 'U.S. Workers Still Haven't Shaken the Job Worries of 2009', Sept. 2. http://www.gallup.com/poll/164222/workers-haven-shaken-job-worries-2009.aspx

Goldscheider, F., Bernhardt, E., & Lappegård, T. (2015). The gender revolution: A framework for understanding changing family and demographic behavior. *Population and development review*, *41*(2), 207-239.

Hersch, Joni. 2009. "Home Production and Wages: Evidence from the American Time Use Survey." *Review of Economics of the Household* 7: p. 159-178.

Hollister, M. N., & Smith, K. E. (2014). Unmasking the conflicting trends in job tenure by gender in the United States, 1983–2008. *American Sociological Review*, *79*(1), 159-181.

Jaspers, E., & Verbakel, E. (2013). The division of paid labor in same-sex couples in the Netherlands. *Sex Roles*, *68*(5), 335-348.

Kalleberg, A. L. (2011). Good jobs, Bad jobs: The Rise of Polarized and Precarious Employment Systems in the United States, 1970s to 2000s. *New York*.

Kalleberg, A. L., & Vallas, S. P. (Eds.). (2017). *Precarious work*. Emerald Group Publishing.

Kan, M.Y. (2014). Housework participation measurement. *Encyclopedia of Quality of Life and Well-Being Research*: 2967-2971.

Kan, M. Y., & Laurie, H. (2018). Who is doing the housework in multicultural Britain?. *Sociology*, *52*(1), 55-74.

Kan, M. Y., & Pudney, S. (2008). 2. Measurement error in stylized and diary data on time use. *Sociological Methodology*, *38*(1), 101-132

Keim, A. C., Landis, R. S., Pierce, C. A., & Earnest, D. R. (2014). Why do employees worry about their jobs? A meta-analytic review of predictors of job insecurity. *Journal of Occupational Health Psychology*, *19*(3), 269.

Kiersztyn, A. (2017). Non-standard employment and subjective insecurity: how can we capture job precarity using survey data?. In *Precarious Work* (pp. 91-122). Emerald Publishing Limited.

Killewald, A., & Gough, M. (2010). Money isn't everything: Wives' earnings and housework time. *Social Science Research*, *39*(6), 987-1003.

Kongar, E., & Berik, G. (2014). Time use of parents in the United States: What difference did the Great Recession make?. *Levy Economics Institute, Working Papers Series*, (812).

Lavee, Y., & Katz, R. (2002). Divison of labor, perceived fairness, and marital quality: The effect of gender ideology. *Journal of Marriage and Family*, *64*(1), 27-39.

Leszczensky, L., & Wolbring, T. (2019). How to deal with reverse causality using panel data? Recommendations for researchers based on a simulation study. *Sociological Methods & Research*, 0049124119882473.

Lim, V. K., & Loo, G. L. (2003). Effects of parental job insecurity and parenting behaviors on youth's self-efficacy and work attitudes. *Journal of Vocational Behavior*, *63*(1), 86-98.

Lowe, G. S. (2000). *The Quality of Work: A People-Centred Agenda*. Order Department, Oxford University Press, 2001 Evans Road, Cary, NC 27513.

Mauno, S., Cheng, T., & Lim, V. (2017). The far-reaching consequences of job insecurity: A review on family-related outcomes. *Marriage & Family Review*, *53*(8), 717-743.

Nelson, M. K., & Smith, J. (1998). Economic Restructuring, Household Strategies, and Gender: A Case Study of a Rural Community. *Feminist Studies*, *24*(1), 79–114.

Oppenheimer, Valerie Kincade. "Women's rising employment and the future of the family in industrial societies." *Population and development review* (1994): 293-342.

Pailhé, A., Solaz, A., & Souletie, A. (2019). How do women and men use extra time? Housework and childcare after the French 35-hour workweek regulation. *European Sociological Review*, *35*(6), 807-824.

Qi, Liangshu and Xiao-yuan Dong. 2016. "Unpaid Care Work's Interference wth Paid Work and the Gender Earnings Gap in China." *Feminist Economics* 22(2): p. 143-167.

Richter, A., Näswall, K., & Sverke, M. (2010). Job insecurity and its relation to work—family conflict: Mediation with a longitudinal data set. *Economic and Industrial Democracy*, *31*(2), 265-280.

Roeters, A., Van Der Lippe, T., & Kluwer, E. S. (2009). Parental work demands and the frequency of child-related routine and interactive activities. *Journal of Marriage and Family*, *71*(5), 1193-1204.

Roeters, A., Van Der Lippe, T., & Kluwer, E. S. (2010). Work characteristics and parent-child relationship quality: the mediating role of temporal involvement. *Journal of Marriage and family*, *72*(5), 1317-1328.

Sayer, L. C. (2016). Trends in women's and men's time use, 1965–2012: Back to the future?. In *Gender and couple relationships* (pp. 43-77). Springer, Cham.

Schneider, D. (2011). Market earnings and household work: New tests of gender performance theory. *Journal of Marriage and Family*, *73*(4), 845-860.

Shelton, B. A., & John, D. (1996). The division of household labor. *Annual review of sociology*, *22*(1), 299-322.

Stevens, D., Kiger, G., & Riley, P. J. (2001). Working hard and hardly working: Domestic labor and marital satisfaction among dual-earner couples. *Journal of marriage and family*, *63*(2), 514-526.

Stewart, M. B., & Swaffield, J. K. (1997). Constraints on the desired hours of work of British men. *The Economic Journal*, *107*(441), 520-535.

South, S. J., & Spitze, G. (1994). Housework in marital and nonmarital households. *American Sociological Review*, 327-347.

University of Essex, Institute for Social and Economic Research. (2021). Understanding Society: Waves 1-11, 2009-2020 and Harmonised BHPS: Waves 1-18, 1991-2009. [data collection]. 14th Edition. UK Data Service. SN: 6614, http://doi.org/10.5255/UKDA-SN-6614-15.

Vaisey, S., & Miles, A. (2017). What you can—and can't—do with three-wave panel data. *Sociological Methods & Research*, *46*(1), 44-67.

Zhao, X., Lim, V. K., & Teo, T. S. (2012). The long arm of job insecurity: Its impact on career-specific parenting behaviors and youths' career self-efficacy. *Journal of Vocational Behavior*, *80*(3), 619-628.

# CHAPTER 2:

# HOUSEWORK IN SAME-SEX AND DIFFERENT-SEX COUPLES: THE ROLES OF PAID WORK TIME AND EARNINGS

## Introduction

The gender gap in housework in the United States remains substantial, with women doing 16 hours of housework per week, on average, compared to men's 10 hours (Bianchi et al., 2012). Although a large empirical literature has emerged to evaluate the sources of this gender gap in the case of different-sex couples [DSCs] (e.g. Bittman et al., 2003; Brines, 1994; Killewald & Gough, 2010; Pailhé et al., 2019; Schneider, 2011), considerably less is known about the division of housework in same-sex couples (SSCs).

This paper examines average time spent in different types of housework (feminine, masculine, and gender-neutral housework) among people in SSCs and DSCs and assesses the relationships between earnings/time availability and housework by couple type. In so doing, it accomplishes two overarching goals. First, it expands our knowledge of a family type with respect to a set of outcomes – time devoted to housework tasks – that many scholars have argued offers insight into key relationship dynamics (e.g. Carrington, 1999; Davis & Greenstein, 2013; Hochschild & Machung, 2003). Second, it sheds light on the role of different gender dynamics in the household division of labor. As will be explained, theory and prior empirical research suggest that the gendered relational dynamics influencing SSCs' and DSCs' divisions of labor might differ.

The current study used high-quality, nationally representative, time diary data from the 2003-2014 American Time Use Survey (https://www.atusdata.org/atus/) to estimate the

relationships between earnings/time in paid work and time in feminine, masculine and gender-neutral housework tasks among people in SSCs and DSCs. It thus differs from prior research on predictors of housework among SSCs, which mostly relied on convenience samples and self-report measures of household labor.

## Background

Some of the major perspectives guiding scholars seeking to explain the household division of labor include time availability, relative resources, autonomy, and gender. The time availability perspective focuses on time as a resource, viewing housework time as a function of partners' paid work time (Blood & Wolf, 1960; Coverman, 1985). The relative resources perspective argues that the relative resources (e.g., earnings) of partners affect relationship power dynamics (Blood & Wolf, 1960) and predicts that the greater the discrepancy in resources between partners, the less unpaid housework the partner with more resources will do (Coverman, 1985). Autonomy theory posits that increases in women's absolute earnings decrease time spent on housework (Gupta, 2007). The gender perspective encompasses various gender theories, several of which will now be discussed. The gender ideology perspective posits that people's ideological support for/against sex-based household roles (Bem, 1970) affects housework time (Stafford et al., 1977). What I refer to as the "identity work perspective" maintains that people may do housework to build up and affirm their positive sense of self (Erickson, 2005; Schwalbe et al., 2000). For instance, a woman might engage in housework because it affirms her sense of herself as caring. The "doing gender" perspective posits that we are constantly held accountable for our actions in the eyes of others, who judge these actions relative to their expectations of sex-appropriate behavior. We may then perform certain behaviors to meet the perceived expectations

held by whoever we are interacting with (West and Zimmerman, 1987). For example, this theory predicts that a woman might "do gender" through feminine housework at home if she perceives feminine housework to be expected of females by others she is interacting with. The "gender frame" perspective posits that people automatically sex categorize others they are interacting with, and themselves in relation to others, which then evokes cultural values about sex-appropriate behaviors and cultural beliefs about essential sex differences that bias our understanding of each other during interaction, including when we are allocating housework (Ridgeway, 2011).

The empirical literature has found evidence that time in paid work might be associated with less housework for people in DSCs and SSCs, in line with the time availability perspective, though the evidence is mixed for men in DSCs and men and women in SSCs (e.g., Carrington, 1999; Chesley & Flood, 2017; Civettini, 2015; Fauser, 2019; Goldberg et al., 2012; Gough & Killewald, 2011; Hook, 2017; Kelly & Hauk, 2015; Kurdek, 1993; Pailhé et al., 2019; Patterson et al., 2004; Tornello et al., 2015). With regard to the earnings-housework relationship, evidence is mixed for SSCs and recent research in the DSC literature has continued to examine whether the relationship between relative earnings and housework is curvilinear or linear (e.g., Carrington, 1999; Civettini, 2015; Hook, 2017; Kelly & Hauk, 2015; Killewald & Gough, 2010; Kurdek, 1993; Martell & Roncolato, 2019; Patterson et al., 2004; Schneebaum, 2013; Schneider, 2011; Tornello et al., 2015), and whether relative or absolute economic resources are stronger predictors of women in DSCs' housework time (e.g., Carlson & Lynch, 2017; Gupta, 2007; Hook, 2017; Schneider, 2011). Few studies have used nationally representative, high quality data from the U.S. to examine these predictors of housework among SSCs. In an unpublished dissertation, Schneebaum (2013) found an association between total housework and relative

earnings among several subpopulations of men (but not women) in SSCs: those who live in states that recognize SSCs, who are in interracial couples, and who have children. Martell and Roncolato (2019) argued that there is an upside-down U-shaped relationship between relative earnings and total housework time for women in SSCs. Smart et al. (2017) presented bivariate associations between total housework time and partner's employment status, but did not control for covariates. Although informative, these studies did not examine predictors of different types of housework (masculine, feminine, and gender-neutral) nor the relationships between housework and own paid work time.

Prior empirical research comparing SSCs and DSCs suggests both similarities and differences in the role of gender in housework time in SSCs relative to DSCs. One set of these studies examined gender beliefs/values/expectations about housework/family roles or examined how segregated masculine and feminine housework is, and they largely suggest that gender processes related to housework are weaker or at least different in SSCs compared with DSCs. Goldberg et al. (2012) and Bauer (2016) found feminine and masculine housework responsibilities to be more segregated within DSCs than SSCs. Doan and Quadlin (2019) undertook a survey experiment in which they presented survey respondents with a scenario describing a married couple and asked survey respondents which partner in the couple should be responsible for each of several housework tasks. The characteristics of the partners described in the scenario were experimentally manipulated with respect to various characteristics, including the sex category (man or woman) of each partner and the gender expression of each partner, as measured by their hobbies that typically signal either masculinity or femininity (basketball and action movies versus shopping and romantic comedies). They found that the effect of gender expression (gendered hobbies) on beliefs about responsibility for housework tended to be larger

for scenarios involving SSCs than those involving DSCs, for whom sex category had a larger effect. The effects of sex category for DSCs tended to be larger than the effects of gender expression for SSCs and sex category necessarily had no effect for SSCs (there was no variation in sex category within SSCs, so survey respondents could not decide on each partners' housework responsibility on the basis of sex category). Although Doan and Quadlin (2019) did not analyze the responses of sexual minorities separately from the rest of their sample, their results suggest that, for SSCs, gender expression might act as a stand-in to some extent for sex category in DSCs and that, because gender expression did not completely replace the role that sex category had for DSCs, the overall role of these gender processes in beliefs about responsibility for housework are weaker for SSCs than DSCs. Martell and Roncolato (2019) found a U-shaped relationship between relative earnings and total housework for women in DSCs, suggesting that higher earning women compensate for deviating from values/beliefs/expectations/identities with respect to breadwinning (e.g., the masculine breadwinner model) by engaging in more housework. They found an upside-down U-shaped relationship for women in SSCs and argued that SSCs' preferences for earnings equality might explain this pattern. Finally, in comparison to their observations of other people in DSCs as well as their own prior different-sex relationships, non-heterosexual respondents described their own and other same-sex relationships as less influenced by gender expectations and assumptions, though only women in SSCs explicitly described housework as less influenced by expectations and assumptions about housework in SSCs compared with DSCs (Dunne, 1999; Heaphy et al., 1999), whereas men in SSCs described how in SSCs they felt fewer pressures to conform to general ideals of conventional masculinity, particularly with respect to their emotional lives, and largely did not specifically mention housework (Heaphy et al., 1999). With the exception of

Heaphy et al. (1999) regarding men in SSCs, the above studies suggest a weaker or at least different role of gender processes in the housework of SSCs compared with that of DSCs.

The remaining studies comparing gender processes in SSCs' and DSCs' housework examined the link between housework and measures of general gender beliefs/values/identities that are not specifically about housework/family roles and they found fewer differences between SSCs and DSCs. These studies examined the association between housework and masculine and feminine personality traits (Kurdek, 1993), sex composition of one's occupation (Fettro, 2018; Schneebaum, 2013), general gender role attitudes (as measured via an index of agreement with statements such as "A drunken woman is more repulsive than a drunken man.") (Shechory & Ziv, 2007), parental gender attitudes about children (as measured via an index asking the extent to which parents agree with statements such as, "It is more acceptable to me for a girl to cry than for a boy (excluding major injuries).") (Patterson et al, 2004), or the presence of children (Smart et al., 2017). Most of these studies did not find differences in these relationships between SSCs and DSCs (Fettro, 2018; Patterson et al., 2004; Shechory & Ziv, 2007; Smart et al., 2017), whereas the remaining studies found evidence of relationships for some groups of DSCs, but not SSCs (Kurdek, 1993; Schneebaum, 2013).

Overall, these studies suggest that some gender processes are similar in SSCs and DSCs (e.g., Smart et al., 2017), but that others are weaker or at least different (e.g., Dunne, 1999; Doan & Quadlin, 2019; Martell & Roncolato, 2019). In particular, values/beliefs/expectations specific to housework or family roles may play a weaker role in SSCs' housework compared with DSCs' (Dunne 1999; Heaphy et al., 1999; Doan & Quadlin, 2019). These findings make sense in light of the gender ideology, doing gender, and gender frame perspectives, which predict that some gender values/beliefs/expectations may not provide as much guidance about how to divide labor

among SSCs relative to DSCs because such values/beliefs/expectations allocate labor based on sex differences between partners. For example, values and expectations that favor a male-breadwinner/female-homemaker division of household labor are not easily applicable to SSCs. Because some gender values/beliefs/expectations are not readily applicable to SSCs, SSCs may have to arrange their division of household labor "from scratch" to a greater degree and to engage in more reflection, negotiation, and explicit coordination between partners. In other words, because some gender values/beliefs/expectations do not provide as much of a blueprint to SSCs for how to allocate housework, the degree to which SSCs can fall back on these values/beliefs/expectations to allocate their housework is lessened and, so, their housework allocations may involve more consideration, intentionality, and explicit coordination between partners. In this context, I would expect that economic factors such as paid work time and earnings might play a greater role in housework time among SSCs than among DSCs.

People in SSCs might also be especially committed to achieving equality in their housework divisions compared with people in DSCs, though this tendency might be less pronounced when comparing women in SSCs with children to DSCs with children. Research has tended to find that people in SSCs share housework more evenly than people in DSCs, even after controlling for work hours, earnings, and other relevant characteristics, though findings are much more mixed for women in SSCs with children compared with DSCs with children (e.g., Cudeville et al., 2020; Goldberg et al., 2012; Gotta et al., 2011; Kurdek, 1993; Perlesz et al., 2010; Shechory & Ziv, 2007 for women in SSCs compared with DSCs; Solomon et al., 2005; though see, e.g., Chan et al., 1998; Patterson et al., 2004; Shechory & Ziv, 2007 for men in SSCs compared with DSCs). Authors have gone on to argue that the egalitarian ideal that emerges in SSCs is about resisting differences between partners (such as differences in earnings) that could

cause inequalities (Dunne, 1999; Heaphy et al., 1999). Thus, this egalitarian ideology (which might not be as pronounced relative to DSCs among women parents in SSCs) might mute the roles of earnings/paid work time in the housework of SSCs.

In summary, theory and prior research suggest that earnings (in some form) and paid work time might predict housework time among both SSCs and DSCs, but the magnitude of the associations might differ according to the differing gender dynamics and ideological commitments (e.g., commitment to dividing labor equally) of SSCs and DSCs.

## Data and Method

For the purposes of understanding housework, existing studies of SSCs suffer from two drawbacks. First, nearly all relied on survey self-report data or in-depth interviews. There is a concern in the literature about the accuracy of these data (Bauer, 2016; Carrington, 1999; Goldberg et al., 2012; Tornello et al., 2015) because, in an influential study, Carrington (1999) found a commitment among SSCs to portraying their housework divisions as more equal than they actually were. Second, these prior studies often relied on convenience samples recruited by public postings, advertising to gay and lesbian periodicals, message boards and interest groups, as well as snowball and similar sampling techniques. Such convenience samples might under-represent people in SSCs whose sexual orientation is a less salient part of their identity or who are less connected to gay and lesbian networks and community organizations and media.

The data I used here, the 2003-2014 American Time Use Survey (ATUS), can help resolve these issues. The ATUS is based on a random selection of a subset of households in the outgoing rotation groups from the Current Population Survey (CPS); after weighting, it is nationally representative (Hofferth et al., 2017). One adult member of each selected household

reports a detailed account of his or her activities undertaken during a designated 24-hour time span through time diaries (Hofferth et al., 2017), which are considered the gold standard for large-scale evidence in this area (Sullivan, 2013) and provide more accurate information than stylized time-use questions (Kan, 2014).

In order to construct the analytic sample, I started with the full sample of 159,937 ATUS respondents. I first restricted the sample to respondents who were between the ages of 18 and 65 and, if they were married or cohabiting, had a partner between 18 and 65 (36,743 cases dropped). The following sample restrictions were then imposed: (1) only respondents who were married or cohabiting with a partner (50,924 cases dropped); (2) at least one partner had nonzero earnings (3,972 cases dropped); (3) respondents and their partners did not report that their usual work hours vary (4,476 cases dropped); and (4) earnings information was collected for respondents and their partners (12,923 cases dropped). To explain this last restriction, the ATUS does not collect earnings information for self-employed respondents and partners and [because partners' earnings information is collected during the final CPS interview two to five months prior to the ATUS interview] partners who joined the household after the CPS as well as partners who were not employed during the CPS, but were employed during the ATUS (Hofferth et al., 2017). However, because partner's employment status is collected during the ATUS (Hofferth et al., 2017), I was able to impute zero earnings for those who were currently not employed. Thus, earnings information is not available for self-employed respondents or currently employed partners who were self-employed, not household members during the CPS, or who were not employed during the CPS, but were employed during the ATUS. Any cases for whom the partners' or respondents' earnings information was not available were dropped.

**Variables:**

The dependent variables differentiated between minutes spent on different types of tasks during the diary day: feminine tasks included interior cleaning, laundry, sewing, food preparation, and grocery shopping; masculine housework tasks included lawn and garden care, interior and exterior maintenance, repair, and decoration, auto maintenance, and appliance, tool, and toy repair, maintenance, and installation; gender-neutral tasks included bookkeeping, pet care, locking up the home, and household management. Several tasks (checking mail, checking email, buying gas, and household organization) could not be categorized into masculine, feminine, and gender-neutral tasks based on the literature, so they were excluded from the dependent variables. For each dependent variable, I set housework time for the top 1% at the number of minutes at the 99$^{th}$ percentile in order to draw in extreme outliers.

Turning to the independent variables, a dummy variable flagged respondents in SSCs. I identified respondents in SSCs using three pieces of information: their sex, the sex of each household member, and the nature of their relationship to these household members (for example, spouse, unmarried partner, child, and so on) (Hofferth et al., 2017). Respondents in SSCs and DSCs were identified as those whose spouse or unmarried partner was of the same or different sex, respectively. Aside from couple type, the key independent variables in the analyses were the respondent's relative weekly earnings, the respondent's usual weekly hours of paid work, and the partner's usual weekly hours of paid work. Following much of the literature (e.g., Bittman et al., 2003; Brines, 1994; Schneider, 2011), I defined relative earnings as the respondent's usual weekly earnings minus their partner's usual weekly earnings, divided by the couple's total usual weekly earnings. This measure ranged from -1 (*respondent had no earnings*) to 1 (*respondent was the sole earner*). (I found similar results in supplemental analyses that

added relative education as an alternative measure of relative resources.) Spouse's/partner's usual weekly earnings were collected at the time of the CPS and were not updated during the ATUS, although employment status was (Hofferth et al., 2017). Thus, I imputed zero earnings for those who reported that they were not employed during the ATUS. Although I fitted the main models with this simple indicator of relative earnings, I also fitted models with a squared term of this variable to test for nonlinearity, as well as with measures of each partner's absolute earnings (I excluded relative earnings in these latter models) (see, e.g., Killewald & Gough, 2010; Schneider, 2011).

Finally, I included measures of common control variables used in the literature (Bauer, 2016; Bittman et al., 2003; Brines, 1994; Civettini, 2015; Gupta, 2007; Hook, 2017; Martell & Roncolato, 2019; Schneebaum, 2013; Schneider, 2011). I included a measure of the couple's total usual weekly earnings (in all models except those that included each partner's absolute earnings). Diagnostics suggested that a quadratic specification on this variable might be preferred in several of the models. I reran these models with such specifications and found no substantive differences in the results of interest. Linear and squared age terms were included. The linear age term was centered on the sample mean to avoid collinearity. The values of the centered age variable were squared to construct the squared age term. The remaining variables in the main analysis were measured with dichotomous indicators: education (1=had college degree, 0=did not have college degree), school enrollment, race (1=Black, 0=non-Black), had children under aged 18 in the household, and cohabiting (reference=married). The ATUS only collected school enrollment information for respondents aged 15-49 (Hofferth et al., 2017); I assume that those over aged 49 were not in school. Supplemental analyses discussed in the Results section

distinguished between Latina/o, Black, and all other races and differentiated between children less than aged 3 and children aged 3-17.

**Method:**

The current study used OLS regression to estimate the associations between relative earnings, usual paid work hours, and minutes spent in various types of housework (feminine, masculine and gender-neutral). For each dependent variable (feminine, masculine, gender-neutral), separate OLS regression models were estimated. OLS estimates are unbiased estimates of the effects of covariates on time use for activities in which everyone in the data participates in the long term (Stewart, 2013), a reasonable assumption for housework. OLS estimators are equivalent to Seemingly Unrelated Regression estimators, which account for the potential correlation of the error terms across the models, when the right-hand variables are constant across the models predicting the different outcome variables (Wooldridge, 2010), as they were in the current study. Models were estimated separately by gender, which allowed the relationships between the covariates and housework time to differ for men and women. However, because the number of respondents in SSCs was modest (129 men and 169 women), within each gender I fitted models that constrained the effects of most of the covariates to be the same across couple types (SSC or DSC), and, in turn, fitted interactions between couple type and those covariates that were of primary theoretical interest: relative earnings, then own time in paid work, and then partner's time in paid work. Time diary data is characterized by a high proportion of zeros. Feminine, masculine, and gender-neutral housework time had a value of zero for 29%, 80%, and 82% of the current sample, respectively. Weighted regression estimates with robust standard errors are presented due to heteroskedasticity.

## Results

Table 1 presents descriptive statistics by couple type and sex. Men and women in DSCs tended to specialize in housework time by traditional gender scripts: although both spent the largest shares of their housework time in feminine tasks, this share was far greater for women than for men. On the other hand, the time use of men and women in SSCs did not differ markedly according to the type of housework. Table 1 also shows differences across couple type and sex in several other variables.

**Table 1.** ***Characteristics by Couple Type and Sex***

| | Men in DSCs | Men in SSCs | Women in DSCs | Women in SSCs |
|---|---|---|---|---|
| **Total Housework Time (in Minutes)** | 89.73 | 108.18 | 155.94* | 94.92 |
| **Feminine Tasks (in Minutes)** | 38.92* | 66.84 | 123.53* | 54.09 |
| **Masculine Tasks (in Minutes)** | 35.03* | 13.18 | 13.00 | 16.23 |
| **Gender-Neutral Tasks (in Minutes)** | 6.00 | 10.70 | 7.41* | 12.83 |
| **Relative Earnings**[a] | .33* | .15 | -.27* | -.01 |
| **Couple's Total Weekly Earnings** | 1483.70* | 1929.20 | 1467.24* | 1827.42 |
| **Usual Hours of Paid Work** | 40.98 | 40.33 | 27.29* | 38.87 |
| **Partner's Usual Hours of Paid Work** | 26.18* | 32.53 | 38.97 | 40.21 |
| **Proportion with Children in Household** | .56* | .11 | .57* | .26 |
| **Proportion Enrolled in School** | .04 | .08 | .06 | .14 |
| **Age** | 43.12* | 40.58 | 41.24* | 38.85 |
| **Proportion Black** | .08* | .01 | .07 | .05 |
| **Proportion with College Degree or More** | .35* | .54 | .36* | .60 |
| **Proportion Cohabiting** | .08* | .92 | .08* | .93 |
| **N** | 24,327 | 129 | 26,274 | 169 |

*Notes* DSC=different-sex couple. SSC=same-sex couple. 2003-2013 American Time Use Survey. Unless otherwise noted, all statistics report means. N's are unweighted; all else is weighted.
[a]-1=*respondent had no earnings*, 1=*respondent was the sole earner*.
*indicates a significant difference ($p < .05$) between people in same-sex and different-sex couples within gender.

### Multivariate Results:

Table 2 presents the estimated coefficients of predictors of minutes spent on housework tasks. The top panel shows the estimates for men. For feminine housework, the first coefficient listed under Model 1 shows that, when relative earnings were zero, men in SSCs did 34.1 minutes more housework than men in DSCs. Furthermore, the relative earnings coefficients

(those for the relative earnings main effect and its interaction term) show that the association between relative earnings and housework was stronger for men in SSCs than in DSCs. For men in DSCs, an increase in relative earnings of one unit – that is, comparing men who earned as much as their partner to men who were the sole breadwinners – decreased housework time by 10.4 minutes. For men in SSCs, the analogous decline was 59.6 minutes of housework, a large difference that was statistically significant ($p<.05$). I investigated why the effect size for men in SSCs was comparatively so large by examining, in turn, whether it was driven by particularly influential cases (about 11 SSCs and 1,128 DSCs, depending on the influence statistic used), or subgroups that might have experienced particularly strong power inequalities [couples where one partner was the only earner in the couple (30 SSCs and 8,646 DSCs); and couples where partners differed in race/ethnicity (29 SSCs and 2,018 DSCs), education (36 SSCs and 5,464 DSCs), or were more than 7 years apart in age (37 SSCs and 3,953 DSCs)]. The effect size remained comparatively large across all these robustness checks, with the one exception that the coefficient in the estimates that excluded partners with different educational levels was smaller and no longer significantly different from that of DSCs, though the point estimate remained comparatively larger (the estimates were -9.5 and -37.1, respectively). [Model 1 also shows that a one hour increase in work hours reduced housework time by 0.6 minutes (not differentiating men in SSCs and DSCs) and a one hour increase in partner work hours increased (though not significantly) housework time by 0.1 minutes (not differentiating SSCs and DSCs).]

Turning to Model 2, the data do not show differences between men in SSCs and DSCs in the housework/own-paid-work-time association. More specifically, a one hour increase in usual paid work time was related to a 0.6-minute decrease in housework for men in DSCs ($p<.01$) and a 1.6-minute decrease for men in SSCs, though this effect was not significant ($p>.10$ based on a

post-estimation F-test). The estimated coefficients of Model 3 do not show a relationship between the spouse's/partner's usual weekly paid work hours and housework for either couple type.

**Table 2.** ***OLS Estimates of Gender-Typed Housework Time (in Minutes)***

| | Feminine Housework | | | | Masculine Housework | | | | Gender-Neutral Housework | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Men (N=24,456)** | Model 1 | Model 2 | Model 3 | Model 4 | Model 1 | Model 2 | Model 3 | Model 4 | Model 1 | Model 2 | Model 3 | Model 4 |
| **In SSC (ref.=in DSC)** | 34.08** | 67.83 | 17.44 | 67.15 | -17.81** | -34.41** | -26.68** | -44.25** | 2.38 | 5.13 | 6.07 | 8.66 |
| | (12.33) | (50.26) | (19.13) | (51.73) | (5.51) | (7.76) | (5.12) | (8.83) | (2.65) | (4.90) | (5.82) | (7.15) |
| **Relative Earnings**[a] | -10.42** | -10.88** | -10.87** | -10.01** | -0.15 | -0.13 | -0.14 | -0.24 | -1.16* | -1.15* | -1.15* | -1.14* |
| | (1.88) | (1.90) | (1.91) | (1.87) | (2.57) | (2.56) | (2.56) | (2.58) | (0.56) | (0.56) | (0.56) | (0.56) |
| X In SSC | -49.17*[SS] | | | -92.23*[S] | 2.00 | | | 11.11 | 1.32 | | | -1.45 |
| | (21.99) | | | (41.56) | (5.60) | | | (7.68) | (4.69) | | | (6.86) |
| **Work Hours** | -0.57** | -0.56** | -0.57** | -0.58** | -0.40** | -0.40** | -0.40** | -0.40** | -0.06** | -0.06** | -0.06** | -0.06** |
| | (0.04) | (0.05) | (0.04) | (0.04) | (0.06) | (0.06) | (0.06) | (0.06) | (0.01) | (0.01) | (0.01) | (0.01) |
| X In SSC | | -1.02 | | 0.58 | | 0.42** | | 0.22 | | -0.06 | | -0.04 |
| | | (1.09) | | (0.88) | | (0.16) | | (0.18) | | (0.10) | | (0.16) |
| **Partner Work Hours** | 0.05 | 0.05 | 0.04 | 0.06 | 0.07 | 0.07 | 0.07 | 0.06 | 0.00 | 0.00 | 0.00 | 0.01 |
| | (0.05) | (0.05) | (0.05) | (0.05) | (0.07) | (0.07) | (0.07) | (0.07) | (0.02) | (0.02) | (0.02) | (0.02) |
| X In SSC | | | 0.28 | -1.54 | | | 0.28[φ] | 0.50[φ] | | | -0.11 | -0.14 |
| | | | (0.41) | (1.03) | | | (0.20) | (0.31) | | | (0.13) | (0.15) |
| **R-squared** | .05 | .05 | .05 | .05 | .03 | .03 | .03 | .03 | .02 | .02 | .02 | .02 |
| **Women (N=26,443)** | Model 1 | Model 2 | Model 3 | Model 4 | Model 1 | Model 2 | Model 3 | Model 4 | Model 1 | Model 2 | Model 3 | Model 4 |
| **In SSC (ref.=in DSC)** | -20.66** | -62.59** | -56.90** | -96.70** | 4.77 | -6.87 | 19.82* | 8.06 | 2.82 | -0.52 | -5.00[†] | -8.05 |
| | (6.89) | (13.42) | (13.01) | (18.13) | (4.26) | (6.70) | (9.16) | (10.13) | (2.19) | (4.89) | (2.93) | (6.01) |
| **Relative Earnings**[a] | -15.80** | -15.70** | -15.77** | -15.75** | -0.39 | -0.32 | -0.32 | -0.29 | 0.03 | 0.02 | 0.01 | 0.01 |
| | (2.83) | (2.83) | (2.82) | (2.84) | (1.08) | (1.08) | (1.08) | (1.08) | (0.58) | (0.58) | (0.58) | (0.58) |
| X In SSC | 12.20 | | | 2.32 | 11.60*[SS] | | | -2.42 | -0.69 | | | 0.64 |
| | (12.72) | | | (22.45) | (5.30) | | | (9.48) | (3.61) | | | (6.74) |
| **Work Hours** | -1.41** | -1.42** | -1.41** | -1.42** | -0.15** | -0.15** | -0.15** | -0.15** | -0.06** | -0.06** | -0.06** | -0.06** |
| | (0.08) | (0.08) | (0.08) | (0.08) | (0.03) | (0.03) | (0.03) | (0.03) | (0.02) | (0.02) | (0.02) | (0.02) |
| X In SSC | | 1.08** | | 1.01* | | 0.30[†] | | 0.35 | | 0.09 | | 0.07 |
| | | (0.31) | | (0.51) | | (0.17) | | (0.28) | | (0.12) | | (0.16) |
| **Partner Work Hours** | -0.05 | -0.05 | -0.06 | -0.06 | 0.07* | 0.07* | 0.07* | 0.07* | 0.02 | 0.02 | 0.01 | 0.01 |
| | (0.08) | (0.08) | (0.08) | (0.08) | (0.03) | (0.03) | (0.03) | (0.03) | (0.02) | (0.02) | (0.02) | (0.02) |
| X In SSC | | | 0.90**[S] | 0.91 | | | -0.38* | -0.43[†] | | | 0.20*[SS] | 0.20 |
| | | | (0.34) | (0.58) | | | (0.19) | (0.26) | | | (0.08) | (0.15) |
| **R-Squared** | .13 | .14 | .13 | .14 | .01 | .01 | .01 | .01 | .03 | .03 | .03 | .03 |

*Note:* ref.=reference. SSC=same-sex couple. DSC=different-sex couple. 2003-2013 American Time Use Survey. Models also control for age, age squared, education, race, presence of children, school enrollment, marital status, and total couple earnings. Estimates are weighted. Robust standard errors in parentheses.

[a]-1=*respondent had no earnings*, 1=*respondent was the sole earner*.

**$p < .01$. *$p < .05$. [†]$p < .10$. A significant effect for people in same-sex couples, based on a post-estimation F-test is indicated by: [SS]$p < .01$. [S]$p < .05$. [φ]$p < .10$.

As we have seen, the magnitude of the couple-type differences in the relationships of interest could be large. The correlations between relative earnings, own paid work time, and partner's paid work time could also be large. In order to assess whether estimating each of the key SSC relationships of interest in isolation resulted in omitted variable bias, Model 4 included all the couple-type interaction terms for the key covariates. Changes in the estimates would suggest that the prior estimates had been affected by omitted variable bias. At the same time, the estimates in these models have larger standard errors. Due to the modest sample size of people in SSCs, it is important not to interpret the Model 4 estimates in isolation, but, rather, to examine how the estimates of the interaction terms changed in these models. Indeed, this check is limited in its ability to adjudicate between omitted variable bias and increased instability caused by the addition of more interaction terms. As such, the results of the current study should be interpreted as preliminary. In Model 4, the general patterns in the data do not change substantially, suggesting that this source of bias is not a concern.

Table 2 also presents analogous results for models predicting time spent on masculine, and gender-neutral tasks. The couple-type differences in the associations of interest that were obtained in the analysis of feminine housework time for men were not sustained in those of masculine or gender-neutral tasks. Specifically, Models 1-4, predicting time in masculine tasks, show, firstly, that among the key predictors only own work hours were significantly associated with time spent on masculine tasks for men in DSCs, whereas only partner's work time was significantly related to time spent in masculine housework for men in SSCs ($p<.10$ based on post-estimation F-tests). There is no evidence of couple-type differences in any of the key relationships: Although the work time coefficient differed significantly by couple type ($p<.01$) in Model 2, the interaction term decreased by almost 50 percent in Model 4. This large change in

the point estimate suggests that the coefficient in Model 2 had been confounded by the interactions for partner's work time and/or relative earnings, such that, once these interactions were controlled for in Model 4, the effect decreased in size. Finally, Models 1-4, predicting time in gender-neutral tasks, show no couple-type differences in the effect sizes of earnings and time in, and partner's time in, paid work.

The bottom panel of Table 2 reports results for women. In general, the factors predicting the housework of women in SSCs and DSCs differed. For feminine and gender-neutral housework, own usual paid work time (and relative earnings for feminine tasks) predicted housework time for women in DSCs, whereas partner's usual paid work time predicted housework time for women in SSCs. For masculine housework, own and partner's work time were related to housework for women in DSCs. Model 1 suggests that relative earnings were related to housework for women in SSCs, but the coefficient estimate decreased substantially in Model 4, suggesting that the coefficient in Model 1 had been confounded with own and/or partner's work time.

Thus far, results from the models show a stronger role of earnings in feminine housework time for men in SSCs than for men in DSCs, but couple-type differences in the coefficients of interest were not found for other types of housework. For women in SSCs, the relationship between paid work time and feminine housework was significantly weaker than that for women in DSCs, whereas the relationships between partner's work hours and feminine and gender-neutral housework were stronger for women in SSCs than women in DSCs. The relationships between own/partner's work time and women's masculine housework further differed in magnitude by couple type.

**Additional Robustness Checks:**

In order to examine whether couple-type differences in average sociodemographic characteristics drove the couple-type differences in the relationships of interest, I redid the analysis after reweighting the sample in order to balance DSCs and SSCs on these characteristics within gender. I estimated a logistic regression model (separate models for men and women) predicting whether the respondent is in an SSC based on education, race, age and presence of children, couple earnings, and respondent's and partner's work time. I then used the predicted probabilities from these estimates to create a set of weights equal to one for people in SSCs and equal to the predicted probability divided by one minus the predicted probability for people in DSCs. I checked that the distributions of the relevant variables were approximately equal across couple types after applying these weights and I re-estimated the models after applying these weights, comparing their results to the unweighted results. A number of the coefficients of interest for men and women in DSCs became insignificant in the weighted results compared with the unweighted results, likely because their weights were so much smaller than those of SSCs (average weights for people in DSCs were well below one, whereas all SSCs had a weight set to one). However, the couple-type differences in the coefficients of interest were robust across the two sets of models, suggesting that couple-type differences in average sociodemographic characteristics were not responsible for the couple-type differences found in the main results. To be clear, this balancing technique might have limitations relevant to the current analysis. First, the few large weights among those in DSCs may render the reweighted results sensitive to the specification of the logistic regression model used to estimate the weights (Guo & Fraser, 2015). Second, the variability of the coefficient estimates in the reweighted results may be increased and their estimated standard errors may be biased downward (Freedman & Berk, 2008). The

current analysis seems unlikely to be affected by this first issue because, in additional analyses, dropping the cases with relatively large weights did not affect the results. Regarding the second potential limitation, the point estimates of the reweighted results were generally quite similar to those of the unweighted results. Thus, the results seem robust.

In order to account for DSCs' greater likelihood of marriage (Table 1), I compared the key coefficients between DSCs and SSCs separately by marital status. In my models, I replaced the SSC indicator and its interaction terms with indicators for cohabiting DSCs, married SSCs, and cohabiting SSCs (with married DSCs serving as the reference group) and interaction terms between each of the key covariates (earnings and own and partner's work time) and these indicators. Due to the very small number of married SSCs in the sample (Table 1), I only examined the results comparing cohabiting SSCs and DSCs (for men: 119 SSCs and 1,417 DSCs, and for women: 156 SSCs and 1,607 DSCs). Though the results for cohabiting DSCs were somewhat different than those for married DSCs (they were generally less significant), the couple type differences in the coefficients were similar to the main results. However, for women's masculine housework, the relationship between housework and partner's work time remained significantly different by couple type in Models 3 and 4 ($p < .10$), but was, in addition, significant ($p < .10$) for SSCs, although the point estimates were similar to the main results. [It is important to note that the sample of SSC cohabiters is plausibly more likely to contain people in "marriage-like" relationships (e.g., people in civil unions, people who have had private marriage ceremonies) than the sample of DSC cohabiters, such that this check might "overcorrect" for the lack of marriage among SSCs.]

The analytic sample excluded respondents who have a partner who was not living in the household during the CPS because the ATUS does not collect earnings information for these

partners (Hofferth et al., 2017). However, it included cases for respondents who were not living in the household during the CPS but were not employed during the ATUS by imputing zero earnings for these partners. Analyses that excluded these cases (179 cases) were similar to the main analyses with the exception that, for women's masculine housework, the coefficient for usual hours of paid work was not significantly different at the .10 level in Model 2, but the point estimate was similar to that in the main results, and for men's masculine housework, the coefficient for partner's work time in Model 4 differed significantly ($p<.10$) by couple type (with similar point estimates to those in the main results).

I assessed whether model fit for feminine housework was improved if I included the square of relative earnings and a dummy variable flagging zero earners, both interacted with couple type (see, e.g., Schneider, 2011), to pick up nonlinearities in the earnings-housework associations. These changes did not improve model fit or yield statistically significant coefficients. I also evaluated models that fit the respondent's absolute earnings and her partner's absolute earnings and excluded both the relative earnings term and the total couple earnings term. These results were similar to those of the main analysis.

In the main analysis, several household tasks (checking mail, checking email, buying gas, and household organization) were not categorized into masculine, feminine, and gender-neutral tasks. Results were similar to the main results when checking mail, checking email, and household organization are categorized as feminine tasks (one by one and all together) as well as when email, checking mail, and buying gas are categorized as gender-neutral tasks (one by one and all together). However, SSCs' coefficient for partner's usual hours of paid work for men's feminine housework when household organization was classified as feminine housework (individually and with the other tasks) became significantly different by couple-type ($p< .10$) in

Model 4, though the point estimate was very similar to that in the main results. Additionally, including in men's gender-neutral tasks checking mail (individually and with the other tasks) made the work time coefficient significant ($p<.10$) for SSCs in Model 2 and the point estimate did not shrink in Model 4. The point estimates for both Models 2 and 4 were larger than in the main results.

Another set of robustness checks included more detailed race/ethnicity and age-of-children measures (described in the Data and Method section above). Results of these analyses were similar to the main results. However, supplemental analyses that distinguished between Latina/o, Black, and all other races found that, for men's masculine housework, the coefficient for partner's work time differed significantly by couple type ($p<.10$), though the point estimates were similar to those in the main results.

Finally, supplemental analyses examined whether the results are robust to the inclusion of a set of several other control variables [the presence of other household adults, housing type (hotel, room in rooming house or college dorm, mobile home, house/apartment, other), urbanicity, homeownership, spouse's education, spouse's race, relative education, and relative age] and the results were similar to the main results. However, for women's masculine housework, partner's usual work time was significant at the .10 level for SSCs (though, the point estimate was similar). Several of the latter variables were collected during the final CPS interview, so these analyses did not include respondents whose partner did not live in the household several months prior to the ATUS during the CPS interview (179 cases).

## Discussion

This study estimated the relationships between earnings, work hours, and time in housework by couple type. The key results are, firstly, that women and men in DSCs tended to specialize, respectively, in feminine and masculine housework tasks, but time in these gender-typed tasks did not differ markedly between men and women in SSCs. Second, the multivariate results for men show that, although relative earnings were associated with feminine housework time for men in DSCs, this relationship was even more pronounced for men in SSCs. For men's masculine housework, no couple-type differences were found in the relationships of interest in the main results, but a few of the robustness checks suggested that partner's paid work may be more strongly related to housework for SSCs. And for gender-neutral housework, no couple-type differences were found in the relationships of interest. Third, for women, the direction of the differences between SSCs and DSCs in the magnitude of the coefficients of interest differed by type of housework.

The descriptive results, whereby men and women in DSCs, but not SSCs, specialized in gender-typed housework tasks by sex highlight how SSCs cannot specialize according to sex, as DSCs can. This constraint might explain the results of the models assessing housework predictors for men. As explained in the Background section above, the gender ideology, doing gender, and gender frame perspectives predict that the sex composition of SSCs (i.e., two women, two men) might mean that some gender values/beliefs/expectations may not provide as much guidance among same-sex partners because such values/beliefs/expectations allocate labor based on sex differences between partners. Indeed, the literature comparing SSCs' housework to that of DSCs' suggests that some gender values/beliefs/expectations might play a weaker role in SSCs' housework (Doan & Quadlin, 2019; Dunne, 1999; Heaphy et al., 1999; Patterson et al.,

2004; Shechory & Ziv, 2007). If some gender values/beliefs/expectations provide less guidance to SSCs about how to allocate their housework, SSCs might be more likely to arrange their housework "from scratch" and partners might be more likely to have to explicitly coordinate their actions with each other, rather than fall back as much on gender values/beliefs/expectations that provide a ready-made blueprint for allocating housework to DSCs. In this context, it seems reasonable that SSCs would need to engage in more negotiation, reflection, and coordination between partners than DSCs to allocate their housework, such that economic factors such as earnings and time availability may play a larger role in SSCs' housework allocations than in DSCs', particularly for masculine and feminine tasks. The results for men are consistent with this explanation in that the relative earnings coefficients were larger for SSCs than DSCs for feminine housework, but no couple-type differences in the key relationships were found for gender-neutral housework. The caveat, of course, is that for masculine housework tasks, there were no couple-type differences in the coefficients of interest, except for perhaps partner's work time.

For women, own paid work time had a smaller relationship with feminine housework for SSCs compared with DSCs and partner's paid work had a larger relationship with feminine and gender-neutral housework for SSCs compared with DSCs. For masculine housework, there is ambiguity as to whether the relationships between housework and own/partner's work time were smaller for SSCs in comparison to DSCs or whether these relationships differed in sign between SSCs and DSCs (i.e., the own work/housework relationship could be negative for DSCs and positive for SSCs and the partner's work/housework relationship could be positive for DSCs and negative for SSCs). As with men, women in SSCs might go through more negotiation and coordination than women in DSCs in allocating housework, due to the absence of sex

differences. Indeed, that feminine housework time was organized more according to the partner's schedule in SSCs compared to DSCs, and less according to own schedule, is consistent with the notion that time in these tasks for SSCs is determined through more coordination between partners than it is in DSCs. It is surprising that, for gender-neutral housework, partners' work time was also larger in magnitude for SSCs, but perhaps the greater negotiation and coordination that may characterize SSCs' feminine housework carries over to gender-neutral housework. For masculine housework, the coefficients for own and partner's paid work time were smaller or possibly differed in sign for SSCs in comparison with DSCs. Masculine tasks are assumed to lack time-sensitivity (i.e., they often do not need to be done at a certain time of the day or week, but can be done when one wants) (Chesley & Flood, 2017; Civettini, 2015; Ridgeway, 2011). If the relationships between own/partner's work time and masculine housework were weaker for SSCs than DSCs, it could be because SSCs are most able to achieve their egalitarian ideal through masculine housework due to its lack of time-sensitivity and so these tasks get split rather equally instead of being determined through own and partner's work time. On the other hand, if these relationships differed in sign between SSCs and DSCs, own work time might have been associated with more time in masculine tasks (and partner's work time might have been associated with less) in order to allow partners who work long hours to continue to contribute to housework, despite their time constraints. In both cases, these couple-type differences could reflect SSCs' commitment to achieving equality in their housework (e.g., Cudeville et al., 2020; Dunne, 1999; Goldberg et al., 2012; Kurdek, 1993; Shechory & Ziv, 2007; Solomon et al., 2005; though see, e.g., Chan et al., 1998). That is, perhaps masculine task performance need not be constrained by paid work time commitments because of its flexibility with regard to when it needs to be done: for example, it might be rather easy for someone who works long hours to find

time around their paid work time constraints to mow the lawn when they find they have a break from work. As such, women in SSCs might be able to achieve their egalitarian ideal through masculine housework by either splitting these tasks equally or reserving these tasks for partners with large time constraints.

Prior authors have argued that housework time could affect or be jointly determined with paid work time and earnings. However, even a descriptive interpretation of the results that is sensitive to this potential source of endogeneity still supports the above conclusions. The finding that some relationships between economic factors and housework time are larger in magnitude for men in SSCs than men in DSCs means that men in SSCs take on more defined breadwinner/homemaker roles. Specifically, the finding that more housework time goes hand-in-hand with less relative earnings and (possibly) greater paid work time of the partner for men in SSCs than men in DSCs implies that the organization of housework time with respect to relative earnings and partner's paid work time for men in SSCs is characterized by a greater degree of specialization. This result is consistent with the predictions of the gender perspective that some gender values/beliefs/expectations provide less guidance to SSCs about how to allocate housework *and* paid work (e.g., those related to the male breadwinner/female homemaker model) such that SSCs might need to engage in more negotiation, reflection, and coordination between partners than DSCs in organizing housework and paid work commitments. In this context, SSCs' divisions of paid and unpaid labor might be more likely to follow an economic logic. As such, the relationships between housework and earnings and paid work time might be steeper for people in SSCs relative to those in DSCs, particularly for feminine and masculine housework tasks, because they are likely to be more efficient (Becker, 1991) or to maximize higher-powered partners' self-interest in minimizing their housework contributions.

Similarly, the findings for women that the relationship between feminine housework and own paid work time is larger for women in DSCs than women in SSCs, but the relationship between feminine and gender-neutral housework time and partner's paid work time is larger for women in SSCs, might reflect a greater degree of coordination between partners in the division of housework and paid work given that own housework time is organized more in relation to *partner's* paid work time in SSCs than DSCs and less in relation to own paid work time. Finally, the findings for women regarding masculine housework time, which show that either the relationships between paid work time and housework time are smaller or differ in sign for women in SSCs with respect to those in DSCs, still might reflect SSCs' greater preference for splitting housework evenly: perhaps SSCs split masculine housework evenly regardless of partners' paid work time or masculine housework and own/partner's paid work time are allocated such that partners spend more time in paid work if they do more masculine housework tasks, which are less time-sensitive. Differences between SSCs and DSCs in the purchasing of market substitutes could further explain some of the women's results. It seems plausible that outsourcing housework could affect the decision-making process by lowering the overall household demand for household members' time in housework (because outsourcing would mean that some of the housework load is completed by non-household members). According to the time availability perspective, this lower demand for household members' housework time would make trade-offs between paid and unpaid work less steep. For example, going from full-time to part-time work for a person in a household that outsources some household tasks might be associated with less of an increase in housework time than for a person in a household that does not outsource housework because there would be less of a demand for increased housework time in such households. SSCs might be more likely to outsource housework than DSCs because

they have higher average economic resources and work more hours (Table 1) (so they have a greater ability and need, respectively, to outsource) and because their housework allocation process might involve more reflection and negotiation (so they're more likely to recognize the benefit of outsourcing). The weighting exercise suggested that SSCs' higher average economic resources and work hours relative to DSCs did not explain the results. In addition, in analyses not shown, I did not find couple-type differences in the relationships between total couple earnings and housework (except for among women's masculine housework), which may suggest that there are few couple-type differences in the propensity to outsource. Nevertheless, I did not have direct measures of outsourcing, so these conclusions are preliminary. Outsourcing could explain the couple-type differences between SSCs and DSCs for women's masculine housework as well as the relationship between usual work time and feminine housework for women because these relationships were found to be smaller for SSCs in comparison to DSCs.

Alternatively, SSC's lower likelihood of being married could explain the couple-type differences in the results. For example, marriage may incentivize specialization and heighten the influence of values/beliefs favoring a male breadwinner/female homemaker division of labor (Brines & Joyner, 1999; Ridgeway, 2011; Schneebaum, 2013; Waite & Gallagher, 2000). However, the current analysis did not find different couple-type differences among cohabiters, which provides preliminary evidence that marital status differences do not explain the results.

Overall, the current study's findings are generally consistent with previous studies. However, the findings that relative earnings and work time were stronger predictors of some housework tasks for men and women in SSCs than for DSCs are not consistent with prior studies that tried to compare DSCs and SSCs (e.g., Goldberg et al., 2012; Patterson et al., 2004; Solomon et al., 2005), with the exception of Cudeville et al. (2020) who found an effect of

income difference on equality in home repairs for SSCs, but not for DSCs and Smart et al. (2017) who, in bivariate analyses of the ATUS, found a larger relationship between spouse's paid work time and housework for men in SSCs than men (and women) in DSCs. This difference could have come about as a result of differences in geographic contexts [that is, the ATUS is nationally representative (Hofferth et al., 2017), and convenience samples generally are not], the kinds of respondents who are represented in probability as opposed to convenience samples, or the ways the time-diary method differs from other methods of measuring time use. Importantly, Carrington (1999) found that, during interviews SSCs tried to portray their division of labor as more egalitarian than it actually was, shedding significant doubt on the literature's emphasis on SSCs' equality in their division of labor. Thus, it is possible that the high-quality time-use measure used in this paper has the effect of revealing the relatively more important role of relative earnings and time availability in the housework time of SSCs vis-à-vis DSCs.

The current study contributes to the literature by analyzing a national probability sample that includes high-quality time-use measures that are in fact considered the gold standard for large-scale evidence in this field (Sullivan, 2013). Prior research mostly relied on non-representative convenience samples and time-use information collected from in-depth interviews or survey self-report questions. However, the current study has several limitations of its own. First, the small sample of respondents in SSCs might have resulted in a number of the null findings. Second, the ATUS only collects housework time on one member of the household (Hofferth et al., 2017), so it is not possible to formally assess the division of labor within a given couple, just aggregate differences in housework time across male and female members of different couple types. Third, the ATUS does not collect information on activities undertaken at the same time as the primary reported activity, with the exception of child care (Hofferth et al.,

2017) so, time spent on household tasks that are "multi-tasked" (e.g., cooking) may be underestimated. Fourth, there may be measurement error in the identification of respondents in SSCs (Black et al., 2000; Kreider and Lofquist, 2015). Finally, and as with any cross-sectional study of time use, this analysis could not tease out endogeneity in paid work time, spouse's work time, and relative earnings with respect to housework time. These limitations aside, the current study provides new insight into the relationships between the paid work time and earnings of people in SSCs and DSCs and the way they organize housework time.

## **Works Cited**


Bauer, G. (2016). Gender roles, comparative advantages and the life course: The division of domestic labor in same-sex and different-sex couples. *European Journal of Population*, *32*(1), 99-128. doi:10.1007/s10680-015-9363-z

Becker, G. S. (1991). *A treatise on the family: Enlarged edition*. Harvard University Press.

Bem, D.J. (1970). *Beliefs, attitudes and human affairs.* Belmont, CA: Brooks/Cole.

Bianchi, S. M., Sayer, L. C., Milkie, M. A., & Robinson, J. P. (2012). Housework: Who did, does or will do it, and how much does it matter?. *Social Forces*, *91*(1), 55-63.

Bittman, M., England, P., Sayer, L., Folbre, N., & Matheson, G. (2003). When does gender trump money? Bargaining and time in household work. *American Journal of Sociology*, *109*(1), 186–214. doi:10.1086/378341

Black, D., Gates, G., Sanders, S., & Taylor, L. (2000). Demographics of the gay and lesbian population in the United States: Evidence from available systematic data sources. *Demography*, *37*(2), 139–154. doi:10.2307/2648117

Blood, R. O., & Wolf, D. M. (1960). Husbands and Wives: The Organization of Married Living. Glencoe, Illinois: Free Press.

Brines, J. (1994). Economic dependency, gender, and the division of labor at home. *The American Journal of Sociology*, *100*(3), 652–688. doi:10.1086/230577

Brines, J., & Joyner, K. (1999). The ties that bind: Principles of cohesion in cohabitation and marriage. *American Sociological Review*, 333-355. doi:10.2307/2657490

Carlson, D. L., & Lynch, J. L. (2017). Purchases, penalties, and power: The relationship between earnings and housework. *Journal of Marriage and Family*, *79*(1), 199-224. doi:10.1111/jomf.12337

Carrington, C. (1999). *No place like home: Relationships and family life among lesbians and gay men.* Chicago: University of Chicago Press.

Chan, R. W., Brooks, R. C., Raboy, B., & Patterson, C. J. (1998). Division of labor among lesbian and heterosexual parents: Associations with children's adjustment. *Journal of Family Psychology*, *12*(3), 402-409. doi:0893-3200.12.3.402

Civettini, N. (2015). Gender display, time availability, and relative resources: Applicability to housework contributions of members of same-sex couples. *International Social Science Review*, 91(1), 1-34.

Coverman, S. (1985). Explaining husbands' participation in domestic labor. *Sociological quarterly*, *26*(1), 81-97. doi:10.1111/j.1533-8525.1985.tb00217.x

Cudeville, E., Gross, M., & Sofer, C. (2020). Measuring gender norms in domestic work: A comparison between homosexual and heterosexual couples. halshs-02468956

Davis, Shannon N. and Theodore N. Greenstein. 2013. “Why study housework? Cleaning as a window into power in couples. *Journal of Family Theory & Review*, 5(2), 63-71. doi:10.1111/jftr.12004

Doan, L., & Quadlin, N. (2019). Partner characteristics and perceptions of responsibility for housework and child care. *Journal of Marriage and Family*, *81*(1), 145-163. doi:10.1111/jomf.12526

Dunne, G. A. (1999). A passion for ‘sameness’? Sexuality and gender accountability. In Silva, E.B., & Smart, C. (Eds.), *The New Family?*, (pp. 66-82). London: Sage.

Erickson, R. J. (2005). Why emotion work matters: Sex, gender, and the division of household labor. *Journal of Marriage and Family*, *67*(2), 337-351. doi:10.1111/j.0022-2445.2005.00120.x

Fauser, S. (2019). Time availability and housework: The effect of unemployment on couples’ hours of household labor. *Social Science Research*, *83*, 102304.

Freedman, D. A., & Berk, R. A. (2008). Weighting regressions by propensity scores. *Evaluation Review*, *32*(4), 392-409. doi:10.1177/0193841X08317586

Gupta, S. (2007). Autonomy, dependence, or display? The relationship between married women’s earnings and housework. *Journal of Marriage and Family*, *69*(2), 399–417. doi:10.1111/j.1741-3737.2007.00373.x

Goldberg, A.E., Smith, J.Z., & Perry-Jenkins, M. (2012). The division of labor in lesbian, gay, and heterosexual new adoptive parents. *Journal of Marriage and Family*, *74*(4), 812-828. doi:10.1111/j.1741-3737.2012.00992.x

Gough, M., & Killewald, A. (2011). Unemployment in families: The case of housework. *Journal of Marriage and Family*, *73*(5), 1085-1100. doi:10.1111/j.1741-3737.2011.00867.x

Guo, S., & Fraser, M. W. (2015). *Propensity score analysis: Statistical methods and applications* (Vol. 11). Thousand Oaks, CA: Sage.

Heaphy, B., Donovan, C., & Weeks, J. (1999). Sex, money and the kitchen sink: power in same-sex couple relationships. In Seymour, J., & Bagguley, P. (Eds.), *Relating Intimacies* (pp. 222-245). London: Macmillan.

Hochschild, A., & Machung, A. (2003). *The Second Shift*. London: Penguin Books.

Hofferth, S.L., Flood, S.M., & Sobek, M. (2017). American Time Use Survey Data Extract Builder: Version 2.6 [dataset]. University of Maryland and University of Minnesota.

Hook, J. L. (2017). Women's housework: New tests of time and money. *Journal of Marriage and Family*, *79*(1), 179-198. doi:10.1111/jomf.12351

Kan, M.Y. (2014). Housework participation measurement. *Encyclopedia of Quality of Life and Well-Being Research*: 2967-2971. doi:10.1007/978-94-007-0753-5_3988

Kelly, M., & Hauck, E. (2015). Doing housework, redoing gender: Queer couples negotiate the household division of labor. *Journal of GLBT Family Studies*, *11*(5), 438-464. doi: 10.1080/1550428X.2015.1006750

Killewald, A., & Gough, M. (2010). Money isn't everything: wives' earnings and housework time. *Social Science Research*, *39*(6), 987–1003. doi:10.1016/j.ssresearch.2010.08.005

Kreider, R. M., & Lofquist, D. A. (2015). Matching survey data with administrative records to evaluate reports of same-sex married couple households. Washington, DC: US Census Bureau.

Kurdek, L. A. (1993). The allocation of household labor in gay, lesbian, and heterosexual married couples. *Journal of Social Issues*, *49*(3), 127-139. doi:10.1111/j.1540-4560.1993.tb01172.x

Martell, M. E., & Roncolato, L. (2019). Share of Household Earnings and Time Use of Women in Same-Sex and Different-Sex Households. *Eastern Economic Journal*, 1-24. doi:0.1057/s41302-019-00145-4

Pailhé, A., Solaz, A., & Souletie, A. (2019). How do women and men use extra time? Housework and childcare after the French 35-hour workweek regulation. *European Sociological Review*, *35*(6), 807-824. doi: 10.1093/esr/jcz039

Patterson, C.J., Sutfin, E.L., & Fulcher, M. (2004). Division of labor among lesbian and heterosexual parenting couples: Correlates of specialized versus shared patterns. *Journal of Adult Development*, *11*, 179–189. doi:10.1023/B:JADE.0000035626.90331.47

Ridgeway, C. L. (2011). *Framed by gender: How gender inequality persists in the modern world*. New York: Oxford University Press.

Shechory, M., & Ziv, R. (2007). Relationships between gender role attitudes, role division, and perception of equity among heterosexual, gay and lesbian couples. *Sex Roles*, *56*(9-10), 629-638. doi:10.1007/s11199-007-9207-3

Schneebaum, A. (2013). *The division of labor in same-sex couples* (Unpublished doctoral dissertation). University of Massachusetts-Amherst, Amherst, MA.

Schneider, D. (2011). Market earnings and household work: New tests of gender performance theory. *Journal of Marriage and Family*, *73*(4), 845–860. doi:10.1111/j.1741-3737.2011.00851.x

Schwalbe, M., Holden, D., Schrock, D., Godwin, S., Thompson, S., & Wolkomir, M. (2000). Generic processes in the reproduction of inequality: An interactionist analysis. *Social Forces*, *79*(2), 419-452. doi:10.1093/sf/79.2.419

Smart, M. J., Brown, A., & Taylor, B. D. (2017). Sex or sexuality? Analyzing the division of labor and travel in gay, lesbian, and straight households. *Travel Behaviour and Society*, *6*, 75-82. doi: 10.1016/j.tbs.2016.07.001

Solomon, S. E., Rothblum, E. D., & Balsam, K. F. (2005). Money, housework, sex, and conflict: Same-sex couples in civil unions, those not in civil unions, and heterosexual married siblings. *Sex Roles*, *52*(9-10), 561-575. doi:0.1007/s11199-005-3725-7

Stafford, R., Backman, E., & Dibona, P. (1977). The division of labor among cohabiting and married couples. *Journal of Marriage and the Family*, 43-57. doi: 10.2307/351061

Stewart, J. (2013). Tobit or not Tobit?. *Journal of economic and social measurement*, *38*(3), 263-290. doi:10.3233/JEM-130376

Sullivan, O. (2013). What do we learn about gender by analyzing housework separately from child care? Some considerations from time-use evidence. *Journal of Family Theory & Review*, *5*(2), 72-84. doi: 10.1111/jftr.12007

Tornello, S. L., Sonnenberg, B. N., & Patterson, C. J. (2015). Division of labor among gay fathers: Associations with parent, couple, and child adjustment. *Psychology of Sexual Orientation and Gender Diversity*, *2*(4), 365. doi:10.1037/sgd0000109

Waite, L. J., & Gallagher, M. (2000). *The case for marriage: Why married people are happier, healthier, and better off financially*. New York: Doubleday.

West, C., & Zimmerman, D. H. (1987). Doing gender. *Gender & society*, *1*(2), 125-151. doi:10.1177/089124328

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data*. MIT press.

# CHAPTER 3:

# THE GROWTH OF FLEXIBLE WORK HOURS BY OCCUPATION

## Introduction

Recent research has emphasized the stark divides by occupation in workplace accommodations for family responsibilities and the problems balancing work and family responsibilities that ensue (Williams, 2010; Williams, Blair-Loy, and Berdahl, 2013). Workers in professional and managerial occupations often struggle with long work hours and a workplace culture that views the "ideal worker" as someone who is perpetually available for work, has few responsibilities outside of paid work, and has the backstage support of a stay-at-home spouse (Williams, 2010; Williams, Blair-Loy, and Berdahl, 2013). Flexible work hours are frequently available in these occupations (Golden, 2001; Golden, 2008), although workers are sometimes resistant to use such arrangements for fear that using them would signal a lack of commitment to work and then result in negative career consequences (Weeden 2005).

Although these conditions frequently result in work-family conflict, professional and managerial workers may be better off than other workers (Williams, 2010). Workers in other occupations often struggle with highly inflexible work hours, including strict absenteeism policies or mandatory overtime practices. Some also have unpredictable and variable work hours. Although these workers sometimes struggle to get enough hours of work, the inflexibility of their work hours and the variability of their work schedules makes caring for their families a huge struggle (Williams, 2010; Williams, Blair-Loy, and Berdahl, 2013). Along these lines, research has emphasized the inequality in the availability and use of flexible work hours by occupation (Gerstel and Clawson, 2014; Williams, 2010; Weeden 2005). In particular,

occupations in management and the professions have greater rates of flexible work hour scheduling than most other occupations (Golden, 2001; Golden, 2008; Kossek and Lautch, 2018; though see Glass and Fujimoto, 1995). This inequality is often explained as a function of how the nature of the work makes the jobs more or less amenable to flexible hours, the extent of the demand for the skills required to do the job, and the percent of women in the occupation (Glass and Fujimoto, 1995; Dulebohn et al., 2009; Deitch and Huffman, 2001; Weeden, 2005).

This inequality is often analyzed at single points in time and so discussion and understanding of this inequality is typically decontextualized from the fact that rates of flexible work hours have risen substantially in the US. In 1985, 13.6 percent of workers had flexible work schedules, whereas in 2004, 29.6 percent did (Menamin, 2007). Indeed, very few studies have examined the sources of this increase in the availability or use of flexible work hours. To what extent is this increase in flexible work hours due to changes in the occupational structure, such that the occupations in which flexible work is standard have grown more than other occupations? Moreover, has the rate of growth of flexible work schedules been equal for all occupations or has it been unequal, thereby making the occupational inequality in flexible scheduling more or less entrenched?

Finding the answers to these questions is important because of their implications for understanding changes in family life, gender inequality at work and at home as well as working conditions. First, the literature continues to try to understand why family behavior diverged by parents' educational levels over the past several decades because this increased inequality might be linked to increased inequality in children's resources and decreased social and economic mobility (Mclanahan, 2004). Several of these divergences might be explained by a divergence in parents' control over their time, particularly with regard to the greater increase in parents' time

investments in children among the highly educated relative to the less educated and the greater decrease in the rate of divorce among the highly educated relative to the less educated. Because we don't know how inequality in flexible work arrangements has changed over time, authors have not hypothesized how inequality in the growth of flextime within occupations might have played a role in causing these divergences in family behavior. Second, there is interest in understanding why movements over time toward gender equality at work and at home have been uneven (England, 2010). Because flexible working arrangements are considered important for achieving gender equality (Thébaud and Halcomb, 2019), understanding how equal the growth of flextime has been by occupation has implications for explaining this unevenness (England, 2010). For example, inequality in the growth of flextime could partially explain why women's employment increased more among the highly educated than the less educated over the past several decades (England, 2010). Third, assessing the extent to which flextime grew because the prevalence of occupations for which flextime is standard grew more than other occupations provides information that could be useful to policymakers and activists seeking to expand flexible workplace accommodations. For example, a finding that the expansion of high-flextime occupations explains most of the growth of flextime would imply that changes in working conditions and worker behavior *within* occupations explain little growth. This would point to the potential levers that could be used to expand flextime, such as promoting change within occupations.

The purpose of this chapter is to analyze inequality in the growth of flexible work hours and to examine the structural sources of the growth of flexible hours, focusing in particular on the role of occupations. It analyzes trends in the proportion of workers with flexible work hours between 1989 and 2018 by occupation, and performs decomposition analyses of changes over

time in this proportion in order to estimate how changes in the distribution of occupations explain the growth of flextime.

## Background

The following sections review the literature on the relationship between occupation and flexible schedules and change over time in that relationship in order to develop predictions about how change over time in the occupational composition affected flexible scheduling inequality between workers. The recent literature often distinguishes between the availability of flexible work schedules and the use of flexible work schedules, so the following review will make this distinction. The current study's measure captures whether workers are on a schedule that allows them to vary their start and stop times, which eludes this distinction and instead falls in between use and availability of flextime. Specifically, this measure captures whether workers can change their stop/start times, but it doesn't indicate whether they actually do, so it does not capture use of flextime. At the same time, this measure is not of availability of flexible schedules because it does not capture workers who could have flexible work hours if they enrolled in a flextime program at their workplace or asked their manager. I assume that factors that affect the availability or use of flexible work hours will affect whether a worker has a schedule that allows them to vary their start/stop times.

### The Relationship Between Occupation and Flexible Work Hours:

Why are occupations related to flexible work? According to the economic rationality perspective, employers will offer flexible work hours only if they increase profitability and decrease turnover and its associated costs (Glass and Fujimoto, 1995). Because flextime helps

employers attract and retain employees (Dulebahn et al., 2009), and because women have more family responsibilities than men, occupations with a relatively high share of women should be more likely to offer flextime.[12] Moreover, how tight labor markets are will increase the likelihood of employers offering flextime: in tighter labor markets, employers will be more motivated to offer flextime in order to compete for labor (Glass and Fujimoto, 1995). Professional/managerial occupations have tighter labor markets than other occupations because these jobs require a level of formal training or experience that is less prevalent in the labor force. This implies that jobs in these occupations will be more likely to have flexible arrangements.

An alternative perspective on work arrangements focuses on employers' desires to control production and manage conflicts of interest between managers and employees. Labor demand empowers workers and increases the likelihood of the provision and use of flexible arrangements through workers' bargaining with their employers (Glass and Fujimoto, 1995; Deitch and Huffman, 2001; Secret, 2000). Professional/managerial workers have more market power than other workers because of skill scarcity and, in some occupations, institutionalized sources of closure that ensure the supply of workers in the occupation does not keep up with demand for them (Weeden 2002). As such, professional/managerial workers will be more likely to have access to and to use flexible arrangements.

Workplace culture can also affect the provision and use of flexible working arrangements. Pro-family workplace cultures (i.e., workplaces containing supportivesupervisors) are more likely to offer flexible arrangements (Glass and Fujimoto, 1995) and employees in such

[12] However, the relationship between flexible arrangement availability and the proportion of women in an occupation may be upside-down U-shaped because woman-dominated occupations tend to contain high concentrations of women who have few alternative employment options, which may reduce the bargaining power of workers in such occupations (Deitch and Huffman, 2001).

environments may be more likely to use them because they feel more buffered from any perceived negative career consequences of using them (Blair-Loy and Wharton, 2002). Managers/professionals are expected by supervisors and co-workers to have minimal family responsibilities and be ever available for work (Williams et al., 2013, p. 211). So managers/professionals may be hesitant to use flexible work hours for fear of the career consequences that they think might result from making their non-work lives salient in the workplace (Williams et al., 2013). Similarly, workers in low-wage occupations are expected by employers and managers to have open schedules and be available for work all of the time (Williams et al., 2013, p. 215-216), so they too may be hesitant to use flexible work hours out of fear of negative consequences for their careers (Williams et al., 2013).

The nature of the work is another reason why occupations have differential access to flexible hours (Weeden, 2005). Occupations involving transferable knowledge, information-based tasks, little direct supervision, visiting clients at their homes or workplaces, and little need for timely communication with colleagues are more likely to have flexible arrangements available as a function of the nature of the work (Weeden, 2005). Professional/managerial occupations tend to have many of these characteristics as do some sales occupations.

Given that theory and empirical research tends to support the view that professional/managerial workers are more likely to have flexible schedules (Golden, 2001; Golden, 2008; Glass and Fujimoto, 1995;Kossek and Lautch, 2018) and evidence that over time the percentages of jobs in such occupation in the labor force have grown (Kalleberg, 2011, p. 64-5), the growth of professional/managerial jobs in the labor market should have contributed to the growth of flexible work schedules. Therefore, the current study predicts that changes over time

in the occupational distribution of workers accounted for part of the growth in the proportion of workers with flexible work schedules over time.

**Change in the Relationship Between Occupation and Flexible Work Hours:**

Theories of technological adoption suggest that flexible schedules will grow over time for all workers. These theories predict that the benefits of an organization adopting a technology increase over time as organizations become more familiar with the technology and more certain about its benefits (Bryson et al., 2007, p. 407). At the same time, the costs of an organization adopting a technology decrease over time as human resources consultants become more familiar with the technology and more employees become more familiar with the technology from prior jobs (Bryson et al., 2007).

Why might growth rates differ across occupations? Several of the possible causes of increased wage inequality over the past several decades similarly predict a divergence in flextime use by occupation. Most of these explanations rely to some extent on assumptions from neo-classical economic theory that shifts in the demand or supply functions of workers in certain occupations will alter the wages these workers can command in the labor market. These ideas about the market power of workers similarly apply to job benefits such as flexible scheduling, with the assumption that workers with greater market power will use that power to request access to and then use flexible scheduling at a higher rate than those with less market power (Glass and Fujimoto, 1995; Deitch and Huffman, 2001; Secret, 2000; Golden, 2008), in line with the theoretical perspectives on flexible work arrangements.

Why has market power shifted, and what are the implications of these explanations for availability and use of flexible work arrangements? First, technological changes decreased demand for workers with lower skill levels (Kalleberg 2011; Goldin and Katz 2014; Weeden and Grusky 2014). To the extent that declining demand reduces workers' ability to bargain for such "perks" as flexible schedules, flexible scheduling will decline (or grow at a slower rate) for less skilled workers than for more skilled workers. Because non-managerial and non-professional occupations are more likely to require a lower level of skill, even net of educational level, than managerial/professional occupations, the overall proportion of workers with flexible scheduling would have declined or grown at a slower rate in this occupational group compared with that of managerial/professional occupations and the gap between non-managerial/non-professional occupations and managerial/professional occupations in the proportion of workers with flexible scheduling is predicted to have increased. Second, occupational licensing practices may have expanded over time, which would have increased the market power of workers in such licensed occupations by restricting the supply of workers who enter the occupation or offer a similar product in another occupation (Weeden and Grusky, 2014). Because these licensing practices are mostly found at the top of the income distribution (Weeden and Grusky, 2014), I predict that they have contributed to a greater increase over time in the market power of managerial/professional workers compared with that of other workers. As such, I predict that this occupational closure expanded the availability and use of flextime over time for managerial/professional workers, thereby increasing inequality in flextime between these workers and other workers. Third, a special type of occupational closure may have grown among managers (Weeden and Grusky, 2014). Specifically, while the demand for managers has grown due to globalization, the expansion of product markets, and increasingly complex

divisions of labor within firms, the supply of managers has not expanded enough to meet the rise in demand because certain credentials such at the MBA have become a prerequisite for some managerial positions (Weeden and Grusky, 2014). The increased market power among managers resulting from this occupational closure should have similarly increased the availability and use of flextime among managers over time.

Additionally, institutional labor protections for workers at the bottom of the skill distribution have decreased over time (Kalleberg, 2011, p. 78-79). The loss of labor protections for lower skill workers might have hampered the growth of flextime for these workers because it inhibited their ability to negotiate for their needs. These arguments predict that flexible scheduling has declined (or grown at a slower rate) among less skilled workers, increasing the gap between highly skilled and less skilled workers' flexible scheduling. Because non-managerial and non-professional jobs are more likely to require lower skill levels than managerial/professional jobs, even net of educational level, the overall proportion of workers with flexible scheduling would have declined more (or grown at a slower rate) among non-managerial and non-professional workers than among managerial/professional workers, which would have increased inequality in the proportion of workers with flextime in these occupations relative to professional/managerial occupations.

Additionally, the proportion of women in one's occupation should be related to flexible scheduling availability because employers are expected to make these benefits available in order to attract and retain employees with caregiving responsibilities or who anticipate caregiving responsibilities (Dulebohn et al., 2009, p. 98). Because professional, managerial, and non-retail sales occupations have integrated more rapidly than other occupations (England, 2010), I predict

that flexible scheduling has grown more for these occupations compared with other occupations because women have entered them at a faster rate. Therefore, the cross-occupation gap in flextime would have also increased over time.

Finally, it should be noted that there might be variation in the rate of growth of flextime within professional occupations. Goldin and Katz (2011, 2016) presented a theoretical framework that suggests that the decrease in self-employment in many healthcare occupations would have increased the rate of workers with flexible work hours because self-employment in healthcare occupations is tied to a lesser ability to work flexibly. For example, the owner of a pharmacy or a doctor's office has less flexibility than an employee because they have to work or be on-call whenever the establishment is open. They suggest that flexibility might have grown at a faster rate among healthcare occupations compared with legal and financial professional occupations (Goldin and Katz, 2016). Additionally, given immovable school hours, I also do not expect that the proportion of teachers with flexible work hours increased as fast as the proportion of other professional workers.

**Other Predictors of Flexible Work Hours:**

Occupations are not the only predictors of flexible work hours: workers' labor market characteristics as well as personal characteristics also play a role. To begin, many aspects of workers' jobs and skills are thought to affect the availability and use of flexible work hours. Workers in competitive industries may be less likely to have access to and to use flexible work (Glass and Fujimoto, 1995; Secret, 2000) because their organizations are more concerned with profits (Secret, 2000). Theory predicts an ambiguous effect of unionization on workers' access to flexible arrangements: on one hand, unionization might increase the likelihood that workers

have access to flexible arrangements by empowering workers and, on the other hand, unionization might decrease the likelihood that workers have access to flexible arrangements by formalizing workplace rules and procedures, thereby limiting supervisors' flexibility in responding to workers' individual needs (Glass and Fujimoto, 1995).[13] Employees with higher human capital (e.g., higher levels of education) might also be more likely to have access to flexible arrangements (Glass and Fujimoto, 1995). Organizational theory further suggests that firms in industries and geographic regions with higher rates of flexible arrangements available are more likely to decide to adopt flexible arrangements in response to institutional pressures (Dulebohn et al., 2009).

Workers' personal characteristics might also predict flexible work arrangements. People with caregiving responsibilities may be more likely to use flexible work, especially mothers who fill the role of primary caregiver (Blair-Loy and Wharton, 2002; Secret, 2000). Marital status, spouse's employment status, and race/ethnicity are also expected to affect one's likelihood of using flexible hours because family responsibilities and cultural norms about the division of household labor will differ according to these statuses.

## Data and Methods

### Data:

The current study used the 1989, 1991, 1997, 2001, and 2004 Current Population Survey's (CPS; available through IPUMS) Work Schedules Supplement and the 2017-2018

[13] Given that some unions are organized at the occupational level (Weeden, 2002), it is unclear whether unionization should be considered an occupational lever that affects the presence of flexible schedules or a confounder of the relationship between flexible schedules and occupations. The structure of the current analysis addresses this ambiguity. Specifically, the main analyses did not control for union coverage, but supplemental analyses did and found that the findings in the main results regarding occupations were not altered.

Leave and Job Flexibilities Module of the American Time Use Survey (ATUS; available through IPUMS) (Flood et al., 2021; Hofferth et al., 2020). The CPS supplements were fielded in May of the year of the survey and the ATUS module was fielded between January 2017 and December 2018.

The universe of the CPS is the civilian noninstitutionalized population of the US who live in households. Information on all sampled household members is collected, but only employed civilian household members ages 15 or older were eligible to answer questions in the Work Schedules Supplement.[14] The ATUS sample is drawn from the CPS sample: first, the oversample of small states is dropped. Next, the households are stratified by the race/ethnicity of the householder, the presence and age of children, and the number of adults (among households consisting only of adults). These strata are then sampled at various sampling rates, including over-samples of households with a Hispanic or non-Hispanic black householder and households with children as well as under-samples of households without children (Bureau of Labor Statistics, 2021). Finally, a household member aged 15 or older is randomly selected to participate in the ATUS. ATUS respondents who are employed (excluding the self-employed) are eligible for the Leave and Job Flexibilities module (Bureau of Labor Statistics, 2021). ATUS weights adjust for the over-samples and under-samples as well as the selection of a single household member, such that weighted ATUS data are nationally representative of the civilian, noninstitutionalized US population age 15 and over (Bureau of Labor Statistics, 2019; Bureau of Labor Statistics, 2021). In particular, because of these adjustments, there is no need to randomly select one member of the household in the CPS sample in order to make it comparable to the ATUS sample.

[14] Though, in 1989, employed civilian household members ages 14 or old were eligible.

The CPS and ATUS differ in that the CPS allows proxies in the household to fill out the Work Schedules Supplement for absent household members, and a substantial proportion of responses comes for proxies, but the ATUS relies exclusively on self-responses. Prior research has found a lot of variation in the level of agreement between proxy reports and self-reports; however, because most of these studies have not had direct measures of the phenomenon being compared, they are limited in their usefulness for assessing the accuracy of proxy reporting (Cobb, 2018). By contrast, the studies with sufficient conditions for assessing the adequacy of proxy reporting suggest that proxy responses to survey questions are nearly as accurate as self-responses (though still generally less accurate) (Cobb, 2018). For the purposes of this study, proxy reporting of the flexible work hours measure (see below) may underestimate its true prevalence. I will address the difference in the use (and non-use) of proxy reports in the CPS and the ATUS with supplemental analyses that only analyze CPS data.

I weighted the data by the distributor-provided person weights. The 1989 and 1991 CPS weights use the 1980 Census-based controls, the 1997 and 2001 CPS weights use the 1990 Census-based controls, the 2004 CPS weights use the 2000 Census-based controls, and the 2017 and 2018 ATUS module weights use the 2010 Census-based controls. As such, the weighted data in which the weights are based on different censuses are not strictly comparable. This difference mostly affects estimates of population counts, but has little effect on summary measures like averages and percentages (U.S. Bureau of the Census, 2004; McCrate, 2012, note 9).

Another potential disparity across survey years is in whether the CPS used computer-assisted interviewing; here, I follow prior research in assuming that trends are unaffected by data

collection method (e.g., Cha and Weeden, 2014; Goldin, 2006; Pettit and Ewert, 2009; Weeden et al., 2016).

The analytical sample for the main analysis of the current study was limited to paid employees and those over age 15 and excluded the self-employed, those in the armed forces, and those with spouses in the armed forces.[15] The 1.18 percent of the sample with missing data on any of the variables used in the main models were also dropped from the analytical sample.

**Dependent variable:**

The CPS and ATUS modules both measure flexible work hours. Specifically, in the later years of the surveys, respondents are asked: "Do you have flexible work hours that allow you to vary or make changes in the time you begin and end work?" In 1989 and 1991 the wording was slightly different. The question asked was: Are you "on flextime or some other schedule that allows workers to vary the time they begin and end their workday?." I coded those workers with flextime as those who answered "yes" to the flextime questions. Due to the change in question wording, supplemental analyses analyzed the data from 1997 forward.

Although the literature on flextime has recently drawn a distinction between the availability of flextime and the use of flextime, this measure captures whether workers have the ability to vary their start and stop times (e.g., Meninin, 2007, Weeden, 2005; Genedek and Hill, 2017). However, Golden (2009) interpreted this measure as having flextime availability, but with the caveats that it might underestimate the true availability of flextime because some employees are not aware of formal flextime policies at their workplace and some employees may

[15] The ATUS sample included those with spouses in the armed forces because information on partner's industry is not updated in the ATUS. Only 1 percent of the 2017-2018 ATUS analytic sample had a spouse in the armed forces during the eighth interview of the CPS.

have formal flextime programs at their workplaces, but have not signed up for them. Although not mentioned by Golden, it seems that a similar logic would apply to informal flextime arrangements made with one's workplace: some employees don't know whether their manager would allow them more flexibility in their work hours because they have not asked. Following most prior research, the current study interprets this measure as having the ability to vary one's start and stop working times.

The CPS/ATUS measures of flextime cannot capture two other nuances. First, the measure does not allow researchers to distinguish between workers who can vary their start and end time by a few minutes and those can who drastically rearrange their work hours across the week (Golden, 2008). Second, it does not capture differences in the frequency with which workers can alter their schedules (Golden, 2008). Despite these limitations, this flexible work measure continues to be used in the literature (Genedek, 2017; Golden, 2008; McCrate, 2012).

This measure of flextime was not asked of self-employed workers in 1991, 2017, and 2018, whereas it was in 1989, 1997, 2001, and 2004. I addressed this by restricting the samples to wage and salary workers.

Furthermore, the flextime question varies in its position in the survey interview, with different lead-in questions across some years of the surveys. However, in all years the flextime questions appear after the respondent is primed to think about work hours/scheduling in their main job. Specifically, in the CPS, the flextime question followed questions about work hours in one's main job and, in the ATUS, the flextime question was the first question about work hours/scheduling, but respondents were told prior to the flextime question that their next set of questions are about flexibility in the scheduling of their main job.

**Independent variables:**

A harmonized occupation measure is available in IPUMS in the Census Bureau's 2010 occupational classification scheme. Because the harmonization process introduces noise to the measure, a supplemental analysis using each survey year's indigenous occupation measure was performed separately for data from 1989-1991 (occupation is measured according to the 1980 Census classification scheme), 1997-2001 (occupation is measured using the 1990 scheme) and 2004-2018 (harmonization of the 2002 and 2010 schemes into broad occupation categories introduces minimal noise). Because the results of these analyses were similar to analyses that used the harmonized variable, the current study presents results using the harmonized variable. Although the literature has emphasized the differences in flextime between professional/managerial occupations and other occupations, the current analysis used more detailed occupational categories, as some research has found variation in flextime at this level (Golden 2001, 2008). In the current analysis, indicator variables capture the respondent's occupational category, with managers serving as the reference group.

Starting in 1992, the CPS changed its education measure from one that measured years of education to one that measured most advanced educational degree. The current study used the coding for the categorical, harmonized education variable developed by Jaeger (1997) to reconcile the differences in the measures across the years. Specifically, in the current analysis a set of dummy variables indicate whether or not the respondent's level of education is 12$^{th}$ grade, some college, college, or graduate school (did not complete 12$^{th}$ grade is the reference category). Information on education is not updated in the ATUS, but rather it carries over the value from the education measure collected during the CPS, two to five months prior to the ATUS interview.

A harmonized region variable is available in IPUMS, indicating the region of the state in which the housing unit is located. In the current analysis, indicator variables capture whether the respondent lives in the northeast, Midwest, or west, with the south serving as the reference category. A harmonized measure of marital status is available in IPUMS. The marital status variable is not updated during the ATUS, but rather it carries over the value from the marital status measure collected during the CPS, two to five months prior to the ATUS interview. A harmonized variable measuring the employment status of one's spouse is available in IPUMS for the survey years of 1989, 1991, 1997, 2001 and 2004. In 2017 and 2018, this measure was collected from the ATUS respondent about their spouse, while in the previous years it was collected via self-report or proxy from a household member. The current analysis captures marital status and the employment status of one's spouse through a set of dummy variables indicating whether the respondent has an employed spouse or a non-employed spouse, with the reference category being unmarried respondents. The number and age of household children is captured through two variables in the current analysis: the first captures the number of children less than age 6 and the second captures the number of children age 6 to 18. These variables were constructed using the harmonized age variable available in IPUMs . A harmonized part-time work variable is available for all data years in IPUMs. In the ATUS, this variable was collected only for respondents who changed jobs or employers since the final CPS interview, and, for the remaining respondents, information on work hours was carried forward from the final CPS interview two to five months prior. In the current study, part-time status is captured through a dummy variable indicating whether the respondent works part time.

Race/ethnicity was measured in the current analysis with indictor variables for "black, non-Hispanic," "Hispanic," and "other, non-Hispanic" (the reference category is white, non-

Hispanic). This measure is based on the race measure and the ethnicity measure in the CPS and the ATUS, which carries over the values from the race/ethnicity measures collected during the CPS. Starting in 2003, the race measure allowed people to identify as more than one race. The variable used in the current analysis codes respondents identifying as more than one race and non-Hispanic as "other, non-Hispanic." Given that less than two percent of respondents indicated they were more than one race during the years of the CPS/ATUS that allowed respondents to indicate that they were more than one race, this measurement difference across the years is unlikely to substantially affect the current study's results. Also, starting in 2003, the question wording of the ethnicity measure changed significantly. Other studies have used this variable in analyses of the CPS that use data from before and after 2003 (e.g., Horowitz, 2018; Cha and Weeden, 2014; Glauber, 2018; England et al., 2020).

A variable measuring year of the interview is available for all survey years. This variable is operationalized in the current analysis with indicator variables for 1991, 1997, 2001, 2004, and 2017/2018 (1989 is the reference category). 2017 and 2018 are grouped together because the ATUS has a smaller sample size than the CPS.

It is important to note some differences in the data editing and allocation procedures between the CPS and the ATUS in the current analysis's independent variables. With the exception of one variable in the current analysis (the presence of children), the first round of data editing and allocation procedures are either identical or almost identical, but, in the second round, it might be possible that some further data edits were made to the ATUS variables: some of these edits were further manual edits while others were made in order to protect respondent confidentiality. The data allocation procedure in the ATUS for the presence-of-children variable is slightly different than that in the CPS because, in the first round of edits, the hot deck

allocation process used fewer variables and different age ranges, and, in the second round, further edits may have been made through further manual edits as well as efforts to protect respondent confidentiality. In the ATUS, under 2% of cases have allocated values. In the CPS, allocation rates are higher, perhaps because of proxy reporting, but still 6% or less.

**Method:**

In order to analyze trends in the growth of flextime by occupation, linear probability regression models of having a flexible schedule were estimated for men and women separately with standard errors clustered at the household level.[16] Supplemental analyses discussed in the results section estimated logistic regression models. Three main models were estimated for men and women. Model 1 is a regression of having flextime on year. Its results show the growth of flextime over time. Model 2 added controls for occupation and interaction terms between year and occupation in order to estimate these trends by occupation. Model 3 added controls for demographic and labor market variables that might potentially explain the relationship between occupation and flexible hours (these variables might also explain the relationship between flextime and year). Specifically, it added controls for education, region, part-time status, marital status/employment status of spouse, the number and age of children, as well as race/ethnicity. Its results show trends in flextime use by occupation, net of these variables, and rule out the possibility that this growth was explained by changes over time in those demographic and labor market characteristics of workers.

[16] These regression estimates were weighted using the CPS and the ATUS sample weights. The ATUS sample weights were multiplied by a constant so that they did not over-represent the ATUS samples in the models. Specifically, the ATUS weights were adjusted so that the sum of the weights for each year were proportionate to the relative size of the populations eligible for the Leave and Job Flexibilities Module with respect to the size of the populations eligible for the CPS Work Schedules Supplements for each survey year. The CPS sample weights did not need further adjustment. They already accurately represented the population sizes of their respective years.

In supplemental analyses discussed in the results section, these models were re-estimated after adding interaction terms between year and the control variables in order to account for differences across occupations in workers' demographic and employment characteristics. Differences in the growth rates of flextime use by occupation estimated in the main models may be driven by demographic and employment differences between them. For example, if the rate of growth of flextime use is lower among less educated workers, workers in non-professional/non-managerial occupations may look like they have a lower rate of growth of flextime use than workers in professional/managerial occupations, according to the estimates of the main models, simply because they have less education. Interacting the covariates by year rules out the possibility that differences between the growth rates of different occupations are driven by demographic differences between the groups.

Next, in order to describe how changes in the distribution of occupations over time accounted for the growth of flextime, I performed Kitagawa-Duncan-Blinder-Oaxaca-type decomposition analyses. The decompositions were done separately by gender. This analysis analyzes the growth of flextime in a counterfactual manner. It does so by comparing the actual proportion of the workforce with flextime in 2017/2018 to the proportion that would have flextime in the counterfactual scenario that workers in 2017/2018 had the average characteristics of workers in 1989: the difference between these two quantities is the amount by which flextime grew from 1989 to 2017/2018 because workers' average characteristics changed over time. Specifically, the difference in the proportion of workers in 2017/2018 with flextime and the proportion in 1989 with flextime [$E(Y_{2017/2018})$-$E(Y_{1989})$] was decomposed into a portion due to changes in workers' average characteristics between 1989 and 2017/2018 [$\sum_{i=1}^{k}(E(X_{i\,2017/2018}) - E(X_{i\,1989}))\beta_{i\,2017/2018}$], called the total explained part of the

decomposition, and a portion due to changes from 1989 to 2017/2018 in the relationships between workers' characteristics and flextime [$(\beta_{0\ 2017/2018} - \beta_{0\ 1989}) + \sum_{i=1}^{k} E(X_{i\ 1989})(\beta_{i\frac{2017}{2018}} - \beta_{i\ 1989})$], called the total unexplained part of the decomposition, where $E(Y_{1989})$ and $E(Y_{2017/2018})$ are the expected probabilities of workers with flextime in 1989 and 2017/2018, respectively; $E(X_{i\ 1989})$ and $E\left(X_{i\ 2017/2018}\right)$ for i=1 to i=k are the expectations of the independent variables in the analysis in 1989 and 2017/2018, respectively; $\beta_{0\ 1989}$ and $\beta_{0\ 2017/2018}$ are the intercepts in the linear probability regression models estimated separately for 1989 and 2017/2018, respectively; and $\beta_{i\ 1989}$ and $\beta_{i\ 2017/2018}$ for i=1 to i=k are the coefficients of the linear probability regression models of flextime on the independent variables for 1989 and 2017-2018, respectively. The total explained part of the decomposition, $\sum_{i=1}^{k}(E\left(X_{i\ 2017/2018}\right) - E(X_{i\ 1989}))\beta_{i\ 2017/2018}$, quantifies how much higher the proportion of flextime was in 2017/2018 than what it would have been under the counterfactual scenario that 2017/2018 workers had 1989 workers' average job and sociodemographic characteristics, but the same propensities for flextime given their characteristics [in other words, the same $\beta_{i\ 2017/2018}$'s for i=0 to i=k]. The reason for this interpretation can be seen with some simple arithmetic on the explained part of the decomposition: $\sum_{i=1}^{k}(E\left(X_{i\ 2017/2018}\right) - E(X_{i\ 1989}))\beta_{i\ 2017/2018} = \sum_{i=1}^{k}(E\left(X_{i\ 2017/2018}\right)\beta_{i\ 2017/2018} - E(X_{i\ 1989})\beta_{i\ 2017/2018}) = E\left(Y_{2017/2018}\right) - E\left(Y_{counterfactual}\right)$.[17] The total unexplained part of the decomposition, $(\beta_{0\ 2017/2018} - \beta_{0\ 1989}) + \sum_{i=1}^{k} E(X_{i\ 1989})(\beta_{i\ 2017/2018} - \beta_{i\ 1989})$, quantifies how much higher flextime in 1989

[17] The reason why $\sum_{i=1}^{k}(E\left(X_{i\ 2017/2018}\right)\beta_{i\ 2017/2018} - E(X_{i\ 1989})\beta_{i\ 2017/2018}) = E\left(Y_{2017/2018}\right) - E\left(Y_{counterfactual}\right)$, even though $\beta_{0\ 2017/2018}$, the intercept for the linear probability model of flextime time for 2017/2018, is not included in the calculation is because, if it were, it would get subtracted by itself and fall out of the equation.

would have been if 1989 workers were counterfactually assigned the same propensities for flextime as 2017/2018 workers, but kept their 1989 characteristics [it also quantifies how much flextime would have grown if 2017/2018 workers were counterfactually assigned 1989 workers' characteristics, but kept their 2017/2018 propensities for flextime]. Note that the total explained and unexplained parts of the decomposition can also be split up in order to examine the individual roles of specific variables, as will be shown in the results section. This feature allows the current analysis to estimate how changes in the distribution of occupations over time account for the growth of flextime.

The decomposition results for categorical variables depend on the choice of the reference group (Jann, 2008). However, the total explained and unexplained parts of the decomposition (Kim, 2013) as well as, in the explained part, the sum of the dummy variables making up a categorical variable (i.e., the total effect of the categorical variable) are not affected by the choice of reference group (Jann, 2008). Although Yun (2005) recommends dealing with this issue with transformations of estimates related to the categorical variables, the decomposition estimates retain their arbitrariness (Kim, 2013) and are sensitive to the number of groups and method of grouping of categorical variables (Kim, 2013). As such, the current analysis will only analyze results that are not affected by the problem. Supplemental analyses discussed in the results examined Kitagawa-Duncan-Blinder-Oaxaca-type decompositions developed by Yun (2004), based upon logit models and found similar results to those presented in the results sections based on linear probability models.

For each gender, two decompositions will be estimated. The first will be based on models of flextime on occupation. The second will add controls for variables that might explain the relationship between occupation and flextime.

## Results

### Descriptive Statistics:

Table 1 displays descriptive statistics for the sample. For both men and women, the proportion of workers with flexible hours has grown rather dramatically from 1989 to 2017/2018. For men, the proportion of wage and salary workers with flexible work hours was .14 in 1989 and .57 in 2017/2018. For women, it was .13 in 1989 and .56 in 2017/2018. The high proportion of workers with flextime in 2017/2018 as well as the rate of growth of flextime in the current study's dataset is consistent with that found in other datasets with the exception that the increase from 2004 to 2017/2018 is higher than in other datasets. According to the National Study of the Changing Workforce, the percentage of wage and salary workers who could periodically change their starting and stopping times within a range of hours was 29 percent in 1992, 45 percent in 1997, 43 percent in 2002, and 44 percent in 2008 (Tang and MacDermid, 2010), a growth rate that mirrors that found between 1991 and 2004 in the CPS. Estimates from the General Social Survey found that the percent of employees allowed to change their start and quit times on a daily basis often, sometimes, or rarely (as opposed to never) was 68.1 percent in 2002, 68.3 percent in 2006, and 72.1 percent in 2014 (Smith et al.); these trends mirror those found in the CPS from 2001 to 2004, but the growth from 2004 to 2017/2018 in the CPS and ATUS data seems rather high compared to that based on this other measure. Similarly, estimates from the National Study of Employers show that the percentage of employers allowing at least some employees to change their start and stop times within some range of hours was 68 percent in 2005 and 81 percent in 2016 and the percentage of employers allowing at least some employees to change their starting and quitting times on a daily basis was 34 percent in 2005 and

42 percent in 2016 (Matos et al., 2017). Again, the growth from 2004 to 2017/2018 in the CPS/ATUS seems high. Given this, the analyses that include the 2017/2018 data should be taken as preliminary and additional analyses that end in 2004 were conducted. These supplemental analyses are discussed in detail below, but they were quite consistent with the main results that included the 2017/2018 data, other than the finding that change in women's educational distribution explained slightly more of the growth of flextime from 1989 to 2004 than from 1989 to 2017/2018.

Table 1 also shows that the occupational make-up of employees changed from 1989 to 2017/2018. As expected, the proportion of employees in managerial jobs as well as professional jobs (which includes workers in education, training, library; healthcare; and "other professional" occupations) grew. Service occupations also became more prevalent among men, though their prevalence stayed the same among women. Sales, and administrative support occupations became less prevalent for women, though the decline was not as steep among men. Indeed, men became slightly more likely to have administrative support jobs in 2017/2018 compared with 1989. The remaining occupations listed in Table 1 are traditional, blue-collar occupations. Their prevalence declined between 1989 and 2017/2018 for both men and women.[18]

Table 1 also shows some important changes in the characteristics of wage and salary workers from 1989 to 2017/2018. The proportion of workers with higher educational levels (college or graduate school) grew considerably for both men and women. For both men and women, the proportion of workers who do not have a spouse present also grew from 1989 to

[18] The only exception to this pattern is that the prevalence of farming/fishing/forestry, construction/extraction, and installation/maintenance/repair occupations did not decline for women. Instead, the prevalence of these occupations among women was very low in 1989 and remained very low in 2017/2018.

2017/2018. Additionally, the proportion of employees who are white shrank, as the proportion who are non-white grew, with the greatest increase occurring among Hispanic employees.

**Table 1.** ***Descriptive Statistics***

| | Men | | | | | | Women | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1989** | **1991** | **1997** | **2001** | **2004** | **2017-2018** | **1989** | **1991** | **1997** | **2001** | **2004** | **2017-2018** |
| ***N*** | 29,413 | 27,419 | 24,350 | 22,953 | 26,747 | 4,939 | 26,829 | 25,750 | 22,947 | 21,846 | 26,087 | 5,132 |
| **Flexible Hours** | | | | | | | | | | | | |
| **Flexible** | 0.14 | 0.16 | 0.30 | 0.32 | 0.30 | 0.57 | 0.13 | 0.16 | 0.30 | 0.31 | 0.30 | 0.56 |
| **Not Flexible** | 0.86 | 0.84 | 0.70 | 0.68 | 0.70 | 0.43 | 0.87 | 0.84 | 0.70 | 0.69 | 0.70 | 0.44 |
| **Occupation** | | | | | | | | | | | | |
| **Manager** | 0.12 | 0.13 | 0.13 | 0.15 | 0.13 | 0.15 | 0.11 | 0.12 | 0.14 | 0.15 | 0.12 | 0.16 |
| **Professional: Education, Training, Library** | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.04 | 0.08 | 0.09 | 0.09 | 0.10 | 0.10 | 0.11 |
| **Professional: Healthcare Practitioners and Technicians** | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.03 | 0.06 | 0.07 | 0.07 | 0.08 | 0.08 | 0.11 |
| **Professional: Other Professional** | 0.10 | 0.11 | 0.11 | 0.12 | 0.12 | 0.17 | 0.06 | 0.06 | 0.07 | 0.07 | 0.07 | 0.10 |
| **Service** | 0.13 | 0.13 | 0.13 | 0.12 | 0.14 | 0.16 | 0.17 | 0.17 | 0.16 | 0.17 | 0.20 | 0.17 |
| **Sales** | 0.10 | 0.10 | 0.10 | 0.10 | 0.11 | 0.08 | 0.13 | 0.12 | 0.12 | 0.12 | 0.11 | 0.08 |
| **Administrative Support** | 0.06 | 0.06 | 0.06 | 0.06 | 0.07 | 0.07 | 0.27 | 0.28 | 0.24 | 0.22 | 0.24 | 0.20 |
| **Farming/Fishing/Forestry** | 0.02 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Construction/Extraction** | 0.09 | 0.09 | 0.09 | 0.10 | 0.09 | 0.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Installation/ Maintenance /Repair** | 0.08 | 0.07 | 0.07 | 0.07 | 0.07 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Production** | 0.14 | 0.13 | 0.12 | 0.11 | 0.10 | 0.08 | 0.09 | 0.08 | 0.07 | 0.06 | 0.04 | 0.03 |
| **Transportation/Material Moving** | 0.13 | 0.13 | 0.13 | 0.12 | 0.11 | 0.08 | 0.03 | 0.03 | 0.03 | 0.03 | 0.02 | 0.02 |
| **Full-/Part-time Status** | | | | | | | | | | | | |
| **Full-Time** | 0.90 | 0.90 | 0.89 | 0.90 | 0.89 | 0.86 | 0.75 | 0.75 | 0.74 | 0.76 | 0.74 | 0.75 |
| **Part-Time** | 0.10 | 0.10 | 0.11 | 0.10 | 0.11 | 0.14 | 0.25 | 0.25 | 0.26 | 0.24 | 0.26 | 0.25 |
| **Education** | | | | | | | | | | | | |
| **Did not Complete 12th Grade** | 0.19 | 0.18 | 0.15 | 0.13 | 0.13 | 0.08 | 0.14 | 0.13 | 0.11 | 0.10 | 0.09 | 0.06 |
| **Completed 12th Grade** | 0.34 | 0.34 | 0.34 | 0.32 | 0.32 | 0.31 | 0.38 | 0.37 | 0.34 | 0.32 | 0.30 | 0.24 |
| **Some College** | 0.23 | 0.24 | 0.26 | 0.26 | 0.26 | 0.24 | 0.26 | 0.27 | 0.30 | 0.30 | 0.31 | 0.27 |
| **College** | 0.15 | 0.16 | 0.17 | 0.19 | 0.19 | 0.23 | 0.15 | 0.16 | 0.18 | 0.19 | 0.20 | 0.26 |
| **Graduate School** | 0.08 | 0.08 | 0.08 | 0.09 | 0.10 | 0.14 | 0.06 | 0.07 | 0.07 | 0.08 | 0.09 | 0.17 |
| **Region** | | | | | | | | | | | | |
| **Northeast** | 0.21 | 0.20 | 0.19 | 0.18 | 0.19 | 0.17 | 0.21 | 0.20 | 0.20 | 0.19 | 0.19 | 0.17 |
| **Midwest** | 0.25 | 0.24 | 0.24 | 0.24 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.23 | 0.24 |
| **South** | 0.34 | 0.35 | 0.35 | 0.35 | 0.36 | 0.36 | 0.34 | 0.35 | 0.35 | 0.35 | 0.36 | 0.38 |
| **West** | 0.20 | 0.22 | 0.22 | 0.23 | 0.23 | 0.22 | 0.20 | 0.19 | 0.20 | 0.21 | 0.22 | 0.20 |
| **Mean Number of Kids < Age 6** | 0.29 | 0.32 | 0.30 | 0.29 | 0.28 | 0.27 | 0.24 | 0.26 | 0.26 | 0.24 | 0.23 | 0.23 |
| **Mean Number of Kids Ages 6-17** | 0.59 | 0.59 | 0.61 | 0.62 | 0.58 | 0.58 | 0.61 | 0.60 | 0.64 | 0.64 | 0.60 | 0.59 |
| **Marital Status/ Spouse's Employment** | | | | | | | | | | | | |
| **Employed** | 0.40 | 0.42 | 0.41 | 0.40 | 0.39 | 0.37 | 0.48 | 0.48 | 0.47 | 0.45 | 0.44 | 0.41 |
| **Not Employed** | 0.21 | 0.20 | 0.18 | 0.18 | 0.19 | 0.16 | 0.06 | 0.06 | 0.06 | 0.06 | 0.07 | 0.08 |
| **No Spouse Present** | 0.39 | 0.38 | 0.41 | 0.41 | 0.42 | 0.47 | 0.46 | 0.46 | 0.47 | 0.48 | 0.49 | 0.51 |
| **Race/Ethnicity** | | | | | | | | | | | | |
| **Black** | 0.10 | 0.10 | 0.10 | 0.10 | 0.11 | 0.11 | 0.12 | 0.11 | 0.13 | 0.13 | 0.12 | 0.13 |
| **Hispanic** | 0.08 | 0.09 | 0.12 | 0.13 | 0.15 | 0.19 | 0.07 | 0.07 | 0.09 | 0.10 | 0.12 | 0.15 |
| **Other** | 0.04 | 0.04 | 0.04 | 0.05 | 0.06 | 0.07 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.07 |
| **White** | 0.78 | 0.77 | 0.74 | 0.72 | 0.69 | 0.64 | 0.77 | 0.78 | 0.74 | 0.72 | 0.71 | 0.65 |

Notes: CPS May 1989, May 1991, May 1997, May 2001, and May 2004. ATUS 2017-2018. Samples from the CPS are limited to wage and salary workers aged 15 or older and exclude the self-employed, those in the armed forced, those with spouses in the armed forces, and those with incomplete data on any variables. The sample from the ATUS is limited to wage and salary workers aged 15 or older and excludes the self-employed, those in the armed forces, and those with incomplete data on any variable. Unless otherwise noted, all statistics report proportions. N's are unweighted; all else is weighted.

**Regression Analyses:**

I next examine trends in the growth of flextime from 1989 to 2017/2018 by occupation. Estimates of linear probability models are presented for their interpretability. The trends found in these model estimates are similar to those estimated using logistic regression models, however, the results in the linear regression models were more significant. Table 2 displays selected coefficient estimates of the linear probability models. Table 1A in the appendix presents the full model results.

The first panel of Table 2 presents the estimates of the men's model. Overall, they show that flextime increased in all occupations, but that growth was slower for education, healthcare, and traditional, blue-collar occupations; inequality by occupation in flextime also increased over time. Model 1 estimated the unadjusted growth of flextime for all workers and just controlled for year indicator variables, with the year 1989 serving as the reference category, though only the estimate of the 2017/2018 indicator is presented in Table 2. The Model 1 estimates show the trend in flextime found in Table 1. Model 2 estimated the unadjusted growth of flextime by occupation and added occupation controls, with managing occupations serving as the reference category, and interaction terms for occupation and year. Again, only the estimates of the indicators for 2017/2018, the occupational groups and their interaction terms are presented in Table 2. The 2017/2018 indicator can be interpreted as the difference in the probability of flextime in 1989 and 2017/2018 for managers. It tells us that, in 2017/2018, the probability of having flexible hours for managers was 54 percentage points higher than it was in 1989. The

estimate of the main year indicator grew between Model 1 and Model 2, indicating that the probability of flextime grew at a faster rate between 1989 and 2017/2018 for managers than for all (men) workers. The estimates of the interactions between occupation and year can be interpreted as the difference between managers and a given occupation in the growth in the probability of flextime from 1989 to 2017/2018. For example, the coefficient on the interaction term for education workers indicates that, from 1989 to 2017/2018, the probability of flextime for education workers grew 27 percentage points less than that for managers: it grew by 54 percentage points for managers and by 27 (.54-.27=.27) percentage points for education workers. As a whole, the estimates of the interaction terms show that flextime grew more from 1989 to 2017/2018 among managers than among workers in all other occupations, except "other professional" and administrative support occupations. However, because the magnitudes of the coefficients for the interaction terms were less than the magnitude of the coefficient for the main year indicator term, the estimates show that flextime grew between 1989 and 2017/2018 for all occupations. The slowest growth in flextime occurred among education, healthcare, and traditional, blue-collar occupations (construction/extraction, farming/fishing/forestry, installation/maintenance/repair, production, and transportation/material moving). The coefficients of the main occupation variables (which indicate the difference in the probability of flextime between managers and a given occupation in 1989) indicate that most of these occupations also had among the lowest flextime rates in 1989. Because the occupations with the lowest flextime rates in 1989 tended to experience the least growth in flextime from 1989 to 2017/2018, inequality in the probability of flextime likely increased over time. In order to confirm that inequality increased over time, Figure 1 graphs the predicted values from Model 2. Because Model 2 only controlled for year, occupation, and their interaction, the predicted values

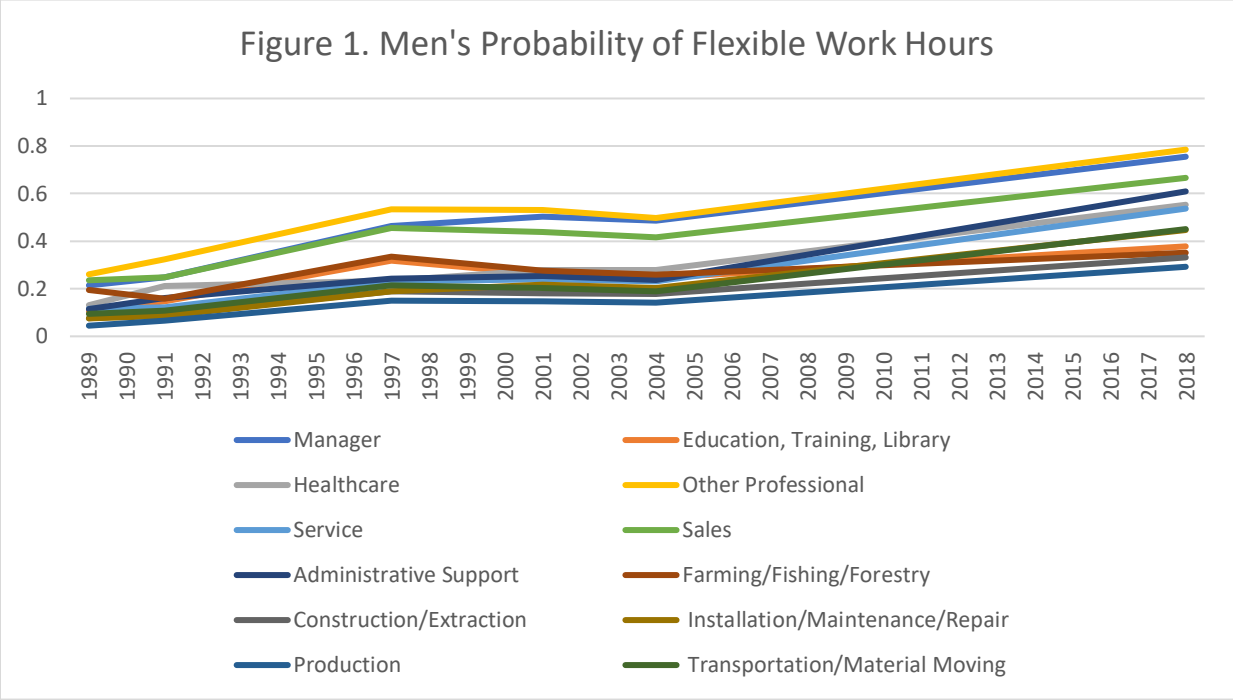
for each year are the unadjusted proportion of workers with flextime in the given occupation. Figure 1 confirms that inequality in the probability of flextime widened by occupation between 1989 and 2017/2018. In analyses not shown, I found that the range of predicted values increased between every survey year except from 2001 to 2004.

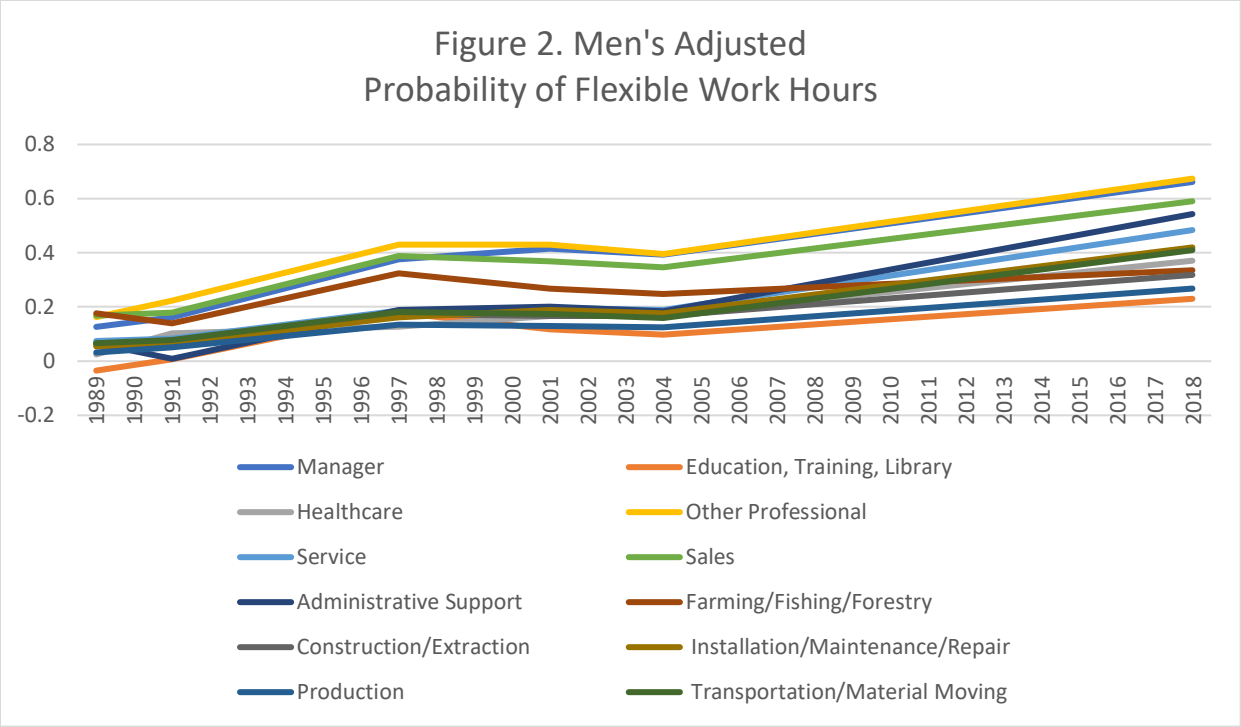
The results thus far show that flextime increased in all occupations, but that the slowest growth occurred for education, healthcare, and traditional, blue-collar occupations; inequality in flextime by occupation also increased over time. Model 3 added controls for factors that potentially account for the relationship between flextime and occupation as well as flextime and year, but the patterns observed in the Model 2 estimates regarding the growth of flextime by occupation remained the same, suggesting a limited role for these variables in explaining the growth of flextime by occupation. Some of the main occupation indicators changed. However, these coefficients continue to show that the occupations with low growth rates had among the lowest flextime rates in 1989, implying that, even controlling for other variables, inequality by occupation in the probability of flextime likely increased. Figure 2 graphs the predicted values from Model 3, with the non-year and non-occupation variables held at their mean (categorical variables are held at their mode). The trends in Figure 2 are very similar to those in Figure 1 and show how inequality increased over time.

**Table 2.** ***Selected Coefficient Estimates of Linear Probability Models of Flexible Work Hours***

| | Men | | | Women | | |
|---|---|---|---|---|---|---|
| VARIABLES | (1) | (2) | (3) | (1) | (2) | (3) |
| **Occupation (reference=manager)** | | | | | | |
| **Professional: Education, Training, Library** | | -0.11*** | -0.16*** | | -0.13*** | -0.17*** |
| | | (0.01) | (0.02) | | (0.01) | (0.01) |
| **Professional: Healthcare Practitioners and Technicians** | | -0.08*** | -0.10*** | | -0.06*** | -0.08*** |
| | | (0.02) | (0.02) | | (0.01) | (0.01) |
| **Professional: Other Professional** | | 0.05*** | 0.04*** | | 0.07*** | 0.05*** |
| | | (0.01) | (0.01) | | (0.02) | (0.02) |
| **Service** | | -0.10*** | -0.05*** | | -0.06*** | -0.08*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Sales** | | 0.02* | 0.04*** | | -0.03** | -0.05*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Administrative Support** | | -0.10*** | -0.06*** | | -0.06*** | -0.06*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Farming/Fishing/Forestry** | | -0.02 | 0.05** | | 0.10* | 0.12** |
| | | (0.02) | (0.02) | | (0.05) | (0.05) |
| **Construction/Extraction** | | -0.14*** | -0.07*** | | 0.02 | 0.03 |
| | | (0.01) | (0.01) | | (0.06) | (0.06) |
| **Installation/Maintenance/Repair** | | -0.14*** | -0.07*** | | -0.06 | -0.03 |
| | | (0.01) | (0.01) | | (0.04) | (0.04) |
| **Production** | | -0.17*** | -0.09*** | | -0.14*** | -0.09*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Transportation/Material Moving** | | -0.12*** | -0.06*** | | -0.09*** | -0.09*** |
| | | (0.01) | (0.01) | | (0.02) | (0.02) |
| **2017/2018** | 0.43*** | 0.54*** | 0.53*** | 0.43*** | 0.54*** | 0.53*** |
| | (0.01) | (0.02) | (0.02) | (0.01) | (0.02) | (0.02) |
| **X Professional: Education, Training, Library** | | -0.27*** | -0.27*** | | -0.29*** | -0.28*** |
| | | (0.05) | (0.05) | | (0.04) | (0.04) |
| **X Professional: Healthcare Practitioners and Technicians** | | -0.18*** | -0.19*** | | -0.22*** | -0.22*** |
| | | (0.07) | (0.07) | | (0.04) | (0.04) |
| **X Professional: Other Professional** | | -0.02 | -0.02 | | -0.07* | -0.07* |
| | | (0.03) | (0.03) | | (0.04) | (0.04) |
| **X Service** | | -0.12*** | -0.13*** | | -0.10*** | -0.10*** |
| | | (0.04) | (0.04) | | (0.04) | (0.04) |
| **X Sales** | | -0.11** | -0.11** | | -0.01 | -0.02 |
| | | (0.05) | (0.05) | | (0.04) | (0.04) |
| **X Administrative Support** | | -0.05 | -0.06 | | -0.10*** | -0.10*** |
| | | (0.05) | (0.05) | | (0.03) | (0.03) |
| **X Farming/Fishing/Forestry** | | -0.39*** | -0.38*** | | -0.24 | -0.18 |
| | | (0.10) | (0.10) | | (0.16) | (0.16) |
| **X Construction/Extraction** | | -0.29*** | -0.28*** | | -0.09 | -0.14 |
| | | (0.04) | (0.04) | | (0.18) | (0.16) |
| **X Installation/Maintenance/Repair** | | -0.17*** | -0.17*** | | -0.21 | -0.20 |
| | | (0.05) | (0.05) | | (0.22) | (0.21) |
| **X Production** | | -0.29*** | -0.30*** | | -0.22*** | -0.24*** |
| | | (0.04) | (0.04) | | (0.05) | (0.05) |
| **X Transportation/Material Moving** | | -0.18*** | -0.19*** | | -0.27*** | -0.27*** |
| | | (0.04) | (0.04) | | (0.07) | (0.07) |
| **Constant** | 0.14*** | 0.21*** | 0.11*** | 0.13*** | 0.18*** | 0.12*** |
| | (0.00) | (0.01) | (0.02) | (0.00) | (0.01) | (0.02) |
| **Observations** | 135,821 | 135,821 | 135,821 | 128,591 | 128,591 | 128,591 |
| **R-squared** | 0.119 | 0.202 | 0.219 | 0.112 | 0.164 | 0.184 |

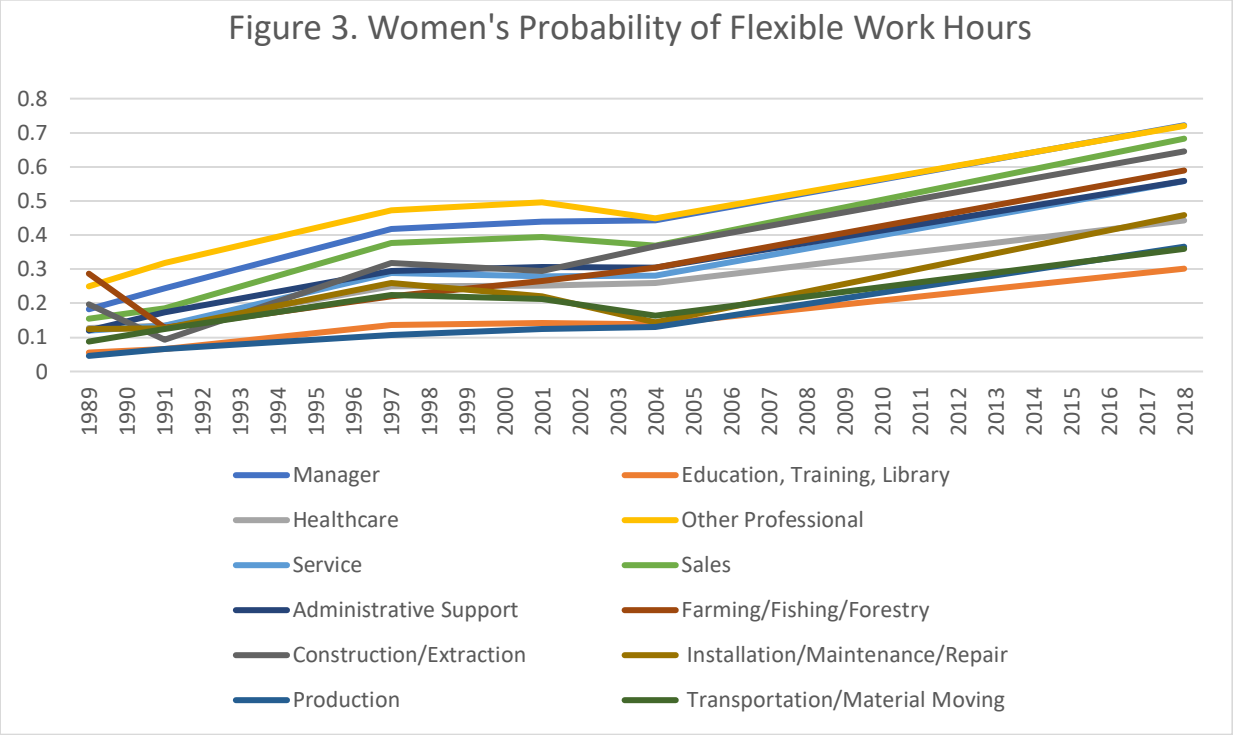
Notes: CPS May 1989, May 1991, May 1997, May 2001, and May 2004. ATUS 2017-2018. Samples from the CPS are limited to wage and salary workers aged 15 or older and exclude the self-employed, those in the armed forced, those with spouses in the armed forces, and those with incomplete data on any variables. The sample from the ATUS is limited to wage and salary workers aged 15 or older and excludes the self-employed, those in the armed forces, and those with incomplete data on any variable. N's are unweighted; all else is weighted. Standard errors in parentheses. Models 1, 2, and 3 also control for dummy variables indicating 1991, 1997, 2001, and 2004 survey years. Model 2 additionally control for interaction terms between these year and occupation variables. Finally, Model 3 additionally controls for part-time status, education, region, marital status/spouse's employment, number of children less than age 6, number of children ages 6 to 17, and race/ethnicity. *** p<0.01, ** p<0.05, * p<0.1.

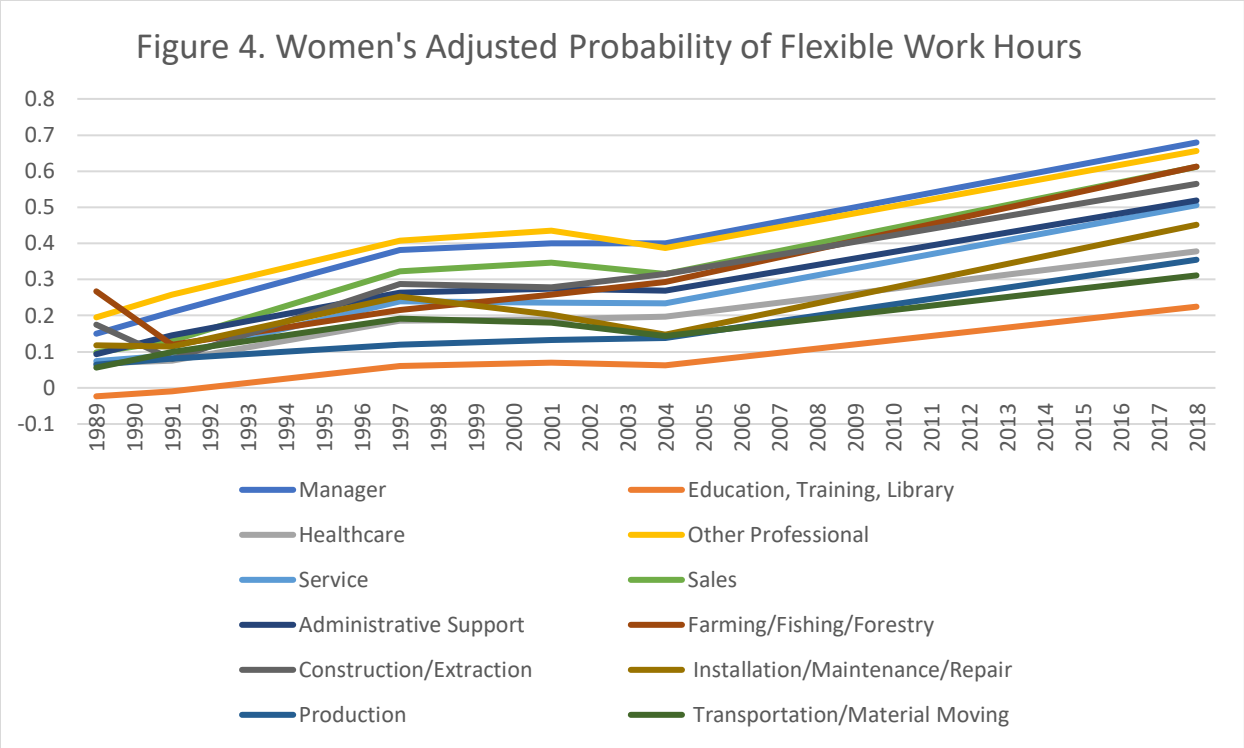





The right-side panel of Table 2 displays selected estimates from the regression results for women. The estimates of the regression models showed quite similar patterns to those observed among men: flextime grew in all occupations, but it grew the least among education, health, and traditional, blue-collar occupations; furthermore, inequality in the rate of flextime by occupation increased. Model 1 included year indicator variables, showing the trends in the proportion of workers with flexible work hours that were presented in Table 1. Model 2 added controls for occupation and the interaction of occupation and year. The estimates of the interaction terms indicate the difference between managers and a given occupation in the growth of the probability of flextime between 1989 and a given year. They show that that flextime grew at the fastest rates for managers, sales, and "other professional" occupations. Because the coefficients of the main occupation indicators show that these occupations also had among the highest rates of flextime in 1989, inequality in the rate of flextime might have increased over time. Furthermore, flextime tended to grow at a slower rate among education, healthcare, and the traditional blue-collar

occupations of production and transportation/material moving occupations compared with other occupations. No significant differences in the rate of growth of flextime were found between managers and the other traditional, blue-collar occupations of farming/fishing/forestry, construction/extraction, and installation/maintenance/repair, but these estimates had limited statistical power due to the low numbers of women in these occupations (Table 1). Figure 3 graphs the predicted values from the Model 2 estimates. It shows that, although the probability of having flextime grew substantially from 1989 to 2017/2018 across all occupations, inequality by occupation in the probability of having flexible work hours also increased.






Model 3 added controls for other variables and Figure 4 graphs the predicted values from Model 3. However, the patterns regarding trends in flextime by occupation that were observed in Model 2 and Figure 3 remained the same. They continued to show that flextime grew for all occupations as did inequality in flextime by occupation, but that the least growth in flextime was experienced by education, healthcare, and traditional, blue-collar occupations.

The results thus far are partially consistent with my predictions: I predicted that flextime grew faster among manager, some sales, and professional occupations (with inequality in flextime between these and other occupations increasing), though within professional occupations, education would grow at a slower rate and healthcare would possibly grow at a faster rate (this last prediction was not formally stated in the background section above, as Goldin and Katz's work suggested that flexibility grew more in health professions than legal and financial professions, in particular). The findings for both men and women that manager, sales, and "other professional" occupations experienced among the fastest growth rates [and that

inequality increased between these and most other occupations (Figure 1 and Figure 3)], while education occupations did not, were consistent with these predictions. However, I did not anticipate the slow growth experienced by healthcare occupations based on Goldin and Katz's work, nor did I anticipate the strong growth experienced by service and administrative support occupations.

**Decomposition Analyses:**

Next, I assessed how change over time in the distribution of occupations might have accounted for the growth of flextime over time through decomposition analyses. Overall, I found that change in the occupational structure explained some of the growth of flextime among men, but not among women. Table 3 displays the decomposition estimates. The men's estimates are displayed in the left-side panel. The first decomposition analysis examined the unadjusted effect of occupation. The growth between 1989 and 2017/2018 in the probability of having flexible work hours was 43.5 percentage points (.572-.137=.435). Most of this growth (.392/.435) is attributable to unexplained factors. Specifically, the estimate of the total unexplained portion of the growth in flextime tells us that flextime in 1989 would have been 39.2 percentage points higher than it actually was if 1989 workers were counterfactually assigned the same propensities for flextime as 2017/2018 workers. The rest (.043/.435) is attributable to changes in the occupational compositions of men workers. Specifically, the estimate of the total explained portion of the growth of flextime (as well as the estimate of the detailed component of the explained portion of the growth of flextime for occupation) tells us that, the proportion of workers with flextime in 2017/2018 is 4.3 percentage points higher than what it would be under the counterfactual scenario that the occupational distribution was the same as it was in 1989

[likewise, the unexplained portion of the decomposition also tells us that, under this counterfactual scenario (2017/2018 workers had 1989 workers' occupational distribution), flextime would have grown by 39.2 percentage points between 1989 and 2017/2018]. This result is consistent with my prediction that changes over time in the distribution of occupations would account for part of the growth of flextime. The occupational groups that grew in size were managing, education, healthcare, "other professional", service, and administrative support occupations (Table 1), which mostly had among the highest rates of flextime in 2017/2018 (Figure 1). Meanwhile, most of the occupations that decreased in size between 1989 and 2017/2018 (sales, construction/extraction, farming/fishing/forestry, installation/maintenance/repair, production, and transportation/material moving occupations) (Table 1) are associated with lower rates of flextime (Figure 1). The second decomposition added other independent variables to the analysis. Most of the growth of flextime (.380/.435) continues to be attributable to unexplained factors. If 2017/2018 workers had the same average job and sociodemographic characteristics as 1989 workers, flextime would have still grown by 38 percentage points. Meanwhile, the total explained estimate tells us that, the proportion of workers with flextime in 2017/2018 is 5.48 percentage points higher than what it would be under the counterfactual scenario that 2017/2018 workers had 1989 workers' average job and sociodemographic characteristics. Compositional changes in occupations contributed slightly less to the growth of flextime from 1989 to 2017/2018 (.032/.435). In other words, the proportion of workers with flextime in 2017/2018 is 3.2 percentage points higher than the counterfactual scenario in which 2017/2018 workers have the occupational distribution of 1989 workers. Compositional changes in part-time work status also contributed to the rise of flextime, though much less so than occupations (.005/.435). This estimate can be interpreted to mean that

the proportion of workers with flextime in 2017/2018 is 0.5 percentage points higher than the counterfactual scenario in which 2017/2018 workers have the same prevalence of part-time work as 1989 workers. Compositional changes in education also account for part of the growth of flextime (.022/.435).

**Table 3.** ***Decomposition Analyses of the Change in the Probability of Flexible Work Hours from 1989 to 2018, by Sex***

| | Men | | Women | |
|---|---|---|---|---|
| VARIABLES | (1) | (2) | (1) | (2) |
| **Probability of Flexible Hours in 2017/2018** | 0.572*** | 0.572*** | 0.558*** | 0.558*** |
| | (0.0103) | (0.0102) | (0.0102) | (0.0102) |
| **Probability of Flexible Hours in 1989** | 0.137*** | 0.137*** | 0.128*** | 0.128*** |
| | (0.00238) | (0.00238) | (0.00242) | (0.00242) |
| **Difference in the Probability of Flexible Hours Between 2017/2018 and 1989** | 0.435*** | 0.435*** | 0.430*** | 0.430*** |
| | (0.0105) | (0.0104) | (0.0105) | (0.0105) |
| **Total Explained Portion of Difference** | 0.0425*** | 0.0548*** | 0.00459 | 0.0114 |
| | (0.00487) | (0.00839) | (0.00517) | (0.00887) |
| **Total Unexplained Portion of Difference** | 0.392*** | 0.380*** | 0.425*** | 0.419*** |
| | (0.0106) | (0.0122) | (0.0112) | (0.0130) |
| **Components of Explained Portion of Difference** | | | | |
| **Occupation** | 0.0425*** | 0.0322*** | 0.00459 | 0.00385 |
| | (0.00487) | (0.00500) | (0.00517) | (0.00562) |
| **Full-/Part-time Status** | | 0.00506*** | | -0.000976 |
| | | (0.00170) | | (0.00147) |
| **Education** | | 0.0220*** | | 0.0110 |
| | | (0.00580) | | (0.00686) |
| **Region** | | 0.00157 | | 0.00161 |
| | | (0.00111) | | (0.00122) |
| **Marital Status/ Spouse's Employment** | | -0.000556 | | 0.00204 |
| | | (0.00190) | | (0.00153) |
| **Number of Children < Age 6** | | -0.000527 | | -8.35e-06 |
| | | (0.000855) | | (0.000469) |
| **Number of Children Ages 6-17** | | -4.91e-05 | | 0.000120 |
| | | (0.000388) | | (0.000603) |
| **Race/Ethnicity** | | -0.00481 | | -0.00626** |
| | | (0.00340) | | (0.00318) |
| Observations | 34,352 | 34,352 | 31,961 | 31,961 |

Notes: CPS May 1989, May 1991, May 1997, May 2001, and May 2004. ATUS 2017-2018. Samples from the CPS are limited to wage and salary workers aged 15 or older and exclude the self-employed, those in the armed forced, those with spouses in the armed forces, and those with incomplete data on any variables. The sample from the ATUS is limited to wage and salary workers aged 15 or older and excludes the self-employed, those in the armed forces, and those with incomplete data on any variable. N's are unweighted; all else is weighted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

The right-side panel of Table 3 shows the results for women. Between 1989 and 2017/2018 the probability of flextime increased by 43 percentage points (.558-.128=.43). The first decomposition analyzes the unadjusted role of occupation in this change in flextime. The estimates indicate that the large majority of this change (.425/.43) is due to unexplained factors. An insignificant amount of the change (.005/-.43) ($p>.05$) is due to changes in the composition of occupations among women workers, which is not consistent with my predictions that changes in the distribution of occupations would account for part of the growth of flextime. Although management and "other professional" occupations (that are high in flextime) grew from 1989 to 2017/2018 (Table 1 and Figure 3), while the low-flextime occupations of production and transportation/material moving decreased in size (Table 1 and Figure 3), the large decreases of sales and administrative support occupations (Table 1), which tended to have a higher likelihood of flextime in 2017/2018 (Figure 3) along with the growth of education occupations (which had lower likelihoods of flextime in 2017/2018, as Figure 3 shows) might have depressed the growth of flextime. Compared to men, there were more changes in women's occupational distribution that stymied the growth of flextime: the high-flextime sales occupations decreased by 2 percentage points for men compared to 5 for women, the high-flextime (in 2017/2018) administrative support occupations increased by 1 percentage point for men and decreased by 7 for women, and the low flextime occupation of education increased by 1 percentage point for men and by 3 for women (Table 1). For men, there were not enough of these changes to outweigh the changes that contributed to the growth, while for women there were. The second decomposition estimates are based on models that also control for variables that might explain the relationship between occupation and flextime. The large majority of the change in flextime

is still estimated to be due to unexplained factors (.419/.43). As a whole, compositional changes in the control variables over time contributed an insignificant amount to the rise of flextime from 1989 to 2017/2018 (.011/.43). However, the detailed components of the explained portion of the change, show that compositional changes in race/ethnicity played a small role in the growth of flextime, though they stymied the growth. Specifically, the proportion of workers in 2017/2018 with flextime is 0.63 percentage points lower than the counterfactual scenario in which 2017/2018 workers are assigned the race/ethnic distribution of 1989 workers.

In summary, for both men and women, the overwhelming majority of the growth of flextime from 1989 to 2017/2018 was due to unexplained changes. Nevertheless, a sizeable proportion of the rise of flextime for men was explained by changes in the occupational make-up of workers, in line with my prediction that changes in the composition of occupations in the labor market would explain some of the growth of flextime. None of the rise of flextime for women was explained by compositional changes in occupations, which is not consistent with my prediction.

**Additional Robustness Checks:**

I suspected that part of the reason why occupation did not explain the growth of flextime among women was because there are a lot of woman teachers and K-12 teaching occupations are not likely to have flexible work hours (Kalleberg, 2011), even though they are "family-friendly". Supplemental analyses re-estimated the decomposition results after dropping education, training and library workers. The results showed that compositional changes in occupation explained over 1.5 percentage points (and 3 percent) of the change in flextime from 1989 to 2017/2018 for women workers ($p<.05$).

Goldin and Katz's (2011, 2016) theoretical framework and empirical analysis of flexible work arrangements in professional occupations suggests that the decrease in self-employment in many professional healthcare occupations would have increased the rate of workers with flexible work hours because self-employment in healthcare occupations is tied to a lesser ability to work flexibly. Their framework's predictions regard the fraction of workers with flextime (for men and women combined), including the self-employed. In order to assess fully this argument, I re-estimated the regression results for a sample that included self-employed workers and pooled together men and women. Because information on flextime was not collected for self-employed workers in 1991, 2017, and 2018, I dropped those years. The estimates continued to show that health professionals experienced less growth in flextime than "other professionals" and that health, education, and traditional, blue-collar workers experienced the least growth in flextime. Goldin and Katz (2016) also suggested that healthcare occupations experienced more growth in workplace flexibility than financial and legal occupations. I estimated the regression models for these occupations (combining men and women and including self-employed workers). I found that health workers experienced less flextime growth than legal and finance workers, which is not in line with Goldin and Katz (2016). Even when I limited this analysis to high-end professional healthcare, legal, and financial occupations, I still found that health workers experienced less flextime growth than legal and finance workers.

I estimated the main results using decompositions developed by Yun (2004), based upon logit models. The results were similar to the main results. The race coefficient in the explained part of the decomposition for women was significant at .10 level in the logit-based decomposition and significant at the .05 level in the main results, but the point estimates were nearly identical.

The ATUS data is all self-report, but the CPS also uses proxy reports. After dropping the proxy responses from the analytical sample and re-estimating the main results, I found consistent results to those of the main analyses. In the women's decomposition results, the compositional effects for race and education became significant at the .10 level, but the point estimates were very similar to those in the main results.

Supplemental analyses included union coverage as a control variable. These analyses were based on data from the outgoing rotation groups from 1989 to 2004, when information on union coverage was collected. Estimates for the outgoing rotation groups for the years 1989 to 2004 were not substantively affected by controlling for union coverage. The only notable differences were that the total explained effect in the men's decomposition became significant and slightly larger when union coverage was controlled for. The compositional effect of union coverage in the decomposition analyses was significant ($p<.05$) in the men's results, explaining 3.91 percent of the growth in flextime from 1989 to 2004, but was not significant in the women's results.

Supplemental analyses compared estimates of models that did and did not include controls for industry. These analyses only used data from 1989 to 2004 because an industry variable in the ATUS that is harmonized as it is in the CPS is not available in IPUMS. Surprisingly, the results were consistent across the two sets of estimates. The compositional effect of industry was insignificant in the men's decomposition analyses, but was significant in the women's decomposition, explaining -1.74% of the change in flextime between 1989 and 2004 (industry compositional changes stymied the growth of flextime).

Because of methodological differences between the measures from the CPS and the ATUS, the main results were re-estimated on the CPS sample for the years 1989 to 2004. The

regression results were similar to those of the full sample. The decomposition results were also similar, but, for both men and women, the compositional effects for more of the independent variables were significant in the 1989 to 2004 estimates. For men, compositional changes in race accounted for the difference in flextime between 1989 and 2004 ($p<.05$), but not between 1989 and 2017/2018, though the size of the effects were similar in both sets of estimates. For women, the estimate of the total explained effect in the first and second decomposition analysis was significant for the 1989-to-2004 analysis and not significant in the 1989-to-2017/2018 analysis, though the estimates were not that different: from 1989 to 2004, the workers' characteristics explained 2.24% and 5.24% in the first and second decompositions, respectively, compared with 1.07% and 2.65% for 1989 to 2017/2018. In the second decomposition for women, compositional changes in education were significant and explained 6.87% of the growth in flextime from 1989 to 2004, while they were not significant and explained 2.56% of the growth from 1989 to 2017/2018.

Because in 1997 the question wording of the flextime question changed and the CPS started to be collected through computer assisted technology, the main results were re-estimated on the data from the years 1997 to 2017/2018. The results were similar to those of the main results. A small exception is that, for women, compositional changes in race accounted for a marginally significant ($p<.10$) amount of the change in flextime from 1997 to 2017/2018, while the effect was significant (.05) in the main results. This inconsistency in the results is a matter of significance, rather than substance: compositional changes in race accounted for -1.83% of the growth in flextime from 1997 to 2017/2018 while they accounted for -1.46% (-.0063/.43) of the change from 1989 to 2017/2018.

Supplemental analyses estimated Model 3 regression models by adding interaction terms between year and the all the control variables. The results were similar to the main results.

## Discussion

The current study analyzed trends in the proportion of employees with flexible work hours from 1989 to 2017/2018 by occupation and estimated how change over time in the occupational distributions of workers explained the change over time in this proportion. The results for both men and women showed that from 1989 to 2017/2018 substantial growth in the probability of flextime occurred for all occupations (Figures 1, 2, 3, 4). The growth in the probability of flextime tended to be greater among managing, "other professional," service, sales, and administrative occupations than among education, healthcare, and traditional, blue-collar occupations (farming/fishing/forestry, construction/extraction, installation/maintenance/repair, production, and transportation/material moving occupations) (Table 2). These differential growth rates meant that from 1989 to 2017/2018 inequality in the probability of having flextime by occupation increased (Figures 1, 2, 3, 4). The decomposition results for both men and women showed that the large majority of the growth in the probability of flextime from 1989 to 2017/2018 was unexplained: under the counterfactual scenario that workers' average characteristics stayed the same as they were in 1989, most of the growth of flextime would have occurred anyway. The role of changes in the occupational structure in explaining the growth of flextime differed by sex. For men, the proportion of workers with flextime in 2017/2018 was 4.25 percentage points higher than what it would be under the counterfactual scenario that the occupational distribution was the same as it was in 1989, suggesting that changes in the occupational structure over time accounted for some of the growth in flextime. For women,

compositional changes in the characteristics of workers did not explain the growth in flextime between 1989 and 2017/2018. While most of the changes from 1989 to 2017/2018 in men's occupational distribution moved workers out of low-flextime occupations and into high-flextime occupations, women experienced large decreases in the high-flextime occupations of sales and administrative support as well as a larger increase in the low-flextime education occupations than men. Supplemental analyses that excluded education workers showed that compositional changes in occupation explained 1.5 percentage points of the change in flextime from 1989 to 2017/2018 for women workers.

My predictions were partially correct. Given theory and prior research suggesting that professional and managerial workers have higher rates of flextime than other workers and that these occupations have grown the most in the past several decades (Kalleberg, 2011, p.64-65), I predicted that changes in the occupational make-up of wage and salary workers would account for part of the growth of flextime from 1989 to 2017/2018. This prediction somewhat panned out: some of the growth of flextime for men was accounted for by changes in the occupational make-up of men workers. An insignificant amount of the growth among women was accounted for by this factor in the main analysis, but supplemental analyses that dropped educational workers (who have low flextime rates despite having rather "family-friendly" jobs) showed that occupation played a role. Second, I predicted that the proportion of workers with flextime in managerial, professional, and some sales occupations would increase faster than the proportion in other occupations, thereby increasing inequality between these occupations and other occupations. However, I also predicted variation in the rate of growth of flextime within professional occupations, with flextime growing at a faster rate among healthcare workers compared with legal and financial occupations, and flextime growing at a slower rate among

education workers compared with healthcare and other professional workers. These predictions were based on prior theory and research suggesting that professional/managerial occupations have gained market power over time, institutional protections have declined for low-skill workers over time, professional/managerial occupations have become less sex-segregated over time, and factors particular to healthcare and education workers added variation within professional occupations. These predictions were partially correct in that managing, "other professional," and sales workers experienced some of the greatest growth in flextime from 1989 to 2017/2018, while education workers did not. However, these predictions did not anticipate the low growth in flextime among healthcare workers and the strong growth in flextime among service and administrative support occupations.

Why did flextime grow at such a low rate for healthcare workers and at such a respectable rate for workers in service and administrative support occupations? For healthcare occupations, Goldin and Katz (2011, 2016) emphasized how the decline of self-employment in healthcare occupations implies that the growth in flexible arrangements would have been strong in these occupations because self-employment in these occupations tends to be linked with a lack of flexibility. My results were not in line with this prediction. Goldin and Katz's analysis focused on part-time work as a measure of job flexibility, but my results imply that their framework might differ for flexible working hours. Flextime for professional healthcare workers might not have grown as fast as it has for other professional workers because of the degree to which healthcare workers rely on teams working together in real-time. For example, professional healthcare workers might often need to make sure there are doctors, nurses, and technicians working at the same time in order to treat patients, whereas, for many other professional occupations, this type of real-time collaboration might be less necessary. For

service occupations, the wage payoff to nurturing skills has risen over the past several decades at a faster rate than that of most other skills, perhaps because the increases in women's labor force participation meant formerly domestic duties got marketized and increased the demand for nurturing skills without an equal increase in supply as younger generations of women have been encouraged by parents and teachers to develop skills outside traditional female skills like nurturing skills (Liu and Grusky, 2014). Taking wages as a likely signal of market power, flextime might have risen at a fast rate in service occupations because their market power increased, as predicted by theory. Even though this is predicted by theory, I overlooked the empirical finding about the relative rise in the returns to nurturing skills when developing my predictions. For administrative support occupations, perhaps flextime grew at relatively fast rate because workers in these occupations often work alongside managerial and professional workers, so they get similar benefits as them.

What are the implications of these findings for family life and gender inequality? To begin, the finding that inequality by occupation in having flexible work hours has increased (Figure 1 and Figure 3) suggests that flexible work hours is one more area where family life has become more unequal over time. Over the past several decades in the United States, family behaviors have diverged by education. Divorce rates have declined more rapidly among highly educated mothers compared with less educated mothers (Mclanahan, 2004; Mclanahan and Jacobsen, 2015). Moreover, time with children has increased more rapidly for the more highly educated compared with the less educated (Ramey and Ramey, 2010). The occupations that experienced the highest growth rates are more likely to contain workers with higher levels of education, so the divergences in family behavior by education should map on to the divergence in flextime by occupation. Future research would do well to examine the role that the increased

inequality in flextime might have played in these family inequalities. For example, it makes sense that greater increases in flexible working hours could have contributed to a greater increase in more highly educated parents' time with children and ability to parent intensively because the flexibility might have allowed them the ability to arrange their work schedules around their family commitments. Similarly, it could have allowed such workers to more effectively manage their relationships and have contributed to declining divorce rates.

Because researchers generally recommend flexible work hours for promoting gender equality at work and at home (Thébaud and Halcomb, 2019), the finding that rates of growth of flextime varied by occupation (resulting in more inequality in flextime by occupation) suggests that conditions for achieving gender equality at work and at home might have improved at different rates. This unequal growth in flextime might have had implications for uneven movements toward gender equality at work and at home. In particular, future research would do well to examine if the faster growth of flextime among occupations largely open to more educated workers might have played a role in, for example, the greater increase over the past several decades in highly educated women's employment compared with that of less educated women (England, 2010).

Second, the finding that the proportion of workers with flextime grew from 1989 to 2017/2018 across all occupations without exception suggests a broad-based growth in the flexibility of work time throughout all lines of work in the labor market. Similarly, the finding that, even if workers' characteristics stayed the same as they were in 1989, we still would have seen most of the growth of flextime since 1989 (Table 3) suggests that working conditions and worker behavior within occupations and other characteristics has shifted in a more family-friendly direction. This implies in turn that conditions have become more favorable for

achieving gender equality in the labor market as well as more accommodating of workers' non-work lives. Caution needs to be taken, however, because my measure does not capture worker's actual *use* of flextime.

In summary, the growth in inequality in the rate of flextime by occupation is one more area where family life has become more unequal over time and possibly could have contributed to several of those other areas where family life has become more unequal. This uneven growth in flextime might have also had implications for the evenness of movements toward gender equality. Nevertheless, there has been a broad-based growth in flextime throughout all lines of work in the labor market, implying that conditions for families and achieving gender equality have broadly improved.

## Works Cited


Appelbaum, E., & Golden, L. (2003). The failure to reform the workday. *Challenge*, *46*(1), 79-92.

Blair-Loy, M., & Wharton, A. S. (2002). Employees' use of work-family policies and the workplace social context. *Social forces*, *80*(3), 813-845.

Bryson, A., Gomez, R., Kretschmer, T., & Willman, P. (2007). The diffusion of workplace voice and high-commitment human resource management practices in Britain, 1984–1998. *Industrial and Corporate Change*, *16*(3), 395-426.

Bureau of Labor Statistics. (2019). *American time use survey (ATUS) data dictionary: 2017-18 leave and job flexibilities module data.*

Bureau of Labor Statistics. (2021). *American time use survey user's guide: Understanding ATUS 2003 to 2020.*

Cha, Y., & Weeden, K. A. (2014). Overwork and the slow convergence in the gender gap in wages. *American Sociological Review*, *79*(3), 457-484.

Cherlin, A. J. (2009). *The marriage-go-round: The state of marriage and the family in America today*. Vintage.

Chung, Heejung, and Tanja Van der Lippe. "Flexible working, work–life balance, and gender equality: Introduction." *Social Indicators Research* (2018): 1-17.

Cobb, C. (2018). Proxy reporting. In *The Palgrave Handbook of Survey Research* (pp. 427-437). Palgrave Macmillan, Cham.

Deitch, C. H., & Huffman, M. L. (2001). Family responsive benefits and the two-tiered labor market. *Working families: The transformation of the American home*, 103-130.

Dulebohn, J. H., Molloy, J. C., Pichler, S. M., & Murray, B. (2009). Employee benefits: Literature review and emerging issues. *Human Resource Management Review*, *19*(2), 86-103.

England, P. (2010). The gender revolution: Uneven and stalled. *Gender & society*, *24*(2), 149-166.

England, P., Levine, A., & Mishel, E. (2020). Progress toward gender equality in the United States has slowed or stalled. *Proceedings of the National Academy of Sciences*, *117*(13), 6990-6997.

Fairlie, R. W. (1999). The absence of the African-American owned business: An analysis of the dynamics of self-employment. Journal of Labor Economics, 17(1), 80-108

Flood, S., King, M., Rodgers, R., Ruggles, S., Warren, J.R., & Westberry, M. (2021). Integrated Public Use Microdata Series, Current Population Survey: Version 9.0 [dataset]. Minneapolis, MN: IPUMS. https://doi.org/10.18128/D030.V9.0

Fortin, N., Lemieux, T., & Firpo, S. (2011). Decomposition methods in economics. In *Handbook of labor economics* (Vol. 4, pp. 1-102). Elsevier.

Genadek, K. R., & Hill, R. (2017). Parents' work schedules and time spent with children. *Community, work & family*, *20*(5), 523-542.

Gerstel, N., & Clawson, D. (2014). Class advantage and the gender divide: Flexibility on the job and at home. *American Journal of Sociology*, *120*(2), 395-431.

Glass, J., & Fujimoto, T. (1995). Employer characteristics and the provision of family responsive policies. *Work and occupations*, *22*(4), 380-411.

Glauber, R. (2018). Trends in the motherhood wage penalty and fatherhood wage premium for low, middle, and high earners. *Demography*, *55*(5), 1663-1680.

Golden, L. (2001). Flexible work schedules: Which workers get them?. *American Behavioral Scientist*, *44*(7), 1157-1178.

Golden, L. (2008). Limited access: Disparities in flexible work schedules and work-at-home. *Journal of Family and Economic Issues*, *29*(1), 86-109.

Golden, L. (2009). Flexible daily work schedules in US jobs: Formal introductions needed?. *Industrial Relations: A Journal of Economy and Society*, *48*(1), 27-54.

Goldin, C. (2006). The quiet revolution that transformed women's employment, education, and family. *American economic review*, *96*(2), 1-21.

Goldin, C., & Katz, L. F. (2011). The cost of workplace flexibility for high-powered professionals. *The Annals of the American Academy of Political and Social Science*, *638*(1), 45-67.

Goldin, C. & Katz, L.F. 2014. *The Race Between Education and Technology*. In Grusky, D.B. (Ed.), *Social Stratification*, (pp. 73-80). Boulder, CO: Westview Press.

Goldin, C., & Katz, L. F. (2016). A most egalitarian profession: pharmacy and the evolution of a family-friendly occupation. *Journal of Labor Economics*, *34*(3), 705-746.

Hofferth, S.L., Flood, S.M., Sobek, M., & Backman, D. (2020). American Time Use Survey Data Extract Builder: Version 2.8 [dataset]. College Park, MD: University of Maryland and Minneapolis, MN: IPUMS. https://doi.org/10.18128/D060.V2.8

Holman, David. 2013. 'Job Types and Job Quality in Europe.' Human Relations 66 (4): 475–502.

Horowitz, Jonathan. "Relative education and the advantage of a college degree." *American sociological review* 83.4 (2018): 771-801.

Jaeger, D. A. (1997). Reconciling the old and new census bureau education questions: Recommendations for researchers. *Journal of Business & Economic Statistics*, *15*(3), 300-309.

Jann, B. (2008). The Blinder–Oaxaca decomposition for linear regression models. *The Stata Journal*, *8*(4), 453-479.

Kelly, E. L., Moen, P., & Tranby, E. (2011). Changing workplaces to reduce work-family conflict: Schedule control in a white-collar organization. *American sociological review*, *76*(2), 265-290.

Kalleberg, A. L. (2011). Good jobs, Bad jobs: The Rise of Polarized and Precarious Employment Systems in the United States, 1970s to 2000s. *New York*.

Kalleberg, A. (2016). *Good jobs, bad jobs* (pp. 129-47). London: Sage Publications.

Kalleberg, Arne L. and Stephen Vaisey. 2005. 'Pathways to a Good Job: Perceived Work Quality Among the Machinists.' British Journal of Industrial Relations 43 (3): 431–454.

Kim, C. (2013). Detailed wage decompositions: revisiting the identification problem. *Sociological Methodology*, *43*(1), 346-363.

Kim, J. (2018). Workplace flexibility and Parent–Child interactions among working parents in the U.S. *Social Indicators Research,* , 1-43

Kossek, E. E., & Lautsch, B. A. (2018). Work–life flexibility for whom? Occupational status and work–life inequality in upper, middle, and lower level jobs. *Academy of Management Annals*, *12*(1), 5-36.

Liu, Y., & Grusky, D. B. (2014). The Winners of the Third Industrial Revolution. In Grusky, D.B. (Ed.), *Social Stratification,* (pp. 113-123). Boulder, CO: Westview Press.

Matos, K., Galinsky, E., & Bond, J. T. (2017). National study of employers. The Society for Human Resource Management.

McLanahan, S. (2004). Diverging destinies: How children are faring under the second demographic transition. *Demography*, *41*(4), 607-627.

McLanahan, S., & Jacobsen, W. (2015). Diverging destinies revisited. In *Families in an era of increasing inequality* (pp. 3-23). Springer, Cham.

McCrate, E. (2012). Flexibility for whom? Control over work schedule variability in the US. *Feminist Economics*, *18*(1), 39-72.

Menamin, T. M. (2007). A time to work: recent trends in shift work and flexible schedules. *Monthly Lab. Rev.*, *130*, 3.

Minnotte, K. L., Minnotte, M. C., & Thompson, K. (2016). The life satisfaction of dual-earner mothers and fathers: Does flexible scheduling matter? *Journal of Happiness Studies*, *17*(6), 2365-2388.

Pettit, B., & Ewert, S. (2009). Employment gains and wage declines: The erosion of black women's relative wages since 1980. *Demography*, *46*(3), 469-492.

Secret, M. (2000). Identifying the family, job, and workplace characteristics of employees who use work-family benefits. *Family Relations*, *49*(2), 217-225.

Sengupta, Sukanya, Paul K. Edwards, and Chin-Ju Tsai. 2009. 'The Good, the Bad, and the Ordinary: Work Identities in "Good" and "Bad" Jobs in the United Kingdom.' Work and Occupations 36 (1): 26–55.

Smith, Davern, Freese, and Morgan. General Social Surveys, 1972-2018.

Tang, C. Y., & MacDermid, S. (2010). *Time and workplace flexibility*. Families and Work Institute.

Thébaud, S., & Halcomb, L. (2019). One step forward? Advances and setbacks on the path toward gender equality in families and work. *Sociology Compass*, *13*(6), e12700.

U.S. Bureau of the Census. (1989) *Current population survey, May 1989: Multiple job holding, flexitime, and volunteer work.* Ann Arbor, MI: Inter-university Consortium for Political and Social Research.

U.S. Bureau of the Census. (1991) *Current population survey, May 1991: Multiple job holding, flexitime, and volunteer work.* Ann Arbor, MI: Inter-university Consortium for Political and Social Research.

U.S. Bureau of the Census. (1997) *Current population survey, May 1997: Work Schedules.* Ann Arbor, MI: Inter-university Consortium for Political and Social Research.

U.S. Bureau of the Census. (2001). *Current Population Survey, May 2001: Work Schedules and Work at Home Supplement*.

U.S. Bureau of the Census. (2004). *Current Population Survey, May 2004: Work Schedules and Work at Home Supplement*.

Van Hook, J., Brown, S. I., & Kwenda, M. N. (2004). A decomposition of trends in poverty among children of immigrants. *Demography*, *41*(4), 649-670.

Weeden, K. A. (1998). Revisiting occupational sex segregation in the United States, 1910–1990: Results from a log-linear approach. *Demography*, *35*(4), 475-487.

Weeden, K. A. (2002). Why do some occupations pay more than others? Social closure and earnings inequality in the United States. *American journal of sociology*, *108*(1), 55-101.

Weeden, K. A. (2005). Is there a flexiglass ceiling? Flexible work arrangements and wages in the United States. *Social Science Research*, *34*(2), 454-482.

Weeden, K. A., & Grusky, D. B. (2014). Inequality and market failure. *American Behavioral Scientist*, *58*(3), 473-491.

Weeden, K. A., Cha, Y., & Bucca, M. (2016). Long work hours, part-time work, and trends in the gender gap in pay, the motherhood wage penalty, and the fatherhood wage premium. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *2*(4), 71-102.

Williams, J. (2010). *Reshaping the work-family debate: Why men and class matter*. Harvard University Press.

Williams, J. C., Blair-Loy, M., & Berdahl, J. L. (2013). Cultural schemas, social class, and the flexibility stigma. *Journal of Social Issues*, *69*(2), 209-234.

Yun, M. S. (2004). Decomposing differences in the first moment. *Economics letters*, *82*(2), 275-280.

Yun, M. S. (2005). A simple solution to the identification problem in detailed wage decompositions. *Economic inquiry*, *43*(4), 766-772.

## Appendix

**Table 1A.** ***Estimates of Linear Probability Models of Flexible Work Hours***

| | Men | | | Women | | |
|---|---|---|---|---|---|---|
| VARIABLES | (1) | (2) | (3) | (4) | (5) | (6) |
| **Occupation (reference=manager)** | | | | | | |
| **Education, Training, Library** | | -0.11*** | -0.16*** | | -0.13*** | -0.17*** |
| | | (0.01) | (0.02) | | (0.01) | (0.01) |
| **Healthcare Practitioners and Technicians** | | -0.08*** | -0.10*** | | -0.06*** | -0.08*** |
| | | (0.02) | (0.02) | | (0.01) | (0.01) |
| **Other Professional** | | 0.05*** | 0.04*** | | 0.07*** | 0.05*** |
| | | (0.01) | (0.01) | | (0.02) | (0.02) |
| **Service** | | -0.10*** | -0.05*** | | -0.06*** | -0.08*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Sales** | | 0.02* | 0.04*** | | -0.03** | -0.05*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Administrative Support** | | -0.10*** | -0.06*** | | -0.06*** | -0.06*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Farming/Fishing/Forestry** | | -0.02 | 0.05** | | 0.10* | 0.12** |
| | | (0.02) | (0.02) | | (0.05) | (0.05) |
| **Construction/Extraction** | | -0.14*** | -0.07*** | | 0.02 | 0.03 |
| | | (0.01) | (0.01) | | (0.06) | (0.06) |
| **Installation/Maintenance/Repair** | | -0.14*** | -0.07*** | | -0.06 | -0.03 |
| | | (0.01) | (0.01) | | (0.04) | (0.04) |
| **Production** | | -0.17*** | -0.09*** | | -0.14*** | -0.09*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **Transportation/Material Moving** | | -0.12*** | -0.06*** | | -0.09*** | -0.09*** |
| | | (0.01) | (0.01) | | (0.02) | (0.02) |
| **1991** | 0.03*** | 0.03*** | 0.03*** | 0.04*** | 0.06*** | 0.06*** |
| | (0.00) | (0.01) | (0.01) | (0.00) | (0.01) | (0.01) |
| **X Education, Training, Library** | | 0.01 | 0.01 | | -0.05*** | -0.05*** |
| | | (0.02) | (0.02) | | (0.01) | (0.01) |
| **X Healthcare Practitioners and Technicians** | | 0.05 | 0.04 | | -0.05*** | -0.05*** |
| | | (0.03) | (0.03) | | (0.02) | (0.02) |
| **X Other Professional** | | 0.03 | 0.03 | | 0.01 | 0.00 |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Service** | | -0.03* | -0.03* | | -0.05*** | -0.04*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **X Sales** | | -0.02 | -0.02 | | -0.03* | -0.03 |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Administrative Support** | | 0.01 | 0.01 | | -0.01 | -0.01 |
| | | (0.02) | (0.02) | | (0.01) | (0.01) |
| **X Farming/Fishing/Forestry** | | -0.07** | -0.07** | | -0.22*** | -0.21*** |
| | | (0.03) | (0.03) | | (0.07) | (0.07) |
| **X Construction/Extraction** | | -0.02 | -0.02 | | -0.17** | -0.15** |
| | | (0.01) | (0.01) | | (0.07) | (0.07) |
| **X Installation/Maintenance/Repair** | | -0.02 | -0.02 | | -0.06 | -0.06 |
| | | (0.02) | (0.02) | | (0.06) | (0.06) |
| **X Production** | | -0.01 | -0.01 | | -0.04*** | -0.04*** |
| | | (0.01) | (0.01) | | (0.01) | (0.01) |
| **X Transportation/Material Moving** | | -0.02 | -0.02 | | -0.02 | -0.02 |
| | | (0.01) | (0.01) | | (0.02) | (0.02) |
| **1997** | 0.17*** | 0.25*** | 0.25*** | 0.17*** | 0.24*** | 0.23*** |
| | (0.00) | (0.01) | (0.01) | (0.00) | (0.01) | (0.01) |
| **X Education, Training, Library** | | -0.04 | -0.04 | | -0.15*** | -0.15*** |
| | | (0.03) | (0.03) | | (0.02) | (0.02) |
| **X Healthcare Practitioners and Technicians** | | -0.15*** | -0.15*** | | -0.11*** | -0.11*** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | (0.03) | (0.03) | | (0.02) | (0.02) |
| **X Other Professional** | | 0.02 | 0.02 | | -0.01 | -0.02 |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Service** | | -0.14*** | -0.14*** | | -0.07*** | -0.07*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Sales** | | -0.03 | -0.03 | | -0.01 | -0.01 |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Administrative Support** | | -0.12*** | -0.13*** | | -0.06*** | -0.06*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Farming/Fishing/Forestry** | | -0.11*** | -0.10** | | -0.30*** | -0.28*** |
| | | (0.04) | (0.04) | | (0.07) | (0.07) |
| **X Construction/Extraction** | | -0.14*** | -0.14*** | | -0.11 | -0.12 |
| | | (0.02) | (0.02) | | (0.08) | (0.08) |
| **X Installation/Maintenance/Repair** | | -0.14*** | -0.14*** | | -0.10 | -0.10 |
| | | (0.02) | (0.02) | | (0.07) | (0.07) |
| **X Production** | | -0.14*** | -0.15*** | | -0.17*** | -0.18*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Transportation/Material Moving** | | -0.13*** | -0.13*** | | -0.10*** | -0.10*** |
| | | (0.02) | (0.02) | | (0.03) | (0.03) |
| **2001** | 0.18*** | 0.29*** | 0.29*** | 0.18*** | 0.26*** | 0.25*** |
| | (0.00) | (0.01) | (0.01) | (0.00) | (0.01) | (0.01) |
| **X Education, Training, Library** | | -0.13*** | -0.14*** | | -0.17*** | -0.16*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Healthcare Practitioners and Technicians** | | -0.14*** | -0.15*** | | -0.13*** | -0.13*** |
| | | (0.03) | (0.03) | | (0.02) | (0.02) |
| **X Other Professional** | | -0.02 | -0.02 | | -0.01 | -0.01 |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Service** | | -0.16*** | -0.17*** | | -0.10*** | -0.09*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Sales** | | -0.08*** | -0.09*** | | -0.02 | -0.00 |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Administrative Support** | | -0.15*** | -0.15*** | | -0.07*** | -0.07*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Farming/Fishing/Forestry** | | -0.21*** | -0.20*** | | -0.28*** | -0.26*** |
| | | (0.04) | (0.04) | | (0.08) | (0.08) |
| **X Construction/Extraction** | | -0.18*** | -0.18*** | | -0.16* | -0.15* |
| | | (0.02) | (0.02) | | (0.09) | (0.09) |
| **X Installation/Maintenance/Repair** | | -0.15*** | -0.15*** | | -0.16** | -0.17** |
| | | (0.02) | (0.02) | | (0.07) | (0.06) |
| **X Production** | | -0.19*** | -0.19*** | | -0.18*** | -0.18*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Transportation/Material Moving** | | -0.18*** | -0.18*** | | -0.13*** | -0.13*** |
| | | (0.02) | (0.02) | | (0.03) | (0.03) |
| **2004** | 0.16*** | 0.27*** | 0.27*** | 0.17*** | 0.26*** | 0.25*** |
| | (0.00) | (0.01) | (0.01) | (0.00) | (0.01) | (0.01) |
| **X Education, Training, Library** | | -0.13*** | -0.13*** | | -0.18*** | -0.17*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Healthcare Practitioners and Technicians** | | -0.12*** | -0.12*** | | -0.13*** | -0.12*** |
| | | (0.03) | (0.03) | | (0.02) | (0.02) |
| **X Other Professional** | | -0.03* | -0.03* | | -0.06*** | -0.06** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Service** | | -0.16*** | -0.15*** | | -0.10*** | -0.09*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Sales** | | -0.09*** | -0.09*** | | -0.05** | -0.03* |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Administrative Support** | | -0.15*** | -0.15*** | | -0.08*** | -0.07*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Farming/Fishing/Forestry** | | -0.21*** | -0.20*** | | -0.24*** | -0.23*** |
| | | (0.04) | (0.04) | | (0.08) | (0.08) |
| **X Construction/Extraction** | | -0.17*** | -0.16*** | | -0.09 | -0.11 |
| | | (0.02) | (0.02) | | (0.10) | (0.09) |
| **X Installation/Maintenance/Repair** | | -0.14*** | -0.14*** | | -0.24*** | -0.22*** |
| | | (0.02) | (0.02) | | (0.06) | (0.06) |
| **X Production** | | -0.17*** | -0.17*** | | -0.18*** | -0.18*** |
| | | (0.02) | (0.02) | | (0.02) | (0.02) |
| **X Transportation/Material Moving** | | -0.18*** | -0.17*** | | -0.19*** | -0.16*** |
| | | (0.02) | (0.02) | | (0.03) | (0.03) |
| **2017/2018** | 0.43*** | 0.54*** | 0.53*** | 0.43*** | 0.54*** | 0.53*** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (0.01) | (0.02) | (0.02) | (0.01) | (0.02) | (0.02) |
| **X Education, Training, Library** | | -0.27*** | -0.27*** | | -0.29*** | -0.28*** |
| | | (0.05) | (0.05) | | (0.04) | (0.04) |
| **X Healthcare Practitioners and Technicians** | | -0.18*** | -0.19*** | | -0.22*** | -0.22*** |
| | | (0.07) | (0.07) | | (0.04) | (0.04) |
| **X Other Professional** | | -0.02 | -0.02 | | -0.07* | -0.07* |
| | | (0.03) | (0.03) | | (0.04) | (0.04) |
| **X Service** | | -0.12*** | -0.13*** | | -0.10*** | -0.10*** |
| | | (0.04) | (0.04) | | (0.04) | (0.04) |
| **X Sales** | | -0.11** | -0.11** | | -0.01 | -0.02 |
| | | (0.05) | (0.05) | | (0.04) | (0.04) |
| **X Administrative Support** | | -0.05 | -0.06 | | -0.10*** | -0.10*** |
| | | (0.05) | (0.05) | | (0.03) | (0.03) |
| **X Farming/Fishing/Forestry** | | -0.39*** | -0.38*** | | -0.24 | -0.18 |
| | | (0.10) | (0.10) | | (0.16) | (0.16) |
| **X Construction/Extraction** | | -0.29*** | -0.28*** | | -0.09 | -0.14 |
| | | (0.04) | (0.04) | | (0.18) | (0.16) |
| **X Installation/Maintenance/Repair** | | -0.17*** | -0.17*** | | -0.21 | -0.20 |
| | | (0.05) | (0.05) | | (0.22) | (0.21) |
| **X Production** | | -0.29*** | -0.30*** | | -0.22*** | -0.24*** |
| | | (0.04) | (0.04) | | (0.05) | (0.05) |
| **X Transportation/Material Moving** | | -0.18*** | -0.19*** | | -0.27*** | -0.27*** |
| | | (0.04) | (0.04) | | (0.07) | (0.07) |
| **Full-/Part-time Status (reference=full-time)** | | | | | | |
| **Part-Time** | | | 0.13*** | | | 0.13*** |
| | | | (0.01) | | | (0.01) |
| **Education (reference=did not complete 12th grade)** | | | | | | |
| **Completed 12th Grade** | | | 0.02* | | | 0.03** |
| | | | (0.01) | | | (0.01) |
| **Some College** | | | 0.06*** | | | 0.06*** |
| | | | (0.01) | | | (0.01) |
| **College** | | | 0.13*** | | | 0.09*** |
| | | | (0.01) | | | (0.01) |
| **Graduate School** | | | 0.17*** | | | 0.12*** |
| | | | (0.02) | | | (0.02) |
| **Region (reference=south)** | | | | | | |
| **Northeast** | | | -0.03*** | | | -0.01 |
| | | | (0.01) | | | (0.01) |
| **Midwest** | | | 0.02* | | | 0.01 |
| | | | (0.01) | | | (0.01) |
| **West** | | | 0.02* | | | 0.03*** |
| | | | (0.01) | | | (0.01) |
| **Marital Status/ Spouse's Employment (reference= no spouse)** | | | | | | |
| **Employed** | | | 0.01 | | | -0.02*** |
| | | | (0.01) | | | (0.01) |
| **Not Employed** | | | 0.01 | | | -0.03** |
| | | | (0.01) | | | (0.01) |
| **Number of Children < Age 6** | | | 0.00 | | | 0.00 |
| | | | (0.00) | | | (0.01) |
| **Number of Children Ages 6-17** | | | -0.00 | | | 0.00 |
| | | | (0.00) | | | (0.00) |
| **Race/Ethnicity (reference=white)** | | | | | | |
| **Black** | | | -0.03** | | | -0.04*** |
| | | | (0.01) | | | (0.01) |
| **Hispanic** | | | -0.04*** | | | -0.04*** |
| | | | (0.01) | | | (0.01) |
| **Other** | | | -0.06*** | | | -0.05** |
| | | | (0.02) | | | (0.02) |
| **Constant** | 0.14*** | 0.21*** | 0.11*** | 0.13*** | 0.18*** | 0.12*** |
| | (0.00) | (0.01) | (0.02) | (0.00) | (0.01) | (0.02) |
| **Observations** | 135,821 | 135,821 | 135,821 | 128,591 | 128,591 | 128,591 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **R-squared** | 0.119 | 0.202 | 0.219 | 0.112 | 0.164 | 0.184 |

Notes: CPS May 1989, May 1991, May 1997, May 2001, and May 2004. ATUS 2017-2018. Samples from the CPS are limited to wage and salary workers aged 15 or older and exclude the self-employed, those in the armed forced, those with spouses in the armed forces, and those with incomplete data on any variables. The sample from the ATUS is limited to wage and salary workers aged 15 or older and excludes the self-employed, those in the armed forces, and those with incomplete data on any variable. N's are unweighted; all else is weighted. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.