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# What Explains the Gender Gap in Schlepping? Testing Various Explanations for Gender Differences in Household-Serving Travel\*

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*Objectives.* Many gender differences in travel have begun to converge. Has convergence occurred for household-serving travel, which constitutes a very large and growing share of all trips? Moreover, what explains the division of household-serving travel in heterosexual couples? In answering these questions, we test the salience of three theories about the gendered division of household labor: (1) time availability, (2) microeconomic, and (3) gender socialization. *Methods.* Using data from the American Time Use Survey (ATUS) from 2003 to 2012, we calculated the female-to-male ratio of household-serving trips in several types of households (i.e., singles vs. couples and male vs. female breadwinner households). *Results.* There was some empirical support for each theory, but we find the most consistent and compelling evidence for gender socialization. We observe substantial gender differences in child- and household-serving trips apart from household formation; even in households where women earn more, are better educated, or work more hours than their partners, women still make about half again as many child-serving and grocery-shopping trips as their male partners. *Conclusion.* Despite dramatic changes in women's labor force participation over the past half-century, the gender division of household-serving travel remains strong.

As women increasingly entered the labor force over the past few decades, dual-earner households became more widespread, and many longstanding gender differences in travel behavior began to converge. While gender differences in paid work, household labor, and commuting have been studied extensively, the division of household-serving travel has received less attention. We examine this issue by asking (1) what is the gender division of household-serving travel in the United States today? and (2) what explains this division? To answer these questions, we draw on detailed time use surveys from a nationally representative sample of adults. While our focus is on household-serving travel, we pay particular attention to female labor force participation because, for many couples, employment decisions are thought to be closely linked with household responsibilities.

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### Why Household-Serving Travel?

Household decisions on where to live and work, and how to divvy up responsibilities are enormously consequential. The travel implications of these decisions, in turn, entail significant costs for both families and governments that build, operate, and maintain transportation systems. According to the Consumer Expenditure Survey, 17.5 percent of all household expenditures in 2012 were for transportation, which ranked second behind only housing (Bureau of Labor Statistics, 2013). Likewise, all units of government in the United States spent a staggering \$295 billion on transportation in 2009, or nearly a thousand dollars (\$961) per capita (Bureau of Transportation Statistics).

Because of its important links to employment and income, transportation policy-makers, planners, and researchers traditionally focused attention and resources on commuting to work, and research on men's and women's travel is no exception (Crane, 2007; Rosenbloom, 2004). A nearly universal finding among studies on gender and travel is that women's commutes (i.e., journeys to and from work) are, on average, shorter than men's. Research on employment, commuting, and gender finds that household characteristics—such as the number of adults, marital status, and presence of children—explain much (though not all) of the observed sex-based commuting differences (see Appendix A for additional information on employment patterns and trends by gender).

Studies on commuting differences are valuable, but we focus here on household-serving travel because commuting comprises a surprisingly small, and declining, proportion of travel in metropolitan areas—only 16 percent of all metropolitan person trips in 2009 (Santos et al., 2011). Trips for other purposes—shopping (21 percent), family errands (22 percent), and school/church (10 percent)—collectively make up a much larger and growing share of trips. Such trips are directly linked to decisions couples make about how to share household responsibilities (such as childcare and food preparation) as well as where and how much to work for pay.

### Three Perspectives on the Division of Household Labor

The relatively thin body of research examining household-serving and child-serving travel has found that women are far more likely to make such trips than men, though there is little agreement as to why (Hanson and Hanson, 1981; McDonald, 2006; McDonald and Aalborg, 2009). To shed light on this question, we drew on three theories, or, more accurately, perspectives, commonly employed to explain the division of household labor, and test them with respect to household-serving travel. These perspectives are (1) time availability, (2) microeconomic, and (3) gender socialization. According to the *time availability* perspective, the household member who has the least human capital and works the fewest hours in the paid labor force is likely to have the most time available for other activities and thus will tend to take on a larger burden of household tasks. The *microeconomic* perspective by contrast suggests that household members maximize utility by making rational decisions about who completes tasks (both paid work and household labor) based on comparative advantage, opportunity costs, and relative resources. Finally, according to the *gender socialization* perspective, couples divide household work based on gender ideologies, which are commonly held beliefs about the appropriate roles and behaviors of men and women (see Appendix B for a more detailed discussion of each of these perspectives).

## Study Approach and Methodology

To answer our research questions, we analyzed American Time Use Survey (ATUS) data because they contain information on daily activities, including travel. The Bureau of Labor Statistics selects the ATUS sample from households completing the Current Population Survey (CPS). A single ATUS respondent from each selected household completes a detailed activity diary over a single day. Because just one member of each household completes the diary, we are unable to directly observe divisions of labor and travel within individual households. Nevertheless, by analyzing data for both men and women in two-person households, we have substantial collective evidence on household labor and travel.

ATUS data were available from 2003 (the first year of the survey) to 2012 (the most recent year available at the start of our research). To analyze changes in the gender division of household-serving travel over this span we analyzed each year (2003 through 2012) separately, but for the most part we present data from our pooled (2003–2012) sample.

We restrict our sample to working-age adults aged 18–65 living in one of four household types: (1) single adults with no children ( $N = 7,877$  men and 8,751 women), (2) single parents with children living at home ( $N = 1,391$ men and 7,099 women), (3) heterosexual couples with no children ( $N = 7,695$ men and 8,953 women), and (4) heterosexual couples with children ( $N = 16,005$ men and 18,204 women). We define couples as those who identify a cohabitant spouse or unmarried partner (distinct from roommates).

We focus our analysis on trips, rather than, say, time spent traveling, distance traveled, or travel mode, because trips—to work, school, the store, the movies, and so on—most directly reflect the purpose of travel. While, for example, time spent traveling is an important measure of time use, it is a function of many factors (travel mode, time of day, local population density, etc.) unrelated to the division of household labor. The two types of household-serving trips we examine are trips that are closely related to household labor and, based on past research, vary substantially by gender: child-serving and household-serving trips (Kwan, 2000; Taylor and Mauch, 1998).

Child-serving trips are defined by ATUS staff as any trip on behalf of a child regardless of whether a child was present. For example, driving alone to school to pick up a child in order to take her to the dentist would count as a child-serving trip. Trips *for* a child as opposed to merely trips *with* a child better reflect our interest in the division of household tasks. Our measure of child-serving trips includes trips to care for any child, including children who are not members of the traveler's household. This allows us to compare the number of child-serving trips men and women make at each stage of the life course, and particularly in younger households with no children. We tested a variety of definitions of child-serving travel and got broadly similar results in all cases.

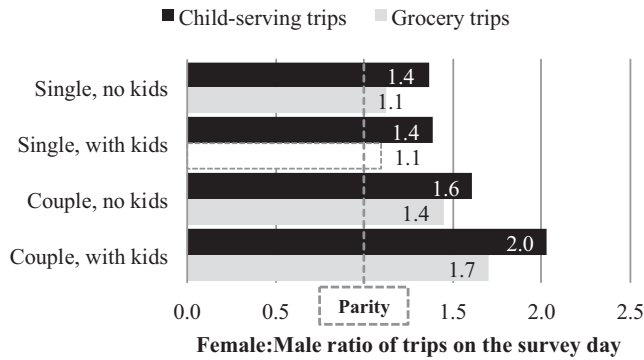
We also focus on grocery-shopping trips since nearly every household makes such trips and grocery shopping is indirectly linked to a variety of important social outcomes such as health and well-being. While these two trip types do not correspond to all forms of household labor, or account for all types of household travel, we assume them to be broadly representative of trips made on behalf of households.

## Testing the Gender Theories

To test the salience of the three perspectives, we use economic data linked to the CPS, which provide information on employment status (where full-time is 35 hours or more per week), hours worked, weekly earnings, and education of not only the respondent who

FIGURE 1

For Each Household-Serving Trip by a Man, a Woman Makes \_\_\_\_ Trips, by Couple Status and Presence of Children (ATUS 2003–2012)



completed the ATUS, but also the respondent's spouse or partner. We test the microeconomic theory by comparing the division of household trips in households where women earn less or have less human capital (measured as years of education) than their partners with couples where women earn more or are better educated than their partners (Day and Newburger, 2002). We test the time availability theory by comparing the division of household-serving travel by the employment status of each partner and the actual number of hours worked on the survey day. And we test the gender socialization theory by comparing travel in male and female single-adult households (with and without children) with two-adult, two-sex households (also with and without children).

## Results

Figure 1 depicts the female-to-male ratio of household-serving trips in each household type. A ratio of 1:1 indicates parity between men and women. Values greater than one indicate that women make more household-serving trips than men.

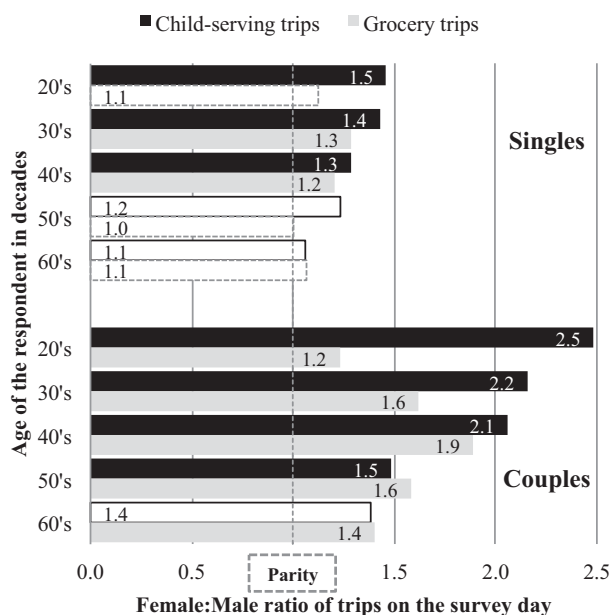
In a sum, women and men exhibit gendered patterns of household maintenance and travel even as single adults. This gap persists, and is larger, among adults who have formed households, and is even larger when couples have children.

One might not expect to find much difference between single mothers and single fathers, as the single parent, regardless of gender, assumes most chauffeuring responsibilities for his or her children. Even so, we observe striking differences between male- and female-headed single-parent households: single mothers make 1.4 times as many child-serving trips as single fathers.

Remarkably, a gender gap in chauffeuring exists even in single-adult households without children. Some travelers in these households make child-serving trips for the children of friends and relatives outside the home. While these trips are understandably rare, women in single-person households make 1.4 times as many trips as men. This suggests a powerful socialization of gender roles at play with respect to childcare and chauffeuring apart from the formation of partnerships or the presence of children.

FIGURE 2

For Each Household-Serving Trip by a Man, a Woman Makes \_\_\_\_\_ Trips, by Age (ATUS 2003–2012)



NOTE: Child-serving trips include households with children under 18.

Couples have more flexibility in allocating household-serving travel than single adults. As the figure shows, the gender gap in child-serving travel is widest in couples with children, where women make two times as many child-serving trips as men.

The gender gap is less pronounced for grocery trips than child-serving trips in all household types. The gap for single adults is minimal (though statistically significant). Moreover, single fathers make nearly as many grocery trips as single mothers. As with child-serving trips, the gender gap for grocery trips widens through couple formation and the presence of children. Again, this reflects the greater flexibility of two-person households in dividing household tasks.

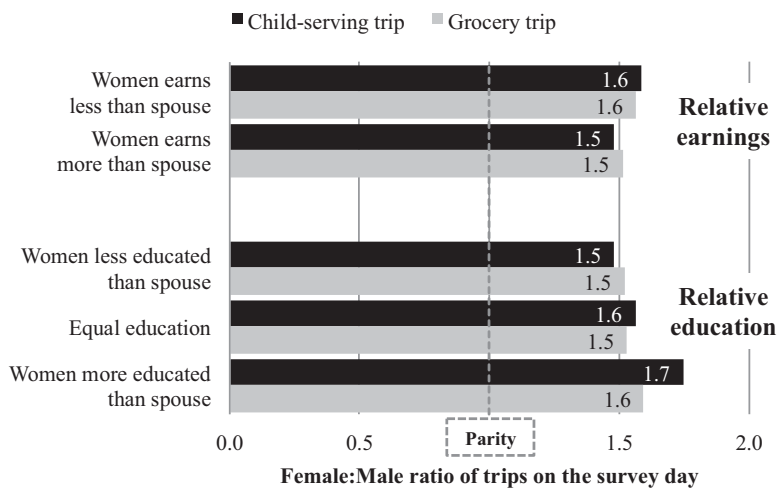
### Gender Gap by Age

Is the gender gap more pronounced for older adults who developed cultural norms and expectations about household tasks when few women worked outside the home? Figure 2 helps answer this question by illustrating the gender gap in household-serving travel by age of the respondent. As above, the gender gap tends to be more pronounced for child-serving trips than grocery trips and wider for couples than for singles. Because these data are repeated cross-sectionally and only cover a recent decade, they tell us little about how today's young people will travel later in life.

We expected to find that younger couples divide household tasks more equally than older couples, but these data generally do not support that expectation. The gender gap

FIGURE 3

## Testing the Microeconomic Perspective



for child-serving trips is actually widest for the youngest respondents; women in their 20s make 2.5 times as many child-serving trips as their male partners, while older women enjoy (slightly) more parity with their partners. Notably, this pattern is not explained by differences in the number of children in younger versus older households. The average number of children (in households with children) is lowest in the 20s, peaks in the 30s, and declines after that (not shown in the figure).

In contrast to child-serving travel, where the gender gap declined with age, the gap in grocery trips was lowest for those in their 20s, increased steadily through the 40s, and declined steadily at higher ages. Among those aged 50–65, single women and men make an equal number of child-serving and grocery-serving trips (though fewer of the former in absolute terms compared with younger adults).

### Testing the Theories

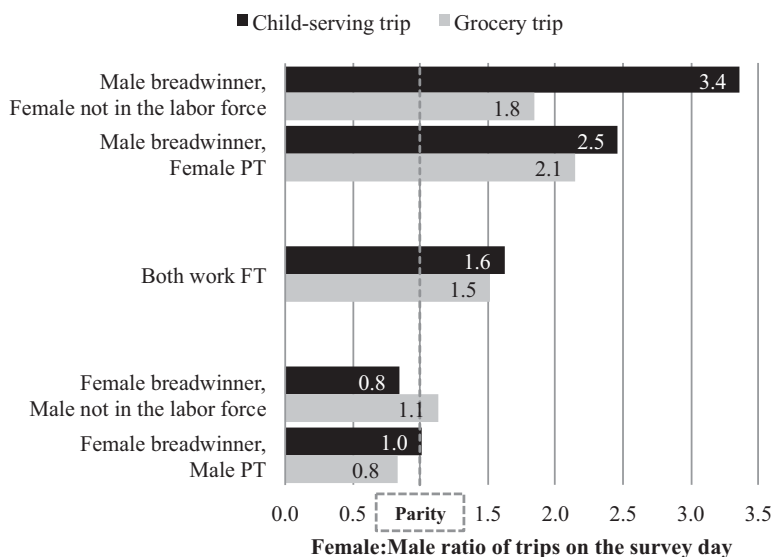
We test the salience of the three perspectives in Figures 3 and 4, where we restrict our analysis to coupled heterosexual households. For child-serving trips, we focus only on households with a child present, but for grocery trips we include all heterosexual coupled households. The figures combine data from the weekend and weekdays.

**Relative Earnings.** Consistent with the microeconomic theory, mothers in this sample who earn less than their partners make 1.6 child-serving trips (and grocery trips) for each such trip by their higher earning male partners. The gap narrows somewhat, but remains large (1.5 to 1) when women earn more than their spouses. This suggests the influence of gender socialization is quite powerful, as women bear much greater household-serving responsibilities and travel on average, regardless of their earnings relative to men in the household.

Some scholars (Gupta and Ash, 2008; Killewald and Gough, 2010) critique the emphasis on relative earnings and suggest analyzing absolute earnings instead. In an analysis not

FIGURE 4

For Each Household-Serving Trip by a Man, a Woman Makes \_\_\_\_\_ Trips, by Relative Employment (ATUS 2003–2012)



presented here (due to space constraints), we find that men and women both make more child-serving trips (but not grocery trips) as household earnings increase. We further find that women make slightly fewer child-serving trips as their *personal* incomes increase. We found no decline in the number of grocery trips for women with higher incomes. This suggests that household-serving *travel* may differ from other types of household labor—such as laundry or food preparation—that are more readily replaced, although this may change as delivery and chauffeuring services continue to expand (Lieber, 2002; Schulte and Aratani, 2015).

**Relative Educational Attainment.** When women are less well educated than their partners, they make 1.5 times as many household-serving trips as their partners. According to the microeconomic theory, the gender gap should narrow as women achieve parity in educational attainment (44 percent of the sample) and when they have more education than their partners (29 percent of the sample). We largely find the opposite; the gender gap in child-serving travel holds steady when women are equally educated and *widens* when women are better educated than their partners. Such findings are consistent with gender ideology arguments as research elsewhere has found that more educated men tend to have more egalitarian attitudes about gender roles (Brines, 1994).

**Employment Status.** The gender division of household labor by employment status serves as a test of both the microeconomic and time availability perspectives. In households where men work full-time and women are not in the labor force (23 percent of our sample), we would expect women to do more household-serving labor because they have more time available and (by definition) they earn less than their spouses. Indeed, Figure 4 shows that in these households women make 3.4 times as many child-serving trips and 1.8 times as many grocery trips as men. As predicted by the time availability perspective, the gender



gap narrows slightly in households with a male breadwinner (employed full-time) where the woman works part-time.

Given cultural expectations about stay-at-home mothers, these findings are not surprising. What is surprising is the extent to which that gap persists in couples where both partners work full-time—which in the 2000s accounts for 38 percent of two-person households with children in our sample. In these households, women make half again as many child-serving trips and grocery trips as their partners (1.6:1 and 1.5:1, respectively).

In households with a female breadwinner, we may expect that the man will take on the bulk of household-serving labor because he has more free time to do housework (time availability perspective) and is dependent on the income of his female partner (microeconomic perspective). As Figure 4 indicates, men in those households do indeed make more household-serving trips than their female partners, but even in these households, women make nearly as many child-serving and grocery trips as men. The finding that relative employment exerts an asymmetric effect depending on gender is consistent with the gender ideology perspective. However, we do not find support for the argument made by some that when employment patterns are not congruent with established gender ideologies, both parties will compensate to better reflect cultural norms (Hochschild, 1989; West and Zimmerman, 1987).

***Relative Hours Worked for Pay.*** Even when women work full-time, they tend to work fewer hours than men (Bureau of Labor Statistics, 2003–2012). The time availability theory suggests that any persistence of the gender gap when both members work full-time likely reflects differences in hours worked. Figure 5 depicts the female-to-male ratio for child-serving and grocery trips by the number of hours each partner worked on the survey day. The figure is restricted to couples where both partners work full-time. Hours worked by the female partner on the graph increases from left to right. We also include two points of comparison: (1) when the male partner did not work on the survey day (solid line) and (2) when the male partner worked nine hours on the survey day (dashed line). As before, child-serving trip data only include households with a child, while the grocery-trip data include all coupled households.

The data on grocery trips somewhat support the time availability perspective. First, the gender gap is wider when the male partner works than when he does not work. Second, as the female partner works more hours—and thus has less time available—the gender gap in grocery trips declines. Yet, even when both partners worked nine hours on the survey day, women make twice as many grocery trips as their partners. This suggests that the time availability perspective at best partially explains the gender gap in grocery trips.

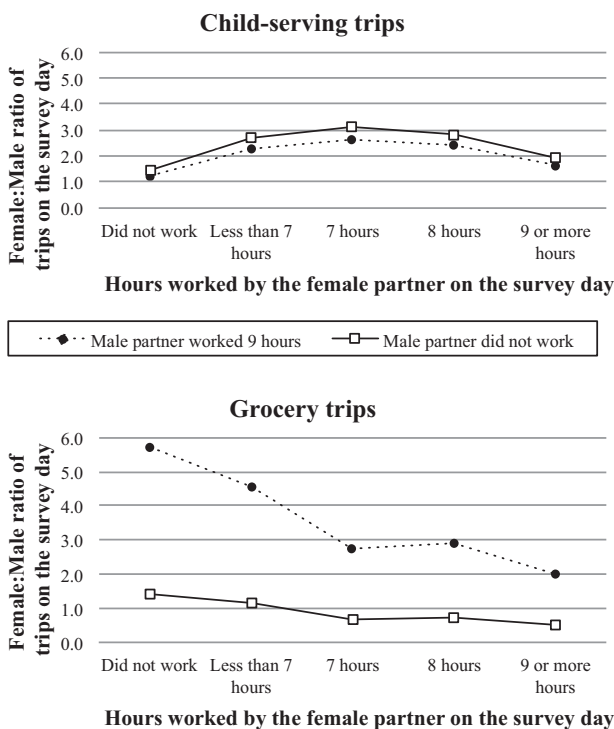
The pattern for child-serving trips, by contrast, does not align with the time availability theory. Women made more child-serving trips regardless of the relative number of hours worked. Even in households where the male partner did not work and the female partner worked full-time, women made at least twice as many (and up to three times as many) child-serving trips.

### ***The Gender Gap in Household-Serving Travel Over Time***

In the preceding analysis, we combined data from multiple years (2003–2012), but the data are a repeated cross-section, which enables us to explore changes over time. These data have enabled other scholars to assess whether the Great Recession reduced the gender gap in household labor (see Aguiar, Hurst, and Karabarbounis, 2013; Kongar and Berik,

FIGURE 5

For Each Household-Serving Trip by a Man, a Woman Makes \_\_\_\_\_ Trips, by Hours Worked on the Survey Day (ATUS 2003–2012)



2014). This article builds on that literature by focusing specifically on household-serving travel. The top panel of Figure 6 depicts the female-to-male ratio of child-serving trips in each year, as well as the mean number of child-serving trips reported by men and women. The second panel provides the same information for grocery trips. We follow the example of Kongar and Berik (2014) to determine the years of the recession.

Previous research suggests that men who lost their jobs in the recession primarily contributed to their households by providing additional care for children (Kongar and Berik, 2014), so we expected the gender gap to narrow more for child-serving trips than for grocery trips during this time. But we did not find this to be the case. In general, the gender gap for household-serving trips declined slightly between 2003 and 2012, but this mild trend does not appear to correlate with the state of the economy: during the Great Recession (shaded gray on the graphs), the gender gap in both grocery and child-serving trips increased during the first year of the downturn (2008), declined in the second year (2009), and edged up again slightly in the third year (2010).

**Trip Chaining and Travel Mode**

Table 1 shows how the differences in household-serving travel patterns by gender manifest in both travel mode and trips per day. Men and women who make household-serving

FIGURE 6

The Gender Division of Household-Serving Travel Over Time (ATUS 2003–2012)

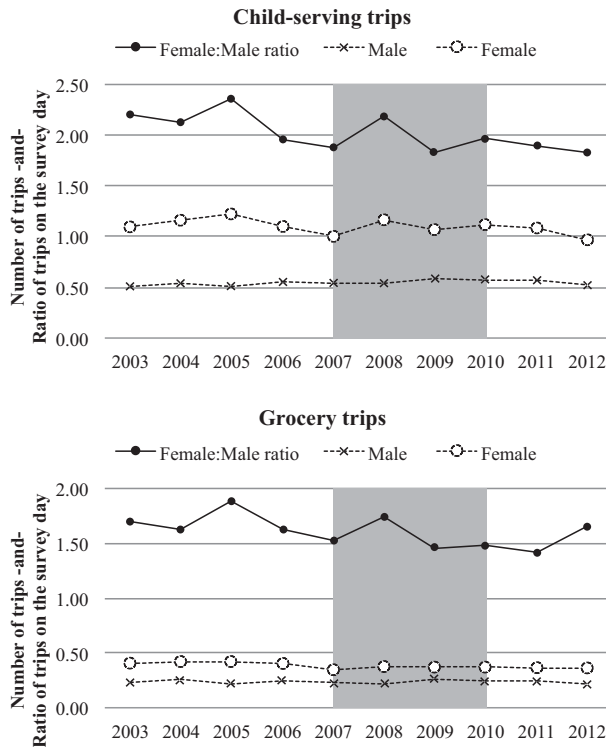


TABLE 1

Mean Number of Daily Trips and Mode Used by Type of Household-Serving Trip in Heterosexual Couple Households with Children (ATUS 2003–2012)

	Grocery and Child Serving	Grocery Only	Child Serving Only	Neither
Men (%; share of sample)	3	9	20	68
Number of trips on survey day	8.0	5.0	6.1	3.4
Number of child-serving trips	2.5	0.0	2.3	0.0
Number of grocery trips	1.8	1.9	0.0	0.0
Drive (%)	96	93	96	82
Use auto (%)	98	97	98	86
Use transit (%)	2	2	1	2
Women (%; share of sample)	9	13	29	49
Number of trips on survey day	8.4	4.8	6.5	3.2
Number of child-serving trips	3.1	0.0	2.8	0.0
Number of grocery trips	1.8	1.9	0.0	0.0
Drive (%)	92	78	86	56
Use auto (%)	98	97	96	76
Use transit (%)	1	1	1	2

trips on the survey day make substantially more trips in total than those who make no household-serving trips. Thus, the household-serving trips examined here tend to act more as a complement to, than a substitute for, other types of travel. Because household-serving travelers make more trips, on average, they tend to chain more trips into tours and favor fast, flexible modes (such as private automobiles) to accommodate these chained trips. Table 1 also shows that people who make grocery and child-serving trips are more likely to travel by private vehicle, particularly as a driver. Conversely, public transit is used more often among people who make neither grocery nor child-serving trips on the survey day (Table 1).

### The Gender Gap in Schlepping

While a popular narrative holds that men in heterosexual households are doing more domestic duties than in years past, this analysis shows that the 21st-century gender division of household-serving travel is anything but equal, despite the substantial movement of women into the paid labor force over the last half-century. We consider the evidence supporting an array of theories associated with two (economic and cultural) competing schools of thought, seeking to explain *why* gender gaps in household labor and household-serving travel persist. In contrast to earlier tests of these theories, we focus on child-serving and grocery-shopping travel outside the home—as household-serving trips constitute a larger share of personal travel and traffic than do any other trip type, including the journey to work. Our findings depict consistent and substantial gender differences, across a variety of dimensions. Taken together, what do these results suggest about the various economic and sociological theories considered at the outset?

No one of the gender theories presented above fully explains the entirety of our results. Instead, a number of mechanisms appear to be at work. Gender socialization from a young age leads to gender differences in household management and household-related travel that manifest well before household formation, which is consistent with the gender ideology perspective. Cultural practices and norms likely orient women—even well-educated working women with under- or unemployed male partners—toward domesticity; as a result, women tend to assume disproportionate household-serving and child-serving roles relative to men—even when they are single. By the time couples form households, expectations about gender roles are already well formed. After two or more decades of acculturation and perhaps years of assisting with the care and chauffeuring of younger siblings and the children of friends and relatives, many women develop a comparative advantage in domestic duties relative to their male partners. Utility-maximizing households may exploit that advantage by having women shoulder the brunt of domestic duties, consistent with the microeconomic perspective. Likewise, women may value investment in (and chauffeuring of) children more than men, on average. Because domestic duties require considerable time, many women, and particularly mothers of young children, are more likely to scale back at work to accommodate their home obligations, consistent with the time availability hypothesis. Gender differences in earnings stemming from differences in human capital accumulation (microeconomic), in hours of work (time availability), and from labor market discrimination (gender ideology) strengthen these trends. Most women in two-person households earn less than their male partners, even when both partners work full-time (Bureau of Labor Statistics, 2014). The disparity in earnings reinforces differences in labor force participation and hours worked (microeconomic), which further exacerbates gender differences in household and child-serving travel.

But while we see evidence to support each of the theories discussed, we find the evidence supporting the gender ideology perspective on the gender gap in travel to be the most consistent and compelling. First, we observe substantial gender differences in child- and household-serving trips even among single people with *no children*, where women make 1.4 times as many child-serving trips (presumably for children of friends and family members) and 1.1 times as many grocery trips as men. These gender differences are most striking for child-serving travel, suggesting that gender ideology may govern appropriate behaviors for childcare to a greater extent than for other household tasks.

Gender differences in child- and household-serving travel persist when couples form households. The microeconomic perspective suggests that when women work equal hours at full-time jobs, are equally educated, or earn incomes similar to those of their partners, the household division of labor should be relatively equal as well. But this is not at all the case. Women consistently make more child-serving and household-serving trips than their male partners, almost regardless of domestic and economic circumstances, suggesting that the role and influence of gender ideology on household-serving travel is remarkably strong. Given this finding, we would expect that decreases in male labor force participation (perhaps due to chronic job losses in male-dominated occupations, especially during the Great Recession) and/or additional increases in women's labor force participation are likely to only slightly reduce the gender gap in household-serving travel in the years ahead.

Finally, the analysis presented here contributes to our understanding of dramatic changes in the travel and mode choices of women. Completing household tasks, including child-serving trips and grocery shopping, requires fast, flexible transportation, especially for working women. This analysis suggests that the disproportionate household-serving travel burdens on women may be contributing to observed changes in modal use. Indeed, we have seen transit use decrease and private vehicle use increase faster for women relative to men since the 1980s (Pisarski, 2006), and trip chaining by women has been increasing faster than for men as well (McGuckin and Murakami, 1999). Whether these trends, and disproportionate household travel burdens borne by women, will continue likely depends on whether gender socialization norms begin to change more quickly, or whether they are embedded so deeply that they will continue to profoundly shape women's work and travel for many years to come.

## **Appendix A: Background Information on Gender Differences in Housework and Paid Work**

### ***Explaining Women's Employment***

Despite increased female labor force participation over the past half-century, women and men still exhibit different patterns of employment and income. If we fail to account for these employment differences, we may overstate gender differences in both household labor and travel behavior (Madden, 1981). Women's decisions to work outside the home, from a microeconomic perspective, are based on rational and utility-maximizing decision making (Chesters, 2013). Women consider a number of factors when making employment decisions: the economic necessity of working (women whose partners earn more are less likely to work); the availability and cost of childcare (when childcare is expensive, women have higher so-called reservation wages and are therefore less likely to work); and the opportunity cost of foregone employment (women with higher potential earnings are less likely to leave the labor force to stay at home with children).

Beginning in the 1970s, a new school of thought, based on gender ideologies, entered the scene. According to this perspective, men's and women's attitudes about gender identities and appropriate gender roles importantly shape decisions about work (Chesters, 2013). For example, women with more traditional views on gender roles are less likely to be employed than women with less conventional attitudes. Further, women's individual employment decisions take place within the context of broader institutional (such as public support of affordable childcare) and cultural factors (such as prevailing attitudes about gender roles) (Steiber and Haas, 2012).

It is of course likely that both economic and cultural factors influence couples' decisions about working outside the home. Broadening the focus to consider the interplay of economic, institutional, cultural, and psychological factors is part of a larger movement in the social sciences (Thaler and Sunstein, 2009), though this movement is relatively nascent in the transportation literature (Gaker and Walker, 2011). But even if both economic and cultural factors are at play, one of these may still predominate.

### *Trends in Women's Employment*

Women's decisions about labor force participation must be understood in light of their employment opportunities. Women working full-time today earn less than men—just 77 cents on the dollar on average (Hegewisch, Williams, and Edwards, 2013). The causes of this gender gap in pay are complex, highly contested, and inevitably interrelated. Women are more likely to work in low-pay service jobs, leave the labor force for child rearing, work fewer hours than men, and experience various forms of discrimination in the labor market.

Consistent with the literature on gender and employment, we find that women in two-sex partnered households in our U.S. CPS sample (that we describe in more detail below) are much less likely than their male partners to be employed full-time. In nearly half of all heterosexual households with children, only the man works full-time. The share of male breadwinner households dropped from 49 percent of couples in 2007 to 44 percent just a year later amidst the economic collapse of the Great Recession, but this share had edged back up to 46 percent in 2012. About half (51 percent) of women in male-breadwinner households (where only the man works full-time) are not in the labor force, and about half are employed part-time (41 percent) or looking for work (8 percent) (U.S. Census Bureau and Bureau of Labor Statistics, 2012).

The extent to which women spend less time working for pay correlates with the presence of young children, a finding that is consistent with both microeconomic and gender identity perspectives. While 80 percent of 28-year-old women with no children in two-person households are employed full-time in our ATUS sample (also described in more detail below), only 40 percent of similarly situated mothers are full-time workers. Similarly, the share of households where only the man works full-time is highest when young children are present, and this percentage of male-only full-time workers declines with the age of household children (Bureau of Labor Statistics, 2003–2012).

Even among full-time workers, the presence of children influences how long parents actually spend working, particularly for women. We find that mothers in two-parent households who report working full-time actually work 4.5 fewer hours per week on average than similar men. Although full-time working men and women are equally likely to work eight hours a day, men are more likely than women to work nine or more hours (22 vs. 14 percent) and women are more likely than men to work seven hours (13 vs. 10 percent) (Bureau of Labor Statistics, 2003–2012).

## Appendix B: Background on Three Theories (or Perspectives) to Explain the Gendered Division of Paid Work and Housework

### *Time Availability Perspective*

From this perspective, households allocate domestic work to the member with the fewest external time obligations (Chesters, 2013; Gough and Killewald, 2010). A half-century ago when most coupled heterosexual women were not in the paid labor force this explanation was plausible, if tautological; it explained women's disproportionate contributions to housework in terms of their limited participation in the labor force, which in turn resulted from their expected role as primary domestic laborer and caregiver. Indeed, a primary critique of the time availability perspective is that empirical support for it is often cross-sectional and fails to account for the reciprocal nature of employment and housework decisions (Gough and Killewald, 2010). The time availability perspective accurately predicted the overall decline in housework as more and more women worked outside the home. With increased female labor force participation, the time working women spent on housework declined. But while men picked up some of the slack, the larger effect has been a dramatic decline in total hours of housework (due in part to labor-saving devices such as dishwashers and in part perhaps to messier homes) (Bianchi et al., 2000). However, this perspective has less to say about the division of household labor in homes where both members work full-time, where we still observe a gendered division of household-serving labor.

### *Microeconomic Perspective*

The microeconomic perspective on the household division of labor encompasses a number of interrelated explanations, each of which builds on microeconomic principles. Becker (1981) famously suggests that men in heterosexual couples, with their frequent, if increasingly historical, *comparative advantage in human capital*, typically specialize in paid labor, while women, due to their capacity for child bearing, are more likely to specialize in, and place greater value in, child-rearing and household tasks. The related *exchange of economic resources* and *economic dependence* theories suggest that women exchange domestic labor for economic resources in male-breadwinner households—by choice in the former (exchange) view and out of necessity in the latter (dependence). Economic dependence theory holds men and women *compete* in the household over housework but men typically win out because of their stronger bargaining position based on their higher earning potential (Gupta, 2007).

During the three decades following World War II, when women were less likely to participate in the paid labor market, these arguments appeared reasonable. With more widespread female employment, the theory predicts the partner with higher earnings will do less housework, regardless of gender. However, recent research on dual-income households calls into serious question the salience of this perspective. For example, Artis and Pavalko (2003) find that women's relative earnings have no effect on the extent of their household responsibilities. Rounding out the evidence against the exchange of economic resources theory are findings that in heterosexual households where men do not work for pay and women do, unemployed men do even less housework than employed men (Brines, 1994).

Despite increased female labor force participation over the past half-century, women and men still exhibit different patterns of employment and income. If we fail to account for these employment differences, we may overstate gender differences in both household labor and travel behavior (Madden, 1981).

### ***Gender Ideology Perspective***

The empirical evidence to date is more promising for the gender ideology perspective. According to this view (or, more accurately, views), women and men develop gender identities at a young age that persist throughout their lives. In addition to their personal identities, each person also develops a gender ideology, which shapes his or her expectations about appropriate roles and behaviors for men and women more broadly. These gender ideologies range from traditional, with clearly delineated and distinct expectations for men's and women's work, to more egalitarian. A number of researchers find that attitudes about gender ideology shape the division of labor within the household (Artis and Pavalko, 2003; Bianchi et al., 2000; Cunningham, 2007). Gender ideologies vary internationally, but, regardless of venue, are neither uniform across all households in a given area nor static over time. Finally, the effect of gender norms on the household division of labor may be quite different in heterosexual versus homosexual households; indeed, there is some evidence that lesbians in particular may divide household labor more evenly than do gay and straight households (Goldberg and Perry-Jenkins, 2007; Kurdek, 1993; Sullivan, 1996).

In many heterosexual couples, microeconomic and gender ideology perspectives manifest similarly; more often than not, the lower earner in a household is female and women are widely expected to take on more household responsibilities, particularly those related to child rearing. Moreover, the employment and household labor decisions are interrelated; expectations about household responsibilities may shape employment decisions and the availability of meaningful employment can shape attitudes about gender roles. Similarly, there is substantial evidence that female labor force participation and gender ideologies are reciprocal. While women with more egalitarian views are more likely to enter the workforce and stay employed after childbirth, labor force participation also changes attitudes such that working women develop more egalitarian views toward employment and household responsibilities over time (Steiber and Haas, 2012).

Under this gender ideology rubric are the *gender display* and *deviance neutralization perspectives*, which emphasize the social construction of male/female social relationships (West and Zimmerman, 1987). From these relatively structuralist perspectives, gender roles are reproduced over time until they are viewed by all as natural. In the household context, this means men are expected to be the breadwinners and women the homemakers.

Indeed, numerous (though by no means all) studies find that women who earn more than their husbands do even *more* housework relative to their partners than do women who earn less than their partners, leading Bittman et al. (2003) to conclude that "gender trumps money." Hochschild (1989) attempts to explain this apparent paradox by suggesting that because high-earning women do not conform to women's expected gender roles in one regard, these higher earning women compensate by doing more housework. Likewise, Brines (1994) suggests that when economic roles are reversed, partners tend to "prove" their gender by exaggerating their gender-normative housework performance—high-earning women by doing more housework and low-earning men by doing less. A more sociological variant on Brines's mostly psychological explanation for higher levels of housework among higher earning women is offered by Greenstein (2000).



Gupta (2007) surveys the empirical literature and finds little consensus as to whether women who earn more really do engage in more housework than their less supportive spouse (see e.g., Artis and Pavalko, 2003). He points to studies showing that women who earn more are more likely to spend more of their own funds on substitutes to housework. Gupta (2007) cautions against focusing on the relative magnitudes of their earnings rather than the absolute effect of women's own earnings—specifically that poorer women spend more time on housework and women who earn substantially more than their spouses tend disproportionately to be poor. Likewise, Killewald and Gough (2010) argue that gender display effects are exaggerated because most do not account for the very different relationships between paid and household labor among lower wage and higher wage women. In criticizing both microeconomic and gender ideology perspectives, Gupta and Ash (2008) find that women's share of couple's earnings “has very little explanatory value when it comes to their household work”; they propose an alternative “her money, her time” perspective, though this could still be viewed as “doing gender” (West and Zimmerman, 1987) since women are substituting their own resources rather than insisting on contributions from their partners.

### *The Road Less Traveled*

What do these various economic and cultural theories and explanations mean for travel? While the tradeoffs within households between paid work outside the home and unpaid work in the home have been well chronicled by economists, geographers, and sociologists, as the review above suggests, the role of travel in these tradeoffs—particularly on behalf of the household—has received far less attention. Yet, as noted in the body of this article, household-serving travel now accounts for more than twice as many person miles of travel as journeys to work. Put simply, household travel, and the factors that explain it, are important and the subject of our analysis.

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