

## **Gendered Sequences: Differences in Women's and Men's Activity Patterns Across the Day**

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### **ABSTRACT**

Scholarship on gender differences in time use has not adequately addressed the issue of how time is experienced by men and women throughout the day. Using data from the 2012 American Time Use Survey on employed individuals ( $N = 5,198$ ), we use sequence analysis, a relatively novel statistical approach to analyzing time use data. Although the average person is engaged in passive leisure during the evening hours, this time period is more standardized for men than women. The most common combinations of activities include time spent in sleep, work and education, eating, and passive leisure. Men engage in twelve activities throughout the day while women engage in fourteen activities, meaning women switch between activities more often than men. The average episode length of work/education and passive leisure is longer for men than women. Our findings suggest women may experience time as more stressful or rushed than men.

## INTRODUCTION

Gender differences in paid and unpaid work time have attenuated substantially since 1965, fueled by the steep rise in dual earner couples, single parent families, adults living alone, and more egalitarian gender attitudes (Bianchi 2011; Sayer 2015). Ample research documents that convergence in women's and men's employment, housework, and child care time have stopped well shy of equality. Gender differences in the quantity of time and the type of family labor persist (Bianchi et al. 2012; England 2011). Compared to fathers, mothers' time with children is more likely to be time spent providing physical care, while fathers' time with children is more likely to be time spent playing (Craig and Jenkins 2015). A larger proportion of women's housework involves routine, daily chores whereas men devote a larger share of their housework time to more discretionary activities that can be scheduled when it's most convenient (Bianchi et al. 2012). This dual burden of paid and unpaid labor results in women, especially mothers, having less and lower quality leisure than men (Craig and Mullan 2010; Gornick and Meyers 2009; Mattingly and Bianchi 2003; Sayer 2005).

Analysis that consider gender differences only in the quantity of paid and unpaid work and leisure time mask gender differences in the experience of time throughout the day. Far less is known about transitions between activities, whether there are common patterns in sequences of activities over the course of the day, or the length of activities. A few qualitative studies indicate that women more often spend time after work running errands and when they arrive home, tending to domestic chores late into the evening (Hochschild and Machung 1989; Stone 2007). Employed mothers assuage guilt about not devoting every hour to children with child centered "quality time" interspersed with housework, or a spot of enriching parent-child leisure (Christopher 2012; Damaske 2011). In contrast, men are more likely to preserve at least some evening time for leisure. The quantitative literature also finds that mothers are more likely than fathers to combine leisure activities with caring for children, to be interrupted during leisure time to provide care for children and to spend an increasing portion of their leisure time, relative to the 1960s, with children (Bianchi, Robinson, and Milkie 2006; Milkie, Raley, and Bianchi 2009). This pattern of mothers combining parent—child leisure time is consistent across countries, despite cross-national differences in levels of mothers' time with children and employment hours (Craig and Mullan 2011).

Examining when women and men engage in paid and unpaid work activities, and in leisure, and how the timing of paid and unpaid work is associated with the timing and type of leisure, may reveal more about how women and men handle work and family responsibilities than studies that consider amounts of time alone. Women are more likely than men to have days that combine paid employment, housework, and child care activities, and women more than men are the ones that rearrange schedules due to unexpected events (e.g. a sick child, malfunctioning plumbing) (Clawson and Gerstel 2014). Hence, women's days may be less standardized and heterogeneous, whereas men's days may be more standardized or, on average, more similar to each other than different. Standardization refers to the process in which sequences of activities take place in a

uniform manner and are nearly universal for a given population, whereas de-standardization is when a sequence of events characterizes a small portion of a population (Brückner and Mayer 2005).

Women's leisure time may be broken up into short durations, with leisure time cobbled together, adding up to both a lower average amount of leisure and more fragmented leisure (Bittman and Wajcman 2000). Moreover, research suggests that fragmented leisure, that is leisure time that is experienced in distinct, shorter episodes separated by labor activities, is experienced as less rejuvenating, more harried, and less likely to reduce stress (Bittman and Wajcman 2000). Frequently switching between activities is, in fact, associated with higher levels of stress, especially for women (Cornwell 2013).

In this paper, we look at gender differences in the experience of time over the course of the day. We go beyond the extensive research that examines gender differences in paid and unpaid labor and leisure time by identifying gender differences in patterns of paid and unpaid work and leisure throughout the day. Our analyses use sequence analysis, a relatively novel statistical approach to analyzing time use data. Sequence analysis is advantageous because it facilitates identification of the standardization of activity processes over time (Aisenbrey and Fasang 2010). We ask: What are the most common activity sequences over the course of the day, and do they vary by gender? Are there gender differences in the number of activities engaged in over the day or in the average time spent in activities?

## **METHODS**

We use respondent reported time diary data from the 2012 American Time Use Survey (ATUS). ATUS is a federally administered time diary, drawn from outgoing rotations of the Current Population Survey, designed to collect nationally representative data on how adults in the U.S. allocate time to paid work, unpaid work, self-care, and leisure (Bureau of Labor Statistics and U.S. Census Bureau 2004). Our analytic sample consists of 5,198 employed men and women who completed time diaries.

Our dependent variable is a categorical measure indicating time spent in seven broad activities: 1) Sleep/Grooming, 2) Eating, 3) Work and education, 4) care work, 5) housework, 6) passive leisure, and 7) all other activities. Gender is the primary independent variable of interest. The other included independent variables include demographic characteristics research suggest influence time use allocations (Kendig and Bianchi 2008). Table 1 shows means of the variables for men and women.

*Plan of Analysis.* We first model gender differences in leisure by conducting an ordinary least squares regression of gender time differences in primary daily activities: work and education, care work, housework, and passive leisure. Next, we identify patterns of when leisure takes place over the course of the day by generating tempograms, images of when the average man or

women is engaged in an activity. Finally, we identify the most common sequences of activities over the course of a day and provide descriptive statistics of the gender differences.

## RESULTS

Consistent with prior scholarship, we find that women spend more time in care work and housework activities while men spend more time in work and educational activities, as well as more time in leisure pursuits (see Table 2). Tempograms reveal that the average employed man and woman spends time in work and educational activities during normal business hours (roughly 8am to 5pm) and engage in a more diverse range of activities between 5pm and 11pm. All employed adults are most likely to be participating in passive leisure activities during this time range, but the proportion of women doing something else is higher than it is for men. The most common sequences include combinations of sleep, work and education, eating, and passive leisure (see Table 3). On average, employed men engage in 12 episodes of activities a day, meaning that they switch between activities about 11 times per day. Comparatively, the average employed woman engages in 14 activities a day, switching between activities 13 times in a day. Table 4 shows the average length of time spent in an activity in one period of time. The average length of time spent eating in an episode is about the same for employed men and women. On average, men spend about 1 hour more than women in an episode of work and education. The average time spent in an episode of housework is 45 minutes longer for women than for men and the average episode of care work is 22 minutes longer for women than men. The average length of time spent in passive leisure is 181 minutes for men, while the average episode of passive leisure for women is about 40 minutes shorter (140 minutes).

Our results point to intriguing gender differences in how gendered activities structure the fabric of daily time. Women's longer daily episodes of housework and child care corroborate research documenting women's housework is more mandatory and frequent compared with men's, tasks that are necessary to complete at the end of a work day regardless of preferences or other constraints. Additionally, longer episodes of household and care work suggest the time tradeoffs at play are between family responsibilities and leisure time, as conditioned by work hour constraints, rather than simply between paid work and other activities.

The less standardized nature of women's days, relative to men's, highlights the importance of considering within gender differences by race-ethnicity and education. Work schedules are becoming more fragmented for service occupations, particularly those filled by individuals of color and those with less education. Abilities to outsource some necessary housework are higher among college educated, white women compared to other women. All college educated workers in professional occupations put in long work hours, whereas those with less education on average have shorter work hour, but may combine jobs. In next steps, we plan to use sequence analysis to examine how intersections of gender, race, and class (education) affect the standardization and tempo of everyday life.

Table 1. Means and Standard Deviations of All Variables (S.D. in parentheses)

Variable	All	Men	Women
	N = 5,198	N = 2,796	N = 2,402
Sleep & Grooming	545 (125)	535 (124)	558 (126)
Eating	74 (63)	77 (64)	71 (62)
Work & Education	361 (289)	391 (297)	325 (276)
Care work	41 (86)	33 (76)	51 (94)
Housework	98 (126)	75 (115)	125 (133)
Passive Leisure	157 (154)	176 (169)	135 (132)
Other Activities	163 (177)	153 (177)	175 (176)
Married	0.61	0.62	0.60
Never Married	0.21	0.23	0.20
Cohabiting	0.06	0.06	0.07
Divorced/Separated	0.11	0.09	0.13
Number of children	1.13	1.10	1.17
Presence of Child Under 2	0.08	0.09	0.07
Presence of Child 2-5 yrs old	0.16	0.17	0.16
Presence of Extended Family	0.27	0.26	0.28
Less than High School	0.08	0.10	0.05
High school	0.27	0.29	0.25
Some College	0.26	0.24	0.28
BA or More	0.39	0.37	0.42
Part-time Employment	0.15	0.08	0.22
Fulltime Employment	0.85	0.92	0.78
White	0.67	0.66	0.68
Black	0.10	0.09	0.12
Asian	0.05	0.06	0.05
Hispanic	0.16	0.18	0.13
Other Race	0.02	0.02	0.02
Age	39.83	39.63	40.06
Weekend Diary Day	0.28	0.28	0.28

Activity variables are in units of minutes

Table 2. Time Use of Employed Men & Women (ages 25-54) OLS Regression Analysis

	Work & Edu	Care work	Housework	Leisure
Women	-51.11 (9.24)	*** 16.84 (2.14)	*** 46.04 (4.21)	*** -41.71 (5.39)
Marital Status (married is reference)				
Single	7.11 (14.76)	-7.83 (2.72)	** -7.51 (6.15)	13.42 (9.52)
Cohabiting	19.59 (22.63)	-10.63 (4.33)	* -14.14 (7.86)	33.07 (16.39)
Divorced/Separated	10.73 (14.18)	-4.04 (2.49)	-18.67 (6.26)	** 1.93 (8.56)
Family Characteristics				
Extended Family	9.30 (12.63)	-17.68 (2.56)	*** -1.19 (5.58)	19.75 (7.96)
Number of Children	-6.13 (5.04)	16.73 (1.46)	*** 5.98 (2.15)	** -7.88 (3.58)
Child Under 2	-17.21 (15.58)	80.23 (7.87)	*** -5.89 (5.65)	-16.15 (7.36)
Child 2-5 years old	12.25 (12.16)	40.85 (4.63)	*** -7.07 (5.03)	-21.28 (6.70)
Education (BA or more reference)				
Less than H. School	-17.04 (19.41)	-14.20 (5.45)	** 14.37 (9.86)	60.33 (14.34)
High School	-6.09 (11.80)	-8.43 (2.63)	** 9.25 (5.20)	48.95 (7.66)
Some College	5.72 (11.33)	-3.13 (2.82)	11.37 (4.79)	* 19.68 (6.03)
Part time Employment	-120.61 (13.58)	*** 17.45 (3.46)	*** 34.91 (6.45)	*** 17.28 (7.59)
Race/Ethnicity (White is reference)				
Black	-25.49 (15.46)	-6.44 (3.04)	* -18.91 (7.11)	** 45.95 (10.69)
Asian	-1.66 (22.50)	2.81 (5.05)	12.69 (8.64)	-4.58 (10.52)
Hispanic	-6.56 (14.48)	-1.74 (3.75)	3.08 (6.38)	-8.51 (8.01)
Other Race	-59.40 (42.18)	18.85 (11.62)	-19.81 (15.12)	33.47 (39.08)
Age	0.47 (0.63)	-0.49 (0.11)	*** 1.20 (0.27)	*** 0.43 (0.38)
Weekend Diary Day	-335.71 (8.20)	*** -3.27 (2.03)	65.59 (4.38)	*** 64.78 (5.87)
Constant	484.90 (30.73)	*** 31.77 (5.62)	*** -0.23 (11.94)	*** 114.22 (18.88)
Observations	5,198	5,198	5,198	5,198
R2	0.31	0.30	0.12	0.11

Standard errors in parentheses

\* p<.05 \*\* p<.01 \*\*\* p<.001

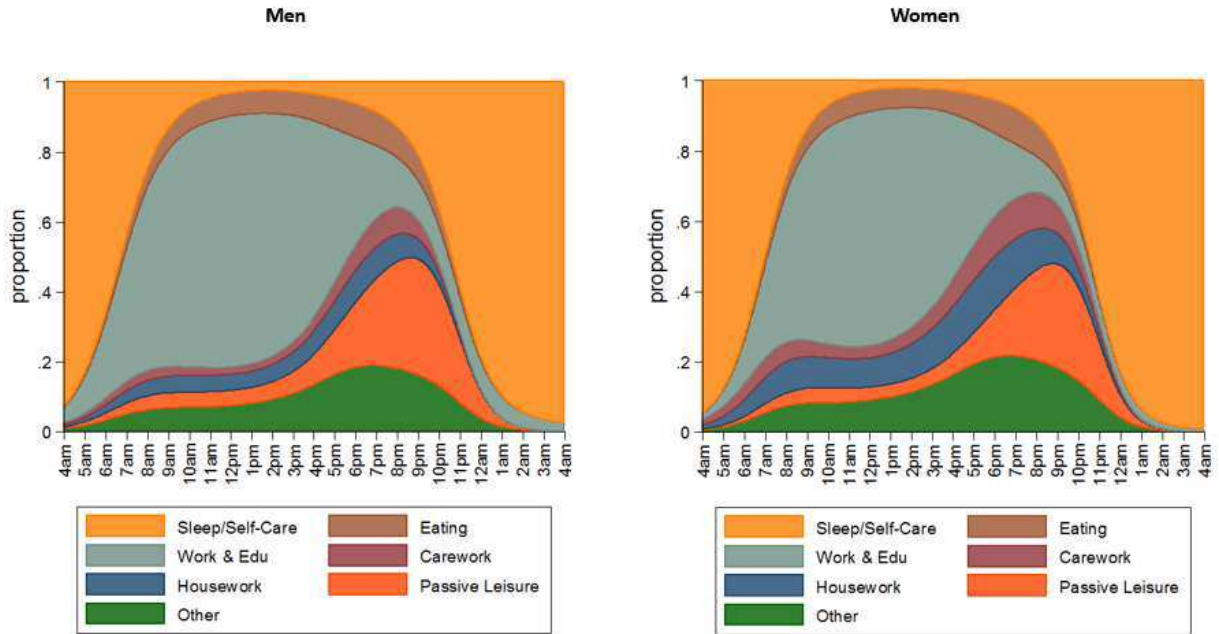
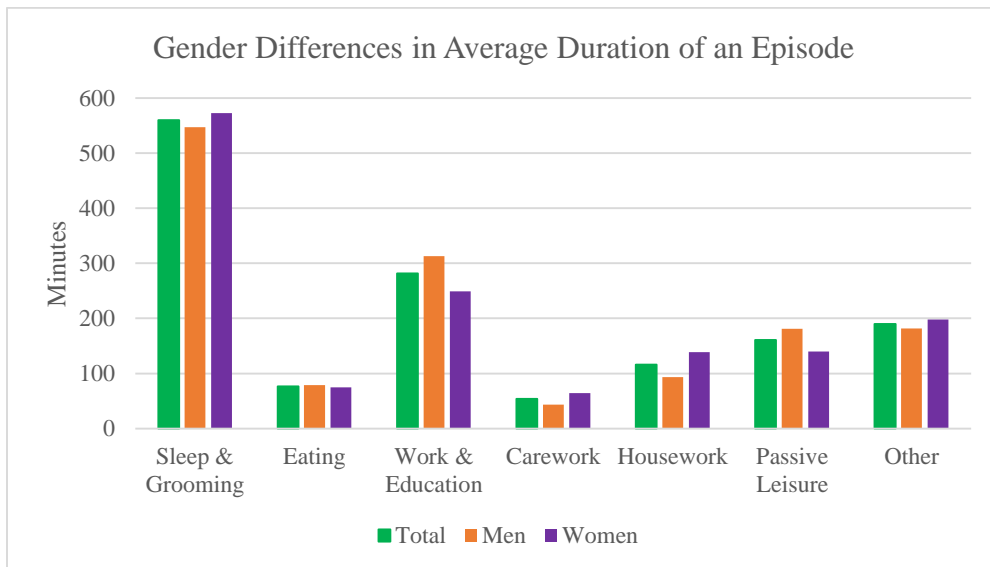


Table 3. Most Common Activity Sequences in a Diary Day

1	sleep	work & edu	eating	work & edu	sleep			
2	sleep	work & edu	eating	work & edu	passive leisure	sleep		
3	sleep	housework	eating	passive leisure	sleep			
4	sleep	work & edu	eating	work & edu	other	sleep		
5	sleep	work & edu	eating	passive leisure	sleep			
6	sleep	passive leisure	eating	passive leisure	sleep			
7	sleep	eating	other	passive leisure	sleep			
8	sleep	work & edu	sleep					
9	sleep	work & edu	eating	work & edu	sleep	eating	passive leisure	sleep
10	sleep	work & edu	eating	work & edu	other	eating	passive leisure	sleep
11	sleep	work & edu	housework	eating	passive leisure	sleep		
12	sleep	housework	passive leisure	eating	passive leisure	sleep		
13	sleep	other	eating	other	sleep			

Table 4. Gender Differences in Sequences

	Total	Men	Women
Average number of activities in a day	5.42	5.29	5.55
Average number of activity episodes in a day	12.60	11.70	13.52
Average length of an episode for each activity			
Sleep & Grooming	560	547	573
Eating	77	79	75
Work & Education	281	313	249
Care work	54	43	65
Housework	116	93	139
Passive Leisure	161	181	140
Other	190	182	198





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