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Secondary Activities in the 2006 American Time Use Survey

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Abstract

A major criticism of the American Time Use Survey (ATUS) is that, with the exception of childcare, the survey does not systematically collect information about activities respondents did while they were doing something else. The ATUS focuses on collecting information about respondents' main (or primary) activities; when respondents volunteer that they were doing secondary activities, this information is recorded by the interviewers, but it is not coded and does not appear in the final data. This study is an analysis of these additional secondary activity data from 2006. The study provides descriptive information about who reported secondary activities and the activities they reported. It also quantifies the secondary activity time that was spent in nonmarket work and examines whether the omission of these data impacts valuations of nonmarket work. Finally, it evaluates the quality of the voluntarily-reported secondary activity data.

Secondary Activities in the 2006 American Time Use Survey

Traditional time-use diaries ask respondents “what they were doing” and if they “were doing anything else” during various portions of a 24-hour day (e.g., Bianchi, Robinson and Milkie, 2006). These questions are used to collect information about activities that people do simultaneously. The first question generates information about the primary, or main, activities people were doing at a given time while the second question yields data on additional, or secondary, activities that they were doing. For example, someone who was preparing dinner and watching television at the same time would need to identify which of these was his primary activity and which was his secondary activity in reporting this information.

The American Time Use Survey (ATUS), the largest-scale time-use study administered in the United States to date, does not explicitly ask respondents to report secondary activities other than secondary childcare; instead, its focus is on the collection of information about respondents' primary activities. However, if respondents voluntarily report doing two or more activities at the same time, the ATUS interviewers record all activities that were mentioned. Secondary activity data from the ATUS were neither coded nor analyzed until recently; here, I explore these data from the 2006 ATUS. For present purposes, I distinguish secondary activity reports according to whether the information was explicitly requested from respondents or was instead volunteered, as is done in the ATUS.

Background

Many time-use researchers have argued that time-use studies should systematically collect data about secondary activities. Alexander Szalai, an early pioneer of time-use studies, wrote:

Elimination of secondary or parallel activities from the circle of observation naturally distorts in a rather arbitrary fashion the picture of what people do the daylong and leads to a biased account of the amounts of time they devote to the various tasks of life. (1972, p. 3)

In practice, however, secondary activity data usually are ignored in time-use analyses (e.g., see Bianchi, et al., 2006). When they are analyzed, the researchers typically take the naïve approach of dividing the time spent in the episode between the two activities. A person who is eating and watching television for an hour would be classified as having spent one-half hour in each activity.

It is not obvious how time spent in secondary activities should be counted, because reported secondary activities can be either true simultaneous activities or short-duration sequential activities that are reported as secondary. An example of true simultaneous activities is "preparing dinner" while "listening to the radio," whereas an example of a

short-duration sequential activity reported as secondary might be "getting the mail" while "watching TV."

One reason time-use data are collected is to learn more about the time people spend doing unpaid work. Unpaid work refers to activities one could hire someone else to do rather than doing for oneself, and it can be measured directly as a primary activity in any time-use data set, including the ATUS. Unpaid work is typically captured in two time-use categories: household activities (which mainly involve unpaid work in and around the home) and childcare. However, many unpaid work activities are either of short duration or lend themselves to being done simultaneous to other activities. For example, an individual may shift laundry from the washer to the dryer in the middle of watching a television show, or mind a child while cooking, cleaning, or reading a novel. In each of these cases, it is possible that some unpaid work would be excluded from the reported primary activities, but included in the secondary activity data.

Childcare tends to account for most of the time devoted to unpaid work as a secondary activity. Harvey analyzed data from one Australian and four U.S. studies, and found that childcare accounted for between three-quarters and nine-tenths of the secondary activity time classified as either household activities or childcare (2006, p. 201).

The ATUS collects information on the time respondents spent caring for any child under the age of 13 by asking whether a child of this age was "in your care" and, if so, during which activities. This construct was designed to capture time the respondent was "able to provide assistance to the child if necessary" (Allard, et al., 2007, p.34). As such, it fits within the definition of unpaid work as any "activity... that... might be delegated to a paid [employee]" (Reid 1934, p. 11). The restriction of the measure to younger children (those under age 13) is sensible when viewed in this light since parents of young children typically do not leave them untended for long periods of time. Admittedly, around 7 percent of children below the age of 13 regularly spend some portion of their day in self-care (Drago 2007, p. 41), but that number is small enough to suggest that most parents would and do often find or pay someone else to care for the child when they cannot provide assistance.

The ATUS measure of secondary childcare captures more time than traditional measures of childcare as a secondary activity. In a comparison of the 2003-04 ATUS data with figures from the 2000 National Survey of Parents (NSP)—which used the more traditional "what else were you doing?" question—it was found that parents averaged around three-quarters of an hour on childcare as a secondary activity in the NSP, but that parents of children under 13 averaged almost 6 hours per day on secondary childcare in the ATUS (Allard et al., 2007, p. 31). Consistent with the view that "in your care" time represents unpaid work, Folbre and Yoon (2008) placed a monetary value on this time in an analysis of the 2003 ATUS data.

Given that the ATUS does not request information on secondary activities other than childcare, it is reasonable to conclude that, on the one hand, measures of unpaid work developed from the data will be understated because time devoted to housework as a

secondary activity is not counted. On the other hand, measures of unpaid work that are generated from time-use surveys asking "What else were you doing?" to collect secondary activities will understate time spent in childcare as a secondary activity. Given the amounts of time involved, the understatement of childcare time in traditional surveys is likely far larger than the understatement of housework in the ATUS, perhaps by a factor of as much as 25 for parents of children under the age of 13.² Regardless of the much larger magnitude of the childcare divergence, it would be desirable to pick up missing housework time in the ATUS, and secondary activity data might serve that purpose.

Not surprisingly, given the discussion to this point, earlier studies find that secondary activities tend to occur in and around the home (Harvey 2006, p. 208). However, childcare and housework comprise only a minority of those activities. Passive leisure in the form of watching television, listening to the radio, or having a conversation accounts for a majority of secondary activity time in those studies. Arguably, being at home lends itself to messy, overlapping and short duration uses of time in a way that being in the workplace or even traveling does not (Kitterod 2001). To the extent that secondary activity reports reflect this messiness, there may be more secondary activity reports in the ATUS data for times when respondents were at home.

It also seems reasonable to expect that busier people will more often report secondary activities. If an individual experiences significant time pressures, he or she may respond by speeding up activities and reducing the average duration, and short duration activities may be reported as secondary activities. Further, busy individuals might respond by multitasking—that is, doing multiple activities at once—in an effort to alleviate time pressures and, with the exception of childcare, secondary activity reports provide the only method for respondents to provide information on multitasking in the ATUS. Busy respondents seem most likely to be those who are women, who work long hours, and who have children and particularly young children.

As suggested earlier, secondary activity reports are likely to include both truly simultaneous as well as short duration, sequential activities. Kitterod (2001) argues that truly simultaneous activities should be reported as secondary, while sequential activities belong in primary activity reports. To the extent there is an advantage to the volunteered method of secondary activity data collection used with the ATUS, it is that respondents may be more likely to report short duration, sequential activities as in fact primary.

In sum, volunteered ATUS secondary activity data (not including the ATUS measure of secondary childcare) will: a) capture housework that would otherwise be missed, b) tend to be located in the home, c) be associated with people who are busy, and d) tend to pick up truly simultaneous rather than short duration, sequential activities. The analysis below is more general, but these four issues receive much attention.

² If individuals report three-quarters of an hour of secondary childcare (as in the 2000 NSP), Harvey's results suggest that the ATUS misses around one-quarter of an hour of secondary housework. The "in your care" figure suggests that traditional secondary childcare measures miss around five hours per day, which is around 25 times as large.

Data

The ATUS is a stratified three-stage sample drawn from households that have recently completed their participation in the Current Population Survey (CPS). CPS households are stratified based on their characteristics, and ATUS sample households are randomly selected from those strata. One individual is then randomly selected from the list of adult (age 15 or older) household members. All adults within a household have the same probability of being selected. One-half of the adults are then assigned a weekend day and one-half are assigned a weekday about which they are interviewed about their time use. The survey is designed to be nationally representative of the civilian noninstitutional population age 15 and older.

The ATUS is sponsored by the Bureau of Labor Statistics and is conducted by the U.S. Census Bureau using computer-assisted telephone interviewing (CATI) technology. All ATUS respondents are assigned an initial day about which they will be interviewed about their time use, and they are called on the following day. If the respondent is unavailable on that day, subsequent contact attempts are made on the same day of subsequent weeks. This procedure maintains the proportional assignment of respondents to days of the week.

The ATUS's core time diary is very similar to other time-budget surveys. The respondent is asked to sequentially describe his or her day from 4 AM "yesterday" through 4 AM "today." The respondent describes each activity, which the interviewer either records verbatim or, for a limited set of commonly-performed, unambiguously-defined activities (such as sleeping or watching television), enters a pre-code. When a pre-code is used, an activity code is automatically assigned to the activity. If a respondent voluntarily mentions secondary activities, an ATUS interviewer asks the respondent to try to separate the activities into distinct time episodes. If he is unable to divide the activities, the interviewer asks the respondent which of the activities was his main activity and records this activity first, followed by the secondary activity.³ While both the primary and secondary activity data are recorded, only the primary activity is assigned a code and appears in the final ATUS data set. The verbatim responses are coded to a three-tier scheme, going from major activity categories, to sub-categories, to descriptions of very specific actions that together comprise a single third-tier activity.

For each episode, the ATUS interviewer collects either the ending time or the duration of the activity. In addition, for each activity the interviewer asks where the respondent was and whom she was with, unless the activity is sleeping, grooming, "refused" (none of your business, etc.), or "don't know." For paid work, respondents are asked to report where they were but not who they were with.⁴ The "who" codes for household members identify specific individuals.

³ Source "American Time Use Survey Jefferson Telephone Center Interviewer Manual," September 13, 2007 version.

⁴ In 2010, the ATUS started collecting information about who was present while respondents were working.

After the time diary has been completed, the ATUS interviewers ask several summary questions that obtain information on childcare, paid work, and volunteering that cannot readily be obtained from the core time diary. These questions produce the “in your care” data discussed earlier. Note also that the “in you care” data are constructed to exclude any episodes involving childcare as a primary activity.

Since the ATUS uses the CPS as a sampling frame, the ATUS data files contain some demographic information that was collected in the CPS, such as information about race and ethnicity. Demographic information on household members who were present during the final CPS interview appears in the ATUS data, except that information is excluded about household members who moved out between CPS and ATUS survey administration. For new household members, the ATUS collects only age, sex, and relationship to the respondent; for all household members, the age, sex, and relationship information provided in the CPS is verified and, if needed, updated. The ATUS updates the respondent's labor force status using an abbreviated version of the basic CPS questionnaire and also updates information on usual hours of work, class of worker, industry, occupation, earnings, and school enrollment. In addition, the ATUS collects basic labor market information (whether employed or not and full-time or part-time employment status) for the respondent's spouse or unmarried partner.

For this project, the Census Bureau coded secondary activities reported in the 2006 ATUS data. Each secondary activity was coded by two independent coders, and was adjudicated when there were differences (as is done when coding primary activities). The coding was performed by the same team that codes the primary activities in the ATUS, so the coding of secondary activities is of high quality and is consistent with that for primary activities. The Census Bureau coders were asked to code only secondary activities mentioned first, so if a respondent listed three or four activities for a single time-use episode, the third and fourth were not coded and are not analyzed here. Fortunately, even in traditional time-use diaries with requested secondary activity reports, episodes with more than two activities provided for a single episode are rare, and even more rarely analyzed (e.g., Harvey 2006; Kitterod 2001), so the loss of information here should be minimal.

It is important to note that ATUS interviewers do not record the starting and ending times of secondary activities. I follow the usual practice of using the duration of the primary activity, which implicitly assumes that the secondary activity was done for the entire period.

The ATUS data can be analyzed at either the respondent- or episode-level. In the 2006 data, there were 12,943 respondents who reported a total of 263,046 time-use episodes. The weighting variable TUFINLWGT is designed to correct for stratification of the sample. The weight can be applied at the respondent level to approximate figures for the civilian noninstitutional population over the age of 14 and, except where explicitly mentioned, that weight is applied to all figures below. The weight is also applied at the episode level for the same reasons, but note that respondents who report a greater number of episodes are implicitly weighted more heavily in those results. Therefore, episode-

level analyses should not be considered representative of the population, although it could be argued that weighting makes the resulting figures representative of the population of time-use episodes.

The 2006 ATUS includes 17 major time-use categories, an 18th category that accounts for data that cannot be assigned a code, and 462 detailed categories.⁵ The major time-use categories are used in most of the following analyses.

Respondent-Level Analyses

On a weighted basis, 29.3 percent of ATUS respondents report at least one secondary activity (3,955 out of 12,943 respondents). This rate seems high given that respondents are not asked to report secondary activities. But in time-use surveys that systematically collect secondary activities, the rate is close to 90 percent (Harvey 2006, p.199). The magnitude of this difference suggests that volunteered secondary activities in the ATUS are not comparable to traditional secondary activity reports.

Table 1 shows the average time spent in the major activity categories in the ATUS, both as primary and secondary activities. On average, respondents reported a little over one-half hour per day engaged in secondary activities, and fully half of that time was devoted to socializing, relaxing, and leisure, with just over 7 minutes spent on eating and drinking, and just under 5 minutes on household activities. As previously discussed, respondents reported spending less time in secondary activities under the volunteered approach than when they were asked to report secondary activities. When respondents were asked to report secondary activities, most reported over 3 hours (Harvey 2006, p. 210).

On the other hand, when secondary activities are requested, respondents may be more inclined to report short-duration sequential activities as secondary rather than taking the time to break them apart and report them as primary activities. A comparison of the data used here and of data from an earlier nationally-representative, time-use study that explicitly requested secondary activity reports suggests that this might be the case: the ATUS generates a greater mean number of episodes per respondent, even with extensive controls (see Drago and Stewart 2010).

⁵ For documentation, see the ATUS 2006 Coding Lexicon available at the ATUS web site: <http://www.bls.gov/tus>.

Table 1: Average Cumulative Duration of Secondary and Primary Activities, Minutes

Time-Use Category	Secondary activities	Primary activities
Personal care and sleep	0.93	563.69
Household activities	4.84	109.33
Caring for household members	0.79	26.93
Caring for nonhousehold members	0.43	8.99
Work	0.45	207.23
Education	0.23	27.39
Consumer purchases	0.17	24.25
Professional and personal care services	0.06	5.18
Household services	0.06	1.08
Government services	0.00	0.63
Eating and drinking	7.04	66.79
Socializing, relaxing, and leisure	18.46	271.73
Sports, exercise, and recreation	0.60	18.93
Religious and spiritual activities	0.15	7.24
Volunteer activities	0.11	7.78
Telephone calls	0.46	7.06
Travel	0.07	74.59
Uncoded activities	1.20	11.20
Total time per day	36.05	1440.00
Sample size, N	12,943	12,943

Source: 2006 ATUS. Note: The total time per day spent doing primary activities does not sum to 1440 minutes due to rounding.

Time spent on primary activities has a very different distribution than that for secondary activities. Primary activities mainly involve personal care and sleep (over 9 hours); socializing, relaxing, and leisure (over 4.5 hours); work (just under 3.5 hours); household activities (almost 2 hours); travel (1.25 hours); and eating and drinking (just over 1 hour). Sleep and work are likely less often done while in engaging in other simultaneous activities or short sequential activities, again suggesting that the secondary activity data are picking up relevant activities.

Turning to unpaid work, respondents spent just over 6 minutes per day in household activities (including caring for household and nonhousehold members) as a secondary activity. Only 1.02 minutes of this time was spent on childcare, which is already captured by the more inclusive “in your care” measure. Given the brief amount of time spent in household activities as a secondary activity—5.04 minutes after excluding childcare—it follows that the use of the secondary activity data, as currently collected, to improve estimates of household production would not contribute much time or value.

The incidence of secondary activities is not distributed evenly across days of the week. Instead, the average respondent reports a low of 0.359 secondary activities for Tuesdays, rising to 0.436 activities on Wednesdays, 0.483 activities on Thursdays, with a peak at 0.533 activities on Fridays, followed by a decline to 0.431 activities on Saturdays, with a mean of 0.414 activities on Sundays and Mondays. A negative binomial regression, with the number of secondary activities as the dependent variable and dummies for the diary day (omitting Wednesday), reveals that significantly fewer secondary activity episodes occur on Tuesdays and significantly more occur on Fridays, both at the 5 percent level.⁶ It is possible that respondents engage in more simultaneous or short-duration activities on Fridays; alternatively, respondents may be willing to take more time to do the interview and report secondary activities on Saturdays. Ultimately, it is impossible to know whether the latter possibility is correct because the reporting of secondary activities might either increase the reporting burden on respondents to the extent they are providing additional information, or decrease the burden if respondents use secondary reports as an alternative to providing more detailed primary activity data.

We can, however, shed some indirect light on the reason for reporting secondary activities by comparing the characteristics of those who do and do not report secondary activities, as shown in Table 2. The figures are mainly percentages, and significance levels are from a simple logit regression predicting whether or not the respondent reported any secondary activity.⁷ Significant differences suggest that women are more likely to report secondary activities and that respondents reporting these activities are around 5 years older, that they are only half as likely to be Hispanic, that they are around 5 percentage points more likely to hold at least a bachelor's degree, and that they worked around 3.5 hours per week less than respondents who did not report secondary activities.

⁶ Wednesday is omitted because the 0.436 average for that day is closest to the mean for the entire sample (0.439). Note that OLS performs poorly in the presence of many zero values, as is true here. Tobit could be applied, but this technique assumes that many of the zero values represent latent negative values, and it is not obvious what meaning negative values would convey. The negative binomial is a count regression method with a natural lower bound of zero. See Appendix table A1 for results.

⁷ Logit is a typical regression procedure when the dependent variable is dichotomous, as is the case here. A relevant alternative, the simple probit, yields identical signs and significance on the relevant variables. See Appendix table A2 for results.

Table 2: Characteristics of Respondents who Do and Do Not Report Secondary Activities

Characteristic	One or more secondary activities reported	No secondary activities reported
Women (percent)	55.8**	49.8
Any children (percent)	38.0	43.9
Child under 6 years (percent)	16.1	20.0
Married (percent)	59.2	57.4
Age (years)	47.2**	42.7
African-American (percent)	11.3	12.9
Hispanic (percent)	7.5**	15.6
Bachelor's degree or higher (percent)	29.0**	23.8
Employed (percent)	60.7	66.6
Weekly work hours	22.4**	25.9
Sample size, N	3,955	8,988

Source: 2006 ATUS. ** for figure that is significantly larger in a logit predicting any secondary activity, 1% significance level.

Women and those with high levels of education may be busier, which may lead these respondents to report more secondary activities. Consistent with this interpretation, the correlation between primary and secondary activity counts is 0.269. But consistent with this explanation, one would expect that respondents with children or those who work long hours would more often report secondary activities; but this is not the case.⁸ Further, it seems unlikely that older respondents are busier, yet an age quadratic in an otherwise identical linear OLS regression yields a maximum probability of reporting secondary activities among respondents over 80 years of age.⁹ It is at least possible that older respondents are willing to take the time to report their activities more completely.¹⁰ Alternatively, some older respondents may suffer from recall difficulties and use secondary activity reports instead of providing more detailed primary activity reports. A disproportionate number of older respondents' interviews are dropped from the ATUS sample because they spent too much time in uncodeable activities (for example, "don't know"). That possibility suggests that the positive correlation between the number of primary and secondary activity episodes will be negative for older respondents. In fact, the correlation coefficient rises from 0.269 for the overall sample to 0.280 for the 1,460 respondents over the age of 70 years, suggesting we can discount this alternative

⁸ Further, introducing an interaction between gender and children (i.e., a mother variable) did not yield a significant coefficient.

⁹ See Appendix table A3.

¹⁰ Consistent with this possibility, the simple correlation between age and primary time spent on the category of socializing, relaxing, and leisure is a positive 0.280. A linear OLS regression with socializing, relaxing, and leisure time as the dependent variable, and an age quadratic as the dependent variable, yields an estimated minimum at age 35.1 years, suggesting the greatest amount of leisure and related time is available to respondents over the age of around 70 years.

explanation. Also, note that there is no obvious explanation for why Hispanic respondents report secondary activities less often; perhaps the difference is cultural.¹¹

An alternative way to examine the same issues lies in a regression of the cumulative daily time devoted to secondary activities on independent variables for the same characteristics listed in Table 2. Using the negative binomial method yields results very similar to those just discussed except that women are no more likely than men to report more time in secondary activities, while those who are employed report significantly less time in secondary activities (at the 1 percent level).¹²

As a more direct test for whether busy respondents are associated with secondary activities, the regressions discussed above were replicated with the amount of leisure time as a primary activity serving as the independent variable. In both the logit for any activities and the negative binomial for cumulative time, relevant coefficients are significant at the 1 percent level.¹³ Simulations from OLS regressions suggest the effects are indeed positive though small; a 60-minute increase in leisure time raises the probability of reporting any secondary activity by 0.5 percent and expands the average amount of time spent on secondary activities by 3.4 minutes per day. However, it is important to note that leisure is historically associated with secondary activity reports, and this correlation may in fact represent the relative ease with which simultaneous activities can be performed while engaging in leisure activities.

In sum, there is mixed evidence of secondary activity reports being associated with busy respondents, casting doubt on the validity of the data.

Episode-Level Analyses

Moving down from the level of the respondent, there are 6,046 secondary activity episodes, or a weighted 2.19 percent out of 263,046 total episodes. The average respondent reports 20.1 episodes per day, with 0.44 episodes having secondary activities. Somewhat surprising given the small number of secondary activities reported, nearly one-third of all respondents report at least one secondary activity.

Table 3 shows the percentage of episodes accounted for by each of the major activity categories. The first column shows the distribution of secondary activities. The second column shows the distribution of primary activities for episodes in which a secondary activity was reported, and the last column shows the distribution of all primary activities. The distributions in the three columns were computed independently. I discuss the links between primary and secondary activities later.

The distribution of episodes in Table 3 is similar to the distribution of time spent in the different activities shown in Table 1. Almost half of all secondary activity episodes are

¹¹ Drago and Stewart (2008) find that Hispanics are only around one-third as likely to report secondary activities when they are requested, although the difference is not statistically significant.

¹² The negative coefficient on work hours only achieves significance at the 5 percent level in this regression, presumably because it is collinear with employment. See Appendix table A4 for results.

¹³ See Appendix tables A5 and A6.

socializing, relaxing or leisure, followed by eating and drinking, and household activities. The remaining time-use categories each account for less than 5 percent of secondary activity episodes.

Table 3: Distribution of Secondary and Primary Activity Episodes, Percentages (weighted)

Time-Use Category	Secondary activities	Primary activities with a secondary activity	Primary activities
Personal care and sleep	2.04	2.44	18.37
Household activities	11.96	13.39	13.23
Caring for household members	3.59	5.25	4.61
Caring for nonhousehold members	1.80	1.47	1.21
Work	1.35	3.08	5.92
Education	0.45	0.80	1.12
Consumer purchases	1.09	1.20	3.34
Professional and personal care services	0.16	0.23	0.58
Household services	0.16	0.10	0.12
Government services	0.02	0.05	0.05
Eating and drinking	20.06	22.59	10.27
Socializing, relaxing, and leisure	49.33	41.74	16.15
Sports, exercise, and recreation	1.08	1.38	1.19
Religious and spiritual activities	0.57	0.30	0.50
Volunteer activities	0.41	0.72	0.50
Telephone calls	1.24	1.45	1.15
Travel	1.02	2.37	20.82
Uncoded activities	3.68	1.44	0.88
Total	100.00	100.00	100.00
Sample size, N	6,046	6,046	263,286

Source: 2006 ATUS.

There are, however, marked differences in the distribution of primary activities depending on whether or not a secondary activity was reported. When the respondent reports a secondary activity, over 40 percent of related primary activities fall into the category of socializing, relaxing, and leisure, followed by eating and drinking, and then by household activities. In the overall sample, the most frequent activity is travel, followed by personal care and sleep, with the three categories just discussed trailing those

two.¹⁴ It seems likely that socializing, relaxing, and leisure; eating and drinking; and household activities lend themselves to both truly simultaneous and short-duration, sequential activities, so we cannot ascertain whether the volunteered method of secondary activity data collection focuses respondents on truly simultaneous activities as secondary. I return to this issue in the analysis of detailed time-use categories below.

One possible linkage between specific primary activities and secondary activity reports lies in the pre-codes available to ATUS interviewers for a set of 15 detailed primary activities. Because the pre-codes speed up the process of data entry, it is possible that interviewers will be more likely to collect secondary activity reports for activities that can be pre-coded. Table 4 shows that 125,038 (or 47.5 percent) of episodes were coded using a pre-code. If the use of pre-codes leads to greater reporting of secondary activities, the percentage of secondary activity episodes reported during pre-coded activities should be larger. In fact, only 2,544 of 6,046 secondary activity episodes, or 42.1%, have pre-coded primary activity reports. Further, in over 2,100 of those episodes the primary activities were pre-coded as watching television or eating and drinking, activities which are traditionally associated with secondary activities.¹⁵ Therefore, it seems reasonably safe to conclude that the use of pre-codes does not affect the reporting of secondary activities.

¹⁴ In the ATUS, if a respondent reports doing simultaneous activities that involve a travel episode, the travel will be collected and coded as the respondent's primary activity. For example, if someone reports driving to work and talking on the phone at the same time, the episode would be coded as travel.

¹⁵ For all but one of the sleep episodes where a secondary activity was reported, the latter activity involved watching "television and movies (not religious)."

Table 4: Pre-coded Primary Activities and Secondary Activity Episodes

Primary activity description	Number of pre-coded primary activities with a secondary activity	Number of pre-coded primary activities without a secondary activity	Total number of pre-coded primary activities	Percent of pre-coded primary activities with a secondary activity
Sleeping	9	27,652	27,661	0.03
Grooming (Self)	45	16,791	16,836	0.27
Watching television	902	18,683	19,585	4.61
Working, main job	40	9,907	9,947	0.40
Working, second job	1	392	393	0.25
Preparing meals and snacks	137	10,798	10,935	1.25
Eating and drinking	1,200	24,811	26,011	4.61
Cleaning the kitchen	53	3,886	3,939	1.35
Laundry	130	3,311	3,441	3.78
Grocery shopping	4	2,099	2,103	0.19
Attending religious services	0	1,008	1,008	0.00
Paying household bills	3	46	49	6.12
Caring for animals and pets	20	2,208	2,228	0.90
Do not know	0	853	853	0.00
Refusal	0	49	49	0.00
Total	2,544	122,494	125,038	23.76

Source: 2006 ATUS.

Splitting out childcare from the two care categories (Caring for and helping household members and Caring for and helping nonhousehold members) reveals that 4.71 percent of all primary activity episodes, but a slightly lower 4.37 percent of secondary activity episodes, were childcare.

Table 5 shows the distribution of where codes for episodes that have secondary activities and for all episodes. The “home or yard” category accounts for just under 40 percent of all episodes, but almost three-quarters of secondary activity episodes. The only other location that accounts for at least 5 percent of secondary activity reports is someone else’s home. These findings are consistent with the interpretation that secondary activity data are to some extent reflecting the messiness of home life.

Table 5: The Location of Primary and Secondary Activity Episodes, Percentage of All Episodes

Location	All Episodes	Secondary activity episodes
Home or yard	39.36	72.11
Unknown ¹	18.18	1.10
Car, truck, or motorcycle (driver)	14.28	1.74
Workplace	7.05	4.67
Car, truck, or motorcycle (passenger)	3.57	0.00
Other place	3.19	3.97
Someone else's home	3.14	7.39
Other store or mall	2.19	1.24
Restaurant or bar	1.88	3.55
Walking	1.80	0.00
School	1.60	1.11
Other categories, accounting for <1% of the total	3.76	3.12
Total	100.00	100.00
Sample size, N	263,286	6,046

¹ Location data are not collected for times respondents were sleeping, grooming, doing personal activities, and when they didn't know or refused to provide information about what they were doing.

Source: 2006 ATUS.

Information about who respondents were with is not collected for times they reported sleeping, grooming, and a few other personal activities, which together account for 24.1 percent of all episodes. These activities rarely generate secondary activities, and who-with information is missing for only 3.7 percent of episodes with secondary activities.

Ignoring episodes during which the who-with information was not collected, figures for who respondents were with during all episodes and during secondary activity episodes are shown in Table 6. Note that these figures do not sum to 100 percent because multiple individuals may be present during an activity. Respondents were slightly less likely to be alone while engaging in secondary activities (a 3 percentage point divergence), and this difference is explained by the more frequent presence of either a partner or spouse or other adult during the episode.

Children were only about 2 percentage points less likely to be present during secondary activity episodes. This result does not, however, imply that childcare is rarely done as a secondary activity, since a full 34.8 percent of "in your care" episodes occur when the child is not in the same location (e.g., is instead in the next room or outdoors). That time is, as noted earlier, linked to secondary activity reports.

In earlier U.S. time-diary surveys, alone time accounted for a smaller fraction of episodes—between 22.7 and 36.6 percent (Harvey 2006, p. 208). Although other explanations might be plausible, it is possible that the greater incidence of being alone during secondary (and perhaps primary) activity episodes in the ATUS reflects the dramatic growth of single-person households in recent decades (Fields and Casper 2000).

Table 6: Who Respondents were with as a Percentage of Non-missing Episodes

Who with	All activity episodes	Secondary activity episodes
Alone	45.96	42.78
With partner or spouse	21.49	25.96
With child	22.42	20.39
With partner or spouse and child	7.03	7.20
With other adult	22.92	27.51
Sample size, N	203,937	5,852

Source: 2006 ATUS. Note that percentages do not add up to 100 because respondents can be with people from more than one category.

The final analyses connect primary and secondary activities across the major time-use categories. For the most-frequently-reported secondary activities, I examine detailed time-use categories for both secondary and primary activities.

The major time-use categories for secondary activity episodes were matched with those for primary activities, resulting in an 18-by-18 matrix with 6,046 unweighted observations. I restrict my attention to the seven cells that have at least 2 percent of these episodes (more than 130 observations each). These cells account for 4,143, or about two-thirds, of the 6,046 secondary activity episodes. The cells are listed in descending order of prevalence in Table 7. Considering the number of episodes, linkages between socializing, relaxing, and leisure, and eating and drinking are by far the most common, and comprise over half of all secondary activity episodes. Household activities as either secondary or primary account for around one-sixth of these episodes, and caring for household members covers a small fraction of the episodes.

The last column of Table 7 reports the average amount of time per day spent on the linked activities. Recalling that secondary activity reports account for just over 36 minutes per day, on average, the figures show that around one-quarter of that time is accounted for by leisure as either a primary or a secondary activity. Indeed, over half of all secondary activity time (18.43 minutes) can be attributed to some mixture of leisure and eating and drinking.

Table 7: Related Secondary and Primary Activity Episodes, Number of Episodes and Cumulative Duration

Secondary activity	Related primary activity	Number of episodes	Average minutes per day
Socializing, Relaxing, and Leisure	Eating and Drinking	1,108	4.25
Socializing, Relaxing, and Leisure	Socializing, Relaxing, and Leisure	1,042	8.82
Eating & Drinking	Socializing, Relaxing, and Leisure	899	5.47
Socializing, Relaxing, and Leisure	Household activities	351	2.08
Household activities	Household activities	318	2.01
Household activities	Socializing, Relaxing, and Leisure	273	2.15
Socializing, Relaxing, and Leisure	Caring for household members	152	0.28
Total sample size, N		6,046	12,943

Source: 2006 ATUS.

In two instances, the primary and secondary activities are in the same major category. Earlier in Table 1, we saw that respondents spent just under 5 minutes per day in household activities. In calculations of the time spent in unpaid work, the 2 minutes per day when household activities were reported as both the primary and secondary activities must be subtracted from this total so that it is not double-counted.

For a more fine-grained look at linkages between the secondary and linked primary activities, I analyzed detailed activity categories where the relevant major categories for the secondary activity are either: household activities; eating and drinking; or socializing, relaxing, and leisure, as shown in Table 8. These three broad categories not only figure prominently in the analysis presented in Table 6, but are also most prevalent in terms of both the cumulative amount of time involved (see Table 1), and the number of episodes reported (see Table 3). Note that, for the secondary activity reports, eating and drinking is both a broad activity category and a single detailed category. For simplicity, detailed categories accounting for less than 5 percent of relevant episodes are excluded from the table.

A total of 3,014 secondary activity reports are categorized as socializing, relaxing, and leisure, with watching television, socializing, and reading accounting for most of the episodes. Related primary activities involve eating and drinking, watching television, socializing, and reading. For the 1,190 episodes of eating and drinking as a secondary activity, primary activities mainly involve watching television, socializing, and reading. For the 757 episodes of household activities as secondary, detailed activities are largely comprised of doing laundry; interior cleaning; food and drink preparation; care for pets; household and personal organization and planning; household and personal mail and messages excluding email; and sewing, repairing, or maintaining textiles. The main associated primary activities in this case include watching television, interior cleaning, socializing, and doing laundry.

Table 8: Detailed Secondary Activity Episodes and Related Primary Activities

Secondary activity	Detailed secondary activity	Related primary activity
Socializing, Relaxing, and Leisure (3,014 episodes)	Television (51.9%)	Eating and drinking (38.8%)
	Socializing (18.9%)	Television (9.3%)
	Reading (11.9%)	Socializing (8.8%)
		Reading (13.5%)
Eating and Drinking (1,190 episodes)	Eating and drinking	Television (25.5%)
		Socializing (24.6%)
		Reading (13.5%)
Household activities (757 episodes)	Laundry (21.6%)	Television (22.8%)
	Interior cleaning (14.8%)	Interior cleaning (10.2%)
	Food and drink preparation (11.5%)	Socializing (9.2%)
	Care for pets (9.3%)	Laundry (5.6%)
	Household and personal organization and planning (8.0%)	

Source: 2006 ATUS.

Overall, the analysis of detailed categories suggests that secondary activities largely revolve around watching television and eating and drinking, either as a secondary or associated primary activity.

In terms of the validity of the data, we need to know whether these activities are more often performed as truly simultaneous activities, or instead in short duration, sequential episodes. Unfortunately, both watching television and eating and drinking are subject to either interpretation. We simply have no way of knowing which is the case.

Conclusion

The quotation from Alexander Szalai provided earlier in this report suggested that the ATUS should have taken a more traditional approach and explicitly requested secondary activity data from respondents. This analysis has examined the secondary activity reports collected in the 2006 ATUS. In some ways, the volunteered secondary activity data seem to mimic traditionally-requested secondary activity reports. Most secondary activities occur in the home and women are more likely to report secondary activities, which together reflect the messiness of home life and the prominent role that women continue to play in the home. Consistent with expectation, more-highly-educated respondents are also more likely to report secondary activities. When secondary activities are reported, the most common activities are socializing, relaxing, and leisure; eating and drinking; and household activities. But, contrary to expectations, respondents who work longer hours were less likely to report secondary activities, while respondents who are over the age of 70 were more likely.

One reason for collecting data on secondary activities is to obtain a better measure of household production for national income and product accounts. However, very little household production beyond childcare was identified in this analysis. Further, the little time that was identified – around 5 minutes – was mainly done in conjunction with household activities as a primary activity, or with socializing, relaxing, and leisure, suggesting that the 5 minutes would need to be discounted substantially before incorporating that time into satellite accounts.

The results presented here make it clear that ATUS respondents report secondary activities far less frequently and secondary activities account for far less time compared with traditionally-collected secondary activity reports. Thus, the secondary activity data that are currently collected in the ATUS are of limited value. Given the low quality of these data, it is hard to make the case for incurring the expense of coding the data for other years and incorporating them into analyses. If the data used for this study were made available from the BLS, at a minimum, researchers would be wise to treat the data with caution.

Would it make sense to start systematically collecting secondary activities in the ATUS? Collecting these data would provide richer information about how Americans spend their time. It would also provide a more complete picture about the amount of time spent in household activities, which would be useful for constructing satellite national income and product accounts to measure the value of household production. The amount of time involved is likely to be relatively small – Harvey’s results suggest perhaps 15 minutes per day. In the grand scheme of economic production, 15 minutes of unpaid work per day, applied to an entire adult population over an entire year, is arguably nontrivial. However, in a comparison of the data used here with results from an earlier nationally-representative time-use survey, Drago and Stewart (2010) conclude that the relevant undervaluation of housework due to the ATUS not explicitly requesting secondary activity data involves the economic value of only around one minute per day.¹⁶

¹⁶ The much smaller figure arises from three factors: 1) much housework as a primary activity is performed in conjunction with leisure, so should be discounted, 2) around half of housework as a secondary activity is

The major danger of changing the ATUS to systematically collect secondary activities is that it may change the way that primary activities are reported. Two analyses suggest this danger is potentially significant. Kitterod (2001) analyzed two days of Norwegian time-use diaries wherein secondary activity reports were explicitly requested of respondents only on the second day. She found differences in the pattern of primary activity reports across the two days, and suggests the data are not strictly comparable. Further, a comparison of the ATUS data analyzed here, and of 1998-1999 U.S. time-use data including traditional secondary activity reports, suggest not only that primary activity reports are altered by the inclusion of explicit secondary activity options, but also that the quality of primary activity reports may be compromised in the process (Drago and Stewart 2008). The main issue is that if respondents are asked to report secondary activities, they may report short-duration primary activities as secondary. For example, someone who spends 20 minutes cooking, 5 minutes talking on the phone, and then another 20 minutes cooking may report a single 45-minute episode of cooking with the secondary activity of talking on the phone. However, evidence in the Drago and Stewart study suggests that the ATUS practice of encouraging respondents to break apart these activities mitigates this problem. In the Kitterod (2001) study, respondents were given leave-behind diaries, so there was no interviewer to prompt respondents to break these activities apart. If such a change is seriously contemplated, it would be wise to begin with a pilot, wherein some respondents are and others are not requested to provide secondary activity reports. If that pilot demonstrated that the quality of primary activity reports would not be substantially impaired, it might then be reasonable to expand secondary activity data collection to include all future ATUS respondents.

performed in connection with housework as a primary activity, and it would not make sense to double the value of housework when it is performed as both a primary and secondary activity, and 3) much of the remaining housework as a secondary activity is related to leisure as a primary activity, so it should also be discounted.

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APPENDIX

Table A1: Negative Binomial Regression - Number of Secondary Activities

Variable	Coefficient	Std Error	p-value
Sunday	-0.0442	0.0714	0.5360
Monday	-0.0536	0.0893	0.5480
Tuesday	-0.1957	0.0872	0.0250
Thursday	0.1021	0.0845	0.2270
Friday	0.1994	0.0870	0.0220
Saturday	-0.0133	0.0713	0.8520
Constant	-0.8295	0.0593	<0.0001

Table A2: Logistic Regression – Any Secondary Activities

Variable	Odds Ratio	Std Error	p-value
Woman	1.1763	0.0643	0.0030
Any children	1.0339	0.0740	0.6420
Child under 6 years	0.9300	0.0679	0.3200
Married	0.9472	0.0567	0.3640
Age	1.0273	0.0088	0.0020
Age_squared	0.9998	0.0001	0.0350
Employed	1.0767	0.1044	0.4460
African-American	0.8756	0.0626	0.0630
Hispanic	0.4972	0.0451	<0.0001
Bachelor's degree or higher	1.2780	0.0785	<0.0001
Weekly work hours	0.9921	0.0021	<0.0001

Table A3: Linear Regression – Any Secondary Activities

Variable	Coefficient	Std Error	p-value
Woman	0.0323	0.0110	0.0030
Any children	0.0055	0.0141	0.6970
Child under 6 years	-0.0135	0.0138	0.3290
Married	-0.0098	0.0122	0.4250
Age	0.0049	0.0017	0.0050
Age_squared	<0.0001	<0.0001	0.0930
Employed	0.0144	0.0199	0.4710
African-American	-0.0191	0.0082	0.0190
Hispanic	-0.1183	0.0135	<0.0001
Bachelor's degree or higher	0.0515	0.0130	<0.0001
Weekly work hours	-0.0016	0.0004	<0.0001
Constant	0.1722	0.0373	<0.0001

Table A4: Negative Binomial – Cumulative time for Secondary Activities

Variable	Coefficient	Std Error	p-value
Woman	0.0861	0.0574	0.1340
Any children	-0.0532	0.0815	0.5140
Child under 6 years	-0.0906	0.0845	0.2830
Married	-0.0836	0.0633	0.1860
Age	0.0266	0.0092	0.0040
Age_squared	-0.0002	0.0001	0.0220
Employed	-0.3212	0.0999	0.0010
African-American	-0.0303	0.0878	0.7300
Hispanic	-0.6308	0.0935	<0.0001
Bachelor's degree or higher	0.1897	0.0598	0.0020
Weekly work hours	-0.0044	0.0022	0.0460
Constant	3.2073	0.2168	<0.0001

Table A5: Logistic Regression – Any Secondary Activities

Variable	Odds Ratio	Std Error	p-value
Total Leisure Time	0.0004	0.0001	<0.0001
Constant	-0.9979	0.0431	<0.0001

Table A6: Negative Binomial – Cumulative time for Secondary Activities

Variable	Coefficient	Std Error	p-value
Total Leisure Time	0.0015	0.0002	<0.0001
Constant	3.1419	0.0557	<0.0001