Estimating Survey Fatigue in Time Use Study

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Abstract

Efficient study of time use should balance the level of detail required from the respondents (granularity of time units, the number of activities reported in each time unit, the level of detail in which each activity is described) and the burden respondents bear in answering the survey (the number of questions asked in the survey, the time it takes to complete the survey). Filling out a time diary can be a tedious and time-consuming chore, and the quality of data typically deteriorates as respondents progress through the time diary. To overcome some of these disadvantages, we utilize innovative sampled hours time-diary methodology, in which respondents list chronologically all activities they performed during six sampled hours of the previous day. Compared to other time-diary methods, the sampled hours time-diary method minimizes respondent burden. In addition, online administration enables us to provide respondents with memory recall assistance, such as a checklist of possible activities as well as a cumulative activity list for the day. Such memory cues cannot be provided in phone surveys and may be cumbersomely long in printed surveys administered by mail.

We estimate the improved accuracy of this method of time use survey by randomly assigning each respondent an additional (seventh) hour. The effects of fatigue on survey response are estimated by comparing the answers of respondents that described a certain hour as an "early" hour (e.g. the 4th hour in the survey), and the answers of the respondents that described their activities during that same hour as a "late" one (e.g. the 5th hour in the survey). We use several different criteria according to which survey fatigue affects reporting, such as the number of activities reported during the hour, and the tendency to avoid reporting activities that call for follow- up questions. We find that the extent of respondents' survey fatigue at late stages in the survey, resulting in under-reporting of activities, is significant both statistically and substantively. These findings have implications with respect to the optimal design of time use surveys; the number of hours about which respondents are asked has to be very limited in order to maintain a reasonable level of accuracy in the responses.

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1. Introduction

Obtaining accurate data from survey respondents has long been a challenge of social science research. In particular, collecting data regarding time use has proven to be a complex task. Efficient study of time use must balance the level of detail required from the respondents, including granularity of time units, the number of activities reported in each time unit, and the level of detail in which each activity is described, with the burden respondents bear in answering the survey, determined in part by the number of questions asked in the survey and the time it takes to complete the survey. This is difficult for most time diary surveys, which ask respondents to detail their activities in every hour of a given time period (ranging from a single 24-hour day to a week or more.).

We use a random hours time-diary survey of about 5,000 respondents to explore the extent to which respondent burden affects the quality of data gathered. We estimate the effects of survey length on the quality of data gathered, as well as the effects of respondents' personal and other characteristics. Specifically, we examine the quality of data gathered in terms of the granularity of time which respondents use to describe their activities, respondents' tendencies to under-report activities that lead to follow-up questions of differing complexity, and under-reporting in these follow-up questions where applicable.

Looking at respondents' survey data as they proceed through the survey suggests important ramifications for survey length. We find that under-reporting might start as early as the second hour of the survey, and that by the seventh hour under-reporting of taking part in several activities might bias reported participation in different activities by as much as fifty percent. Our findings suggest that while personal characteristics such as gender, marital status and ethnicity may affect the activity profile of respondents over the day, they usually have little impact on respondents' tendency to under-report activities later in the survey. However, we find that respondents' education level diminishes their tendency to under-report activities at later stages of the survey. The number of times a respondent has taken the time-use survey has an adverse effect on the quality of answers they provide, but it has no effect on how fast the quality of answers deteriorates as the survey progresses.

2. Related Literature

The first time budget studies took place in the 1920s, with the method accelerating in popularity in the 1960s and 1970s, particularly for use in cross-national studies (Andorka 1987.) Since then, the basic technique has remained relatively consistent, although technological and methodological advances have necessitated some changes (see Harvey 1993 for some recommendations for improved time use data.)

Although time diaries have been used for over 80 years, respondent burden, generally used to refer to the time required to answer a survey, is a "relatively recent concern" (Sharp & Frankel 1983: 36). Bradburn's (1979) original theory, developed in 1977, about the causes of respondent burden proposes four influential factors: interview length, required respondent effort, frequency of being interviewed, and the stress of psychologically disturbing questions. According to Bradburn, burdensomeness is a subjective phenomenon, and can be influenced by positive elements, such as perceived importance of the survey. Sharp and Frankel conclude that respondent burden is not a major issue for the survey profession; they find that only length of survey affects

perceived burden, while effort and repeat administration have no significant effect.

Despite this finding, less work has been done on the effects of survey length on response quality once a respondent has already elected to take a survey. Recent works have focused in particular on the well-documented drop in response rates due to increasing incidence of refusal and greater difficulty in contacting potential respondents (see Porter 2004 for discussion). While there has been some discussion of satisficing, in which respondents skip or do not complete the four stages of answering a survey question (interpreting the question, searching their memory for information, integrating that info into a single judgment, then translating that judgment into a response) (Krosnick 1999), the precise effects of survey length on detailed responses once an individual has started the survey remain an area that requires further investigation.[1]

In addition, Porter (2004) notes that much of survey research has been done using changes in survey design from year to year; however, such research does not account for other changes that may have occurred. Our design allows us to consider respondents in the same year, answering about the same specific hour of the day, at different stages in their survey. Using random hours time-diary data from 2006, we are beginning to explore the effects of survey length on data richness.

3. Data

Our data is collected by Knowledge Networks (KN), a survey company which uses a nationally representative sample of United States residents. The sample is recruited through Random Digit Dialing (RDD), using a quarterly-updated sample frame which includes the entire United States telephone population. All telephone numbers have an equal probability of selection, and sampling is done without replacement. Each household recruited for the sample is given an incentive for their participation in the panel; households without Internet access are equipped with a WebTV set-top box and given free Internet access.

During the initial RDD telephone interview, respondents are told they have been selected to participate in an important national study, and they will be given a WebTV receiver that will allow them free access to the Internet if they will answer brief weekly surveys on their television screen. It is emphasized that confidentiality and privacy are always upheld and that no other household can replace theirs. Once the equipment is installed in their homes, respondents are asked to respond to some profile surveys that record the key attributes of each household member. Each member (adults 18 and older) is sent one short survey per week, usually not taking more than 15 minutes to complete.

Questionnaires are completed either via the television and WebTV controls or through a typical computer interface. In the rare instances that panel members are asked to respond to longer surveys, they are given a week off from responding or some other form of incentive. Respondents can respond to the surveys at any time at their convenience, and are permitted to interrupt before completing the survey and return to it at a later time. Respondents who fail to respond to eight consecutive surveys have the WebTV receiver removed from their homes.

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[1] Although some work has been done regarding longitudinal respondent burden, that is not our primary focus here. However, because our panel includes some repeated survey respondents, we do address this issue somewhat in our analysis.

Typically, about 18 percent of those approached accept the offer to be on the panel for KN. In 2006, our survey had a completion rate of approximately 74 percent for a total sample size of 5,216 respondents, with those who had taken the survey before reporting higher rates of completion than new respondents. For estimating the effects of survey burden on the quality of data gathered, we used only the responses of adults (ages 18-75). Table 1 (provided at the end of the paper) includes descriptive statistics of the survey population.

3.1 Survey Design

Overall, time diary studies, in which data is collected from respondents regarding their specific activities at a given time, tend to be more reliable than stylized questions, in which respondents themselves estimate the amount of time spent on an activity. Time diaries help avoid errors in judgment and reduce distortions of estimates caused by social desirability bias, but they can be tedious and time-consuming, especially when they cover the whole day or even longer periods. The quality of data typically deteriorates as respondents progress, and non-response tends to be high (Andorka 1987; Robinson and Godbey 1997; Gershuny 2003). We increase accuracy by making recall easier; we ask respondents about "yesterday" in order to make the reference period shorter than using stylized estimates. In addition, reporting totals for specific time periods reduces the effects of social desirability, because respondents would have to manipulate estimates for each hour. Using ten minute increments to divide the hour means that respondents cannot use middle range responses to center their own approximations, as can happen with some survey designs (Krosnick 1999.)

Our goal has been to collect the detailed time-use estimates of time diaries while reducing respondent burden. Therefore, our particular survey is based on a time-diary approach, which Robinson and Godbey (1997) argue is necessary for accurate time measurement. Like typical time diaries, the six-hour time-diary method offers increased accuracy of measurement and reduced social desirability bias. Unlike other time-diary methods, however, it minimizes respondent burden by reducing the number of hours and activities respondents report. Because the survey is administered by computer, we can provide memory prompts and clarifications where necessary without needing multiple pages of paper or requiring respondents to listen to a long list of options. The reduced length of the survey means that each activity a respondent participates in can be documented in greater detail.

Like many time-diary studies, ours asks respondents about "yesterday." We draw an hour from each of six time blocks: night (midnight to 5 am), early morning (6 am to 9 am), late morning (10 am to 1 pm), afternoon (2 pm to 5 pm), early evening (6 pm to 8 pm), and late evening (9 pm to 11 pm). Our sampling design is structured to collect a relatively even distribution of days of the week and hours of the day. In the survey, respondents are asked about their main activities during six randomly selected hours, one from each of the aforementioned time blocks. Individuals select from sixteen broad categories of activity, including "Work for Pay, Job Search", "Eat Meal, Snack", "Housework" and "Internet, Email, Other Internet Communication". They are then asked to identify their specific activity category within the main activity they selected. For example, if they chose "Housework" as their main activity, they could then choose their

specific activity from a number of options, including "Cook", "Plant Care", "Laundry", and "Pet Care".

After each activity, respondents are asked how long the activity lasted (in ten minute increments), where the activity took place, if anyone was with them, and, if someone was with them, who was with them. Because our research tends to focus on Internet use, we also ask if they used the Internet for any activities. This series of questions is repeated for each reported activity. For a given hour, respondents are asked about their activities until the end of that hour is reached; for example, a respondent who reported participating in an activity for ten minutes would be asked what they did next in that hour (with a prompt providing the specific time, such as 6:10 am), but a respondent who reported participating in an activity for sixty minutes or more would continue on to the next randomly selected hour.

Previous research has demonstrated that randomly selected hours tend to correlate with 24-hour time diary responses (Robinson and Bostrom 1994.) However, the need for a 24-hour diary is often articulated despite potential data costs (see, for example, Harvey 1993). Our survey typically divides the 24-hour day into six time blocks, then draws one hour from each, resulting in a random six-hour time diary. However, in 2006, we asked each respondent about a seventh hour of data, randomly selected from the entire 24-hour day (see Appendix A for the distribution of the seventh hour and for measures of panel balance over the day). Survey questions are always presented in chronological order, so this "extra" hour of data may be administered at any point in the survey. This means that we can compare respondents who are surveyed about the same hour of the day, but at different points in the survey. As an example, imagine two individuals providing data for the hour between 5:00 pm and 6:00 pm. If the additional hour for Respondent A is 10:00 am, and the additional hour for Respondent B is 8:00 pm, then at the 5:00 pm point in the survey, Respondent A has given a diary for four hours (the three preceding time blocks plus the additional hour.) Respondent B has not been given the series of questions for her additional hour yet, so she has only given a diary for three hours. Because the additional time block is randomly placed, we can compare respondents within the same time period, allowing us to control for factors associated with a given hour (such as individuals tending to report an increased number of activities at 5:00 pm) as well as survey fatigue over the length of the survey.

Because each extra hour of data requires repeated and detailed mental consideration, we expect to see respondents who have given an additional hour of data to show signs of survey fatigue, measured in a variety of ways.

3.2 Dependent Variables

Because the survey measures time in ten minute increments and each activity has a series of follow-up questions, reporting fewer activities for an hour dramatically reduces the amount of questions an individual must answer. We look at the number of activities reported in each surveyed hour as one potential indicator of survey fatigue (see Appendix B for the specific wording of these questions.)

After providing details about a specific activity, respondents are asked if they talked on the phone at any point during that activity. A positive answer to this question requires respondents to detail exactly how much time they spent talking on the phone; additionally, respondents receive a follow-up question regarding what device they used

for their phone call. Respondents with survey fatigue may try to avoid this extra work by reporting that they did not talk on the phone.

Respondents are then asked if anyone was with them when they participated in their reported activity. Like the question about phone calls, respondents who answer affirmatively must then fill in a series of checkboxes detailing who was with them. Again, saying no one was with them eliminates this question from the survey.

4. Analysis

4.1 Under- Reporting the Number of Distinct Activities Performed

Maintaining the chronological order of the hours about which respondents are asked to report their activities (in order to avoid respondent confusion), complicates estimating survey fatigue in standard time use surveys, since both the number of questions respondents are asked and the time of day of activities reported advance at the same pace. Since every activity has its own participation profile along the day, it is impossible to attribute reports of lower participation rates in any activity late in the day to respondent's fatigue and not to the natural activity profile[2].

The advantage of the additional seventh hour random assignment enables separating between the natural activity participation profile, and the effects of respondent fatigue; for each hour of the day, there are two groups of respondents: respondents whose "extra" survey hour occurred before the hour about which they are reporting, and respondent whose "extra" survey hour will occur after the current hour. The randomized design makes sure that these two groups exist for each hour of the day (except for the first hour, midnight to 1:00 am, and the last hour of the day, 11:00 pm to midnight, which are always either the first or last questions of the survey).

For each hour (except the first) in the first block of the day, there are two groups of respondents - those who report about their activities during that hour as the first hour they are asked about, and respondents who report about their activities during that hour as the second hour they are asked about. The differences between the means of number of activities that respondents report taking part in can be attributed solely to survey fatigue. Similarly, for each hour of the second block, the differences in means of number of activities between respondents for whom this is the second hour they describe and respondents who are reporting it as their third hour can be attributed to additional fatigue.

Figure 1 shows the mean number of activities reported by respondents for each hour of the day. The red line corresponds to activities reported by respondents who report their activities in each hour as the nth hour (n=1 during the first block, n=2 in the second block, etc.). The Blue line corresponds to activities reported by respondents who report their activities in each hour as the $(n+1)^{th}$ hour. The time blocks are marked on the graph. The means were calculated by regressing the number of activities reported on a full set of hour dummies and a set of interactions between each hour and a dummy variable for being asked about this hour as the nth or $(n+1)^{th}$ hour. Equation (1) is the regression equation:

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[2] For example, if respondents report participating in fewer activities between 5:00 pm and 6:00 pm than between 7:00 pm and 8:00 pm, there is no way to separate between less activity in the afternoon and under-reporting later in the survey using a standard 24-hour time use surveys.

(1)   Number of Activities$_{it} = \sum_{t=0}^{23} \alpha_t D(hour)_{it} + \sum_{t=1}^{22} \gamma_t D(hour)_{it} D(late)_{it} + \varepsilon_{it}$

$D(hour)_{it}$ is a dummy for respondent i being asked to report about her activity during the hour t, and $D(late)_{it}$ is a dummy for being asked about hour t as the $(n+1)^{th}$ hour in the survey ($D(late)_{it} = 0$ if the hour was the nth hour asked in the survey). α_t is the mean number of activities reported for hour t, when asked as the nth hour in the survey, and $\alpha_t + \gamma_t$ is the mean number of activities reported for hour t when asked as the $(n+1)^{th}$ hour in the survey. Regression results are provided in column (1) of table 1 in appendix C.

Figure 2 shows the under-reporting of the number of activities by respondents as the survey progresses. We define under-reporting as the difference between the actual mean number of activities reported by respondents and the mean number of activities respondents would have reported were they asked about each hour of the day as the first hour in the survey. It is estimated by regressing the number of activities reported by respondents on a full set of hour dummies, and another set of dummies, one for each survey question (the dummy for the first survey question is omitted to prevent multi-colinearity between the sets of dummies). Equation (2) is the regression equation:

(2)   Number of Activities$_i = \sum_{t=0}^{23} \alpha_t D(hour)_{it} + \sum_{j=2}^{7} \delta_j D(survey\_question)_{ij} + \varepsilon_{ijt}$

The δ coefficients, which represent the mean number of activities under-reported, are identified from the randomization of the extra hour design; the hours of the first block identify δ_1, the hours of the second block identify the difference between δ_1 and δ_2, the hours of the third block identify the difference bewteen δ_2 and δ_3, and so on. Regression results are provided in column (2) of table 1 in appendix C.

The vertical error bars in Figure 2 represent two standard deviations in each direction. The pattern of under-reporting is clear; it is apparent already (though not statistically significant) in the second block of the survey, and it gets worse as the survey progresses. The under- reporting is somewhat less severe in the seventh hour of the survey, but the difference between the sixth and seventh hour is not statistically significant[3]. Under- reporting is not only statistically significant, it is also large in absolute terms; the mean number of activities reported by respondents during the hours of the fifth block (6:00 pm to 9:00 pm) is 1.43, and the under-reporting is estimated to be 0.194 activities - 13.5% of the mean.

In addition to yielding an estimate for the extent of under-reporting as the survey progresses, the regression of equation (2) also provides an estimate for the "true" mean number of activities performed (but only partially reported) by the respondents, at each hour of the day[4]. Estimates of the "true" means (the set α_0- α_{23}) are shown as the grey line in figure 1. The estimates of the "true" mean of number of activities performed by respondents are different than the uncorrected means - one major difference is that the

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[3] Less under- reporting, or more accurate reporting, could be attributed to the fact that respondents know that this is the last question they will be asked, and hence are more willing to spend some extra time responding.

[4] We use the term "true mean" loosely; this is what would have been reported had all the hours in the survey been asked as the first question in the survey.

number of activities performed between 5:00 pm and 6:00 pm is no longer smaller than the number of activities performed between 7:00 am and 8:00 am.

We used an additional specification to estimate the under- reporting associated with an extra survey question, which is represented in equation (3):

(3) $\text{Number of Activities}_{it} = \sum_{t=0}^{23} \alpha_t D(hour)_{it} + \varphi D(late)_{it} + \varepsilon_{it}$

This specification assumes that each additional survey question results in the same amount of under-reporting, regardless of its location within the survey, while still allows for a flexible profile of activities over the day. In this specification, φ is the under-reporting associated with each extra survey question, and $D(late)_{it}$ is a dummy for respondent i being asked to report her activities at hour t as the $(n+1)^{th}$ hour in the survey (instead of as the nth hour in the survey). The regression results for this specification are provided in column (3) of table 1 in appendix C. Assuming a uniform effect for each extra survey question allows us to use all survey questions for all respondents in estimating the determinants of under- reporting activities (survey fatigue), which will explored in further detail in section XXX.

4.2 Under- Reporting the Propensity to Talk on the Phone During Activities
Figures 3 and 4 show the patterns of reported propensity to use the phone during each hour of the day. These figures were produced in a similar manner to Figures 1 and 2, and the regression used to produce them are provided in table 2 in appendix C.
While the daily pattern of phone usage is different than the daily pattern of number of activities performed, the pattern of under-reporting is quite similar, save for the fact that under- reporting at a significant level begins slightly later, only in the fifth survey block. The scale of under- reporting is significant at the later hours of the survey; the mean respondent's probability of reporting using the phone during the sixth time block is 10.9%, and the estimated under-reporting of the propensity to use the phone is 9.3% - almost the same size.

4.3 Under- Reporting the Propensity to be in the Same Room With Someone Else
Figures 5 and 6 show the patterns of reported propensity to have someone else in the room while performing activities during each hour of the day. These figures were produced in a similar manner to Figures 1 and 2, and the regressions used to produce them are provided in table 3 in appendix C.
Even though respondents who reported having someone else in the room with them were "punished" by a more irritating follow-up question than those who reported talking on the phone, the estimated under- reporting is smaller both in absolute terms (peaks to 4.9% at the fourth survey block) and in relative terms (66% of respondents reported having someone else in the room with them while performing activities during the fourth time block, between 2:00 pm and 6:00 pm). The statistical significance of under-reporting being in the room with someone else is limited.

4.4 Under- reporting the number of categories of people who were in the room with the respondent

Figures 7 and 8 show the patterns of the number of different categories of people' such as spouse, roommates, or neighbors (see Appendix B for a complete list) that the responders reported having in the room with them during each hour of the day. These figures were produced in a similar manner to Figures 1 and 2, and the regressions used to produce them are provided in table 4 in appendix C.

In contrast to the under- reporting estimated in the previous sub- sections, Figures 7 and 8 show no significant under- reporting.

4.5 Additional Specification

The regression equations (1) - (3), estimated for the four dependent variables described in the previous subsections (the results of which are provided in tables 1 - 4 in appendix C) were all estimated as linear models. However, a linear model might not be the best description of the processes determining under-reporting in time use surveys. In order to account for potential biases due to the linear specification, we repeated the estimation using an ordered probit specification for the number of activities reported at each hour of the day and for the number of categories of people who were in the room with the responders, and a probit specification for responders' propensity to report talking on the phone and to report having someone else in the room with them. The coefficients that were estimated using the probit and ordered probit specifications, while not directly comparable to the coefficients estimated using the linear specifications are similar. The estimation results for the probit and ordered probit specifications are provided in tables 1 - 4 in appendix D.

Number of Activities Reported at Each Hour of Day
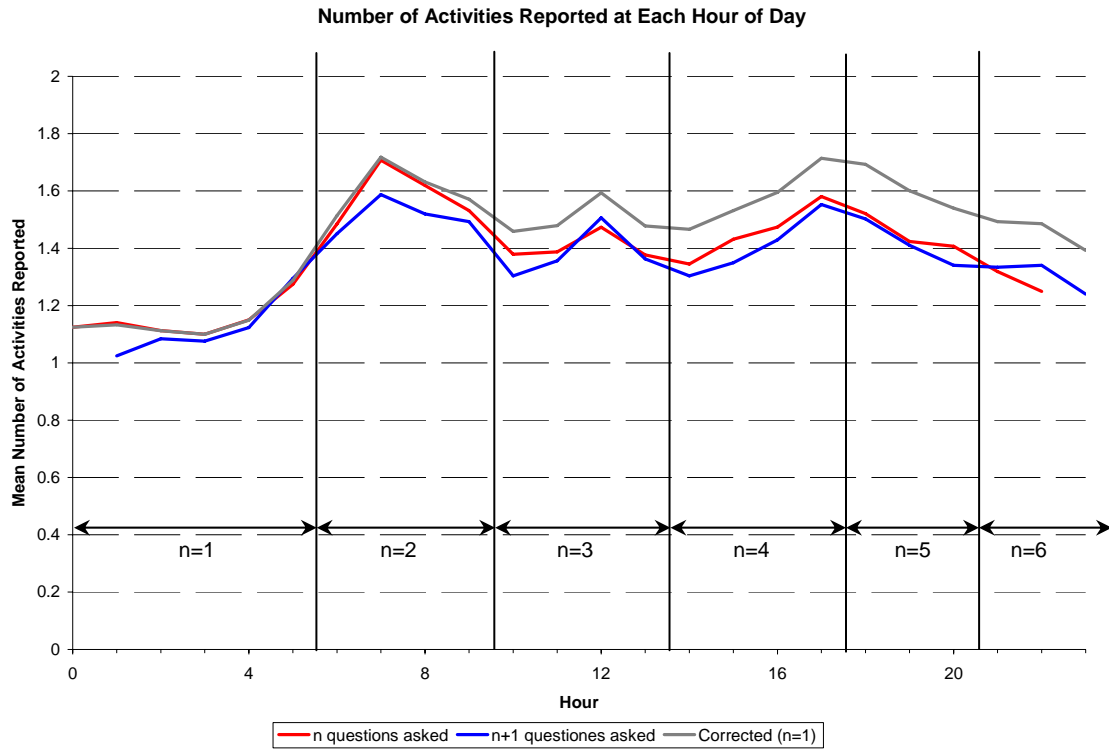
Figure 1: Number of activities reported during each hour of the day, asked as an "early" or "late" hour.

Under- Reporting as Survey Progresses
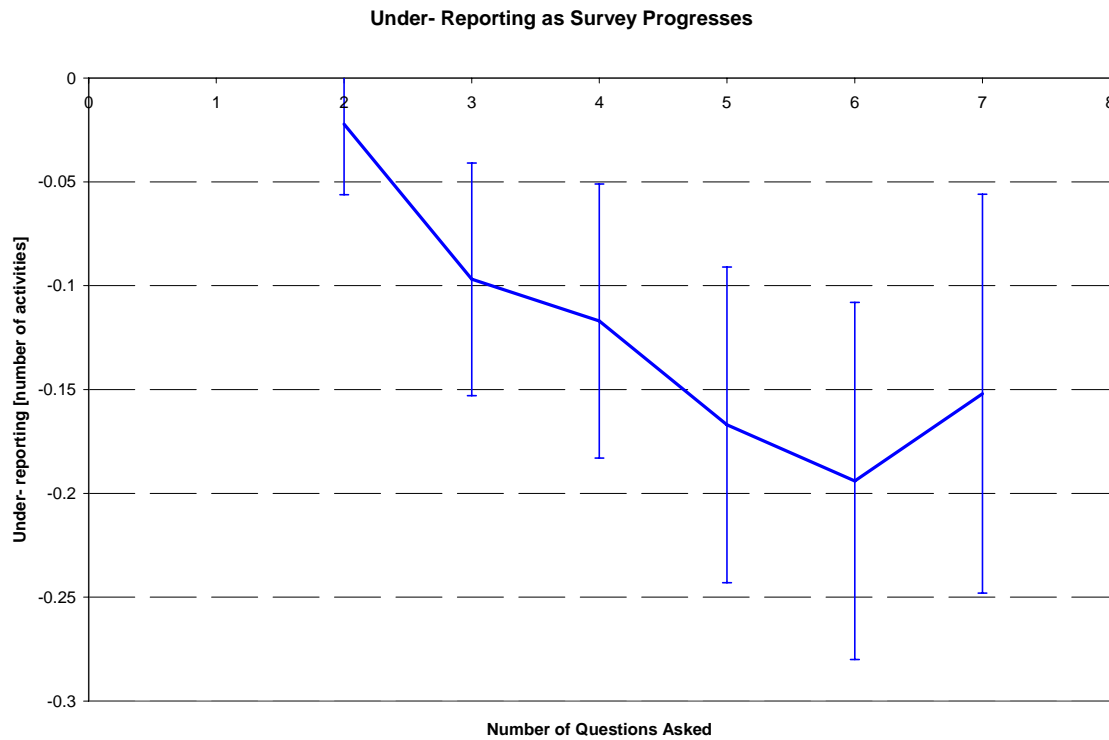
Figure 2: Under- Reporting of Number of Activities as the Survey Progresses

Propensity to Report Talking on the Phone at each Hour of the Day
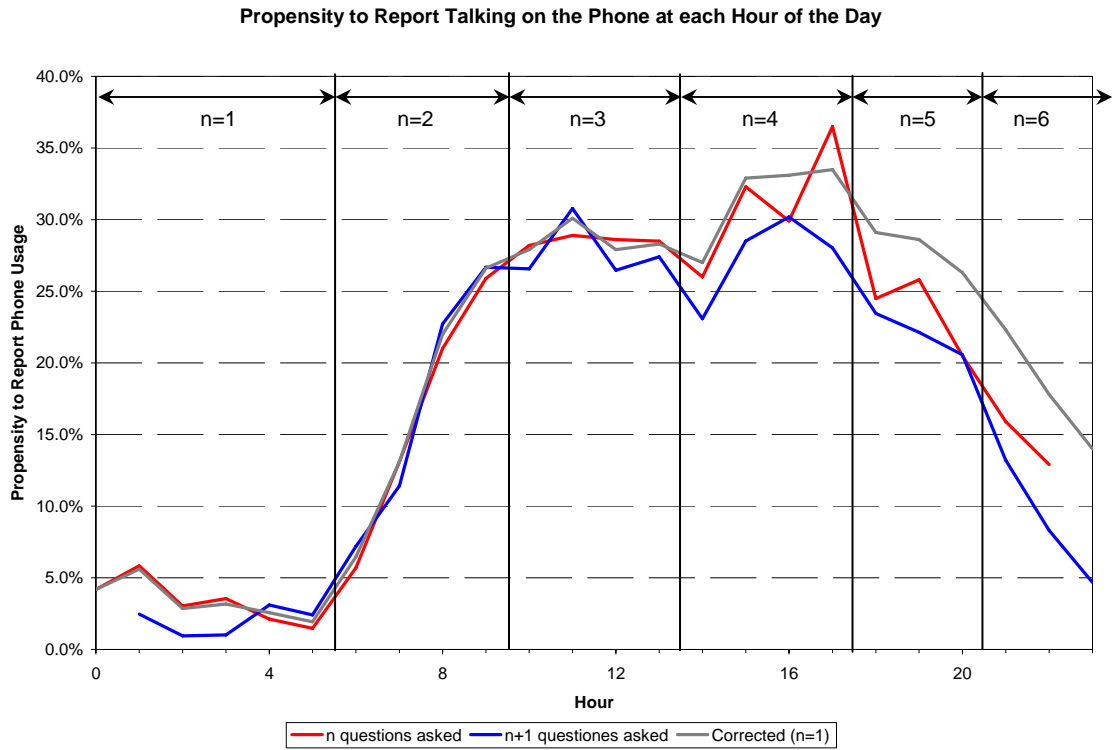
Figure 3: Propensity to report phone usage at each hour of the day, asked as an "early" or "late" hour.

Under- Reporting Phone Usage as Survey Progresses
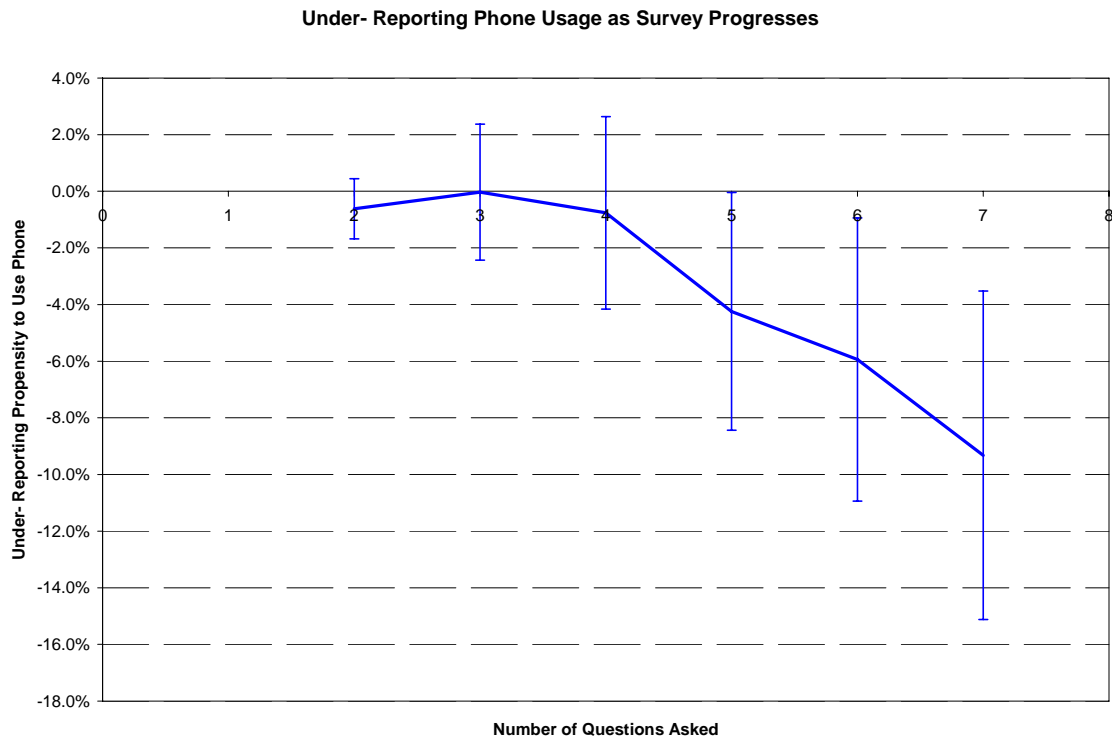
Figure 4: Under- Reporting of Phone Usage as the Survey Progresses

Propensity to Report being with Someone Else for each Hour of the Day
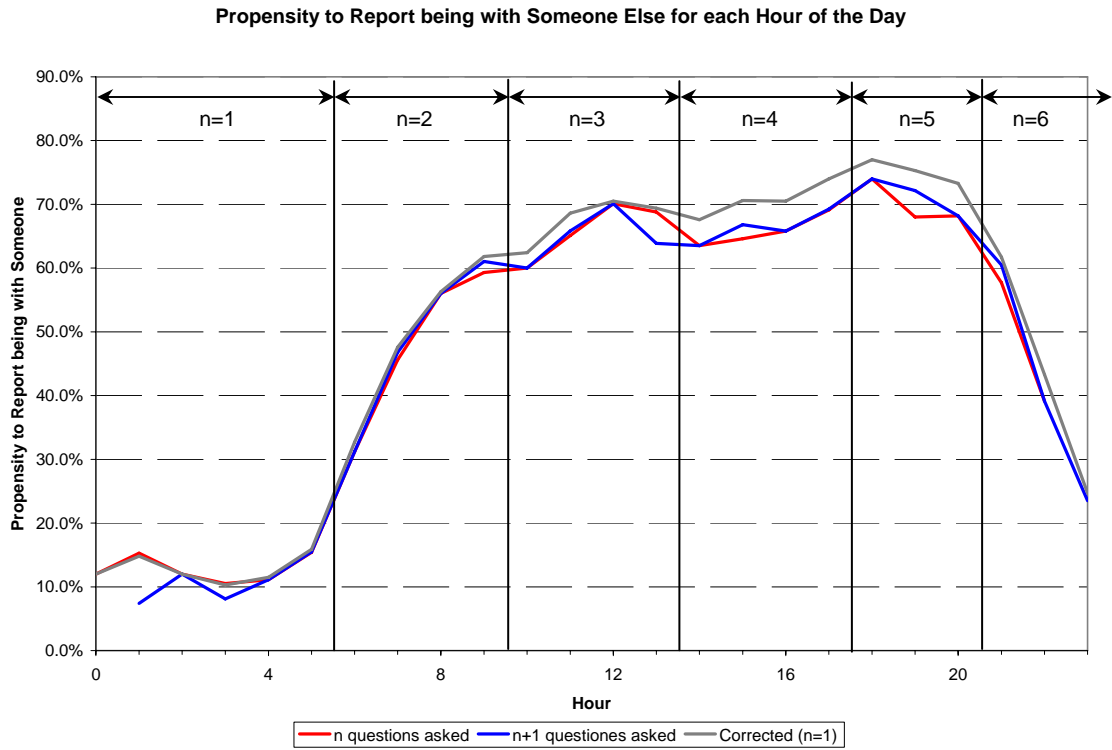
Figure 5: Propensity to report being with someone else at each hour of the day, asked as an "early" or "late" hour.

Under - Reporting being with Someone as Survey Progresses
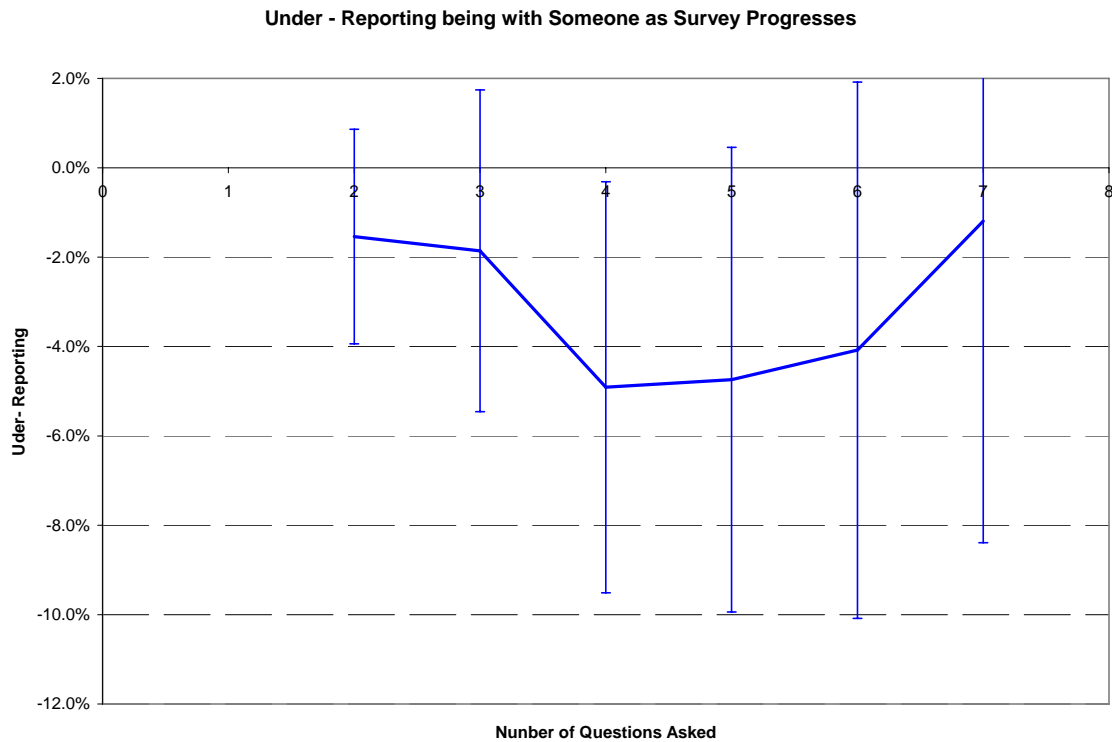
Figure 6: Under- Reporting of Being with Someone Else as the Survey Progresses
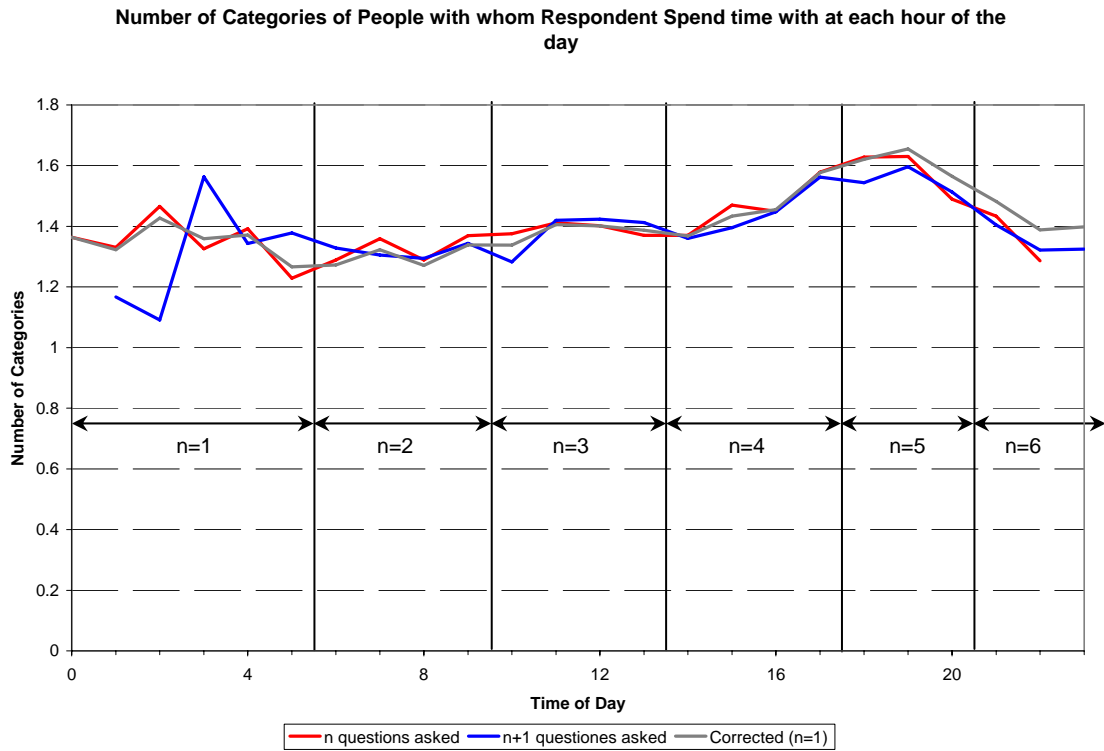
Figure 7: Number of categories of people with whom the respondent spent time with (for respondents who reported that someone else was in the room with them) at each hour of the day, asked as an "early" or "late" hour.

Under- Reporting the Number of Categories of people with whom Respondents Sepnt Time with as Survey Progresses
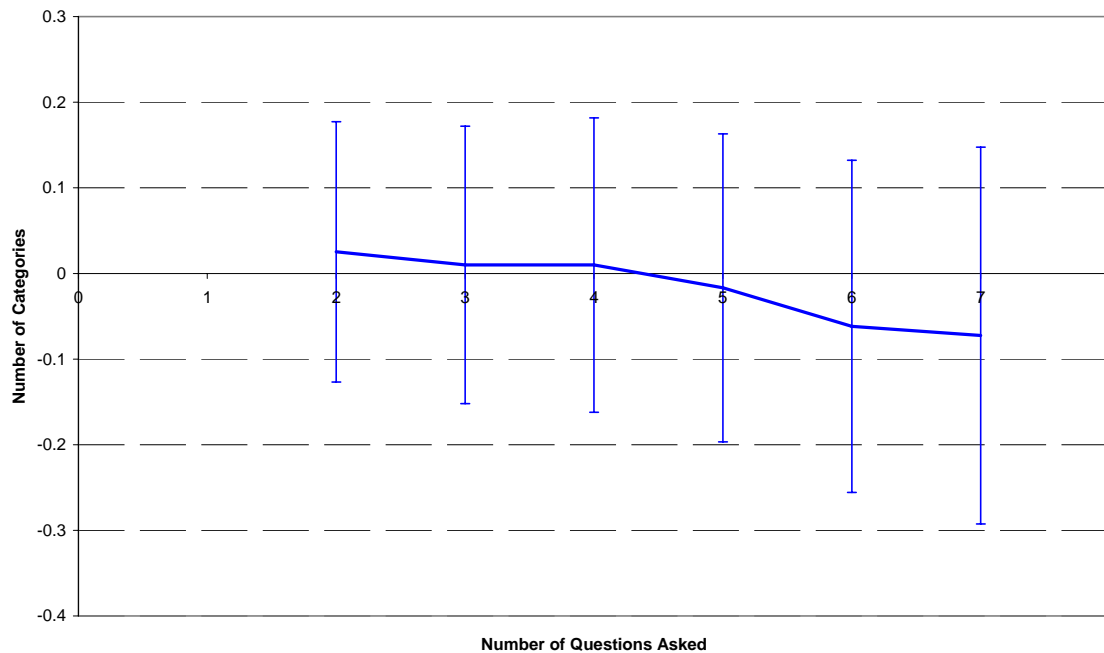
Figure 8: Under- reporting of number of categories of people with whom the respondent spent time (for respondents that reported someone else was in the room with them) as the survey progresses

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5. What Variables Affect Under- Reporting?

In this section we explore the determinants of under- reporting in time- use surveys; the effects of respondents' personal characteristics (age, gender, level of education, ethnic background, employment status), survey design parameters (day of the week being asked about, day of the week of filling the survey), and hybrids of both (the number of times a respondent has filled a time- use survey).

As explained in section 4, estimating equation (3) using the whole data (all respondents, for all hours of the day) is equivalent to assuming all questions have the same effect on under- reporting (each extra survey question causes the same amount of under- reporting, regardless of question order and time of day). The estimation yields an estimate of the average under- reporting associated with an extra survey question. The specification detailed in equation (4), has a similar structure of the effects of each additional survey question, but also includes respondents' demographics and additional characteristics, and more importantly, their interactions with the dummy for the $(n+1)^{th}$ hour:

$$(4) \qquad y_{it} = \sum_{t=0}^{23} \alpha_t D(hour)_{it} + \varphi D(late)_{it} + \sum \beta_j x_{ij} + \sum_{j \in J} \theta_j x_{ij} D(late)_{it} + \varepsilon_{it}$$

y_{it} is one of the dependent variables used (number of activities reported, propensity to talk on the phone, propensity to report someone else being in the room with the respondent, or the number of categories of people who were with the respondent), the β coefficients are the effects of each of the demographic and other personal characteristics x on the dependent variable, and the θ coefficients are the effects of the demographic and other personal characteristics on the propensity to under- report as the survey progresses.

The demographic and other personal characteristics included in x are:
- age and age squared (to allow for a more flexible effect).
- level of education completed, in four categories: less than high- school, high school or equivalent, some college, and Bachelor's degree or more.
- ethnic background, in five categories: non- Hispanic white, non- Hispanic black, other non- Hispanic, Hispanic, and mixed.
- marital status, in three categories: single (never married), single (divorced, separated or widowed), and married.
- day of the week during which the survey was completed.
- number of years the respondent has filled a time-use survey.

All personal characteristics were coded as dummies, except for age (and age squared). Regression results for all four dependent variables are provided in table 5 in appendix C. The reference group (the one for which the dummies were omitted) is single (never married) non- Hispanic white males who have not graduated from high- school, filled the survey on a Sunday, and were filling out this time- use survey for the first time.

5.1 Analysis of Regression Results: Number of Activities Reported

Time of day profile: The time of day profile is similar to the one shown in Figure 1.

Average effect of an extra survey question: An extra survey question lowers the number of activities reported by, on average, 0.07 activities (statistically significant only

at the 10% level). Considering the mean number of reported activities is around 1.3, and the survey length of being asked to report activities during seven hours, the effect adds up to being quite significant, similar to what is shown in Figure 2.

Age: The coefficients on age and age squared are not statistically significant. However, they show that the reported number of activities rises slightly with age.

Gender: Females report, on average, 0.054 activities per hour more than males, a finding which is statistically significant. Females also report more activities when being asked about their activities during a certain hour as a "late" hour in the survey, meaning that they get less "fatigued" as the survey progresses. This effect is also statistically significant, but only at the 5% level.

Education: In general, more educated respondents reported more activities. This effect is statistically significant only for owners of bachelors' degrees or higher. More educated respondents also reported more activities when asked to describe an hour as a "late" question in the survey, a finding which is statistically significant at the 10% level. The magnitude of this effect is equal to more than half of the effect of the extra survey question itself, meaning that under- reporting for the more educated (some college education and more) happens at a much lower scale than for less educated respondents (high school graduates and high school drop- outs).

Ethnicity: There are no statistically significant differences between the different ethnic groups in reporting the number of activities performed. Hispanics tend to report more activities than other ethnic groups when asked about a certain hour as a "late" question. This effect is statistically significant, and is almost as strong as the effect of the extra survey question itself, meaning that Hispanics, on average, did not get "fatigued" by filling the survey.

Marital status: There were no statistically significant effects of marital status on the number of activities reported, or on the tendency to under- report the number of activities.

Internet: There were no statistically significant differences between respondents living in households with an Internet connection and respondents that do not have Internet connection at home.[6] There were also no differences in their tendency to under-report the number of activities later in the survey.

Day of the week: Respondents reported more activities per hour on weekdays than on weekends. There were no statistically significant differences in the tendency to under-report on different days of the week.

Number of surveys filled: respondents who have filled out time-use surveys in previous years reported fewer activities per hour than first-time respondents. The effect is statistically significant (at the 1% level) only for staying on the panel for four years. There were no differences in the tendency to under-report the number of activities between respondents with different tenures in the panel.

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[6] This refers to those without a WebTV, as WebTV's interface and loading speed makes it less than ideal for regular Internet use.

5.2 Analysis of Regression Results: Reporting talking on the phone during activities

Time of day profile: The time of day profile is similar to the one shown in Figure 3.

Average effect of an extra survey question: Controlling for demographics and other characteristics makes the average effect of an extra survey question statistically insignificant.

Age: The coefficients on age and age squared are statistically significant and yield an inverted U shaped age profile, with the maximal phone usage at the age of 41.6 years.

Gender: Females report talking on the phone during other activities 4.2% more, on average, than males. The tendency to under-report talking on the phone has no gender-specific component.

Education: In general, more educated respondents reported talking on the phone during activities more than less educated respondents. This effect is statistically significant for respondents that have at least some college education. More educated respondents also reported talking on the phone more often when asked to describe an hour as a "late" question in the survey, a finding which is statistically significant only at the 10% level.

Ethnicity: Blacks and Hispanics reported talking on the phone more than non-Hispanic whites. There are almost no effects of ethnicity on the tendency to under-report phone usage later in the survey.

Marital status: Separated, divorced or widowed respondents reported talking on the phone slightly more than singles, and married respondents reported talking on the phone even less than singles. The differences are statistically significant at the 10% level only. There were no effects of marital status on the tendency to under-report phone usage when asked about a certain hour as a "late" hour in the survey.

Internet: Respondents living in households with an Internet connection reported talking on the phone during 3.8% more activities than respondents that did not have an internet connection at home, a finding which is statistically significant at the 1% level. There were no differences in their tendency to under- report phone usage later in the survey.

Day of the week: Respondents reported talking on the phone more on weekdays than on weekends. There were no statistically significant differences in the tendency to under- report on different days of the week.

Number of surveys filled: Respondents who filled out time-use surveys in previous years reported fewer activities per hour than those who did not. The effect is statistically significant (at the 1% level) for respondents starting from their second year on the panel. Respondent on their second year of filling the survey reported more phone usage than others when asked about a certain hour later in the survey, but respondents who were on the panel for more than two years under-reported later in the survey just as much as respondents for whom this was the first time to fill out such a survey.

5.3 Analysis of Regression Results: Was someone in the room with you?

Time of day profile: The time of day profile is similar to the one shown in Figure 5.

Average effect of an extra survey question: An extra survey question lowers, on average, a respondent's propensity to report having someone else in the room with them by 9.3%, statistically significant only at the 1% level. Once we control for demographics and other characteristics, the effect appears stronger than appears in Figure 6.

Age: The coefficients on age and age squared are statistically significant. As a respondent's age progresses, she is less likely to report having someone in the room with her during the hours about which she reports.

Gender: Females report having other people in the room with them during described hours of activity 1.7% more, on average, than males. The tendency to under-report having someone else in the room has no gender-specific component.

Education: Respondents' education has no statistically significant effect on the propensity to report having someone else in the room while they were performing activities. However, more educated respondents (in this case, high school graduates and up) were more likely to report having someone else in the room with them when asked to report their activities during an hour as a "late" question in the survey, a finding which is statistically significant at the 1% level.

Ethnicity: Hispanic respondents and those of mixed ethnicity were less likely to report having someone else in the room with them. There are no effects of ethnicity on the tendency to under- report having someone else in the room later in the survey.

Marital status: Married respondents were more likely to report having someone else in the room with them than single respondents. They were also more likely to report having someone else in the room with them when asked to report their activities during an hour as a "late" question in the survey. Both findings were statistically significant at the 1% level.

Internet: Respondents living in households with internet connection were more likely to report having someone else in the room with them than respondents with no internet connection at home. There were no differences in their tendency to report having someone else in the room with them later in the survey.

Day of the week: Respondents reported having someone else in the room with them more when filling the surveys on Mondays and Fridays (reporting about their activities during Sundays and Thursdays) than on other days of the week. There were no statistically significant differences in the tendency to under- report on different days of the week, except when filling the survey on a Friday. These findings are statistically significant at the 5% level, but do not seem to be big in value.

Number of surveys filled: respondents who have already filled time- use surveys in previous years were less likely to report having other people in the room with them, and this finding is only statistically significant (at the 5% level) for respondent who were filling out the survey for the third year. Filling the survey more than once has no significant effect on under- reporting later in the survey.

5.4 Analysis of Regression Results: Who was in the room with you (number of categories)[7]?

Time of day profile: similar to the one shown in Figure 7.

Average effect of an extra survey question: an extra survey question has no significant effect on the number of categories of different people respondents report having in the room with them, as is apparent on Figure 8. This may be due to the self-selected population who was asked this question, as was mentioned earlier.

Age: the coefficients on age and age squared are not statistically significant.

Gender: females report having more different categories of other people in the room with them during described hours of activity (6.8 %, significant at the 1% level). The tendency to under- report has no gender- specific component.

Education: educated respondents reported having more different categories of people in the room with them than less educated people. Education had no effect on the tendency to under- report later in the survey.

Ethnicity: there are no statistically significant differences between respondents of different ethnic groups, neither in terms of number of categories reported, nor in the tendency to under- report.

Marital status: Divorced, separated and widowed respondents reported having more different categories of people in the room with them than singles (statistically significant at the 5% level). Married respondents reported even more different categories of people with them (statistically significant at the 1% level). Arital status has no effect on the tendency to under- report later in the survey.

Internet: There are no significant differences between the number of categories of people reported by respondents who have an internet connection at home and number of categories of people reported by respondents who do not have internet connection at home. There were also no significant differences in the tendency to under- report later in the survey.

Day of the week: Respondents reported having more different categories of people in the room with them on Monday (when asked about Sunday) than on Sunday (when asked about Saturday), and fewer categories on other days of the week than on Sunday. These findings are all significant at the 1% level. There was significant (at the 1% level) under- reporting on Mondays (when asked about Sundays), and on Thursdays (when asked about Wednesday, significant at the 5% level).

Number of surveys filled: There were no statistically significant differences in the number of categories of people reported by respondents that have filled the survey different number of times. However, respondents who were filling the survey for the fourth time were more likely to under- report the number of categories of people who were in the room with them, when asked about a certain hour later in the survey.

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[7] Only respondents who have reported having other people in the room with them while they were performing activities were asked who was in the room with them.

6. Discussion and Conclusions

We observe some form of survey fatigue in three of our four measures; at some point in the survey, respondents who have answered more questions overall begin to report fewer activities, less instances in which they were on the phone, and, to a lesser extent, fewer instances in which someone was with them. In some cases, under-reporting begins during the second block of questions, and by the time respondents reach the end of the seven block survey, estimates for some activities might be biased by as much as fifty percent. Sharp and Frankel (1983) found that length of interview was not related to item refusal or item non-response rate; however, we find that although respondents may choose to answer a given question, length may affect the quality of data reported by those respondents.

Number of activities and instances on the phone show the largest effects; in both cases, respondents can easily manipulate their answers without changing their response profile significantly. For example, by simply overestimating the amount of time spent on an activity by ten minutes, respondents can avoid having to describe another activity, cutting several questions from the survey (follow-up questions about their specific activity, whether anyone was with them, whether they used the Internet, and so on.) With regard to phone use, this question may seem incidental (as it comes toward the end of a series of questions about the activity), and a negative response is an easy way to avoid an extra question. Since respondents may try to guess at what is important survey administrators and respond accordingly (Krosnick 1999), the nature of this question may encourage under-reporting, as it seems unrelated to the series of queries about the specific activity and does not seem likely to the focus of the research.

We see lower incidences of under-reporting for questions about if anyone was with the respondents when they performed their selected activities. This may be an effect of social desirability in that people are reluctant to portray themselves as spending much of their time alone. In fact, we see that married people, who likely expect to be alone less often, under-report spending time with others significantly less than unmarried individuals.

Finally, we see no significant under-reporting for who was with the respondent during the activity (if they reported that someone was with them). This may be due to the difference between this variable and our previous dependent variables: only respondents that reported having someone else in the room with them while they were performing their activities were asked to describe who was in the room with them. As this is a follow-up question which can be avoided by reporting not having anyone else in the room, we might expect respondents who decided not to avoid the question not to be as likely to under-report. In other words, responders that were likely to under-report when answering this question have probably under-reported having someone in the room with them, and avoided this question altogether.

Our findings suggest that while personal characteristics such as gender, marital status and ethnicity may affect the activity profile of respondents over the day, they usually have little impact on respondents' tendency to under-report activities later in the survey. With regard to gender, we find that females are slightly less likely to under-report activities, but no different from males in their likelihood of reporting talking on the phone or someone else being in the room with them. Porter, Whitcomb, and Weitzer (2004) found that survey fatigue did not affect males and females differently, supporting

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our finding that overall, men and women tend to experience survey fatigue similarly. We find that like females, Hispanics are slightly less likely to under-report activities, but no different from other ethnicities in their likelihood of reporting talking on the phone or someone else being in the room with them.

Our most notable findings concerned the respondents' level of education. More educated individuals were less likely to under-report activities, talking on the phone, and/or others being with them at later stages of the survey. This is supported by previous research, which suggests that education does affect survey response (Narayan and Krosnick 1996.) In particular, Narayan and Krosnick (1996) suggest that highly educated respondents are less likely to satisfice than those with less education.

When considering longitudinal respondents who have participated in our survey in previous years, we find that although the number of times a respondent has taken the time-use survey has an adverse effect on the quality of answers they provide, it has no effect on under-reporting. In other words, these respondents tend to report fewer activities from the start of the survey, but the number of activities provided does not decrease faster than new respondents as the survey progresses. This requires further exploration to determine whether these respondents reported fewer activities in their first iteration of the study as well. Whether these individuals are satisficing or actually do participate in fewer activities, the time it takes to complete the survey is reduced for these individuals. It may be that for these individuals, survey research is less burdensome and therefore more appealing, encouraging them to stay on the survey panel.

Finally, one of our most interesting findings is the dramatic under-reporting at 1:00 am for respondents who were asked about both midnight and 1:00 am. In other words, the first two hours these respondents received were sequential. Although respondents are told at the start of the survey that they will only be asked about seven hours of the day, it may be that these respondents perceive the survey will be a greater burden than expected and respond by extinguishing data. Apodaca, Lea, and Edwards (nd) found that perceived respondent burden (longitudinal, in their case) reduced response rate. In our case, it may be that perceived burden of the particular survey dramatically increases when respondents receive the first two hours of the day, which may suggest that they will be asked about all hours of the day. Indeed, we do not see such effect for respondents asked about midnight and 2:00 am. This finding has important implications for 24-hour time diaries, in which respondents actually are asked about each sequential hour of the day. If respondents react to what initially appears to be a 24-hour time diary by deliberately reducing the amount of data they give as early as the second hour of the survey, the effects for hours later in the survey would no doubt be dramatic.

The extent of respondents' survey fatigue at late stages in the survey, resulting in under- reporting of activities, is significant both statistically and substantively. Even in a short time- use survey, in which respondents are asked to describe their activities during only 7 randomly selected hours in the previous day, the accuracy of the data obtained late in the survey is degraded significantly. Under- reporting happens also early in the survey, especially when respondents are asked to describe consecutive hours. Full 24- hour time diaries most probably suffer from similar, or even greater under- reporting, due to the increased respondent burden, be it real or perceived. The significant findings of under-reporting in a short time- use survey suggest that researchers designing and using data obtained from full 24 hour time- diaries should take into account potential large scale

under- reporting of activities. Our methodology of estimating the extent of under-reporting at different stages in the survey could easily be implemented in a full 24 hours time- diary survey.

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Table 1: Descriptive Statistics

Continuous \ Dummy Variables:

	Mean	Std. Dev.	Min	Max
Age	47.80	14.37	17	75
D_female	0.520	0.500	0	1
HH has internet connection	0.644	0.479	0	1
Years on Panel	2.07	1.099	1	4

Categorical Variables:

Education:

	Number	Percent	Cumulative Percentage
Less than high school	493	9.89%	9.89%
High school or equivalent	1515	30.40%	40.29%
Some college	1491	29.92%	70.20%
Bachelor's degree or higher	1485	29.80%	100.00%

Ethnicity:

	Number	Percent	Cumulative Percentage
White, non-Hispanic	3880	77.85	77.85%
Black, non-Hispanic	416	8.35	86.20%
Other, non-Hispanic	178	3.57%	89.77%
Hispanic	376	7.54%	97.31%
2+ races, non-Hispanic	134	2.69%	100.00%

Employment Status:

	Number	Percent	Cumulative Percentage
Unemployed, on leave, retired	1013	20.33%	20.33%
Student	399	8.01%	28.33%
Working part time	604	12.12%	40.45%
Working full time	2499	50.14%	90.59%

Homemaker	469	9.41%	100.00%

Marital Status:

	Number	Percent	Cumulative Percentage
Single, never married	1012	20.30%	20.30%
Separated, divorced, widowed	977	19.60%	39.91%
Married	2995	60.09%	100.00%

Total number of people age 18-75 who responded to the survey: 4984.
Survey response rate: ???%

Appendix A - Balanced Sampling of 7th Hour

This appendix demonstrates that the random mechanism used for assigning respondents with the additional hour resulted in a balanced sample, meaning that the characteristics of those who were asked to report their activities for each hour as an "early" hour resemble (on the observable demographic variables) to those who were asked to report their activities during the same hour as a "late" hour.

Survey Design - number of respondents for each hour of the day
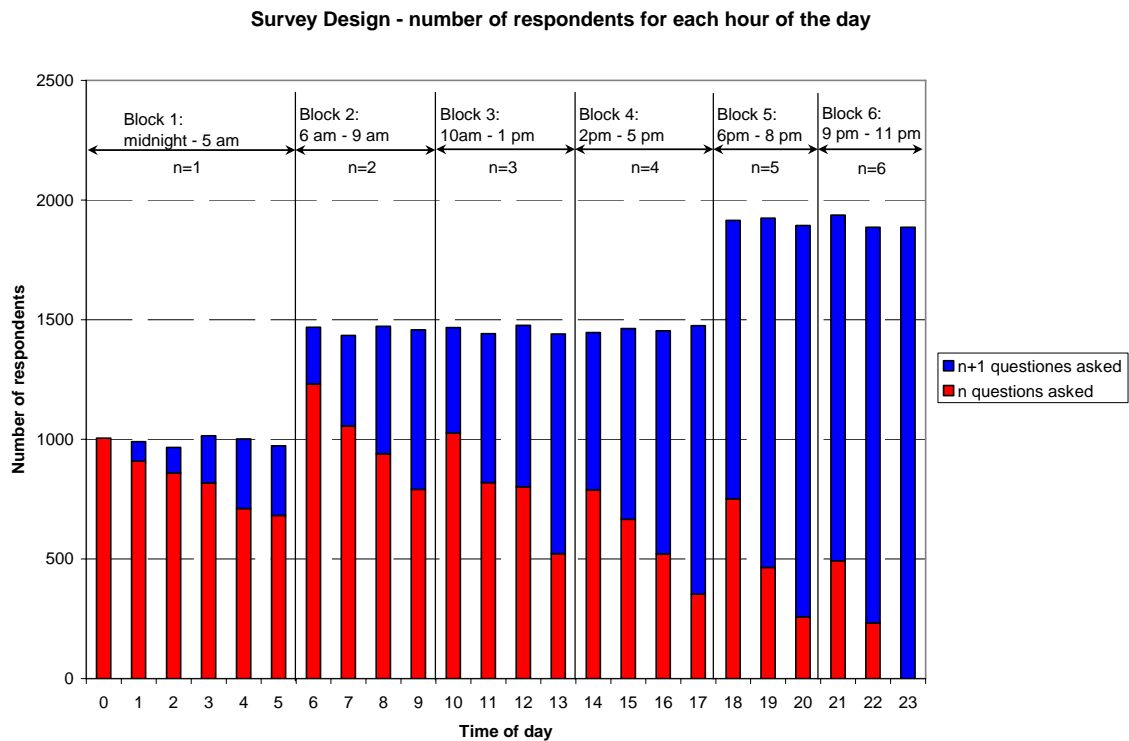
Figure A.1: Number of respondents asked to report their activities for each hour of the day, by "early" or "late" hour

As figure A.1 shows, the number of respondents who were asked to report their activities is well balanced within each time block. The 7th hour sample design, which means that each respondent was assigned one extra hour out of one of the time blocks, is apparent in the chart: The first hour (midnight - 1 am), is always answered as an early hour, by design. Similarly, the last hour (11 pm - midnight) is always asked as a late hour. The later it is in the day, the higher the probability that a respondent was already asked to report their activities in two hours of the same block earlier, thus making them more probable to be reporting about the hour as a late one.

Figures A. XXX - A. XXX show that the random assignment of "early" and "late" hours did not affect the demographic characteristics of the respondents that were asked to report about their activities in different hours of the day. We report means of categorical variables (such as marital status, employment status, ethnic background) to economize on space. In all graphs, the red lines represent characteristics of respondents who were asked

to report about their activities at this hour as an "early" hour, and the blue lines represent characteristics of respondent who were asked to report about their activities during this hour as a "late" hour.
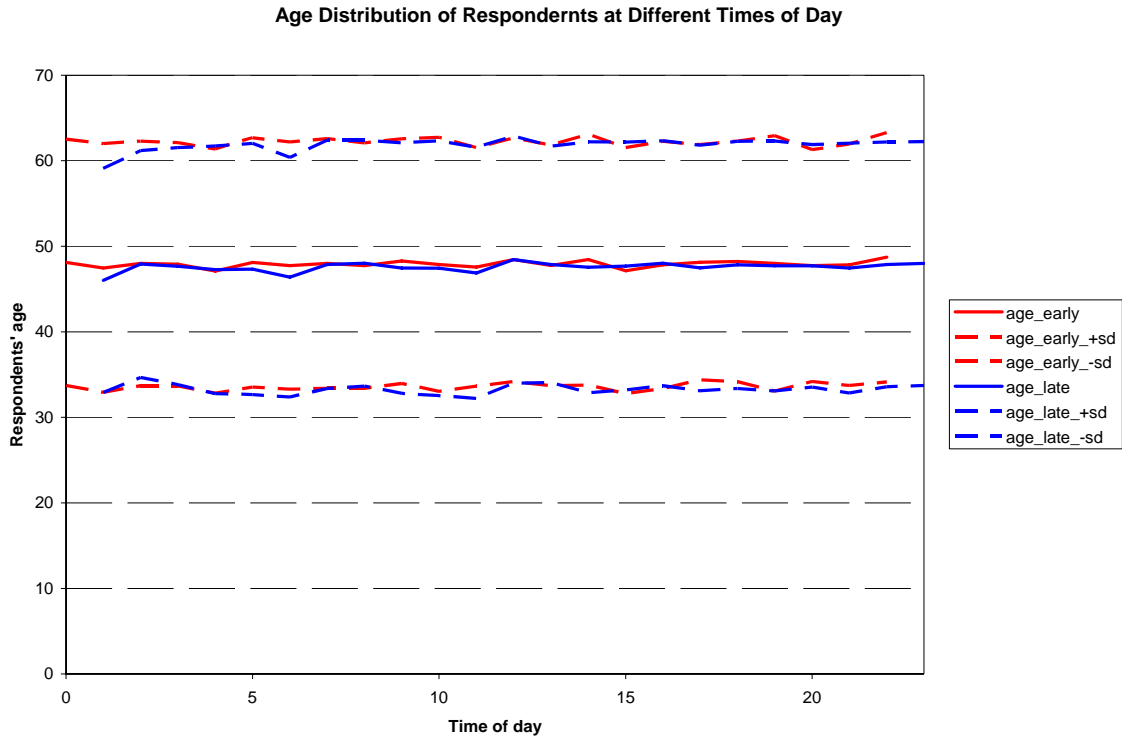
Figure A.2: Age distribution of respondents at different times of day. The continuous lines represent the mean age, and the dashed lines represent 1 standard deviation in each direction.

% Female Respondernts
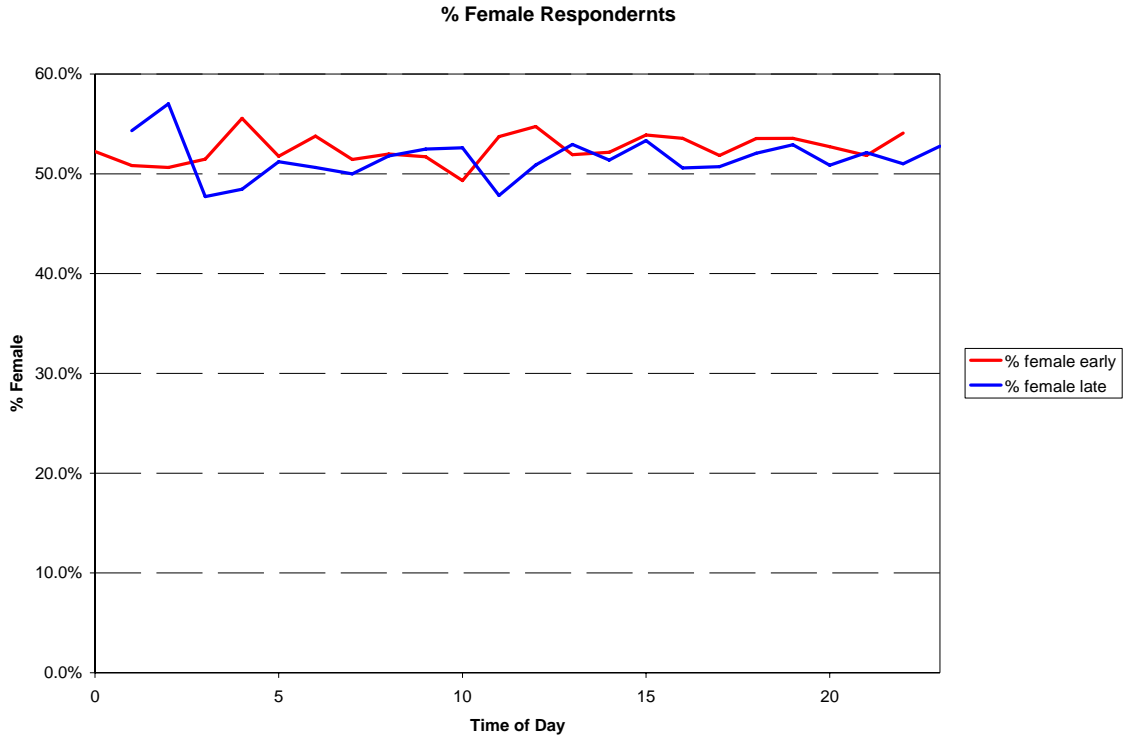
Figure A.3: Percentage of females out of all respondents at each hour of the day.

Education (category) of respondents in different hours of the day
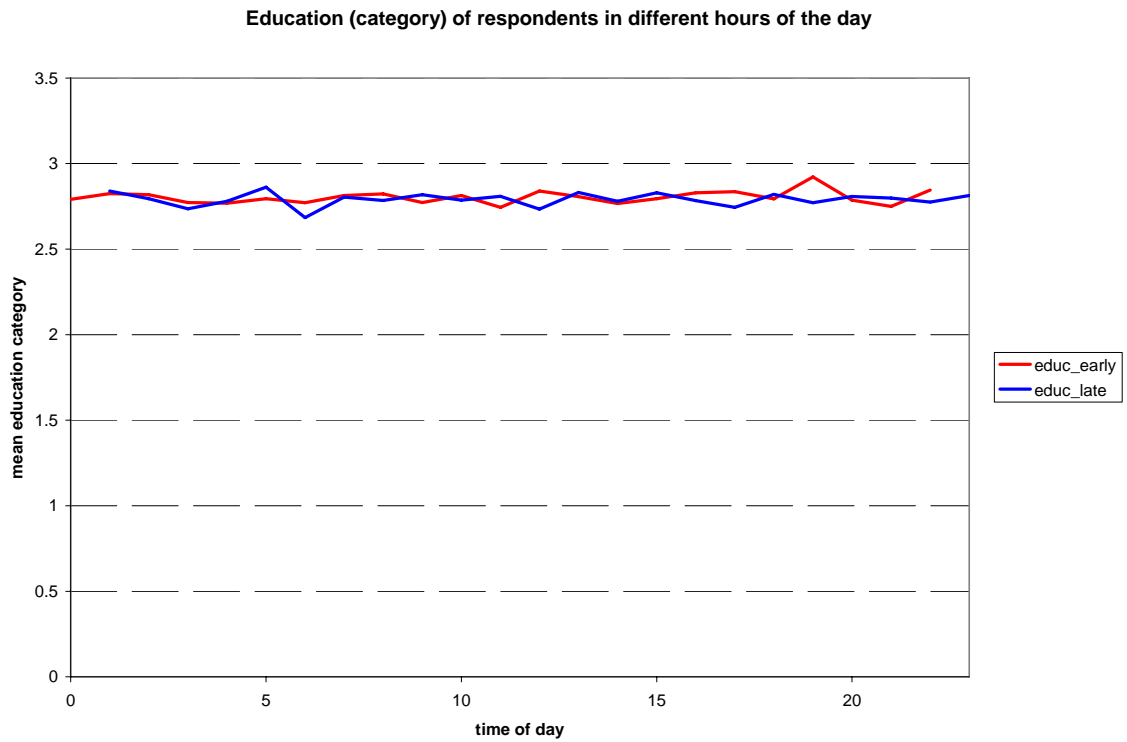
Figure A.4: Education level of respondents at each hour of the day. Numbers presented are the mean of the education category. Categories are: 1. Less than high school. 2. High School or equivalent. 3. Some college. 4. Bachelor's degree or higher.

Mean Number of Years on Panel
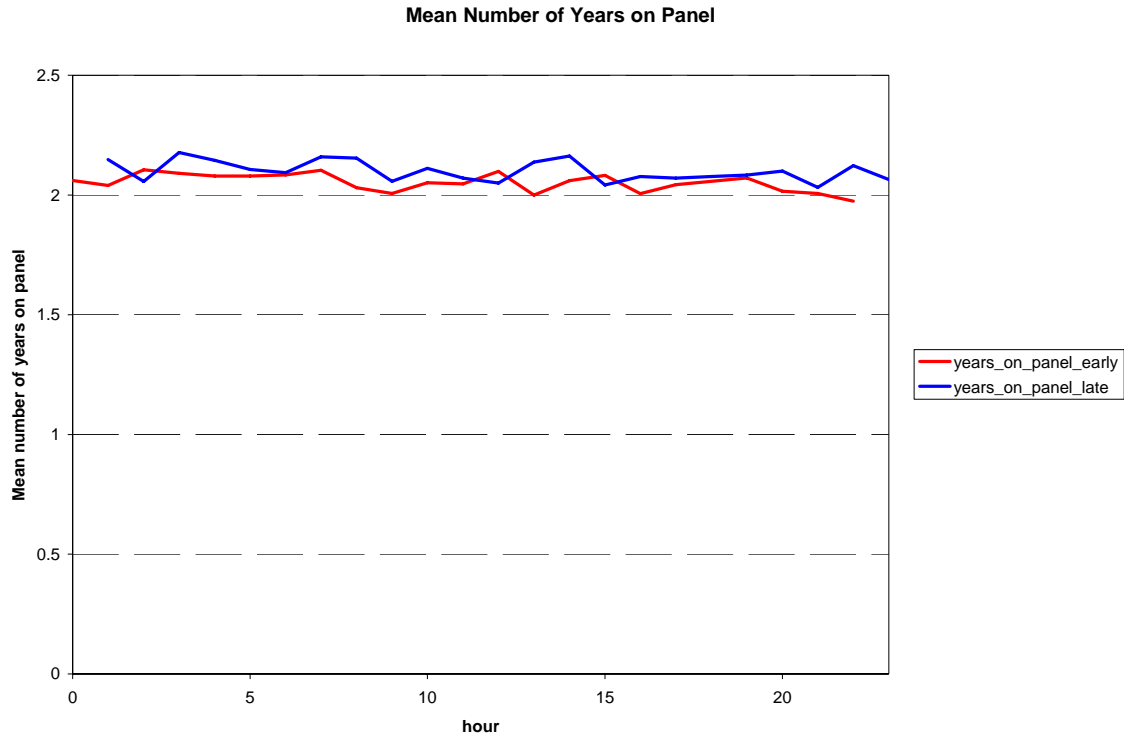
Figure A.5: Mean number of years on the panel for respondents at each hour of the day.

Marital Status (Category) for Respondents at Each Hour of the Day
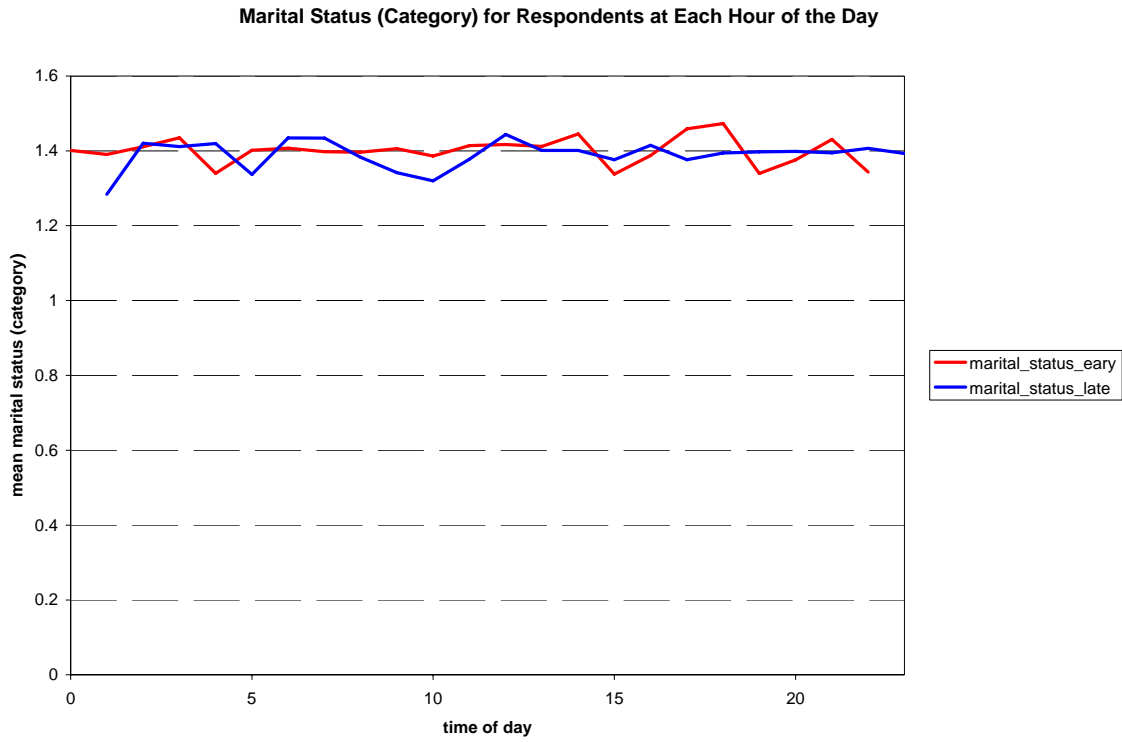
Figure A.6: Marital Status of respondents at each hour of the day. Numbers Presented are the mean of the marital status category. Categories are: 1. Single, never married. 2. Separated, Divorced, Widowed. 3. Married.

Appendix B - Survey Questions

1. Main Diary Question

First, we would like to know about all the things you did between [*START time*] and [*END time*] YESTERDAY. What was the MAIN thing you were doing at [*START time*] YESTERDAY? People often do several activities at the same time, but please select what you consider to be your PRIMARY activity.

Please click on (?) to view category definition.
 [single select]

[if time is 12am please put "12:00am(midnight)" and if 12pm put "12:00pm(noon)"]
 [these activities should NOT be rotated or randomized]

- ❑ Work for Pay, Job Search (?)
- ❑ Education, Schoolwork (?)
- ❑ Housework, Cooking, Household Repair (?)
- ❑ Errands, Shopping, Finances (?)
- ❑ Child Care, Parenting (?)
- ❑ TV, Video, Music (?)
- ❑ Social Activity (in person, on phone, etc.) (?)
- ❑ Recreation, Hobby, Sport (?)
- ❑ Reading (?)
- ❑ Church, Organizations, Club (?)
- ❑ Internet, Email, Other Internet Communication (?)
- ❑ Sleep, Nap, Doze (?)
- ❑ Intimate relations, Sex (?)
- ❑ Wash, Dress, Groom (?)
- ❑ Eat Meal, Snack (?)
- ❑ Travel, Commute, Wait at the Airport (?)
- ❑ Other (please specify) [textbox]

Starting at *[start time],* **how long** did this activity last before you started a new activity? Please think in time blocks of 60 minutes or less.
[single select]

- ❑ About 10 minutes or less
- ❑ About 20 minutes
- ❑ About 30 minutes
- ❑ About 40 minutes
- ❑ About 50 minutes
- ❑ About 60 minutes or more

2. Phone Usage Question

Between [*START time*] and [*END time*], **how much time, if any,** did you spend making or receiving phone calls?

- ❑ I did not make or receive phone calls
- ❑ I spent *[write in text box]* minutes making or receiving phone calls

If respondent made or received phone calls:

Which device did you use to make or receive phone calls during this activity?

- ❑ Land-line phone
- ❑ Cell phone
- ❑ Both land-line and cell phone
- ❑ Neither of them

3. Other People's Presence

Was anyone with you while you were doing this activity?

Select ONE answer only

- ❑ NO, I was alone
- ❑ PARTLY, other people were there, but did not participate with me
- ❑ YES, others participated in this activity with me

If respondent answered "Partly" or "Yes", ask:

Who was with you?

Select ALL answers that apply

- ❑ Spouse, significant other, special partner
- ❑ Children
- ❑ Parents
- ❑ Other family, relative
- ❑ Friends
- ❑ Roommates
- ❑ Neighbors
- ❑ Business associates, co-workers
- ❑ Client, customer, student, patient
- ❑ Acquaintances
- ❑ Attendant/Waiter/Server
- ❑ Strangers
- ❑ Others (should not have text box)

Appendix C - Linear Regression Tables

Table C.1: Number of different activities (10 minute segments) reported

COEFFICIENT	(1) num_resp	(2) num_resp	(3) num_resp
D_hour_0	1.125***	1.125***	1.125***
	(0.014)	(0.014)	(0.014)
D_hour_1	1.141***	1.133***	1.134***
	(0.014)	(0.013)	(0.013)
D_hour_2	1.113***	1.112***	1.113***
	(0.016)	(0.015)	(0.015)
D_hour_3	1.100***	1.100***	1.102***
	(0.014)	(0.013)	(0.012)
D_hour_4	1.150***	1.149***	1.152***
	(0.017)	(0.015)	(0.014)
D_hour_5	1.274***	1.287***	1.290***
	(0.024)	(0.021)	(0.020)
D_hour_6	1.485***	1.514***	1.485***
	(0.021)	(0.026)	(0.020)
D_hour_7	1.708***	1.718***	1.685***
	(0.027)	(0.029)	(0.022)
D_hour_8	1.619***	1.632***	1.595***
	(0.026)	(0.028)	(0.021)
D_hour_9	1.532***	1.571***	1.529***
	(0.027)	(0.028)	(0.020)
D_hour_10	1.379***	1.459***	1.366***
	(0.020)	(0.033)	(0.016)
D_hour_11	1.387***	1.479***	1.388***
	(0.023)	(0.034)	(0.017)
D_hour_12	1.473***	1.594***	1.503***
	(0.023)	(0.034)	(0.017)
D_hour_13	1.377***	1.478***	1.389***
	(0.027)	(0.035)	(0.017)
D_hour_14	1.345***	1.466***	1.341***
	(0.022)	(0.038)	(0.016)
D_hour_15	1.432***	1.532***	1.405***
	(0.026)	(0.038)	(0.017)
D_hour_16	1.474***	1.595***	1.467***
	(0.029)	(0.039)	(0.018)
D_hour_17	1.581***	1.714***	1.584***
	(0.038)	(0.040)	(0.019)
D_hour_18	1.521***	1.693***	1.529***
	(0.024)	(0.042)	(0.016)
D_hour_19	1.424***	1.601***	1.438***
	(0.027)	(0.043)	(0.015)
D_hour_20	1.407***	1.540***	1.378***
	(0.040)	(0.044)	(0.015)
D_hour_21	1.319***	1.493***	1.354***

	(0.025)	(0.047)	(0.015)
D_hour_22	1.249***	1.486***	1.358***
	(0.033)	(0.049)	(0.016)
D_hour_23	1.240***	1.392***	1.272***
	(0.012)	(0.050)	(0.014)
X_i_hour_1	-0.116***		
	(0.022)		
X_i_hour_2	-0.0288		
	(0.055)		
X_i_hour_3	-0.0241		
	(0.025)		
X_i_hour_4	-0.0268		
	(0.030)		
X_i_hour_5	0.0213		
	(0.044)		
X_i_hour_6	-0.0335		
	(0.052)		
X_i_hour_7	-0.121**		
	(0.048)		
X_i_hour_8	-0.0990**		
	(0.042)		
X_i_hour_9	-0.0390		
	(0.040)		
X_i_hour_10	-0.0753**		
	(0.035)		
X_i_hour_11	-0.0307		
	(0.034)		
X_i_hour_12	0.0334		
	(0.034)		
X_i_hour_13	-0.0146		
	(0.034)		
X_i_hour_14	-0.0412		
	(0.031)		
X_i_hour_15	-0.0824**		
	(0.034)		
X_i_hour_16	-0.0443		
	(0.036)		
X_i_hour_17	-0.0282		
	(0.043)		
X_i_hour_18	-0.0181		
	(0.031)		
X_i_hour_19	-0.0131		
	(0.032)		
X_i_hour_20	-0.0665		
	(0.043)		
X_i_hour_21	0.0145		
	(0.030)		
X_i_hour_22	0.0917**		
	(0.036)		
D_ord_2		-0.0222	
		(0.017)	

D_ord_3		-0.0969***	
		(0.028)	
D_ord_4		-0.117***	
		(0.033)	
D_ord_5		-0.167***	
		(0.038)	
D_ord_6		-0.194***	
		(0.043)	
D_ord_7		-0.152***	
		(0.048)	
D_late			-0.0325***
			(0.0082)
Observations	34888	34888	34888
R^2	0.83	0.83	0.83

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table C.2: Did the respondent talk on the phone?

COEFFICIENT	(1) phone	(2) phone	(3) phone
D_hour_0	0.0418***	0.0418***	0.0418***
	(0.0063)	(0.0063)	(0.0063)
D_hour_1	0.0583***	0.0561***	0.0567***
	(0.0078)	(0.0073)	(0.0073)
D_hour_2	0.0303***	0.0286***	0.0296***
	(0.0058)	(0.0054)	(0.0053)
D_hour_3	0.0355***	0.0317***	0.0334***
	(0.0065)	(0.0057)	(0.0055)
D_hour_4	0.0211***	0.0257***	0.0282***
	(0.0054)	(0.0049)	(0.0050)
D_hour_5	0.0147***	0.0193***	0.0218***
	(0.0046)	(0.0043)	(0.0045)
D_hour_6	0.0569***	0.0645***	0.0616***
	(0.0066)	(0.0083)	(0.0062)
D_hour_7	0.131***	0.131***	0.130***
	(0.010)	(0.011)	(0.0089)
D_hour_8	0.210***	0.220***	0.221***
	(0.013)	(0.013)	(0.011)
D_hour_9	0.259***	0.266***	0.269***
	(0.016)	(0.014)	(0.012)
D_hour_10	0.282***	0.279***	0.281***
	(0.014)	(0.017)	(0.012)
D_hour_11	0.289***	0.301***	0.304***
	(0.016)	(0.018)	(0.012)
D_hour_12	0.286***	0.279***	0.282***
	(0.016)	(0.018)	(0.012)
D_hour_13	0.285***	0.283***	0.288***
	(0.020)	(0.019)	(0.012)

D_hour_14	0.260***	0.270***	0.254***
	(0.016)	(0.022)	(0.012)
D_hour_15	0.323***	0.329***	0.310***
	(0.018)	(0.022)	(0.012)
D_hour_16	0.299***	0.331***	0.311***
	(0.020)	(0.023)	(0.012)
D_hour_17	0.365***	0.335***	0.312***
	(0.026)	(0.023)	(0.013)
D_hour_18	0.245***	0.291***	0.248***
	(0.016)	(0.025)	(0.010)
D_hour_19	0.258***	0.286***	0.241***
	(0.020)	(0.026)	(0.010)
D_hour_20	0.205***	0.263***	0.219***
	(0.025)	(0.026)	(0.010)
D_hour_21	0.159***	0.223***	0.149***
	(0.016)	(0.029)	(0.0088)
D_hour_22	0.129***	0.178***	0.101***
	(0.022)	(0.029)	(0.0080)
D_hour_23	0.0467***	0.140***	0.0612***
	(0.0049)	(0.029)	(0.0070)
X_i_hour_1	-0.0336*		
	(0.019)		
X_i_hour_2	-0.0209*		
	(0.011)		
X_i_hour_3	-0.0253***		
	(0.0096)		
X_i_hour_4	0.00983		
	(0.011)		
X_i_hour_5	0.00939		
	(0.010)		
X_i_hour_6	0.0149		
	(0.018)		
X_i_hour_7	-0.0169		
	(0.019)		
X_i_hour_8	0.0172		
	(0.023)		
X_i_hour_9	0.00770		
	(0.023)		
X_i_hour_10	-0.0164		
	(0.025)		
X_i_hour_11	0.0188		
	(0.024)		
X_i_hour_12	-0.0214		
	(0.023)		
X_i_hour_13	-0.0109		
	(0.025)		
X_i_hour_14	-0.0291		
	(0.023)		
X_i_hour_15	-0.0380		
	(0.024)		
X_i_hour_16	0.00283		

	(0.025)		
X_i_hour_17	-0.0847***		
	(0.029)		
X_i_hour_18	-0.0105		
	(0.020)		
X_i_hour_19	-0.0367		
	(0.023)		
X_i_hour_20	0.000564		
	(0.027)		
X_i_hour_21	-0.0270		
	(0.019)		
X_i_hour_22	-0.0459**		
	(0.023)		
D_ord_2		-0.00618	
		(0.0053)	
D_ord_3		-0.000336	
		(0.012)	
D_ord_4		-0.00760	
		(0.017)	
D_ord_5		-0.0424**	
		(0.021)	
D_ord_6		-0.0594**	
		(0.025)	
D_ord_7		-0.0932***	
		(0.029)	
D_late			-0.0146***
			(0.0051)
Observations	34888	34888	34888
R^2	0.24	0.24	0.24

<center>Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1</center>

Table C.3: Was anyone else in the room with the respondent?

COEFFICIENT	(1) with_someone	(2) with_someone	(3) with_someone
D_hour_0	0.120***	0.120***	0.120***
	(0.010)	(0.010)	(0.010)
D_hour_1	0.153***	0.148***	0.147***
	(0.012)	(0.011)	(0.011)
D_hour_2	0.120***	0.120***	0.119***
	(0.011)	(0.010)	(0.010)
D_hour_3	0.105***	0.103***	0.101***
	(0.011)	(0.0098)	(0.0095)
D_hour_4	0.111***	0.115***	0.112***
	(0.012)	(0.010)	(0.010)
D_hour_5	0.154***	0.159***	0.156***
	(0.014)	(0.012)	(0.012)
D_hour_6	0.312***	0.327***	0.312***
	(0.013)	(0.017)	(0.012)

D_hour_7	0.456***	0.476***	0.461***
	(0.015)	(0.018)	(0.013)
D_hour_8	0.560***	0.563***	0.549***
	(0.016)	(0.018)	(0.013)
D_hour_9	0.593***	0.618***	0.603***
	(0.017)	(0.019)	(0.013)
D_hour_10	0.600***	0.624***	0.597***
	(0.015)	(0.023)	(0.013)
D_hour_11	0.651***	0.686***	0.656***
	(0.017)	(0.023)	(0.013)
D_hour_12	0.701***	0.705***	0.674***
	(0.016)	(0.023)	(0.012)
D_hour_13	0.688***	0.694***	0.659***
	(0.020)	(0.024)	(0.013)
D_hour_14	0.635***	0.676***	0.630***
	(0.017)	(0.027)	(0.013)
D_hour_15	0.646***	0.706***	0.660***
	(0.019)	(0.027)	(0.013)
D_hour_16	0.658***	0.705***	0.660***
	(0.021)	(0.027)	(0.013)
D_hour_17	0.691***	0.740***	0.696***
	(0.025)	(0.027)	(0.013)
D_hour_18	0.740***	0.770***	0.730***
	(0.016)	(0.029)	(0.011)
D_hour_19	0.680***	0.753***	0.715***
	(0.022)	(0.030)	(0.011)
D_hour_20	0.682***	0.733***	0.695***
	(0.029)	(0.031)	(0.012)
D_hour_21	0.577***	0.617***	0.602***
	(0.022)	(0.035)	(0.012)
D_hour_22	0.391***	0.433***	0.422***
	(0.032)	(0.036)	(0.012)
D_hour_23	0.235***	0.247***	0.240***
	(0.0098)	(0.037)	(0.011)
X_i_hour_1	-0.0788**		
	(0.031)		
X_i_hour_2	-0.0171		
	(0.031)		
X_i_hour_3	-0.0239		
	(0.022)		
X_i_hour_4	-0.00115		
	(0.022)		
X_i_hour_5	0.000680		
	(0.025)		
X_i_hour_6	-0.00392		
	(0.033)		
X_i_hour_7	0.0118		
	(0.030)		
X_i_hour_8	-0.0367		
	(0.027)		
X_i_hour_9	0.0173		

	(0.026)		
X_i_hour_10	-0.0154		
	(0.028)		
X_i_hour_11	0.00731		
	(0.025)		
X_i_hour_12	-0.0628**		
	(0.025)		
X_i_hour_13	-0.0494*		
	(0.026)		
X_i_hour_14	-0.0145		
	(0.026)		
X_i_hour_15	0.0219		
	(0.025)		
X_i_hour_16	-0.00240		
	(0.026)		
X_i_hour_17	0.00130		
	(0.028)		
X_i_hour_18	-0.0221		
	(0.021)		
X_i_hour_19	0.0415*		
	(0.025)		
X_i_hour_20	0.0104		
	(0.031)		
X_i_hour_21	0.0276		
	(0.026)		
X_i_hour_22	0.0311		
	(0.034)		
D_ord_2		-0.0154	
		(0.012)	
D_ord_3		-0.0186	
		(0.018)	
D_ord_4		-0.0491**	
		(0.023)	
D_ord_5		-0.0474*	
		(0.026)	
D_ord_6		-0.0408	
		(0.030)	
D_ord_7		-0.0119	
		(0.036)	
D_late			-0.00501
			(0.0058)
Observations	34888	34888	34888
R^2	0.60	0.60	0.60

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table C.4: Number of categories of people that were in the room with the respondent

COEFFICIENT	(1) num_cat_with	(2) num_cat_with	(3) num_cat_with
D_hour_0	1.364***	1.364***	1.364***
	(0.072)	(0.072)	(0.072)
D_hour_1	1.331***	1.323***	1.325***
	(0.054)	(0.053)	(0.052)
D_hour_2	1.466***	1.427***	1.432***
	(0.079)	(0.073)	(0.072)
D_hour_3	1.326***	1.359***	1.366***
	(0.071)	(0.071)	(0.072)
D_hour_4	1.392***	1.371***	1.384***
	(0.087)	(0.076)	(0.071)
D_hour_5	1.229***	1.266***	1.279***
	(0.049)	(0.048)	(0.046)
D_hour_6	1.289***	1.273***	1.298***
	(0.029)	(0.081)	(0.028)
D_hour_7	1.359***	1.323***	1.350***
	(0.029)	(0.081)	(0.026)
D_hour_8	1.289***	1.271***	1.297***
	(0.028)	(0.080)	(0.024)
D_hour_9	1.369***	1.339***	1.366***
	(0.032)	(0.081)	(0.024)
D_hour_10	1.375***	1.338***	1.353***
	(0.033)	(0.086)	(0.027)
D_hour_11	1.411***	1.405***	1.423***
	(0.035)	(0.087)	(0.028)
D_hour_12	1.402***	1.401***	1.420***
	(0.035)	(0.086)	(0.027)
D_hour_13	1.370***	1.387***	1.409***
	(0.044)	(0.087)	(0.028)
D_hour_14	1.370***	1.368***	1.374***
	(0.033)	(0.090)	(0.025)
D_hour_15	1.470***	1.433***	1.439***
	(0.044)	(0.092)	(0.028)
D_hour_16	1.449***	1.455***	1.460***
	(0.046)	(0.092)	(0.029)
D_hour_17	1.578***	1.577***	1.581***
	(0.061)	(0.093)	(0.031)
D_hour_18	1.628***	1.621***	1.588***
	(0.044)	(0.097)	(0.027)
D_hour_19	1.630***	1.655***	1.619***
	(0.058)	(0.098)	(0.029)
D_hour_20	1.489***	1.565***	1.526***
	(0.064)	(0.098)	(0.027)
D_hour_21	1.433***	1.482***	1.426***
	(0.043)	(0.10)	(0.024)

D_hour_22	1.286***	1.388***	1.334***
	(0.072)	(0.11)	(0.027)
D_hour_23	1.325***	1.398***	1.344***
	(0.033)	(0.11)	(0.036)
X_i_hour_1	-0.164		
	(0.16)		
X_i_hour_2	-0.375***		
	(0.12)		
X_i_hour_3	0.237		
	(0.26)		
X_i_hour_4	-0.0487		
	(0.15)		
X_i_hour_5	0.149		
	(0.11)		
X_i_hour_6	0.0397		
	(0.094)		
X_i_hour_7	-0.0538		
	(0.058)		
X_i_hour_8	0.00493		
	(0.051)		
X_i_hour_9	-0.0249		
	(0.047)		
X_i_hour_10	-0.0921*		
	(0.054)		
X_i_hour_11	0.00863		
	(0.055)		
X_i_hour_12	0.0211		
	(0.052)		
X_i_hour_13	0.0425		
	(0.055)		
X_i_hour_14	-0.00971		
	(0.048)		
X_i_hour_15	-0.0750		
	(0.055)		
X_i_hour_16	-0.00127		
	(0.057)		
X_i_hour_17	-0.0154		
	(0.069)		
X_i_hour_18	-0.0846		
	(0.054)		
X_i_hour_19	-0.0337		
	(0.065)		
X_i_hour_20	0.0242		
	(0.069)		
X_i_hour_21	-0.0281		
	(0.050)		
X_i_hour_22	0.0357		
	(0.076)		
D_ord_2		0.0253	
		(0.076)	
D_ord_3		0.0100	

	(0.081)
D_ord_4	0.00986
	(0.086)
D_ord_5	-0.0168
	(0.090)
D_ord_6	-0.0618
	(0.097)
D_ord_7	-0.0724
	(0.11)

	(1)	(2)	(3)
D_late			-0.0192
			(0.014)
Observations	17598	17598	17598
R^2	0.76	0.76	0.76

<center>Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1</center>

Table C.5: Linear regressions of all four variables - with demographics and interactions between demographics and late dummy

COEFFICIENT	(1) num_resp	(2) phone	(3) with_someone	(4) num_cat_with
D_hour_0	1.017***	-0.125***	0.227***	1.499***
	(0.044)	(0.024)	(0.030)	(0.10)
D_hour_1	1.027***	-0.110***	0.252***	1.505***
	(0.044)	(0.024)	(0.030)	(0.089)
D_hour_2	1.007***	-0.137***	0.226***	1.608***
	(0.044)	(0.024)	(0.030)	(0.099)
D_hour_3	0.998***	-0.132***	0.205***	1.517***
	(0.043)	(0.024)	(0.030)	(0.10)
D_hour_4	1.046***	-0.142***	0.219***	1.574***
	(0.044)	(0.024)	(0.030)	(0.10)
D_hour_5	1.182***	-0.146***	0.262***	1.479***
	(0.046)	(0.023)	(0.030)	(0.087)
D_hour_6	1.379***	-0.106***	0.417***	1.485***
	(0.046)	(0.024)	(0.031)	(0.079)
D_hour_7	1.577***	-0.0353	0.567***	1.526***
	(0.047)	(0.024)	(0.031)	(0.078)
D_hour_8	1.487***	0.0536**	0.656***	1.467***
	(0.046)	(0.025)	(0.031)	(0.077)
D_hour_9	1.420***	0.100***	0.712***	1.533***
	(0.046)	(0.026)	(0.031)	(0.076)
D_hour_10	1.259***	0.116***	0.706***	1.516***
	(0.044)	(0.025)	(0.031)	(0.078)
D_hour_11	1.281***	0.135***	0.761***	1.582***
	(0.045)	(0.026)	(0.031)	(0.078)
D_hour_12	1.395***	0.115***	0.780***	1.580***
	(0.045)	(0.026)	(0.031)	(0.077)
D_hour_13	1.280***	0.118***	0.765***	1.569***
	(0.045)	(0.026)	(0.031)	(0.079)
D_hour_14	1.233***	0.0873***	0.735***	1.541***

	(1)	(2)	(3)	(4)
	(0.044)	(0.025)	(0.031)	(0.077)
D_hour_15	1.295***	0.139***	0.767***	1.594***
	(0.045)	(0.026)	(0.031)	(0.078)
D_hour_16	1.359***	0.143***	0.767***	1.620***
	(0.045)	(0.026)	(0.031)	(0.078)
D_hour_17	1.479***	0.145***	0.804***	1.744***
	(0.045)	(0.026)	(0.031)	(0.077)
D_hour_18	1.420***	0.0790***	0.835***	1.748***
	(0.044)	(0.025)	(0.030)	(0.076)
D_hour_19	1.330***	0.0728***	0.822***	1.777***
	(0.044)	(0.025)	(0.030)	(0.078)
D_hour_20	1.269***	0.0486*	0.802***	1.682***
	(0.044)	(0.025)	(0.030)	(0.077)
D_hour_21	1.245***	-0.0191	0.704***	1.582***
	(0.044)	(0.025)	(0.031)	(0.076)
D_hour_22	1.251***	-0.0665***	0.529***	1.485***
	(0.044)	(0.024)	(0.031)	(0.077)
D_hour_23	1.161***	-0.109***	0.349***	1.500***
	(0.044)	(0.024)	(0.031)	(0.081)
D_late	-0.0706**	-0.0172	-0.0928***	0.0814
	(0.033)	(0.019)	(0.024)	(0.061)
age	-0.000587	0.00364***	-0.00564***	-0.00483*
	(0.0016)	(0.00090)	(0.0011)	(0.0027)
age_sq	0.0000179	-0.0000437***	0.0000304***	-0.0000372
	(0.000017)	(0.0000093)	(0.000011)	(0.000028)
_ID_female_1	0.0549***	0.0421***	0.0173**	0.0685***
	(0.0099)	(0.0055)	(0.0068)	(0.018)
_ID_fXD_lat_1	0.0325**	-0.00000589	0.0109	-0.0137
	(0.014)	(0.0079)	(0.0095)	(0.024)
_Ieduc_2	-0.00561	0.00201	-0.0102	0.0412
	(0.019)	(0.010)	(0.013)	(0.030)
_Ieduc_3	0.00291	0.0286***	0.00288	0.0514*
	(0.019)	(0.010)	(0.013)	(0.031)
_Ieduc_4	0.0546***	0.0280***	-0.0180	0.118***
	(0.019)	(0.010)	(0.013)	(0.032)
_IeduXD_lat_2	0.0202	0.00244	0.0538***	0.00196
	(0.025)	(0.014)	(0.018)	(0.041)
_IeduXD_lat_3	0.0484*	0.0236*	0.0621***	-0.00509
	(0.025)	(0.014)	(0.018)	(0.042)
_IeduXD_lat_4	0.0479*	0.0151	0.0610***	-0.0689
	(0.026)	(0.015)	(0.018)	(0.043)
_Iethnic_2	-0.00940	0.0708***	-0.00578	0.0409
	(0.018)	(0.011)	(0.013)	(0.033)
_Iethnic_3	0.0208	-0.0179	-0.0584***	-0.0222
	(0.031)	(0.014)	(0.018)	(0.053)
_Iethnic_4	-0.00310	0.0235**	-0.0383***	-0.00158
	(0.020)	(0.011)	(0.013)	(0.037)
_Iethnic_5	-0.0167	-0.0210	-0.0146	0.0298
	(0.030)	(0.017)	(0.022)	(0.064)
_IethXD_lat_2	0.0188	-0.00439	-0.0165	-0.000850
	(0.025)	(0.016)	(0.018)	(0.046)

_IethXD_lat_3	-0.0602	0.0405*	0.0161	-0.0383
	(0.041)	(0.022)	(0.027)	(0.071)
_IethXD_lat_4	0.0635**	0.00435	0.0218	0.0365
	(0.028)	(0.016)	(0.019)	(0.049)
_IethXD_lat_5	-0.00404	0.0347	0.0336	-0.0859
	(0.041)	(0.025)	(0.030)	(0.078)
_Imarit_1	-0.00601	0.0182*	0.00398	0.0701**
	(0.017)	(0.0097)	(0.012)	(0.030)
_Imarit_2	-0.00176	-0.0129*	0.130***	0.195***
	(0.014)	(0.0077)	(0.0094)	(0.025)
_ImarXD_lat_1	-0.0236	-0.00174	-0.0112	0.0409
	(0.022)	(0.013)	(0.016)	(0.038)
_ImarXD_lat_2	-0.00535	0.00295	0.0482***	0.00546
	(0.018)	(0.010)	(0.013)	(0.031)
_ID_interne_1	0.00841	0.0380***	0.0288***	0.00972
	(0.011)	(0.0059)	(0.0075)	(0.019)
_ID_iXD_lat_1	-0.00178	-0.00888	0.0169	-0.0283
	(0.015)	(0.0085)	(0.011)	(0.026)
_Iday_2	0.0194	0.00966	0.0268**	0.199***
	(0.017)	(0.0092)	(0.012)	(0.043)
_Iday_3	0.0706***	0.0804***	-0.0163	-0.181***
	(0.017)	(0.0095)	(0.012)	(0.034)
_Iday_4	0.0596***	0.0757***	-0.00614	-0.174***
	(0.017)	(0.0098)	(0.012)	(0.034)
_Iday_5	0.0831***	0.0747***	-0.00189	-0.171***
	(0.019)	(0.010)	(0.013)	(0.034)
_Iday_6	0.0531***	0.0821***	0.0290**	-0.173***
	(0.018)	(0.011)	(0.013)	(0.036)
_Iday_7	0.0956***	0.0686***	0.00125	-0.170***
	(0.018)	(0.0096)	(0.012)	(0.034)
_IdayXD_lat_2	-0.00673	-0.00657	-0.00277	-0.167***
	(0.023)	(0.013)	(0.017)	(0.055)
_IdayXD_lat_3	0.00976	-0.0116	-0.0112	-0.0724
	(0.024)	(0.014)	(0.017)	(0.045)
_IdayXD_lat_4	0.00870	-0.0108	-0.00633	-0.000839
	(0.024)	(0.014)	(0.018)	(0.047)
_IdayXD_lat_5	-0.00455	-0.0122	-0.0137	-0.0961**
	(0.026)	(0.015)	(0.019)	(0.046)
_IdayXD_lat_6	0.0181	-0.0189	-0.0394**	-0.0302
	(0.026)	(0.015)	(0.019)	(0.048)
_IdayXD_lat_7	-0.0122	-0.0202	0.00474	0.0137
	(0.024)	(0.014)	(0.017)	(0.046)
_Isurvey_nu_2	-0.0174	-0.0434***	-0.0127	-0.0344
	(0.015)	(0.0082)	(0.010)	(0.027)
_Isurvey_nu_3	-0.0131	-0.0267***	-0.0183**	-0.00227
	(0.012)	(0.0067)	(0.0081)	(0.022)
_Isurvey_nu_4	-0.0419***	-0.0528***	-0.0150	0.0246
	(0.016)	(0.0086)	(0.011)	(0.031)
_IsurXD_lat_2	-0.0116	0.0315***	-0.000177	0.00696
	(0.021)	(0.012)	(0.015)	(0.036)
_IsurXD_lat_3	-0.0222	-0.00245	-0.00343	0.00269

	(0.016)	(0.0095)	(0.011)	(0.029)
_IsurXD_lat_4	-0.00128	0.0157	-0.00699	-0.132***
	(0.022)	(0.012)	(0.016)	(0.039)
Observations	34888	34888	34888	17598
R^2	0.83	0.26	0.61	0.77

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix D - Probit and Ordered Probit Specifications

Table D.1: Number of different activities (10 minute segments) reported

COEFFICIENT	(1) num_resp	(7) num_resp	(13) num_resp
D_hour_1	0.0939	0.0607	0.0589
	(0.079)	(0.079)	(0.078)
D_hour_2	-0.0785	-0.0988	-0.101
	(0.087)	(0.086)	(0.086)
D_hour_3	-0.122	-0.120	-0.125
	(0.088)	(0.084)	(0.083)
D_hour_4	0.110	0.107	0.0999
	(0.086)	(0.081)	(0.079)
D_hour_5	0.488***	0.536***	0.528***
	(0.080)	(0.076)	(0.074)
D_hour_6	0.938***	1.041***	0.939***
	(0.067)	(0.091)	(0.066)
D_hour_7	1.282***	1.365***	1.257***
	(0.067)	(0.091)	(0.065)
D_hour_8	1.165***	1.244***	1.132***
	(0.068)	(0.091)	(0.065)
D_hour_9	1.024***	1.141***	1.024***
	(0.071)	(0.092)	(0.066)
D_hour_10	0.762***	0.935***	0.731***
	(0.069)	(0.098)	(0.066)
D_hour_11	0.773***	0.977***	0.776***
	(0.072)	(0.099)	(0.066)
D_hour_12	0.949***	1.211***	1.011***
	(0.070)	(0.098)	(0.064)
D_hour_13	0.764***	0.977***	0.782***
	(0.078)	(0.100)	(0.066)
D_hour_14	0.690***	0.948***	0.680***
	(0.073)	(0.10)	(0.066)
D_hour_15	0.868***	1.084***	0.814***
	(0.073)	(0.10)	(0.066)
D_hour_16	0.952***	1.213***	0.939***
	(0.076)	(0.10)	(0.065)
D_hour_17	1.129***	1.424***	1.147***
	(0.081)	(0.10)	(0.065)
D_hour_18	1.036***	1.404***	1.057***
	(0.070)	(0.11)	(0.063)
D_hour_19	0.876***	1.238***	0.893***
	(0.077)	(0.11)	(0.064)
D_hour_20	0.820***	1.111***	0.766***
	(0.094)	(0.11)	(0.065)
D_hour_21	0.652***	1.012***	0.704***
	(0.079)	(0.12)	(0.065)
D_hour_22	0.473***	1.002***	0.713***

	(0.10)	(0.12)	(0.066)
D_hour_23	0.438***	0.778***	0.506***
	(0.065)	(0.13)	(0.067)
X_i_hour_1	-0.803***		
	(0.30)		
X_i_hour_2	-0.344		
	(0.30)		
X_i_hour_3	-0.0853		
	(0.15)		
X_i_hour_4	-0.104		
	(0.12)		
X_i_hour_5	0.0637		
	(0.10)		
X_i_hour_6	-0.0607		
	(0.092)		
X_i_hour_7	-0.163**		
	(0.069)		
X_i_hour_8	-0.160**		
	(0.064)		
X_i_hour_9	-0.0663		
	(0.064)		
X_i_hour_10	-0.176**		
	(0.075)		
X_i_hour_11	-0.0606		
	(0.067)		
X_i_hour_12	0.0684		
	(0.058)		
X_i_hour_13	-0.0396		
	(0.068)		
X_i_hour_14	-0.0893		
	(0.068)		
X_i_hour_15	-0.171***		
	(0.065)		
X_i_hour_16	-0.0881		
	(0.063)		
X_i_hour_17	-0.0449		
	(0.066)		
X_i_hour_18	-0.0335		
	(0.052)		
X_i_hour_19	-0.0463		
	(0.060)		
X_i_hour_20	-0.131		
	(0.081)		
X_i_hour_21	0.00245		
	(0.065)		
X_i_hour_22	0.204**		
	(0.093)		
D_ord_2		-0.0946	
		(0.063)	
D_ord_3		-0.212***	
		(0.072)	

D_ord_4		-0.253***	
		(0.079)	
D_ord_5		-0.354***	
		(0.086)	
D_ord_6		-0.411***	
		(0.093)	
D_ord_7		-0.340***	
		(0.11)	
D_late			-0.0678***
			(0.016)
cut_1	1.266***	1.266***	1.266***
	(0.057)	(0.057)	(0.057)
cut_2	2.293***	2.292***	2.292***
	(0.058)	(0.058)	(0.058)
cut_3	3.191***	3.191***	3.190***
	(0.061)	(0.061)	(0.061)
cut_4	3.718***	3.718***	3.717***
	(0.072)	(0.072)	(0.072)
cut_5	3.868***	3.868***	3.867***
	(0.079)	(0.079)	(0.079)
Observations	34888	34888	34888
Pseudo R^2	0.0399	0.0394	0.0393

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table D.2: Did the respondent talk on the phone?

	(1)	(2)	(3)
COEFFICIENT	phone	phone	phone
D_hour_0	-1.730***	-1.730***	-1.730***
	(0.071)	(0.071)	(0.071)
D_hour_1	-1.569***	-1.586***	-1.589***
	(0.067)	(0.066)	(0.065)
D_hour_2	-1.877***	-1.903***	-1.907***
	(0.085)	(0.084)	(0.083)
D_hour_3	-1.806***	-1.857***	-1.864***
	(0.083)	(0.081)	(0.078)
D_hour_4	-2.032***	-1.950***	-1.962***
	(0.11)	(0.086)	(0.086)
D_hour_5	-2.179***	-2.080***	-2.092***
	(0.12)	(0.097)	(0.097)
D_hour_6	-1.582***	-1.469***	-1.552***
	(0.058)	(0.11)	(0.052)
D_hour_7	-1.123***	-1.054***	-1.131***
	(0.049)	(0.11)	(0.043)
D_hour_8	-0.807***	-0.698***	-0.766***
	(0.046)	(0.11)	(0.037)

D_hour_9	-0.646***	-0.550***	-0.610***
	(0.048)	(0.11)	(0.036)
D_hour_10	-0.578***	-0.513***	-0.576***
	(0.042)	(0.11)	(0.035)
D_hour_11	-0.555***	-0.449***	-0.508***
	(0.046)	(0.11)	(0.036)
D_hour_12	-0.566***	-0.513***	-0.571***
	(0.047)	(0.11)	(0.036)
D_hour_13	-0.567***	-0.501***	-0.553***
	(0.058)	(0.11)	(0.037)
D_hour_14	-0.643***	-0.544***	-0.660***
	(0.048)	(0.12)	(0.037)
D_hour_15	-0.460***	-0.369***	-0.489***
	(0.050)	(0.12)	(0.036)
D_hour_16	-0.526***	-0.361***	-0.486***
	(0.058)	(0.12)	(0.037)
D_hour_17	-0.344***	-0.350***	-0.481***
	(0.068)	(0.12)	(0.037)
D_hour_18	-0.690***	-0.480***	-0.678***
	(0.050)	(0.13)	(0.033)
D_hour_19	-0.649***	-0.500***	-0.697***
	(0.063)	(0.13)	(0.035)
D_hour_20	-0.822***	-0.576***	-0.774***
	(0.088)	(0.13)	(0.036)
D_hour_21	-1.000***	-0.716***	-1.048***
	(0.068)	(0.14)	(0.038)
D_hour_22	-1.132***	-0.957***	-1.303***
	(0.10)	(0.14)	(0.044)
D_hour_23	-1.678***	-1.263***	-1.624***
	(0.050)	(0.15)	(0.053)
X_i_hour_1	-0.396		
	(0.31)		
X_i_hour_2	-0.475		
	(0.38)		
X_i_hour_3	-0.515*		
	(0.28)		
X_i_hour_4	0.164		
	(0.18)		
X_i_hour_5	0.203		
	(0.20)		
X_i_hour_6	0.119		
	(0.14)		
X_i_hour_7	-0.0836		
	(0.098)		
X_i_hour_8	0.0584		
	(0.076)		
X_i_hour_9	0.0236		
	(0.071)		
X_i_hour_10	-0.0492		
	(0.076)		
X_i_hour_11	0.0542		

	(0.070)		
X_i_hour_12	-0.0643		
	(0.070)		
X_i_hour_13	-0.0325		
	(0.073)		
X_i_hour_14	-0.0927		
	(0.072)		
X_i_hour_15	-0.109		
	(0.069)		
X_i_hour_16	0.00812		
	(0.072)		
X_i_hour_17	-0.237***		
	(0.079)		
X_i_hour_18	-0.0337		
	(0.064)		
X_i_hour_19	-0.118		
	(0.073)		
X_i_hour_20	0.00198		
	(0.095)		
X_i_hour_21	-0.119		
	(0.080)		
X_i_hour_22	-0.254**		
	(0.11)		
D_ord_2		-0.0960	
		(0.098)	
D_ord_3		-0.0730	
		(0.11)	
D_ord_4		-0.0947	
		(0.11)	
D_ord_5		-0.197*	
		(0.12)	
D_ord_6		-0.252**	
		(0.13)	
D_ord_7		-0.415***	
		(0.14)	
D_late			-0.0542***
			(0.019)
Observations	34888	34888	34888

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table D.3: Was anyone else in the room with the respondent?

	(1)	(2)	(3)
COEFFICIENT	with_someone	with_someone	with_someone
D_hour_0	-1.173***	-1.173***	-1.173***
	(0.051)	(0.051)	(0.051)
D_hour_1	-1.024***	-1.046***	-1.051***
	(0.051)	(0.049)	(0.049)
D_hour_2	-1.175***	-1.177***	-1.183***

	(0.055)	(0.053)	(0.053)
D_hour_3	-1.253***	-1.264***	-1.276***
	(0.059)	(0.055)	(0.054)
D_hour_4	-1.221***	-1.200***	-1.218***
	(0.062)	(0.055)	(0.053)
D_hour_5	-1.020***	-0.996***	-1.014***
	(0.058)	(0.051)	(0.049)
D_hour_6	-0.490***	-0.413***	-0.490***
	(0.037)	(0.069)	(0.034)
D_hour_7	-0.109***	-0.0218	-0.0976***
	(0.039)	(0.069)	(0.033)
D_hour_8	0.151***	0.198***	0.123***
	(0.041)	(0.070)	(0.033)
D_hour_9	0.235***	0.337***	0.262***
	(0.045)	(0.071)	(0.034)
D_hour_10	0.254***	0.353***	0.247***
	(0.040)	(0.079)	(0.033)
D_hour_11	0.387***	0.518***	0.403***
	(0.045)	(0.080)	(0.035)
D_hour_12	0.527***	0.570***	0.453***
	(0.047)	(0.080)	(0.035)
D_hour_13	0.489***	0.541***	0.412***
	(0.057)	(0.081)	(0.036)
D_hour_14	0.344***	0.493***	0.333***
	(0.046)	(0.087)	(0.034)
D_hour_15	0.374***	0.572***	0.414***
	(0.050)	(0.088)	(0.035)
D_hour_16	0.408***	0.569***	0.413***
	(0.057)	(0.089)	(0.036)
D_hour_17	0.499***	0.667***	0.514***
	(0.070)	(0.090)	(0.036)
D_hour_18	0.644***	0.755***	0.613***
	(0.049)	(0.095)	(0.032)
D_hour_19	0.466***	0.706***	0.568***
	(0.060)	(0.097)	(0.033)
D_hour_20	0.474***	0.646***	0.512***
	(0.081)	(0.098)	(0.033)
D_hour_21	0.195***	0.337***	0.259***
	(0.057)	(0.11)	(0.031)
D_hour_22	-0.278***	-0.128	-0.194***
	(0.083)	(0.11)	(0.033)
D_hour_23	-0.723***	-0.653***	-0.708***
	(0.032)	(0.11)	(0.036)
X_i_hour_1	-0.422**		
	(0.21)		
X_i_hour_2	-0.0903		
	(0.17)		
X_i_hour_3	-0.144		
	(0.14)		
X_i_hour_4	-0.00607		
	(0.12)		

X_i_hour_5	0.00286		
	(0.11)		
X_i_hour_6	-0.0111		
	(0.093)		
X_i_hour_7	0.0297		
	(0.075)		
X_i_hour_8	-0.0926		
	(0.068)		
X_i_hour_9	0.0448		
	(0.067)		
X_i_hour_10	-0.0396		
	(0.072)		
X_i_hour_11	0.0198		
	(0.069)		
X_i_hour_12	-0.173**		
	(0.068)		
X_i_hour_13	-0.135*		
	(0.071)		
X_i_hour_14	-0.0382		
	(0.067)		
X_i_hour_15	0.0594		
	(0.068)		
X_i_hour_16	-0.00653		
	(0.071)		
X_i_hour_17	0.00368		
	(0.080)		
X_i_hour_18	-0.0669		
	(0.063)		
X_i_hour_19	0.119*		
	(0.070)		
X_i_hour_20	0.0293		
	(0.088)		
X_i_hour_21	0.0711		
	(0.066)		
X_i_hour_22	0.0802		
	(0.089)		
D_ord_2		-0.0776	
		(0.060)	
D_ord_3		-0.0857	
		(0.070)	
D_ord_4		-0.168**	
		(0.079)	
D_ord_5		-0.164*	
		(0.086)	
D_ord_6		-0.144	
		(0.096)	
D_ord_7		-0.0701	
		(0.11)	
D_late			-0.0151
			(0.017)
Observations	34888	34888	34888

Table D.4: Number of categories of people that were in the room with the respondent

COEFFICIENT	(1) num_cat_with	(2) num_cat_with	(3) num_cat_with
D_hour_1	-0.0143	-0.0289	-0.0259
	(0.16)	(0.16)	(0.16)
D_hour_2	0.221	0.156	0.162
	(0.17)	(0.17)	(0.17)
D_hour_3	-0.0220	0.0279	0.0414
	(0.18)	(0.17)	(0.17)
D_hour_4	0.0515	0.0188	0.0418
	(0.19)	(0.18)	(0.18)
D_hour_5	-0.230	-0.144	-0.119
	(0.18)	(0.17)	(0.16)
D_hour_6	-0.0761	-0.119	-0.0695
	(0.14)	(0.19)	(0.13)
D_hour_7	0.0609	-0.0134	0.0326
	(0.13)	(0.19)	(0.13)
D_hour_8	-0.102	-0.142	-0.0985
	(0.13)	(0.19)	(0.13)
D_hour_9	0.0471	-0.00969	0.0299
	(0.13)	(0.19)	(0.13)
D_hour_10	0.00555	-0.0422	-0.0365
	(0.13)	(0.20)	(0.13)
D_hour_11	0.103	0.105	0.116
	(0.13)	(0.20)	(0.13)
D_hour_12	0.0693	0.0950	0.105
	(0.13)	(0.20)	(0.13)
D_hour_13	0.0223	0.0757	0.0919
	(0.14)	(0.20)	(0.13)
D_hour_14	0.0370	0.0441	0.0442
	(0.13)	(0.20)	(0.13)
D_hour_15	0.173	0.132	0.131
	(0.14)	(0.20)	(0.13)
D_hour_16	0.159	0.181	0.180
	(0.14)	(0.20)	(0.13)
D_hour_17	0.356**	0.367*	0.365***
	(0.14)	(0.20)	(0.13)
D_hour_18	0.409***	0.406**	0.369***
	(0.13)	(0.21)	(0.13)
D_hour_19	0.394***	0.442**	0.401***
	(0.14)	(0.21)	(0.13)
D_hour_20	0.239	0.337	0.295**
	(0.15)	(0.21)	(0.13)
D_hour_21	0.180	0.223	0.160

	(0.14)	(0.22)	(0.13)
D_hour_22	-0.129	0.0363	-0.0266
	(0.18)	(0.22)	(0.13)
D_hour_23	-0.0532	0.0342	-0.0278
	(0.14)	(0.23)	(0.14)
X_i_hour_1	-0.352		
	(0.55)		
X_i_hour_2	-0.911*		
	(0.47)		
X_i_hour_3	0.337		
	(0.33)		
X_i_hour_4	-0.0598		
	(0.27)		
X_i_hour_5	0.312		
	(0.22)		
X_i_hour_6	0.0161		
	(0.17)		
X_i_hour_7	-0.137		
	(0.11)		
X_i_hour_8	-0.0159		
	(0.099)		
X_i_hour_9	-0.0631		
	(0.089)		
X_i_hour_10	-0.177*		
	(0.10)		
X_i_hour_11	0.00313		
	(0.083)		
X_i_hour_12	0.0570		
	(0.082)		
X_i_hour_13	0.0855		
	(0.087)		
X_i_hour_14	-0.00933		
	(0.086)		
X_i_hour_15	-0.102		
	(0.084)		
X_i_hour_16	0.00733		
	(0.085)		
X_i_hour_17	-0.0135		
	(0.087)		
X_i_hour_18	-0.0941		
	(0.065)		
X_i_hour_19	-0.0158		
	(0.078)		
X_i_hour_20	0.0390		
	(0.097)		
X_i_hour_21	-0.0530		
	(0.081)		
X_i_hour_22	0.0898		
	(0.15)		
D_ord_2		0.0542	
		(0.14)	

D_ord_3		-0.00319	
		(0.15)	
D_ord_4		0.00251	
		(0.16)	
D_ord_5		-0.0283	
		(0.16)	
D_ord_6		-0.0692	
		(0.17)	
D_ord_7		-0.0875	
		(0.18)	
D_late			-0.0254
			(0.021)
Observations	17598	17598	17598
Pseudo R^2	0.00925	0.00875	0.00871

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table D.5: Ordered probit with demographics (interacted with late dummy) - number of activities reported, and number of categories of different people who were in the room with you.

COEFFICIENT	(1) num_resp	(2) num_cat_with
D_hour_1	0.0581	0.0416
	(0.079)	(0.17)
D_hour_2	-0.0992	0.204
	(0.086)	(0.17)
D_hour_3	-0.118	0.0721
	(0.083)	(0.18)
D_hour_4	0.103	0.117
	(0.080)	(0.18)
D_hour_5	0.524***	-0.0398
	(0.074)	(0.16)
D_hour_6	0.944***	-0.0128
	(0.066)	(0.14)
D_hour_7	1.258***	0.0842
	(0.065)	(0.13)
D_hour_8	1.135***	-0.0662
	(0.065)	(0.13)
D_hour_9	1.028***	0.0608
	(0.066)	(0.13)
D_hour_10	0.734***	-0.0149
	(0.066)	(0.13)
D_hour_11	0.779***	0.141
	(0.066)	(0.13)
D_hour_12	1.016***	0.136
	(0.065)	(0.13)
D_hour_13	0.782***	0.119
	(0.067)	(0.13)

D_hour_14	0.682***	0.0782
	(0.067)	(0.13)
D_hour_15	0.815***	0.150
	(0.066)	(0.13)
D_hour_16	0.944***	0.208
	(0.066)	(0.13)
D_hour_17	1.153***	0.401***
	(0.065)	(0.13)
D_hour_18	1.058***	0.403***
	(0.063)	(0.13)
D_hour_19	0.894***	0.435***
	(0.064)	(0.13)
D_hour_20	0.765***	0.319**
	(0.065)	(0.13)
D_hour_21	0.705***	0.179
	(0.065)	(0.13)
D_hour_22	0.716***	-0.0249
	(0.066)	(0.13)
D_hour_23	0.502***	-0.0164
	(0.067)	(0.14)
D_late	-0.145**	0.130
	(0.069)	(0.099)
age	-0.00305	-0.00321
	(0.0032)	(0.0047)
age_sq	0.0000535	-0.000134***
	(0.000033)	(0.000050)
_Ieduc_2	-0.0216	0.0995*
	(0.040)	(0.059)
_Ieduc_3	-0.00627	0.0715
	(0.040)	(0.059)
_Ieduc_4	0.0999**	0.211***
	(0.040)	(0.059)
_IeduXD_lat_2	0.0612	-0.0619
	(0.053)	(0.076)
_IeduXD_lat_3	0.124**	-0.0441
	(0.053)	(0.076)
_IeduXD_lat_4	0.120**	-0.175**
	(0.053)	(0.077)
_Iethnic_2	-0.00229	0.0828
	(0.038)	(0.058)
_Iethnic_3	0.0185	-0.0390
	(0.057)	(0.081)
_Iethnic_4	0.00965	0.00788
	(0.041)	(0.059)
_Iethnic_5	-0.0324	0.0458
	(0.064)	(0.097)
_IethXD_lat_2	0.0170	-0.00774
	(0.052)	(0.076)
_IethXD_lat_3	-0.129*	-0.0787
	(0.078)	(0.11)
_IethXD_lat_4	0.120**	0.0636

	(0.054)	(0.075)
_IethXD_lat_5	-0.0136	-0.138
	(0.087)	(0.12)
_Imarit_1	0.0143	0.107*
	(0.035)	(0.058)
_Imarit_2	0.0142	0.312***
	(0.029)	(0.044)
_ImarXD_lat_1	-0.0455	0.0861
	(0.045)	(0.073)
_ImarXD_lat_2	-0.0172	0.0301
	(0.037)	(0.054)
_ID_interne_1	0.0210	-0.00298
	(0.023)	(0.034)
_ID_iXD_lat_1	0.00314	-0.0113
	(0.031)	(0.045)
_Iday_2	0.0378	0.259***
	(0.039)	(0.053)
_Iday_3	0.134***	-0.291***
	(0.036)	(0.055)
_Iday_4	0.119***	-0.273***
	(0.038)	(0.056)
_Iday_5	0.165***	-0.255***
	(0.040)	(0.059)
_Iday_6	0.105***	-0.288***
	(0.040)	(0.059)
_Iday_7	0.178***	-0.269***
	(0.037)	(0.056)
_IdayXD_lat_2	-0.00926	-0.228***
	(0.053)	(0.069)
_IdayXD_lat_3	0.0279	-0.107
	(0.050)	(0.071)
_IdayXD_lat_4	0.0235	0.00257
	(0.052)	(0.072)
_IdayXD_lat_5	-0.00904	-0.175**
	(0.055)	(0.077)
_IdayXD_lat_6	0.0459	-0.0290
	(0.055)	(0.077)
_IdayXD_lat_7	-0.0135	0.0313
	(0.051)	(0.071)
_Isurvey_nu_2	-0.0500	-0.0570
	(0.032)	(0.045)
_Isurvey_nu_3	-0.0188	-0.00597
	(0.024)	(0.036)
_Isurvey_nu_4	-0.0917***	0.000940
	(0.034)	(0.052)
_IsurXD_lat_2	-0.000104	0.0321
	(0.043)	(0.059)
_IsurXD_lat_3	-0.0378	-0.00133
	(0.033)	(0.046)
_IsurXD_lat_4	0.000892	-0.215***
	(0.046)	(0.069)

Observations	34888	17598	
Pseudo R^2	0.0435	0.0413	

<div align="center">Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1</div>

Table D.4: Probit with demographics (interacted with late dummy) - did the respondent talk on the phone, and was there anyone else in the room with the respondent

COEFFICIENT	(1) phone	(2) with_someone
D_hour_0	-2.353***	-0.817***
	(0.13)	(0.10)
D_hour_1	-2.208***	-0.702***
	(0.12)	(0.100)
D_hour_2	-2.521***	-0.831***
	(0.14)	(0.10)
D_hour_3	-2.479***	-0.936***
	(0.13)	(0.10)
D_hour_4	-2.591***	-0.865***
	(0.14)	(0.10)
D_hour_5	-2.713***	-0.666***
	(0.14)	(0.099)
D_hour_6	-2.173***	-0.134
	(0.12)	(0.093)
D_hour_7	-1.734***	0.270***
	(0.11)	(0.093)
D_hour_8	-1.368***	0.504***
	(0.11)	(0.093)
D_hour_9	-1.216***	0.652***
	(0.11)	(0.093)
D_hour_10	-1.168***	0.633***
	(0.11)	(0.092)
D_hour_11	-1.109***	0.784***
	(0.11)	(0.093)
D_hour_12	-1.162***	0.839***
	(0.11)	(0.093)
D_hour_13	-1.157***	0.796***
	(0.11)	(0.094)
D_hour_14	-1.253***	0.710***
	(0.11)	(0.093)
D_hour_15	-1.094***	0.805***
	(0.11)	(0.093)
D_hour_16	-1.077***	0.803***
	(0.11)	(0.094)
D_hour_17	-1.073***	0.909***
	(0.11)	(0.094)
D_hour_18	-1.275***	1.010***
	(0.11)	(0.092)

D_hour_19	-1.296***	0.975***
	(0.11)	(0.092)
D_hour_20	-1.379***	0.912***
	(0.11)	(0.093)
D_hour_21	-1.651***	0.630***
	(0.11)	(0.092)
D_hour_22	-1.911***	0.169*
	(0.11)	(0.092)
D_hour_23	-2.248***	-0.353***
	(0.12)	(0.094)
D_late	-0.0309	-0.250***
	(0.087)	(0.071)
age	0.0131***	-0.0180***
	(0.0039)	(0.0034)
age_sq	-0.000165***	0.000100***
	(0.000041)	(0.000035)
_Ieduc_2	0.0000652	-0.0354
	(0.050)	(0.041)
_Ieduc_3	0.102**	0.00341
	(0.049)	(0.041)
_Ieduc_4	0.102**	-0.0677
	(0.050)	(0.042)
_IeduXD_lat_2	0.0305	0.164***
	(0.066)	(0.055)
_IeduXD_lat_3	0.104	0.184***
	(0.065)	(0.055)
_IeduXD_lat_4	0.0627	0.190***
	(0.066)	(0.056)
_Iethnic_2	0.305***	-0.0131
	(0.043)	(0.041)
_Iethnic_3	-0.0842	-0.171***
	(0.066)	(0.058)
_Iethnic_4	0.118**	-0.116***
	(0.047)	(0.043)
_Iethnic_5	-0.0944	-0.0390
	(0.081)	(0.069)
_IethXD_lat_2	-0.0481	-0.0486
	(0.059)	(0.056)
_IethXD_lat_3	0.172*	0.0464
	(0.090)	(0.081)
_IethXD_lat_4	0.000488	0.0699
	(0.062)	(0.057)
_IethXD_lat_5	0.160	0.0908
	(0.11)	(0.092)
_Imarit_1	0.106***	0.0153
	(0.041)	(0.037)
_Imarit_2	-0.0656*	0.400***
	(0.034)	(0.030)
_ImarXD_lat_1	-0.0219	-0.0115
	(0.053)	(0.047)
_ImarXD_lat_2	0.0175	0.122***

	(0.043)	(0.038)
_ID_interne_1	0.178***	0.0924***
	(0.028)	(0.024)
_ID_iXD_lat_1	-0.0520	0.0426
	(0.038)	(0.032)
_Iday_2	0.0559	0.0931**
	(0.052)	(0.039)
_Iday_3	0.381***	-0.0499
	(0.047)	(0.038)
_Iday_4	0.358***	-0.0169
	(0.049)	(0.040)
_Iday_5	0.354***	-0.00194
	(0.051)	(0.042)
_Iday_6	0.386***	0.0941**
	(0.050)	(0.042)
_Iday_7	0.331***	0.00617
	(0.048)	(0.039)
_IdayXD_lat_2	-0.0430	-0.0205
	(0.069)	(0.054)
_IdayXD_lat_3	-0.106*	-0.0314
	(0.063)	(0.053)
_IdayXD_lat_4	-0.101	-0.0242
	(0.065)	(0.054)
_IdayXD_lat_5	-0.101	-0.0439
	(0.068)	(0.057)
_IdayXD_lat_6	-0.129*	-0.122**
	(0.068)	(0.057)
_IdayXD_lat_7	-0.133**	0.0116
	(0.064)	(0.053)
_Isurvey_nu_2	-0.192***	-0.0454
	(0.039)	(0.033)
_Isurvey_nu_3	-0.115***	-0.0608**
	(0.029)	(0.026)
_Isurvey_nu_4	-0.264***	-0.0598*
	(0.043)	(0.035)
_IsurXD_lat_2	0.149***	0.00812
	(0.052)	(0.045)
_IsurXD_lat_3	0.0116	0.000584
	(0.040)	(0.035)
_IsurXD_lat_4	0.115**	-0.00528
	(0.058)	(0.048)
Observations	34888	34888

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$