

## Appendix A – Interview Protocol

### Visit 1

#### Introductory Material

- *Hi! Thank you for coming in today.*
- *Have you participated in any of our studies before? (if yes, Which ones?)*
- *Study Introduction:*
  - *One of the surveys we conduct at BLS is the American Time Use Survey. In this survey, we ask people about all the things they did the previous day. And that’s what this study is about...how you spend your day. We are going to ask you to wear a Fitbit watch this whole week. We’ll then have you come back and we’ll ask you some questions about how you spent your time during the week. Your answers will help us improve the questions we ask in the American Time User Survey.*
  - *We are not evaluating you, we are evaluating the questions that we ask. All the information you give us and all of the information recorded by the Fitbit will be kept completely confidential, and will be used to improve the survey questions.*
  - *I’ll point out that you don’t get to keep the watch. We need it back so we can have more people go through this study. To compensate you for your time, we’ll pay you \$30 this time and \$50 when you come back next week. Also, if you would like, we will also give you a printout of what the Fitbit measured over the week.*
- *Consent Form/Permission to audiotape*
- *Any questions before we begin?*

*I would like to begin by asking you a few questions about you and your household.*

- *How many people are in your household, including yourself? \_\_\_\_\_*
- *How old are you?*
- *[if more than 2 in HH] OK, and who is the next person? I don’t need their name, just how they are related to you.*

Name	Relationship	Age	Gender	
	Participant		M	F
			M	F
			M	F
			M	F
			M	F

- *Are you currently employed? YES NO*
  - *(if NO) Are you currently looking for work?*
  - *(if YES) Do you work part-time (less than 35 hours per week) or full-time (35 hours or more)?*

- o (IF YES) *During what hours is your typical work shift?*
- o (IF YES) *Do you typically work on weekends? YES NO*
- o (if YES) *How long does it take you to commute to and from work?*
- o (if YES) *How do you typically commute to work? CAR PUBLIC  
TRANSPORTATION WALK BICYCLE OTHER*
- o (if YES) *Do you usually start and stop work around the same time each day? YES NO*
- *Do you own a car? YES NO*
- *Would you say that you have a typical daily routine? YES NO*
- *How many days per week do you usually exercise?*
  - o (if > 0) *How long do you typically spend exercising when you do exercise?*
- *How many hours per day are you sitting down?*
- *How many hours per day do you spend interacting with computers, tablets, and smartphones?*
- *How many hours per day do you spend watching television?*

### **Explanation of Fitbit**

- *This is the watch we will ask you to wear. Can you try it on to make sure it fits?*
- *When you're putting it on, you have to make sure that both of the metal pegs are fully seated.*
- *It's important that you wear the watch at all times, even when you're exercising or sleeping. Of course, you can take it off to shower or bathe or any other time where the watch may get damaged, but please put it back on immediately after. It's water resistant so you can wear it in the rain, while you're working out, or while you're washing your hands.*
- *When you do take the watch off, please do not reclip it before putting it down. This will make the watch think that you're still wearing it. Leave it open, like this [Demonstrate with watch].*
- *Feel free to use the watch. In addition to the time, it will show you the number of steps you've taken, the distance you've walked or ran, the number of floors you've climbed, and the number of calories you burned that day. To view these measurements you just gently tap on the front of the watch.*
- *We ask that you do not sync the watch with your phone or your computer. This may clear out the data and we need to be able to download it at the end of the week. We will show you your records at the end of the week.*
- *The watch is fully charged so you won't need to charge it. It should last the whole week. If it doesn't, that's fine.*
- *We also have this pamphlet for you. It covers some of the basic operations of the watch and how to care for it. It also has the contact information for myself and my colleague should you have any questions during the week.*
- *Remember that we need the watch back at the end of the week, so be sure to bring it with you when you come back.*

### **End of Visit 1**

- *That is all for this time.*
- *Have you scheduled your visit for next week?*
  - o [if No] *OK, can we schedule you now?*
- *If you have any questions during the week, my phone number and email are written on the pamphlet. If I'm not there, please leave a message and I'll get back to you as soon as possible.*
- *Is it alright if I call you on [THREE DAYS AFTER MEETING] to see how things are going?*

- o [if Yes] *Will the number that our recruiter has for you work, or is there another number I should call?*
- o [if No] *That's OK. I'll see you at our meeting next week and see how things went.*
- *Thank you for coming in.*

## Mid-Week Telephone Call

- *Hi. This is \_\_\_\_\_ from BLS. I'm calling to see how things are going.*
- *Do you have any questions? YES NO*
- *Have you been wearing the watch all the time? YES NO*
- *Have you been wearing the watch while you exercise? YES NO*
- *Have you been wearing the watch while you sleep? YES NO*
- *Thank you for your participation so far.*
- *[If scheduled] I will see you on \_\_\_\_\_.*
- *[If not scheduled] We still need to find a time for you to come in. Can we do that now?*

## Visit 2

### Fitbit Experience Questions

- *How was your experience wearing the watch?*
- *Did you have any issues with the watch? YES NO*
  - o (if YES) *Tell me more about that.*
- *About what percent of the time would you say you wore the watch this week?*
- *Did you take off the watch for any reason this week? YES NO*
  - o (if YES) *For what reasons did you take it off?*
- *Would you say this week was typical of how you spend your time? YES NO*
  - o (if NO) *How was it different?*
- *Did you work more or less than usual or about the same? MORE LESS ABOUT THE SAME*
  - o (if MORE or LESS) *Why was this different?*
- *Did you exercise more or less than usual or about the same? MORE LESS ABOUT THE SAME*
  - o (if MORE or LESS) *Why was this different?*
- *Did you sleep more or less than usual or about the same? MORE LESS ABOUT THE SAME*
  - o (if MORE or LESS) *Why was this different?*
- *Do you think that wearing the watch affected what you did this week? YES NO*
  - o (if YES) *Tell me more about that.*
- *Did you sync the watch with an app or computer program to view the data? YES NO*
  - o (if YES) *Tell me more about that.*

### ATUS Interview and Stylized Questions

The ATUS questions and stylized question order would be counterbalanced.

### ATUS Style Interview

The ATUS interview will start at 4 a.m. and run through 10 a.m. or whenever the participant woke up. It will then skip to 7 p.m. and continue through the participant's bedtime. Participants will not be asked where they were or who they were with.

*Now I'd like to find out how you spent your time yesterday, <DAY & DATE>. If an activity is too personal, there's no need to mention it.*

- *Let's begin with yesterday, <DAY>, at 4 a.m. What were you doing?*
  - (if sleeping) *What time did you wake up yesterday?*
  - (if not sleeping) *What did you do next?*
- *What did you do next?*
  - *How long did you spend <ACTIVITY>?*
- *What did you do next?*
- *...*
- *OK, now I would like to skip forward to last night at 7 p.m. What were you doing at 7 p.m.?*
  - *How long did you spend <ACTIVITY>?*
- *What did you do next?*
  - *How long did you spend <ACTIVITY>?*
- *\*... (Continue until the participant mentions sleep)*
- *What time did you wake up?*
  
- *We skipped from about 10 a.m. to 7 p.m., during that time yesterday did you take any naps?*
  - (if yes) *What time did you fall asleep for your nap? What time did you wake up?*

**\*Going/Went to bed (FROM ATUS TRAINING MANUAL)**

- *Ask the probe "What time did you fall asleep?"*

### **Stylized Questions**

The following sets of questions could be asked together (in their current order), only one set could be asked if we prefer one over the other, or half of the participants could receive one set, and another half could receive the other.

- *How long do you sleep at night on an average weekday?*
- *Do you typically take naps?*
  - (if yes) *How long do your naps usually last?*
  
- *Thinking about the past week (between <DATE> and <DATE>), on average, how long have you slept each night?*
- *Did you take any naps during the last week?*
  - (if yes) *How long was your typical nap this week?*
- *Was the amount you slept during the last week typical of how you usually sleep?*
  - (if no) *In what way was your sleep this week unusual?*

- *Thinking about the past week (between <DATE> and <DATE>), on average, how long have you slept each night?*
- *On average, at what time did you fall asleep on Monday through Friday during the past week?*
- *On average, at what time did you wake on Monday through Friday during the past week?*
- *On average, at what time did you fall asleep on Saturday and Sunday during the past week?*
- *On average, at what time did you wake up Saturday and Sunday during the past week?*

### **Debriefing**

The debriefing will always be asked in this order, regardless of the order of the ATUS interview and stylized questions.

*Thanks for going through those questions with me. We are going to switch gears now and talk a bit about what it was like for you to answer those questions. I have some follow-up questions that will help us better understand how people are responding to this survey. I want to emphasize that there are no ‘right’ or ‘wrong’ answers to these questions – we are just interested in your interpretations and reactions.*

1. *What were your reactions to these questions?*
2. *I asked you a number of questions about sleep. What does the word “sleep” mean to you?*
3. *What activities do you include as part of sleep?*
  - a. *(if any non-sleep activities reported) Did you include any of these activities in your estimate of how long you slept?*

### **Debriefing – ATUS**

1. *When we walked through your day yesterday, you said that you woke up at <WAKE TIME>. How did you arrive at your answer to this question?*
  - a. *(if exact) Can you describe how you know that is the exact time you woke up?*
2. *When someone asks, “What time did you get up?” what does this mean to you? Is this the same or different from what time you woke up?*
3. *What time do you usually wake up?*
  - a. *(if different than time reported for yesterday) Why was yesterday different?*
4. *You said that you went to sleep at <SLEEP TIME>. How did you arrive at your answer to this question?*
  - a. *(if estimate) Can you remember the exact time you went to sleep yesterday?*
  - b. *(if exact) How do you know that is the exact time you went to sleep?*
  - c. *About how long did it take you to fall asleep last night?*
5. *When someone asks, “What time did you go to bed?” what does this mean to you? Is this the same or different from the time you actually fell asleep?*
6. *Is <SLEEP TIME> when you usually go to sleep or was yesterday different?*
  - a. *(if unusual) Why was yesterday different?*
  - b. *(if unusual) Do you have a usual time that you go to sleep? When is that?*
7. *(if nap) I asked about naps and you said you slept for <NAP DURATION> yesterday. Is that time exact or an estimate?*
  - a. *(if estimate) Do you remember the exact amount of time you napped?*
  - b. *(if estimate) How precise do you think I wanted to you to be about naps?*

8. *Given the time you went to sleep last night and the time you woke up this morning, I calculate that you slept <SLEEP DURATION> last night. Does that sound correct?*
9. *Did you wake up during the night?*
  - a. (if yes) *How many times?*
  - b. (if yes) *Were you awake for more than 15 minutes?*
10. *Is it easy or difficult to remember what time you woke up yesterday? Why is that?*
  - a. response options provided on showcard: Very Easy, Somewhat Easy, Neither Easy Nor Difficult, Somewhat Difficult, Very Difficult
11. *Is it easy or difficult to remember what time you fell asleep yesterday? Why is that?*
  - a. Response options provided: Very Easy, Somewhat Easy, Neither Easy Nor Difficult, Somewhat Difficult, Very Difficult

### **Debriefing – Stylized Questions**

1. *I asked you about how long you slept on the average night last week. How did you go about answering that question?*
2. *I also asked about the average time you fell asleep during the past week. How did you go about answering that question?*
3. *I asked you about the average time you woke up during the past week. How did you go about answering that question?*
4. *Is it easy or difficult to determine how long you sleep on an average weekday? Why is that?*
  - a. Very Easy, Somewhat Easy, Neither Easy Nor Difficult, Somewhat Difficult, Very Difficult
5. *How certain are you that you slept <SLEEP DURATION> on average last week?*
  - a. Not at all certain, A little certain, Somewhat certain, Very certain, Extremely certain

### **Debriefing - Social Desirability**

1. *Why do you think the government would ask questions about how much sleep people get?*
2. *Do you think there is an appropriate number of hours a person should sleep in one night?*
  - a. *What is the minimum number of hours a person should sleep in one night?*
  - b. *What is the maximum number of hours a person should sleep in one night?*
3. *Do you think it would be more embarrassing for someone to admit they have slept too much or slept too little? Why is that?*
  - a. *If I told you that I am conducting a survey about employment and jobs, do you think it would be more embarrassing to admit having slept too much or too little?*
  - b. *If I told you that I am conducting a survey about health, do you think it would be more embarrassing to admit having slept too much or too little?*
4. *Is there a time in the morning that you think everyone should be awake by?*
5. *Is there a time that you would be embarrassed to tell someone you slept until?*
6. *Is there a time at night you consider too early to be in bed? That is, is there a time that you would be embarrassed to tell someone you fell asleep for the night?*
7. *Would you be embarrassed to discuss naps you take during the day?*
8. *Do you discuss how much you sleep with friends and family?*
  - a. (if yes) *Is the amount you sleep greater than, less than, or about the same as the people you talk to?*

9. *Do you think you sleep more than, less than, or about the same as the average American?*

### **Fitbit Comparison Questions**

These questions will be somewhat unstructured. While we will attempt to follow the protocol below as much as possible, there will likely be a number of unique situations that we did not account for. The interviewer will ask unscripted questions to seek more information about these situations.

*Now I'd like talk about what the Fitbit measured. I would like to compare it to what you reported and get your feedback about any differences. Remember, this is not an evaluation of you or your answers. There are a number of reasons why there might be differences, we are looking to find out what those reasons might be.*

1. *The Fitbit recorded that you slept \_\_\_\_ hours last night.*
  - a. *[if equal to or close to ATUS report] That is close to what you reported. Does that number seem right to you?*
  - b. *[if greater than or less than] Does that number seem right to you?*
  - c. *[if greater than or less than] That is (greater than/less than) what you reported when you we walked through your day yesterday. Can you tell me more about that?*
  - d. *[if greater than or less than] The Fitbit recorded \_\_\_\_ as the time you fell to sleep (last night/this morning). Does that sound right?*
  - e. *[if greater than or less than] The Fitbit recorded \_\_\_\_ as the time you woke up (this morning/last night). Does that sound right?*
  - f. *[if sleep data indicate time awake during night] Do you recall waking up during the night?*
2. *[if went to bed time is different than went to sleep time] The Fitbit recorded that you laid down (but hadn't fallen asleep yet) at \_\_\_\_\_. Does that sound right?*
3. *[if got out of bed time is different than woke up time] The Fitbit recorded that you got out of bed at \_\_\_\_\_ (after having woken up at \_\_\_\_\_). Does that sound right?*
4. *The Fitbit recorded that you slept, on average, \_\_\_\_ hours per night during the weeknights and \_\_\_\_ per night on the weekends.*
  - a. *[if equal to or close to stylized report] That is close to what you reported. Does that number seem right to you?*
  - b. *[if greater than or less than] Does that number seem right to you?*

- c. [if greater than or less than] *That is (greater than/less than) what you reported when you we talked about the amount of sleep you get during an average week. Can you tell me more about that?*
  - d. [if sleep data indicate an irregular sleep pattern or deviations on an individual night] *Were there any days this week, that your sleep was unusual or out of the ordinary?*
    - i. [if yes] *Can you tell me more about that?*
  - e. [if sleep data indicate time awake during night] *Do you recall waking up during the night?*
5. [if sleep data indicate any sleep duration < 3 hours between 5 a.m. and 10 p.m.] *Do you recall taking any naps this week?*
- a. [if yes] *On which days?*
6. *Do you have any additional comments about the Fitbit, about how you spent your time this week, or anything else?*



