For each sensor, please **circle the vertical line** that best describes your experience performing tasks while wearing it.

	Didn't notice it	Neutral	Very obtrusive	Reason or general comments
Body trackers				
Tactile sensors on hands (the black pads and associated wires)				
Gloves alone				
Eye-tracking headset				
Muscle-sensing armbands				
Any other general comments?				

How likely would you be to want a robot assistant for the following tasks? Please circle the most appropriate vertical lines.

	The robot does it on its own	The robot assists you	
	Not at all Definitely	Not at all Definitely	Reason or general comments
Prepare an entire meal			
Cut (vegetables/fruit, bread, etc.)			
Fetch ingredients	шшшшшшш	шшшшшшш	
Load the dishwasher			
Unload the dishwasher	шшшшшшш	шшшшшшш	
Manually wash/dry plates etc.			
Put away plates, utensils, etc.		шшшшшшш	
Set/clear the table			
General cleaning	шшшшшшш	шшшшшшш	
Any other tasks that you would want a robot to do on its own or while working with you?			

Considering the tasks as a whole while wearing the sensors, please circle the vertical line that best matches your experience.

Mental Demand: How mentally demanding was the task?	Very low Very high	
<b>Physical Demand:</b> How physically demanding was the task?	Very low Very high	
<b>Temporal Demand:</b> How hurried or rushed was the pace of the task?	Very low Very high	
<b>Performance:</b> How successful were you in accomplishing what you were asked to do?	Perfect ✓ × Failure	
<b>Effort:</b> How hard did you have to work to accomplish your level of performance?	Very low Very high	
<b>Frustration:</b> How insecure, discouraged, irritated, stressed, and annoyed were you?	Very low Very high	
Any other general comments?		

## For each pair, circle the Scale Title that represents the more important contributor to workload for the specific task(s) you performed in this experiment.

Effort	Temporal Demand	Temporal Demand	
or	or	or Effort	
Performance	Frustration		
Physical Demand	Performance	Physical Demand	
or	or	or	
Frustration	Frustration	Temporal Demand	
Physical Demand	Temporal Demand	Frustration	
or	or	or	
Performance	Mental Demand	Effort	
Performance	Performance or	Mental Demand	
or		or	
Mental Demand	Temporal Demand	Effort	
Mental Demand	Effort	Frustration	
or	or	or	
Physical Demand	Physical Demand	Mental Demand	

Any additional feedback, comments, or suggestions:			

To be completed by the research team: Subject ID: \_\_\_\_\_ Session ID: \_\_\_\_\_ Date: \_\_\_\_

## **INSTRUCTIONS: RATING SCALES**

We are not only interested in assessing your performance but also the experiences you had during the different task conditions. Right now we are going to describe the technique that will be used to examine your experiences. In the most general sense we are examining the "workload" you experienced. Workload is a difficult concept to define precisely. but a simple one to understand generally. The factors that influence your experience of workload may come from the task itself, your feelings about your own performance. how much effort you put in, or the stress and frustration you felt. The workload contributed by different task elements may change as you get more familiar with a task, perform easier or harder versions of it, or move from one task to another. Physical components of workload are relatively easy to conceptualize and evaluate. However, the mental components of workload may be more difficult to measure.

Since workload is something that is experienced individually by each person, there are no effective "rulers" that can be used to estimate the workload of different activities. One way to find out about workload is to ask people to describe the feelings they experienced. Because workload may be caused by many different factors. we would like you to evaluate several of them individually rather than lumping them into a single global evaluation of overall workload This set of six rating scales was developed for you to use in evaluating your experiences during different tasks. Please read the descriptions of the scales carefully. If you have a question about any of the scales in the table. please ask me about it. It is extremely important that they be clear to you. You may keep the descriptions with you for reference during the experiment.

After performing each of the tasks, you will be given a sheet of rating scales. You will evaluate the task by marking each of the six scales at the point which matches your experience. Each line has two endpoint descriptors that describe the scale. Note that "performance" goes from "good" on the left to 'bad" on the right. This order has been confusing for some people. Please consider your responses carefully in distinguishing among the different task conditions. Consider each scale individually. Your ratings will play an important role in the evaluation being conducted, so your active participation is essential to the success of this experiment and is greatly appreciated by all of us.

## **INSTRUCTIONS: SOURCES-OF-WORKLOAD EVALUATION**

Throughout this experiment the rating scales are used to assess your experiences in the different task conditions. Scales of this sort are extremely useful. but their utility suffers from the tendency people have to interpret them in individual ways. For example, some people feel that mental or temporal demands are the essential aspects of workload regardless of the effort they expended on a given task or the level of performance they achieved. Others feel that if they performed well the workload must have been low and if they performed badly it must have been high. Yet others feel that effort or feelings of frustration are the most important factors in workload: and so on. The results of previous studies have already found every conceivable pattern of values. In addition, the factors that create levels of workload differ depending on the task. For example, some tasks might be difficult because they must be completed very quickly. Others may seem easy or hard because of the intensity of mental or physical effort required. Yet others feel difficult because they cannot be performed well, no matter how much effort is expended.

The evaluation you are about to perform is a technique that has been developed by NASA to assess the relative importance of six factors in determining how much workload you experienced. The procedure is simple: You will be presented with a series of pairs of rating scale titles (for example, Effort vs. Mental Demands) and asked to choose which of the items was more important to your experience of workload in the task(s) that you just performed. Each pair of scale titles will appear on a separate card.

Circle the Scale Title that represents the more important contributor to workload for the specific task(s) you performed in this experiment.

After you have finished the entire series we will be able to use the pattern of your choices to create a weighted combination of the ratings from that task into a summary workload score. Please consider your choices carefully and make them consistent with how you used the rating scales during the particular task you were asked to evaluate. Don't think that there is any correct pattern: we are only interested in your opinions.

If you have any questions. please ask them now. Otherwise, start whenever you are ready. Thank you for your participation.