Pilot Study for CS294-4 project

**Handout for Adam:**

The project in which we are participating is part of a graduate course in UC Berkeley that studies assistive technologies for disabled people. We have broken into project groups to study how a particular new technology may prove useful. Our group, made up of Andy (a Ph.D. candidate, Computer Science) and Safi (undergraduate, Public Policy and Disability), iscollecting data and experimenting with new software for improving navigation in word processor.  
 It is important for us, the authors of this project, to have the nature of the proposed modifications unknown to the participants until the time of the actual experiments. Additionally, we would like to collect some biographical background—which will remain absolutely confidential—in order to compare and contrast it with the results of these experiments.  
 This project has six similar, yet not identical, parts and could take between 2-3 minutes and up to 10 minutes each, after an initial voice recognition training period of up to 30 minutes (if necessary). It is not a contest; we are anticipating significant variations between different volunteers, as well as differences within the individual’s own various tasksWe would like to emphasize that this experiment should be approached at as a fun activity and a contributing effort.

The followingare some clarifications for the biographical questionnaire:  
Each question might broken into smaller different categories. Please answer each category to the best of your knowledge. If you have no information for some of these categories please indicate it with N/A (= not applicable). In addition to these direct and specific questions, please feel free to voice your opinion about related aspects of the specific question, as well as the more general idea. If you refer to a specific question please indicate it with the assigned number of the appropriate section next to your answer.

Thank you and good luck.

**Andy, the following is my contribution. The suggestion in bold fonts and inside [brackets] I feel strongly about. The *italic comments* are to your consideration. Safi**

Pre-interview:

1. Age/Sex/Job/Major
2. Functional impairment history
3. Experience with assistive technologies (and history)
4. Experience with speech recognition **[length, proficiency, attitude toward, initial training time/length]**
5. Expectations **[speed, errors, other difficulties]**
6. Level of satisfaction/dissatisfaction with current tools in editing documents

Post-interview:

1. During the task, did you feel anxious or pressured?
2. Which was the easiest to use/hardest to use and why?
3. If you were designing this, how would you change it? what would you keep the same?
4. Compare and contrast to existing assistive devices/equipment you usually use. **[ease of learning, usage, difficulties: space, light and noise, upgrading and maintenance ideas]**
5. Did you like it/hate it? How much satisfaction?
6. Was the task solvable?
7. Is this task typical? **[what other means you currently use for these specific tasks? Are you aware of other solutions? Did you try them?]**
8. Might this be easier to use with more training?
9. Might there be another population of people who would benefit from these technologies?

**[10. Can you guess/predict the advantages or disadvantages these modifications might give you in school? Future work?**

Four people

Six Experiments each  *On the same computer? With their original voice recognition file? Retraining?* I think we should train them on whatever software we use, unless they’ve already been trained on the same one and we can run it on the test computer.

First Experiment: A document the person wrote **[Perhaps few weeks earlier to avoid perfect memory situation?]**

Second: A document we wrote, but they read before the experiment starts **[Length of time to get familiar with this text: fix time or until finish to read? How many times to read it over, if that all?]** They should read it once, however long that takes them.

Third: A document we wrote that they don’t get a chance to look at

Round:

1. dragon/viavoice navigation commands
2. keyboard + mouse commands
3. wizard of oz for our stuff.

Documents are max 3-4 pages. Discuss formatting.

Tasks:

1. Find a sentence/paragraph about “something”. Be vague, no exact words. **[Does the location of our target significant? I think yes! Too short of a search as well as too long might have completely different reasoning for performance. Additionally, do we start with the top of the document—scrolling up/down is equivalent? I think that the scrolling should incorporate at least one crossover between pages]** Sure. Then we can have three searches. One within the page, one to another page. and one backwards to a previous page.
2. Select a phrase/sentence or multiple contiguous sentences near the target site. **[I would like to experiment with a sentence which written over partial of two different lines]** ok.

Metrics for each task:

1. Time to completion.  
   **[I truly believe that we should consider, or at least mention—without action, the idea of different types of errors: *physical*, *perceptual* (Coordination of screen interface with cursor’s actual location, pace: actual speed versus the appropriate scrolling speed for the person, space.) and *cognitive* (Understanding, pace: reaction time, energy level, retention/memory of similar tasks].[Can we evaluate it at all? If we consider it—with help? Adams? Jennie (the Ph.D. in special education in our class?]** Those aren’t metrics. Those are analyses that use measurable quantities to get at them. it’s really hard to measure what reaction time really means here.
2. Number of errors:
   1. Finding:
      1. Overshoot **[misses completely? What does that mean with regard to the above comments?]**
      2. saying faster instead of slower, vice versa
   2. Selection:
      1. Start position incorrect (#chars, words, sentences)
      2. End position incorrect (#chars, words, sentences)
   3. Recognition error in command
   4. Navigational estimation error
3. Number of commands spoken
4. Number of words spoken
5. Subjective approval
6. Training time.

Do we want this project to stay at the “cave” and have Adam exposed it randomly during the semester (if he has time/energy/interest)? No. We need to be in control.