Part 1 – Steps in the Experimental Method [Step #s come from lecture slides]

Discuss the following questions with your neighbor:

Steps 1-3: Hypotheses, Independent and Dependent Variables

1. Example #1: Menus
   (a) Given the hypotheses, what is(are) the independent variable(s) and dependent variable(s)?

   (b) What other independent / dependent variables might we be interested in adding to our experiment?

2. Example #2: Passwords
   (a) Given the hypotheses, what is(are) the independent variable(s) and dependent variable(s)?

   (b) What other independent / dependent variables might we be interested in adding to our experiment?

Step 4: Possible nuisance variables (systematic errors)
Consider the following examples of nuisance variables for each of our experiment scenarios. How could you manage each of these variables in the given experiment? Could you control the variable? Should you make it an independent variable in the experiment? Randomize it?

Example #1: Menus
   (a) learning effects (e.g., participants faster on 2nd menu condition after doing the first one)
Step 5: Design the task to be performed
Come up with a task that you would have participants complete for each of the experimental scenarios. Consider external validity, what you’re trying to test (i.e. your hypotheses) and the feasibility.

1. Example #1: Menus

2. Example #2: Passwords

Step 7: For each independent variable, identify whether the comparison should be within or between subject. Explain what experimental design results (within-subject design, between-subject design, or split-plot design).

Example #1: Menus

Example #2: Passwords