Long Answer Questions

Instructions:

As part of your final exam for PSYC 3450 (Fall 2017) you will submit long form answers to **two** questions. Each question is worth a total of 10 points. Below you are given four long-answer questions (one on each page). You must provide answers to two of these questions. For each question you will submit your answer as a word document on blackboard. There are no word limits, but you can be as brief as you like as long as you clearly answer the questions.

1. In class we discussed 10 QRPs, or questionable research practices. Most of these research practices are grey areas. There are situations where engaging in these practices have negative consequences for the research at hand, and there may be situations where engaging in these practices is justifiable. Choose 5 of the 10 QRPs to discuss. For each of the 5 QRPs that you choose:
    a. Identify the QRP
    b. Describe a situation where engaging in that practice is harmful to the research, explain the negative consequence.
    c. Describe a situation where engaging in that practice could be justified, explain why.
    d. Grading Scheme (10 points). You will receive 2 points for your complete discussion of each QRP.

2. Consider the following experimental design conducted to measure the production effect. Remember from class, the production effect is the finding that words read aloud are better remembered than words read silently.

The experiment is a within-subjects design with one IV. The IV involves the manipulation of reading method during the encoding phase, and includes 2 levels: reading aloud vs. reading silently. The experiment was conducted as follows. All subjects were first presented with words from list 1 (names of cities), and asked to read each of them aloud. Next, all subjects were presented with words from list 2 (names of animals), and asked to read each of them silently. Finally, subjects were given a recall memory test and asked to write down as many words from both lists as they could remember. The DV was the number of correctly recalled words for each level of the IV.

Assume that the results of a statistical analysis showed a significant production effect. In other words, there were more correctly recalled words in the read aloud compared to the read silently condition.

Answer the following questions (2 points each)

a. There are two obvious confounds in the above design. Identify one confound in this design, and describe how that confound could explain the presence of a significant production effect (2 points)
b. Identify the second confound in this design, and describe how that confound could explain the presence of a significant production effect (2 points)
c. The two confounds above could potentially explain why there was a significant difference between the levels of the independent variable. But, the difference could be observed for at least two other reasons. Identify one additional reason, and explain why it would lead to the presence of a significant production effect (2 points)
d. Identify a second additional reason, and explain why it would lead to the presence of a significant production effect (2 points)
e. Describe a new design that controls for the two main confounds in the above experiment (2 points).

3. Throughout the course we have discussed how the results of experiments are used to test theories of the phenomena under investigation. We have also discussed many different kinds of phenomena, such as the Stroop effect, the task-switching cost, the inversion effect, etc. Complete the following:
    a. Identify a phenomenon from lecture or lab, and describe how it can be measured in an experiment with one IV and two levels. (2 points)
    b. Generate and describe a testable theory of the above phenomena. Your theory can be an existing one, or your own. At a minimum it must describe some kind of general principle that offers a testable explanation for the phenomena.
        - Describe your theory and how it explains the phenomena you have chosen (2 points)
        - Your theory should have at least one testable implication. Describe at least one testable implication (2 points)
        - Describe a 2x2 design that could be used to test an implication from your theory (2 points)
        - Describe a predicted pattern of results from the above design that would corroborate your theory (1 point)
        - Describe an alternative pattern of results that would not be consistent with your theory (1 point)

4. This question tests your ability to generate and clearly describe specific patterns of results. The table below shows some mean reaction times from a fictitious Stroop experiment involving a 2x2 design. The first independent variable (IV1) has two levels, congruent and incongruent. The second independent variable (IV2) has two unspecified levels A and B.

	IV2: A	IV2: B
IV1: Congruent	500 ms	?
IV1: Incongruent	600 ms	?

Answer the following questions:

a. Create a copy of the above table. Replace the ? marks with two new mean reaction times such that the table shows a significant 2-way interaction between IV1 and IV2. Assume that any difference must be at least +/- 10ms in order to be significant (1 point). In one or two sentences, clearly describe the pattern of the interaction, including appropriate values in your description (2 points)

b. Create a copy of the above table. Replace the ? marks two new mean reaction times such that the table shows only two significant main effects, and no significant interaction (1 point). Assume that any difference must be at least +/- 10ms in order to be significant. Clearly describe the pattern and mean values for the main effect of IV1 (2 points). Clearly describe the pattern and mean values for the main effect of IV2 (2 points).

c. Use the new table below to answer the following questions. In a few sentences clearly describe the patterns for all main effects and interactions. (2 points)

	IV2: A	IV2: B
IV1: Congruent	500 ms	600 ms
IV1: Incongruent	600 ms	500 ms