**Psych 610**

**Homework 12: Due 6 December 2017, 5:00pm**

**Note: This homework is a little shorter than usual, but it may require a little more careful thinking than usual!**

**Reading question:**

1. From Van Breukelen (2006): The more groups differ before testing, ANCOVA becomes more biased and less efficient. Why?

**Data Analysis**

Some researchers are interested in the cognitive-affective effects associated with drinking Mello Yello. The researchers recruited both regular Mello Yello drinkers and people who dislike Mello Yello (Mello Yello Haters) for an experiment. The researchers further divided the Mello Yello drinkers into two groups. In the first Mello Yello drinking group, the researchers did not allow the Mello Yello drinkers to drink Mello Yello for 3 days before the experiment (Mello Yello Deprived). In the second Mello Yello drinking group, the researchers let the Mello Yello drinkers drink an ice-cold Mello Yello right before the experiment began (Mello Yello Satiated). At the start of the experiment, the researchers called the participants insulting names and then asked participants to report how irritated they felt on a scale from 0 to 12 (Irritation at Baseline). Next, the researchers showed all groups an ice-cold Mello Yello, told them they would be able to drink it in only 5 minutes, and then asked them to report how irritated they felt on the same scale (Irritation at Anticipation).

Researchers hypothesized that (1) Mello Yello Deprived participants would feel significantly less irritated just knowing that they were about to drink an ice-cold Mello Yello. (2) Researchers were unsure as to if Mello Yello Satiated participants would feel any less irritated knowing that they were about to drink another ice-cold Mello Yello but were curious to test this. (3) That Mello Yello Haters would not be affected by the prospect of soon drinking an ice-cold Mello Yello.

**Codebook**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Name | Description | Values |
|  | Condition | Experimental manipulation | “Hater”  “Deprived”  “Satiated” |
|  | Baseline  Anticipation | Self-reported irritation at Baseline  Self-reported irritation at Anticipation | 1.5-12  0-12 |

**Analyses Instructions/Questions**

1. Read the data file into R and run descriptive statistics. For purposes of this assignment, you may pretend that this data is normal, neat, mello and outlier free.
2. Condition is already a factor but go ahead and run the code to make it a factor again with levels in whatever order you find helpful.
3. Should the researchers use the difference score or ANCOVA approach to test their hypotheses? Why or why not? Be careful to consider what is and is not manipulated.

1. Set up the appropriate contrasts to test all three of the researchers’ hypotheses. Hint, you will need a different reference group for each hypothesis. Be careful to note the number of tests needed when choosing your contrast method.
2. Use the Fisher’s LSD approach to protect against multiple comparisons for your tests.

a. Was Fisher’s LSD approach appropriate in this situation? Why or nor why not?

1. Using the difference score approach, run models to test each hypothesis.

a. Interpret the appropriate coefficient for hypothesis 1.

b. Interpret the appropriate coefficient for hypothesis 2.

c. Interpret the appropriate coefficient for hypothesis 3.

1. Regardless of your answer to 5a, correct your tests for multiple comparisons using the Holm-Bonferroni approach.
2. On a scale of 1-10 rate how pleased you are that we are not asking you to make a figure this week.
3. Make a figure showing…just kidding…Write a results section in your word doc describing the tests you ran and what you found. Include Holm-Bonferroni corrected p values in your results.
4. In your word doc, write how long it took for you to do this homework