ANTH 317 Quantitative Methods in Anthropology
Lab Assignment 1: Comparing Samples

Grade Weight: 20%
Due: November 14, 11:59 pm to Brightspace

Academic Integrity

Please note, while you are welcome to work through these exercises with other members of our class, because problem solving together can certainly be an aid to learning, it is expected that you will turn in your own unique and independent assignment, not the work of someone else. Remember that UVic's academic integrity policy clearly states that *"[c]heating includes, but is not limited to....copying the answers or other work of another person…"* (LINK to policy). If you have questions about what this policy means in context of this assignment or any other in this course, please do ask me, I will be happy to discuss it further.

Submission and Grading

Please submit your completed assignment as a PDF document only - whatever word processor application you are using (e.g., Word, Googledoc, Papers, etc.) will allow you to export your document as a PDF.

In addition to the document containing your answers to the questions, please also submit the script file (.R file) of your annotated script. IMPORTANT: the answers for each of the questions in this assignment should be presented your PDF document, the script file is only so I can check that you are:

1) correctly coding the tasks *using the functions we have learned*, or spot problems if not
2) getting into good annotation habits.

Your reports on each of the data sets will be graded based on the following:

1. The completeness of your examination and testing of the sample(s): Did you include all of the relevant statistics and visuals? Is your discussion of the results comprehensive but including the relevant information and interpretation?
2. The clarity of your presentation: Is the purpose of each analysis clear? Are the results (text, visual, tables) properly labeled and well formatted? Are they easy to read and understand? Is the writing clear, concise, and technically correct, with correct spelling and grammar?
3. Correctness: Are the correct tests, statistics and visuals presented? Are they interpreted correctly?

Mark values for each data set are indicated below
Your script file will be graded /5 on organization, clarity, and proper use of coding functions.
Total grade = /45

The Assignment:

Your goal for this lab is to write reports for each of the data sets, that compare the samples provided to address the research questions posed. Where appropriate remember to check assumptions. Including numeric and visual descriptions of the samples is an important part of reporting statistical results. Provide the full results of all your analyses and use them to support your decisions about which test(s) you chose to apply, and what you conclude about your hypotheses and the answer(s) to the research question(s). Where appropriate, create a graph to visualize the means comparisons. Do not just cut-and-paste the R outputs as your results

reporting - Present your results in organized table(s) and figure(s), with a narrative that tells your reader about these tests and their interpretation. Ensure you include the appropriate figure and table captions and refer your reader to the figures/tables in the text of your report (e.g., “Table 1 provides…”). Remember the data manipulation functions we learned earlier in the course. You may find these come in handy in dealing with these data sets.

The Data Sets:

Reaction (10 marks)

This data set contains the reaction times (in seconds) on a virtual obstacle course of 40 participants attempted before and after being administered a super-secret new drug intended to speed reflexes. As the researcher in charge of this experiment, you want to know does the drug affects reaction times?

Aliens (20 marks)

This data set contains data on length (mm) and weight (g) for samples of knives found at archaeological sites of three alien species - Vulcan, Ferengi, and Romulan. As an archaeologist of alien species from the Star Trek universe, who is particularly interested in weapons from these species, you want to know if the size characteristics of knives differ among these three species. Do the lengths and/or weights of the knives of these three populations differ?

Football (10 marks)

This data set contains the height (stature) data for the Dallas Cowboys Football Team (American football), and the Manchester United Football Team (English football). Are the heights of these two populations (American vs. English football players) different?