

### Conducting Research Using t-Tests

The purpose of this lab is to demonstrate the use of t-tests to investigate differences between means. You will select an experiment from the following options. To complete this assignment, you will (a) participate in the experiment, (b) analyze a set of data, (c) read supporting literature, and (d) prepare a written report in APA style. We will complete this lab across two weeks. This lab will be graded out of 100 points and will count 10% towards your course grade. As a result, each student will turn in his or her own work.

To start, review the following summaries of the experiment options and visit the PsychExperiments website URL: <http://psychexps.olemiss.edu/index.html>. Participate in at least two experiments. Feel free to try more to help you decide which one is most interesting to you. They are fun to do! For each experiment you do, you will be asked to provide some information before you begin -- age, where you are from, first name, etc. Be sure to select Arterberry's Psy 205 course and record the ID number you are given (it is like a license plate). This will allow me to be sure you completed this part of the assignment.

#### Experiment Options and Sources

Each experiment below lends itself to analysis as a two-group experiment. Some have more than two groups, but you will be able to compare only two groups for this project. See possible questions that can be asked about the phenomenon under each experiment heading. If more than one question is listed you need to select the one you prefer to address.

**Be a Juror.** A frequent feature of criminal and civil trials is the testimony of someone who witnessed an event. In this experiment you will assume the role of a juror and decide whether a defendant is innocent or guilty from the information presented to you.

References:

Lindsay, R. C. L., Wells, G. L., & O'Connor, F. J. (1989). Mock-juror belief of accurate and inaccurate eyewitnesses: A replication and extension. *Law and Human Behavior, 13*, 333-339.

Wells, G. L., Malpass, R. S., Lindsay, R. C. L., Fisher, R. P., Turtle, J. W., & Fulero, S. M. (2000). From the lab to the police station: A successful application of eyewitness research. *American Psychologist, 55*, 581-598.

Questions that can be asked:

1. Is there a difference in assignment of guilt in trials without an eyewitness vs a discredited eyewitness?
2. Is there a difference in assignment of guilt in trials without an eyewitness vs an unrefuted eyewitness?
3. Is there a difference in assignment of guilt in trials with a discredited eyewitness vs an unrefuted eyewitness?

**Perception of Gender.** How do we know someone is a boy or a girl? We cannot often use cues such as jewelry or hairstyle because both males and females can have similar earrings or hair cuts. Is it possible to determine gender in the absence of this information? This study addresses whether we can perceive gender using only facial structure, and you will be asked to judge the gender of 48 faces.

References:

Bruce, V., Burton, A. M., Hanna, E., Healey, P., Mason, O., Coombes, A., Fright, R., & Linney, A. (1993). Sex discrimination: how do we tell the difference between male and female faces? *Perception*, 22, 131-152.

Campbell, R., Benson, P. J., Wallace, S. B., Doesbergh, S., & Coleman, M. (1999). More about brows: How poses that change brow position affect perceptions of gender. *Perception*, 28, 489-504.

Questions that can be asked:

1. Is there a difference in judging gender between full face view and eyes only view?
2. Is there a difference in judging gender between full face view and mouth only view?
3. Is there a difference in judging gender between eyes only view and mouth only view?

**Political Poll Experiment.** This study asks you to predict the voting patterns of people who are like you and who are not like you. You will be asked to indicate your own preference among the four major presidential candidates in the 2000 election and then to estimate the preferences of others.

References:

Brown, C. E. (1982). A false consensus bias in 1980 presidential preferences. *The Journal of Social Psychology*, 118, 137-138.

Brown, C. E. (1996). False consensus bias and gender: The case of Judge Clarence Thomas. *Psychological Reports*, 78, 144-146.

Questions that can be asked:

1. Do predictions in voting patterns vary by whether the judgments are made about someone who is the same vs opposite gender?

**Ponzo Experiment.** The Ponzo illusion is an example of a geometrical illusion that results in the misjudgment of line length. This misjudgment is usually based on features the context within which the lines are presented. You will be asked to equate the length of two lines with and without background information.

References:

Jordan, K., & Randall, J. (1987). The effects of framing ratio and oblique length on Ponzo illusion magnitude. *Perception and Psychophysics*, 41, 435-439.

Schiffman, H. R., & Thompson, J. G. (1978). The role of apparent depth and context in the perception of the Ponzo illusion. *Perception*, 7, 47-50.

Questions that can be asked:

1. How are line judgments affected by the presence of the background?

**Self-Reference Experiment.** You will be asked to answer questions about a list of words in order to assess how we process text. You will make either orthographic (e.g., does the word contain an "e"?) or semantic (e.g., does this describe you?) judgments.

References:

Bower, G. H., & Gilligan, S. G. (1979). Remembering information related to one's self. *Journal of Research in Personality*, 13, 420-432.

Craik, F. I., & Tulving, E. (1975). Depth of processing and the retention of words in episodic memory. *Journal of Experimental Psychology: General*, 104, 268-294.

Rogers, T. B., Kuipers, N. A., & Kirker, W. S. (1977). Self-reference and the encoding of personal information. *Journal of Personality and Social Psychology*, 35, 677-688.

Questions that can be asked:

1. Is recognition influenced by how we process words?

**Stroop Experiment.** The Stroop Effect demonstrates how reading text can be disrupted by color. For example, if you are asked to read the word "red" and it is printed in red ink, you will be faster than if it were printed in blue ink. The ink color interferes with the processing of the text. Likewise if you were asked to say the ink color, you would have a harder time responding "blue" when the blue letters spelled red. This study looks at whether there are hemispheric differences in the Stroop Effect. In other words is the right side of your brain equally confused by ink color as the left side of your brain?

References:

MacLeod, C. M. (1991). Half a century of research on the Stroop effect: An integrative review. *Psychological Bulletin*, 109, 523-553.

Schmit, V. & Davis, R. (1974). The role of hemispheric specialization in the analysis of Stroop stimuli. *Acta Psychologica*, 38,149-158.

Questions that can be asked:

1. Is the Stroop Effect equally strong for the right and left side of the brain?
2. What is the strength of the Stroop Effect in the right brain?
3. What is the strength of the Stroop Effect in the left brain?

**Word Recognition Experiment.** Does one side of our brain do better than another in recognizing words? Traditionally the left side of the brain has thought to govern language abilities. In this experiment, you will be presented words to the left and right visual fields (and thus to the right and left side of your brain, respectively). Your ability to recognize these words will be assessed.

References:

Barton, M. I., Goodglass, H., & Shai, A. (1965). Differential recognition of tachistoscopically presented English and Hebrew words in right and left visual fields. *Perceptual and Motor Skills*, 21, 431-437.

Bryden, M. P., & Rainey, C. A. (1963). Left-right differences in tachistoscopic recognition. *Journal of Experimental Psychology*, 66, 568-571.

Questions that can be asked:

1. Does the left and right side of our brains process text differently?

### Deadlines

Due Wednesday April 18: experiment choice, ID number(s), desired sample size, questions/hypotheses.

Due Friday April 20: typed method section that describes your experiment using APA style (see CD-rom and/or document on Blackboard) and method sections in reserved readings for your experiment.

Before Wednesday April 25, read supporting references for your experiment (all articles are on reserve), the section on APA Style on your CD-rom or the document posted in Blackboard under Documents, and the SPSS sections on independent samples t-tests and correlated samples t-tests (also on CD-Rom).

Wednesday April 25: In lab you will conduct your analyses, work on interpretation and make graphs/tables.

Due April 27: Full written report with at least one graph or table. Report will include:

title page

abstract

introduction

method section (with participants, materials/apparatus, procedure subsections)

results

discussion

references

graph or table

Be sure to read about each about APA style as you prepare your paper.

**Psy 205 -- PsychExperiments Lab**

Researcher's Name \_\_\_\_\_

ID Number(s) \_\_\_\_\_

List all experiments tried and submitted data for:

Experiment Name for Assignment \_\_\_\_\_

Desired Sample Size \_\_\_\_\_  
(per condition -- is this between groups or matched pairs?)

Research Hypothesis (see Graziano & Raulin, page 180):

Causal Hypothesis (see Graziano & Raulin, page 183):

Null and Alternative Hypotheses:

Filename \_\_\_\_\_  
(Filled in by Martha)