**Psychology 100**

**Lab Exercise: Drawing Conclusions from Experimental Data: A Mirror Drawing Experiment**

In the first part of this term's Psyc 100 class, you have been learning about research methodology and how psychologists rely on empirical data to draw conclusions about human behavior. In today's lab, you will get some practice with gathering data, presenting the data graphically, and drawing conclusions from that data. The experimental task we will be using is called a *mirror-drawing task.* This is a task based upon something we will study a bit later in the course called *procedural memory.* Procedural memories involve memory for motor skills such a tying your shoes or riding a bicycle. Unlike other memories, procedural memories do not seem to be encoded via language, and thus they are difficult to transmit to someone in words. The memories seem to be "in the muscles."

In today's lab you are going to be taking part in a mirror-drawing exercise with a partner. Your TA will provide you with a mirror along with a couple sheets of the actual drawing task.

In the first part of the task you each will complete the control condition, which doesn't make use of the mirror. Your task is to begin at any point in the star and trace the basic shape while staying within the lines (see below). Your task is to trace the shape as quickly as possible without sacrificing accuracy. We will operationalize accuracy as your ability to stay within the lines. Each time you stray outside of the lines will count as an **error**. (See the diagram on the next page as an example.) While you are performing the task, your lab partner will be recording the time that it takes you to complete the task. You and your partner will alternate turns. First, one of you will do the control drawing, then the other one will. You will then alternate on each of the three experimental runs, with one person recording time while the other performs the drawing task.

After you've completed the control condition, you will begin the mirror drawing portion. Your task is the same as before: drawing the basic star shape as quickly as possible while staying within the lines. Now however, you cannot directly look at the paper or your hand, you must only use the reflection in the mirror to complete the task. Like before, take note of how long it takes you to complete the task and how many errors you produced. Complete this task **THREE** times. After each trial, record the number of errors and the time it took you to complete the task in the table on the next page of this lab handout.
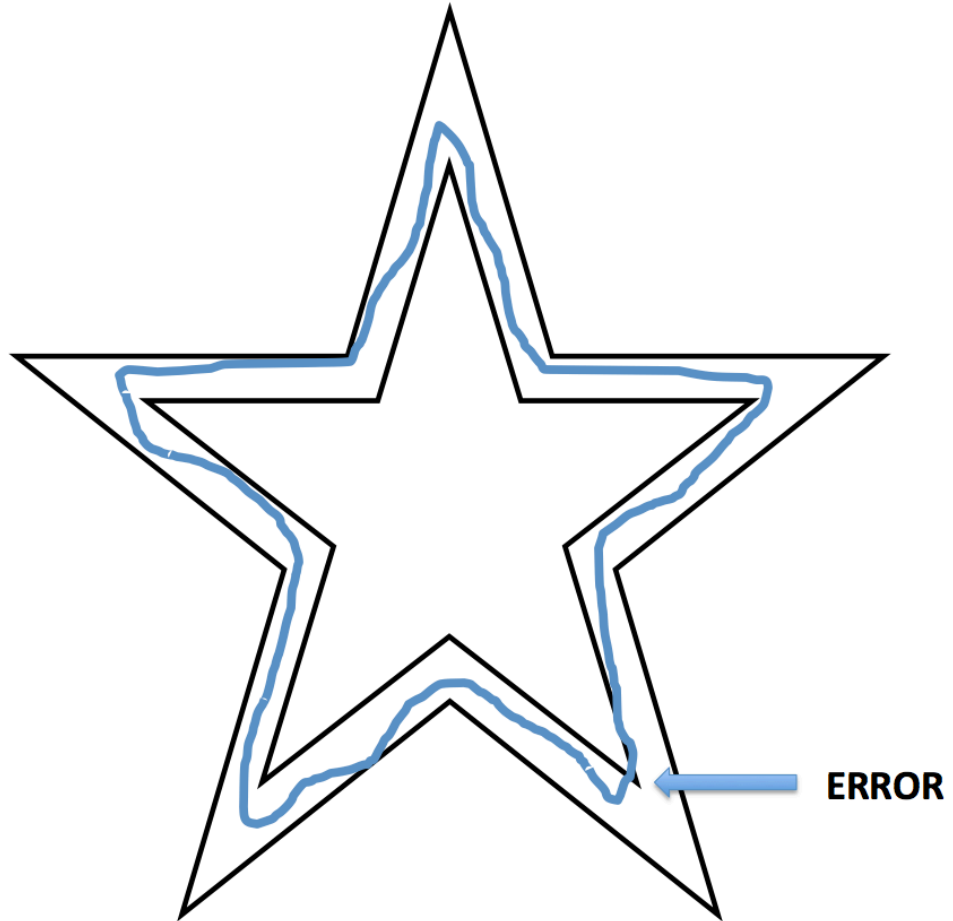
ERROR

| | Time (s) | Errors |
|---|---|---|
| CONTROL | | |
| RUN 1 | | |
| RUN 2 | | |
| RUN 3 | | |

**The Lab Report Write-Up:**

Draw two graphs of your results, one for the number of errors and one for the time that it took to complete the task in each condition. In both of your graphs, the experimental condition (control, run 1, run 2, run 3) should be on the horizontal axis and the vertical axis should represent time (in seconds) or number of errors, depending upon the graph. You are free to use a line graph or a bar graph to present your results. After you draw the graph write a brief account of what you found. Be sure to address all of the following points in your write-up.

1. Examine the data in your graph. What happened to the performance on the mirror-drawing task over consecutive runs? Why do you think this happened?
2. Did performance on the mirror-drawing task ever get as good as it was in the control condition?
3. Why are both time and accuracy measured? What if we measured only one or the other?
4. What is the point of the control task?
5. Did you find any evidence that this is a skill that improves with practice?
6. Pretend you spend hours on this task until you are as quick and accurate as you are in the control condition. If you had to switch and complete the task with your non-dominant hand what would happen? How do you think your performance would relate to novices trying to complete the task with their non-dominant hand? Explain the reasoning behind your thoughts.
7. Choose one skill you're particularly adept at which would fall under the umbrella of procedural memory. How is this task similar or different to that skill?