**Data Collection Lab on Speed-Accuracy Trade-off**

**Background**

Henmon (1911) was the first to systematically study the relationship between the time and accuracy of responses. He used a line judgment task—participants had to judge whether two lines were the same length. We will use a similar task, with some modern twists, to generate and explore the speed-accuracy trade-off.

**1. Task practice.**  Using the henmonSAT.pbl file for this demonstration. Run the task once, using a long time deadline (10000 ms, which is 10 s). Take as much time as you need on each trial, and try to be accurate.

Look at the data output:

Results of the line judgment task

Data code: morn

This report stored in data/morn/sat-report-morn.txt

Deadline was: 1000

Mean accuracy: 0.58

Response time: 538.56

Late responses: 0

Correct RT: 534.966 with N=29

Incorrect RT: 543.524 with N=21

***Questions to answer for lab report:*** What might lead to errors in this task? Why might accuracy depend on time?

**2. Create SAT 'operator' function.** Run the task on yourself using the following deadlines:

5000,3000,1000,750, 500. After each run, we will record times and accuracy, and times of correct and incorrect trials, in a shared spreadsheet, so we have more data.

* Create a figure showing the SAT function, similar to the Yamaguchi paper..
* Plot mean correct and incorrect RT against deadline.
* Discuss what this shows about a macro SAT.
* We should have seen a cross-over in the mean duration for correct and incorrect as deadline increased. Why do you think this happened?

Use the following report template as a guideline for your report.

**Lab Report**

Student Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Introduction**

The goal of the study was to determine how the speed and accuracy of responses would change in response to differences in base rate. In addition, we examined how response bias would be impacted. We hypothesized:

1. That more common stimuli would lead to faster responses

**Method**

***Participants.***Data from two participants was included in this report

***Procedure.*** *Detailed description of procedure here, including basic paradigm, instructions, diagram/screenshot, number of trials, main independent variables/conditions, and dependent measures.*

**Results**

* Describe main results in terms of dependent and independent variables
* Include table or figure of results
* Discuss each hypothesis stated in the introduction.