

Homework 6
Due: November 7, 2025

In an *Emotional Stroop* experiment, a participant is asked to identify the font color of a word (e.g., red, green, or blue). The shown words are either neutral (e.g., tower, pencil, month) or emotional (e.g., abuse, drown, suffocate). Each trial measures how long it takes for participants to identify the font color (in this version of the experiment, trials with a mistake—such as indicating a green word is red) are repeated later in the experiment. Emotionally laden words tend to draw attention and thereby slow down identification of the word's color.

From the class website, get the CSV file named “EmotionalStroop.csv”. For each of the 33 participants it reports the mean response time (averaged across 39 trials) for each word type.

1. Run a (traditional) dependent t-test on the data. Report the results.
2. Run a JZS Bayes Factor dependent t-test on the data. Report the results. [Note: We did not give an example of a dependent t-test in class, but you should be able to figure it out.]
3. Modify the scaling value for the Cauchy prior used in the JZS Bayes Factor calculation over the range 0.001 to 3. What happens to the Bayes Factor for different scaling values? Make a plot.
4. Explain the relationship between the Bayes Factor value and the scaling parameter.