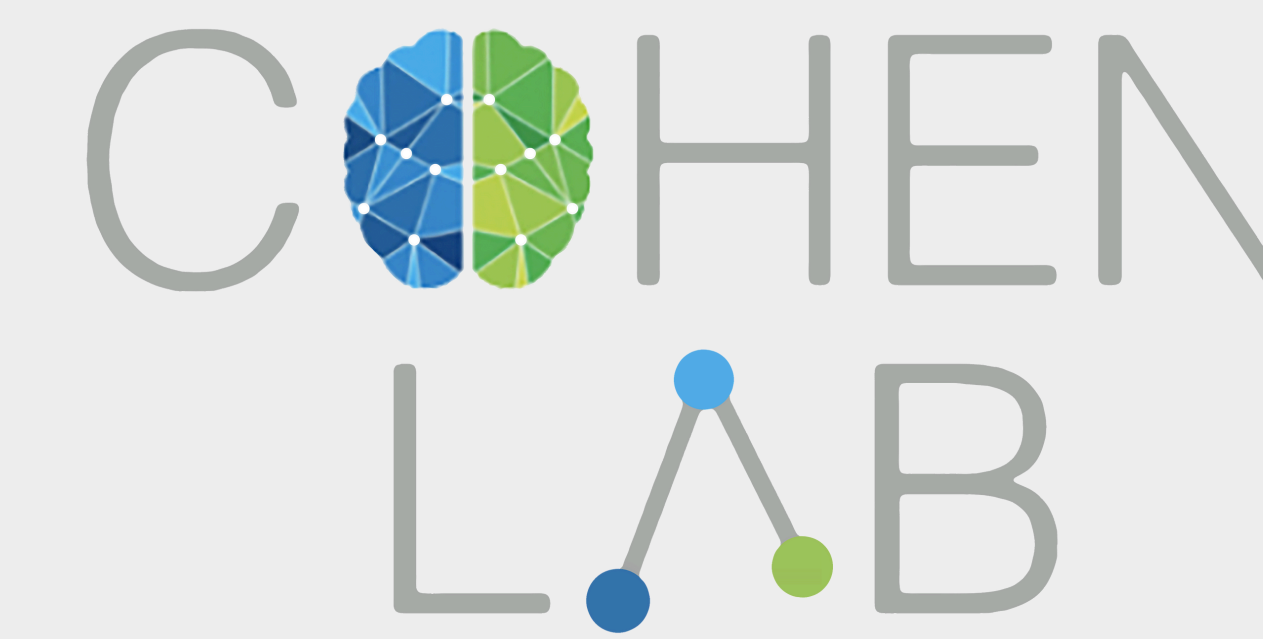




Quick Thinking: Does reaction time predict accuracy on a stop signal task?



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Background

- Executive functioning skills, especially action control and action inhibition, are critically important for daily life.
- Past research has suggested that humans are better at action-based stimuli task versus action inhibition based tasks.
- There is limited research examining whether reaction time influences performance on action inhibition-based stop-signal tasks.
- We hypothesize that reaction time will impact performance on a stop-signal task.

Methods

Participants

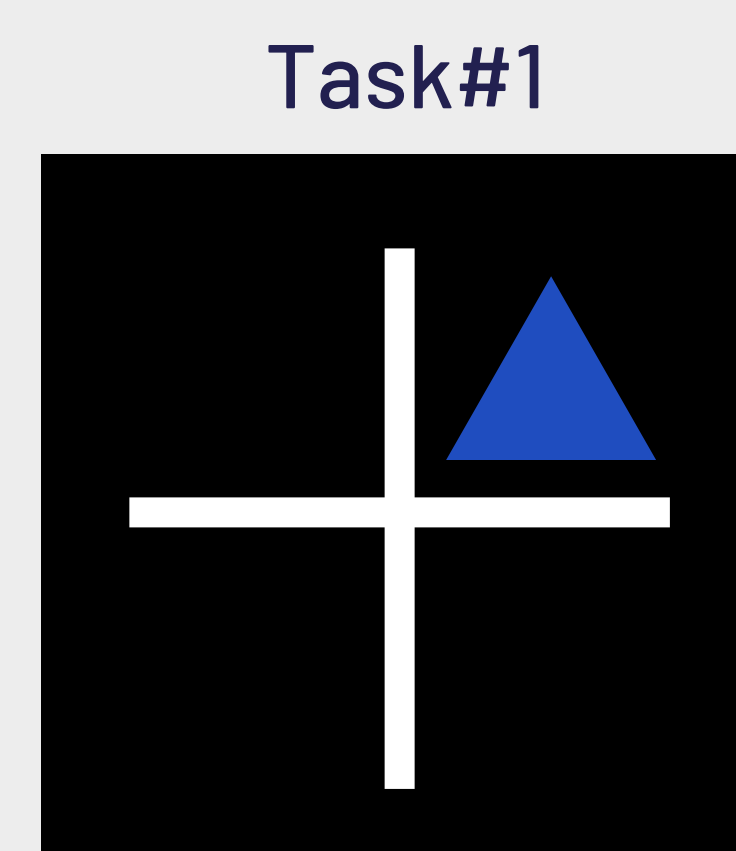
- Healthy adults ages 18-50
- Mean Age: 25.3
- N=121 (68% women)

Analyses

1. Using the mean reaction time (369 ms) from task 1, participants were divided into two groups: fast responders and slow responders.
2. An Independent Samples T-Test measured differences in stop-signal performance in experiment 2 between fast and slow responders.
3. A Pearson correlation coefficient was performed to further examine this relationship.

Tasks

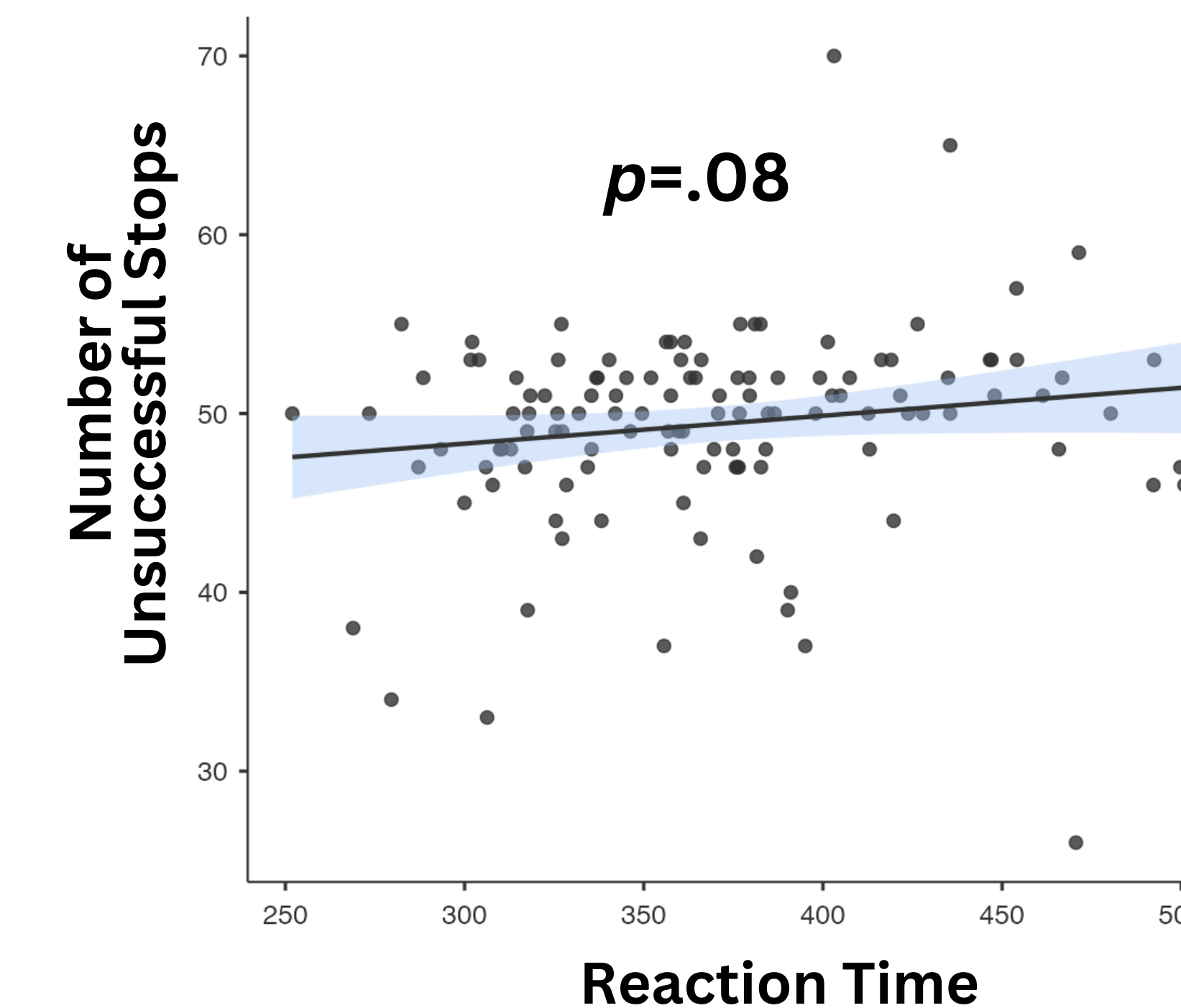
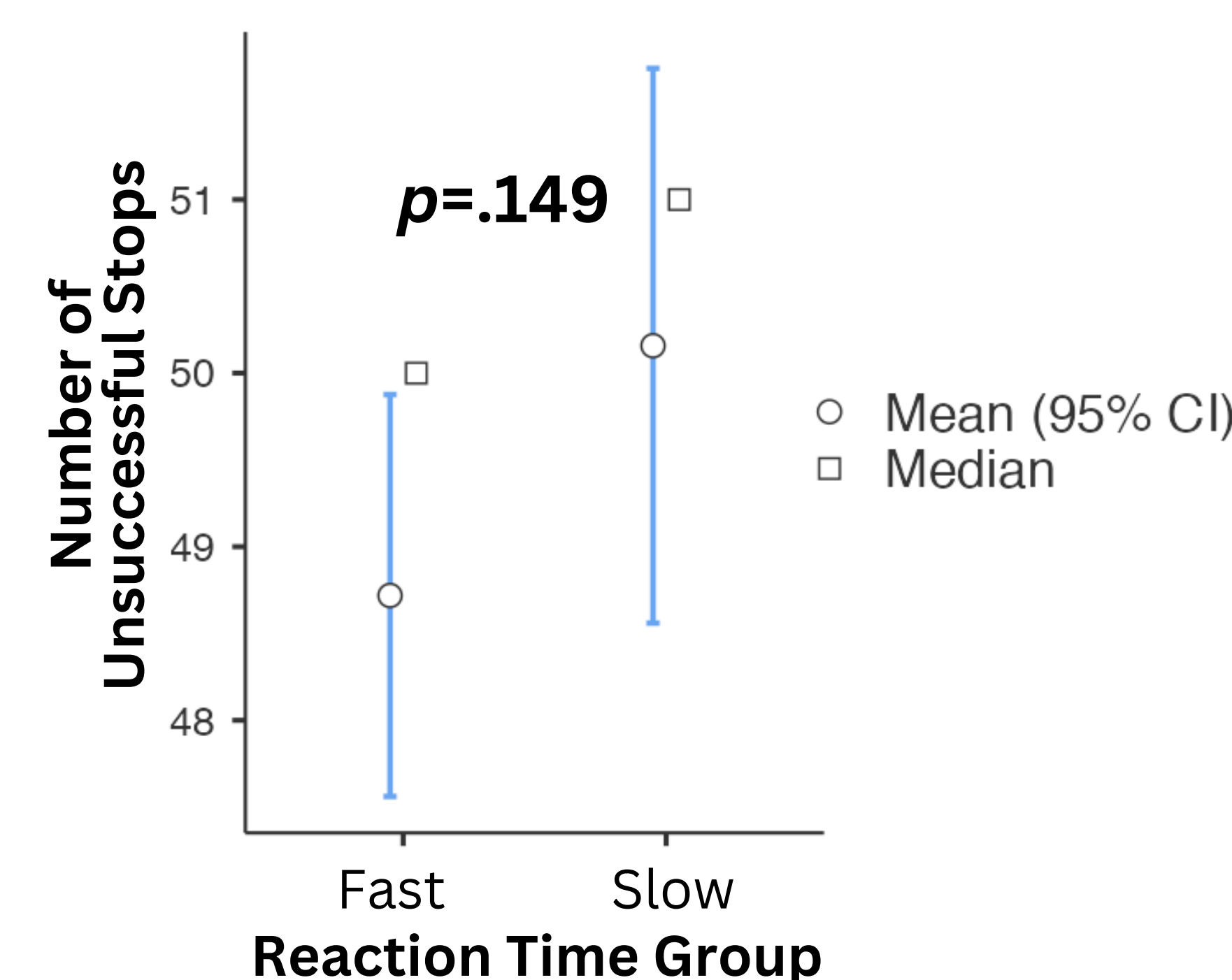
#1 Reaction Time: Participants were asked to press a button as fast as possible when a stimulus appeared on the screen.



#2 Stop Signal: Participants were asked to press as quickly as possible when a stimulus appeared but to stop themselves from pressing when they heard a stop-signal, which was a beep tone.



Results



- Independent Samples T-Test revealed no significant difference in stop-signal performance between fast and slow responders ($p=.149$).
- There was no significant correlation between reaction time and stop signal performance; however, there may be an indication of a slight trend ($p=.08$).

Conclusion

- These findings do not support the hypothesis that reaction time impacts performance on a stop-signal task, but more research must be done in larger samples.
- This contributes to our understanding of the relationship between reaction time and action inhibition.
- Future analyses will probe whether brain function impacts the relationship between reaction time and stop-signal performance.

References

