



Gender Differences in Sustained Attention on a Mathematical Task

Elizabeth Buell¹, Lindsay Rice², Ph.D., & Eric T. Greenlee², Ph.D.

¹Department of Biology; ²Department of Psychological Sciences, Texas Tech University

Introduction

- Sciences, technology, engineering, and math (STEM) jobs are in demand and in some areas of work sustained attention and performance on complicated science or math-based tasks is critical.
- Previous research has indicated that women can have lower self-efficacy which could potentially affect performance in these areas.
- This study examines whether there are gender differences in performance on a mathematical task.
- Gender and whether individuals are working alone or with other people are important considerations when trying to understand distress during these tasks.

Method

Participants

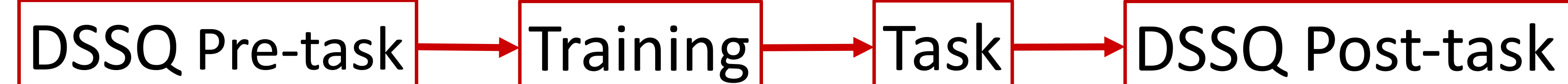
- 68 undergraduate students (46 women) completed the study.
- Dependent variable: Performance on a mathematically based vigilance task.

Hypotheses:

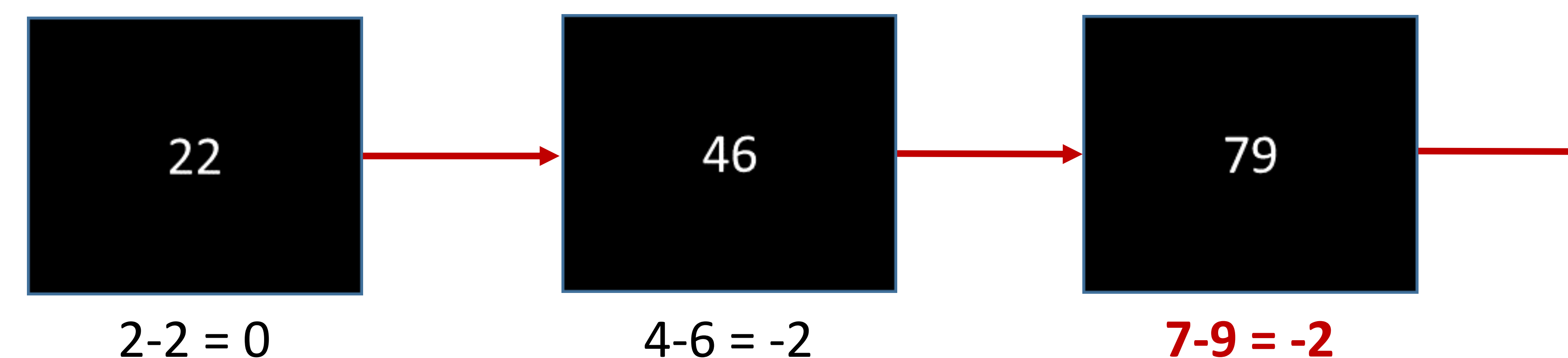
- We hypothesized that there would be no gender differences in performance on this task between men and women

Study Flow & Vigilance Task

Study Flow:



Vigilance Task:



Results

Performance

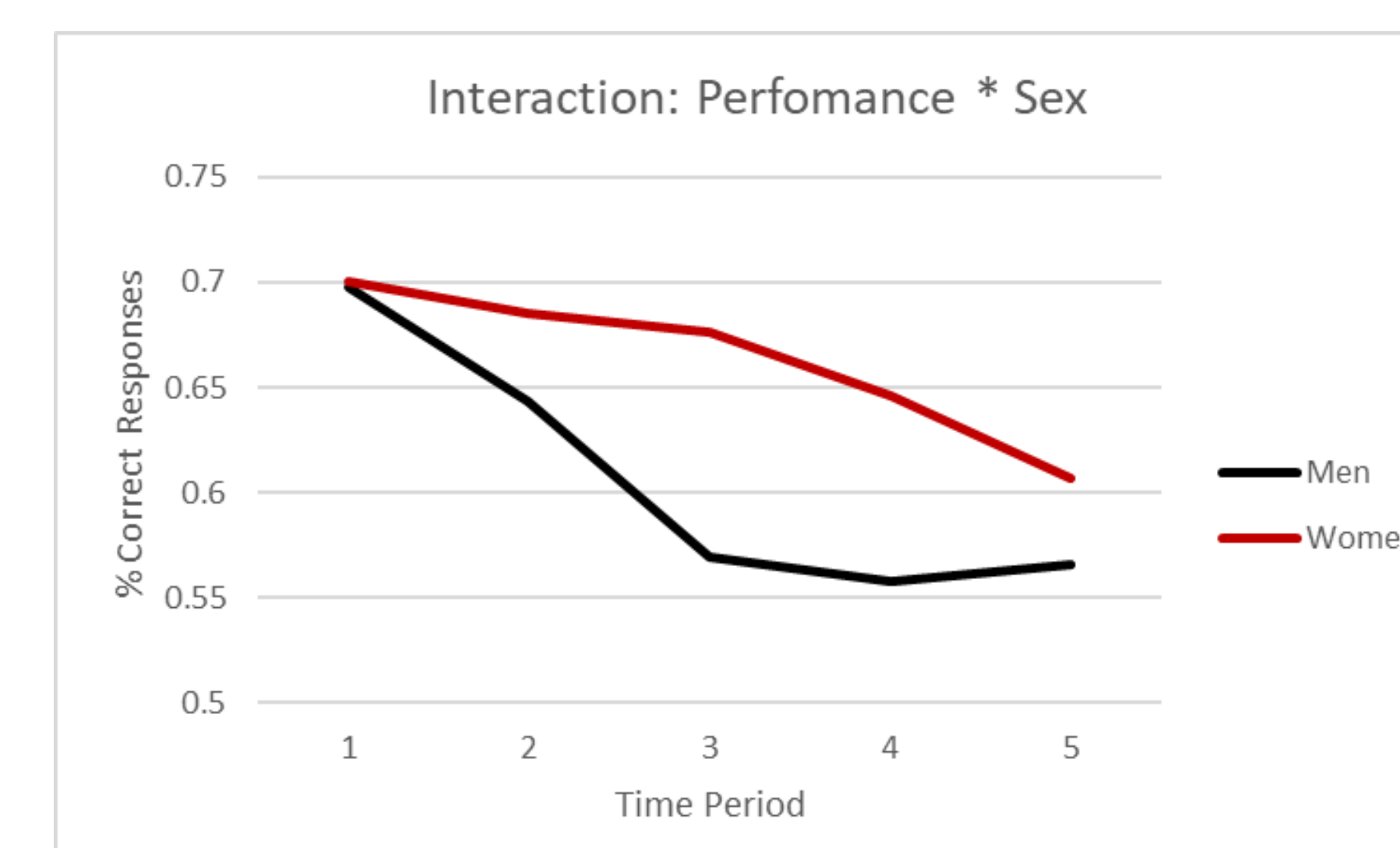
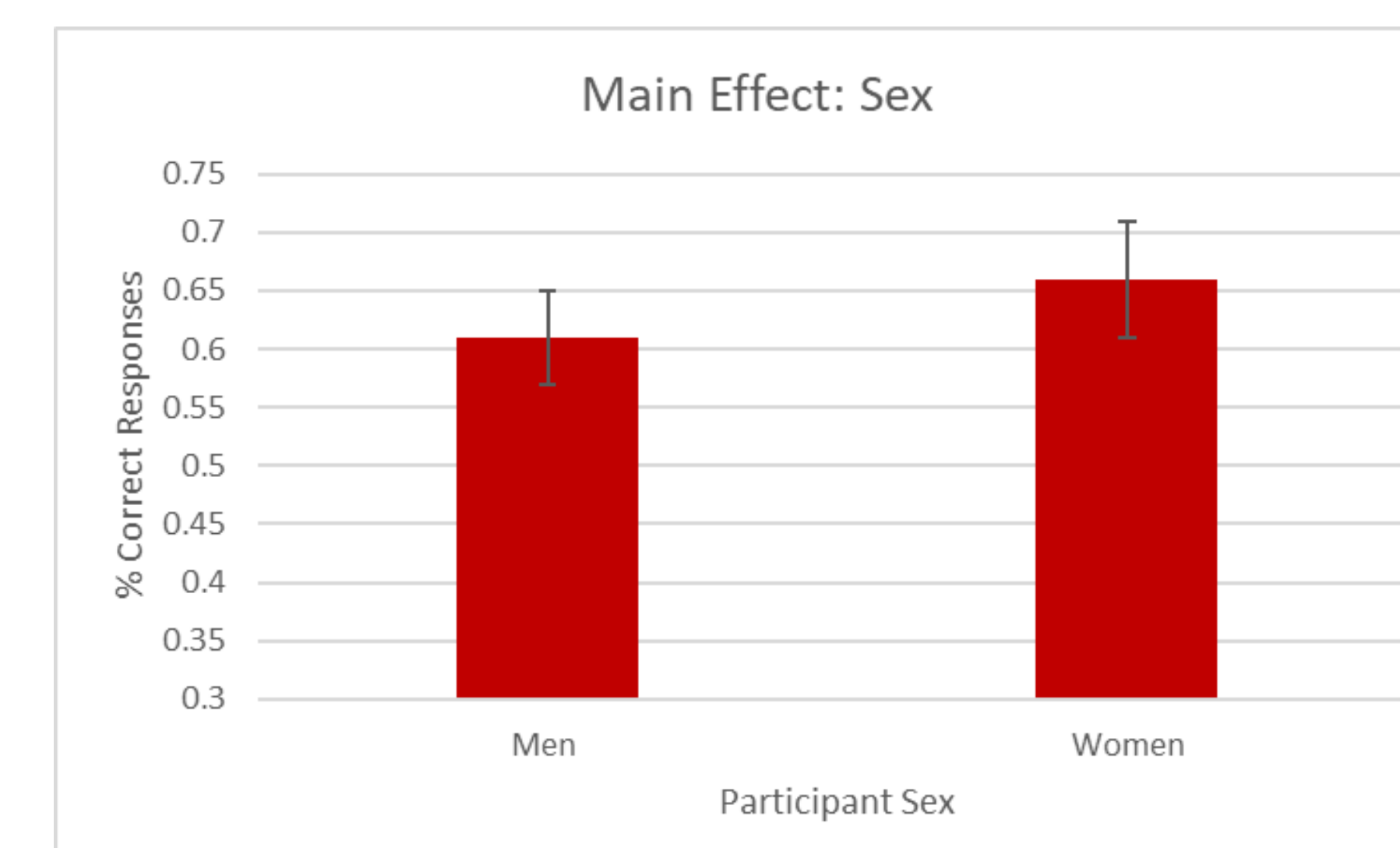
- There was a main effect for overall performance, $F(3.47, 256) = 5.66, p < .001, \eta_p^2 = .08$. All participants declined in performance over time.

Sex

- There was not a significant main effect for sex, $F(1, 64) = .73, p = .40, \eta_p^2 = .01$, indicating that men and women performed similarly on this task.

Interaction Between Performance*Sex

- There was not a significant interaction between performance and sex, $F(4, 61) = 1.04, p = .40, \eta_p^2 = .06$, indicating that both men and women experience similar performance declines over time.



Conclusions

- The current study examined differences in performance on a mathematical vigilance task between men and women.
- Overall, the expected performance decline over time was significant, but there were no significant differences between the performance of men and women.
- This data suggests that even though there may be perceptions of a difference in performance between men and women based on the nature of the task, the data indicate these differences are not present.
- Many fields, including STEM fields require sustained performance on highly technical tasks and our data suggest that men and women could perform equally well in these fields.