

# The Effects of Reading and Writing Text-Based Messages While Driving

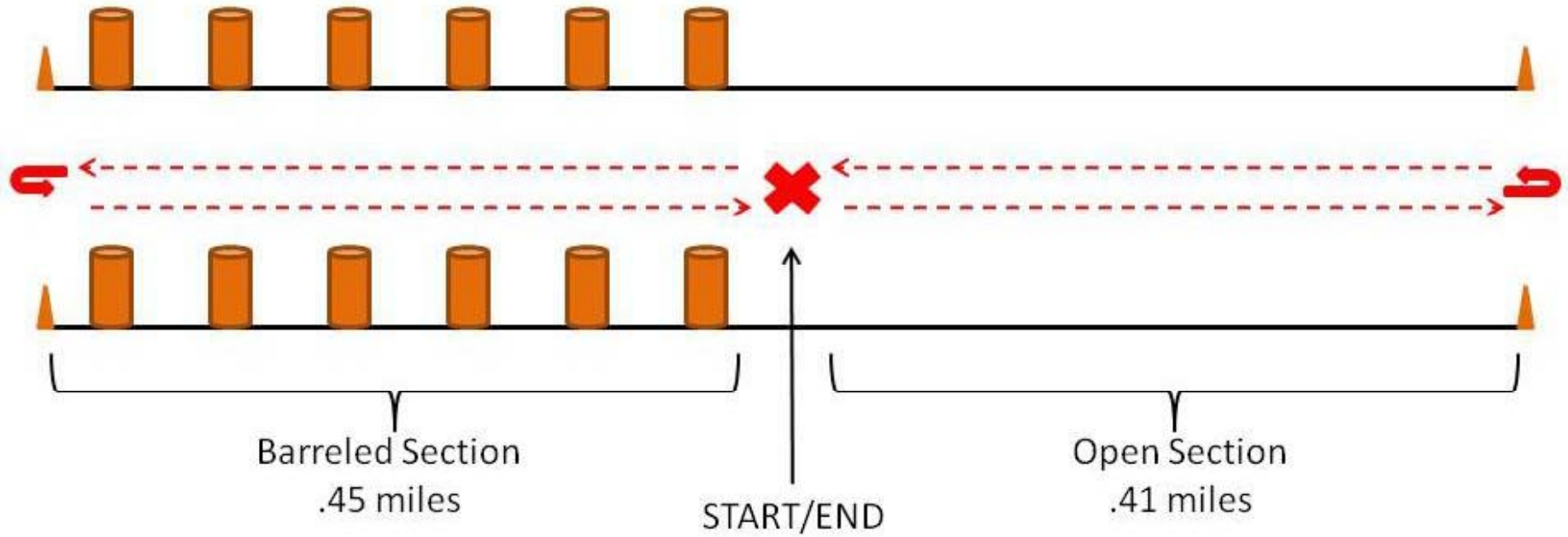
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# Objectives

- Primary Objective: To assess the distraction potential of reading and writing text-based messages while driving under varying roadway and texting response demands
  - Closed course testing versus driving simulator?
  - Changes in task interaction as driver workload varies?
  - Does reading differ from writing?



# Methodology

- Three experimental segments

Experimental Condition	Writing Texts?	Reading Texts?	Told to Drive 30mph?	Asked to Maintain Lane Position?	Asked to Respond to Light Task?
Control			✓	✓	✓
Writing	✓		✓	✓	✓
Reading		✓	✓	✓	✓

- Content of text-based messages



# Video Layout

Eye glance position	Reaction time light and Hand position
Left side view	Right side view

# Video of Experiment: Control Condition





# Video of Experiment: Writing Condition

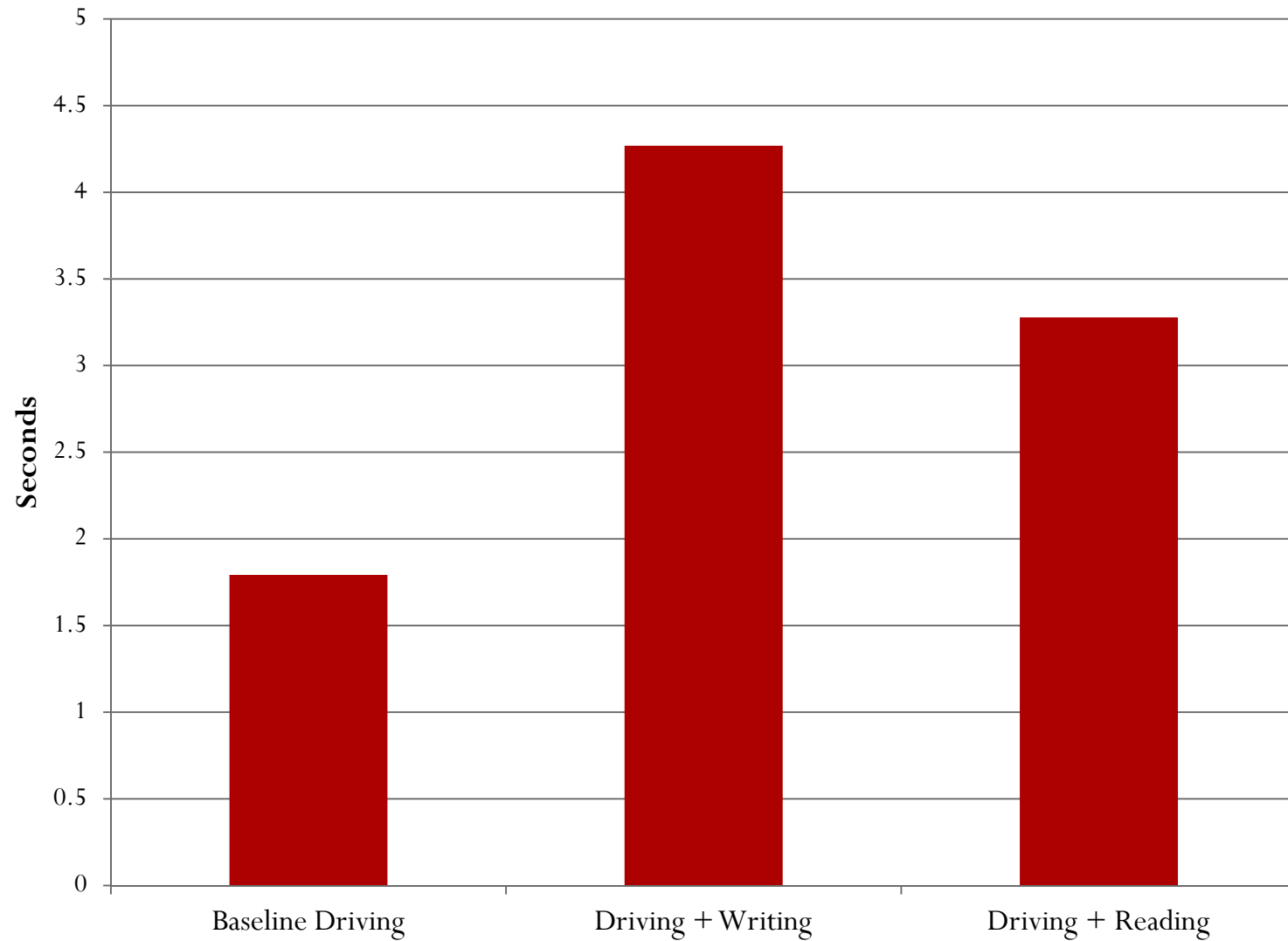




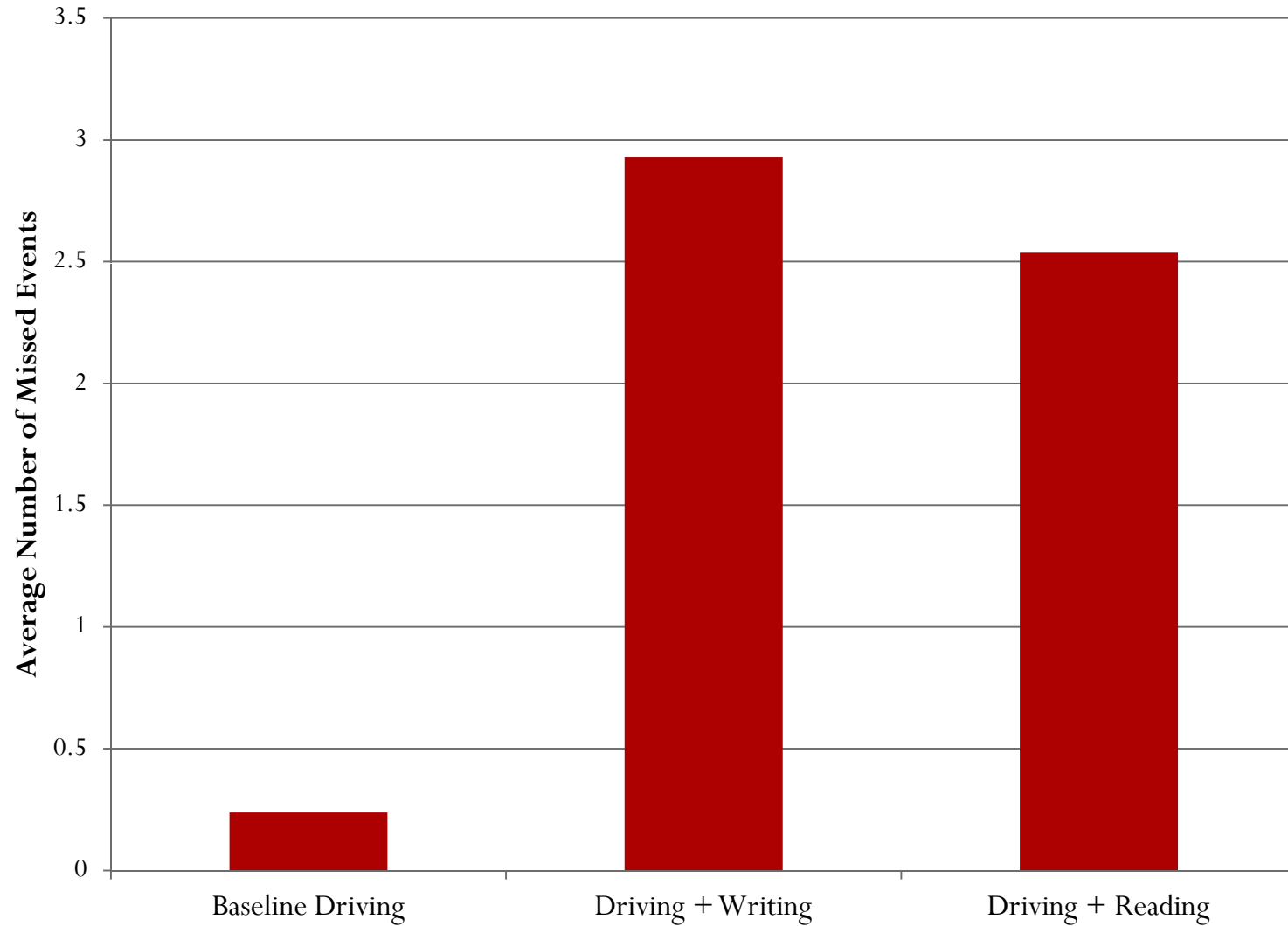
# Video of Experiment: Reading Condition



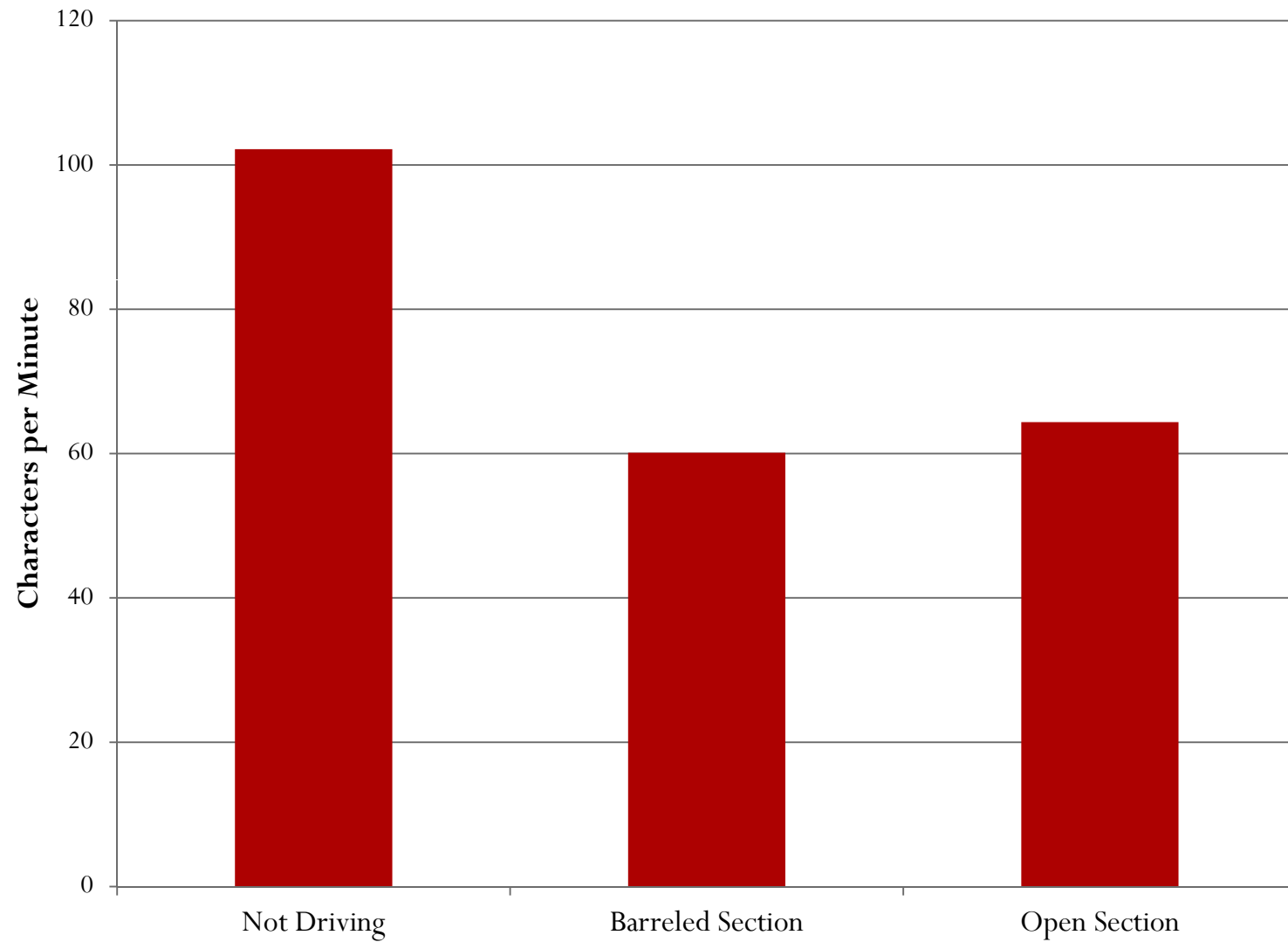
# Event Response Time



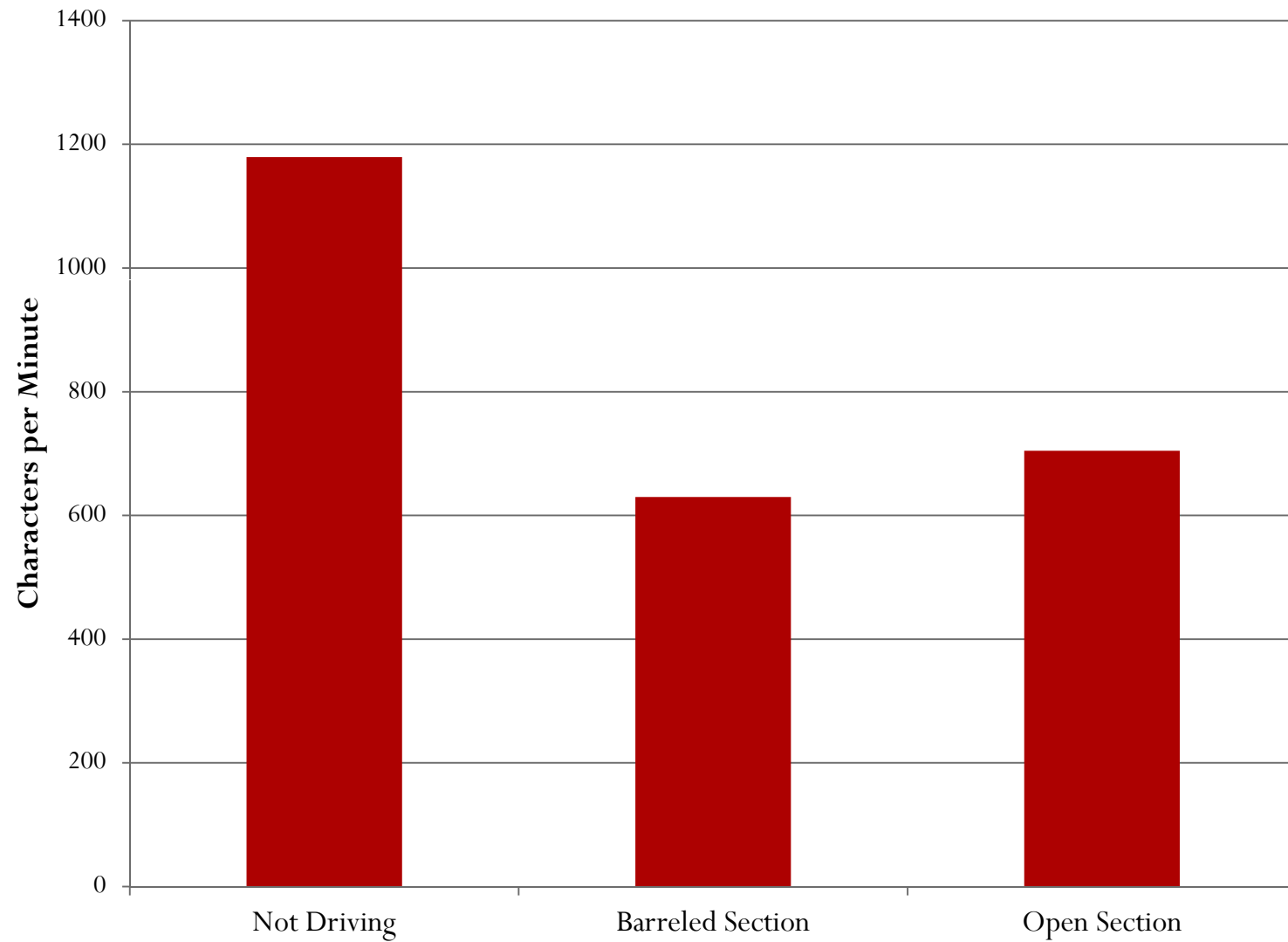
# Missed Detection Events per Drive



# Text Entry Rate



# Text Reading Rate



# Further Discussion

- Closed course testing versus driving simulator?
  - Similar results
  - Even greater response time impairment
- Changes in task interaction as driver workload varies?
  - Both wrote and read fewer characters per minute in barreled section than open section
- Does reading differ from writing?
  - Significant impairment from both reading and writing when compared to control condition
  - Only response time was differentially affected by the two tasks, showing greater impairment associated with writing text-based messages

# Thank you! Questions?

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