

THE EFFECT OF EXPECTANCIES ON DIFFICULT VERSUS EASY DUAL TASKS

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Purpose



- How does cell phone use effect driving performance?
 - ▣ Cognitive performance on easy vs. hard task
 - ▣ How do expectancies effect driving performance?

Introduction



- Strayer and Johnston (2001)
 - ▣ Cell phone use impairs driving
 - ▣ Reaction time significantly impaired

- McCarthy, Pedersen, Thompsen, and Leuty (2006)
 - ▣ Evaluated the expectancies of young adults on drinking and driving

Hypotheses



- Performance (in terms of RT and accuracy) on the hard level of the computerized detection task would be worse than on the easy one.
- Performance on both tasks will be impaired by a verbal distractor
 - Perform best: repetition detection task only
 - Perform slightly worse: repetition detection task + word shadow distractor
 - Perform worst: repetition detection task + word generation distractor
- Worse performance on computer task for participants with positive expectancies regarding cell phone use and driving, as they believed that the distraction would not impair them.

Method

- Participants
 - ▣ Emails to 600 randomly selected Wofford students
 - ▣ 47 participants

- Questionnaire and the Marlowe-Crowne Social Desirability Scale
 - ▣ Used to account for the defensive reactions

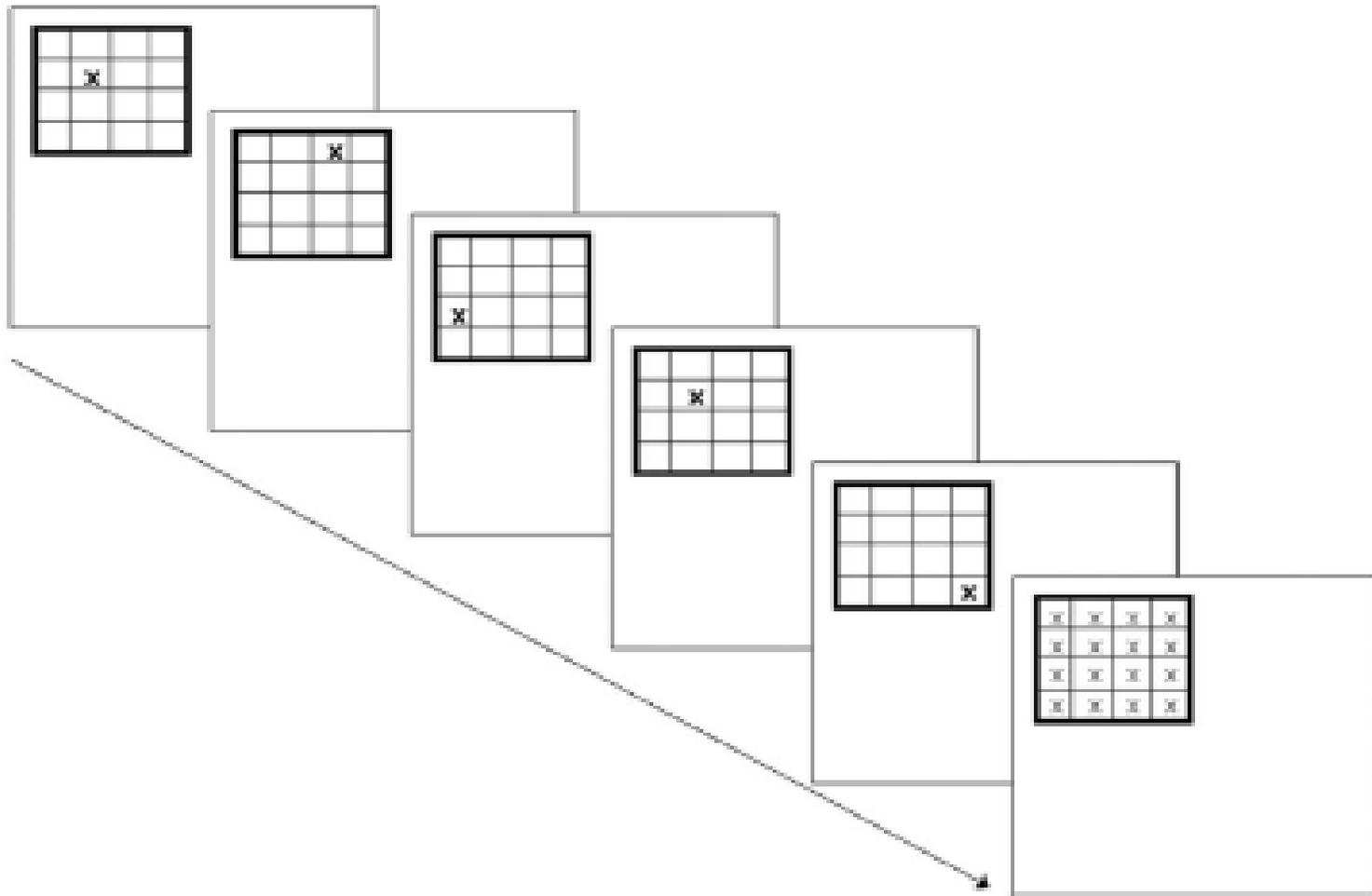
- Visuospatial Repetition Detection Task (Bopp & Verhaeghen, 2009)
 - ▣ Distractors: None vs. Easy vs. Hard
 - ▣ Measured response time and accuracy

- Ospan Task used as a rule out
 - ▣ Above 85% accuracy

- Counterbalanced order
 - ▣ Randomized difficulty level of repetition task and distractor task

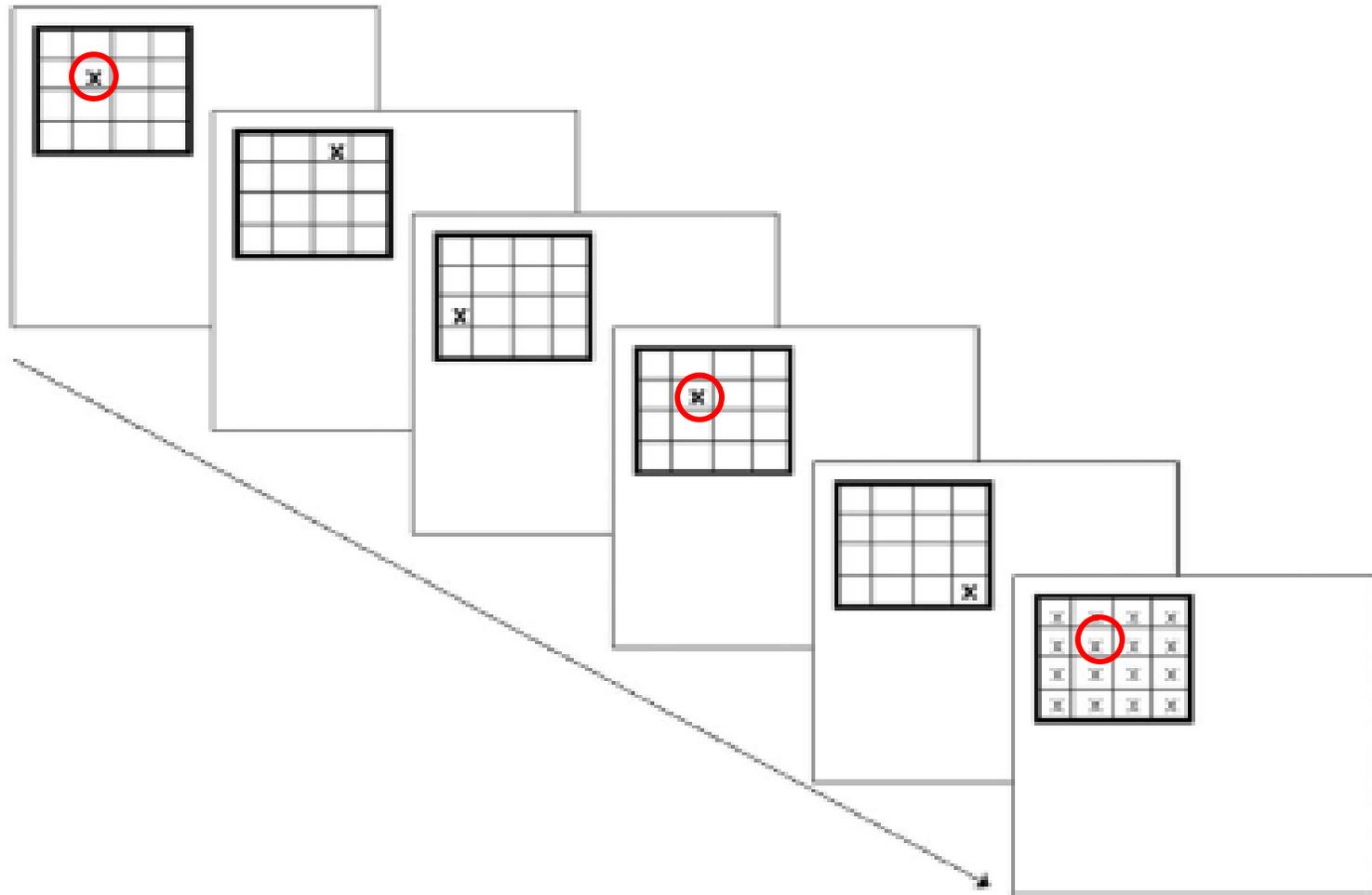
Visuospatial Repetition Detection Task

Single Series



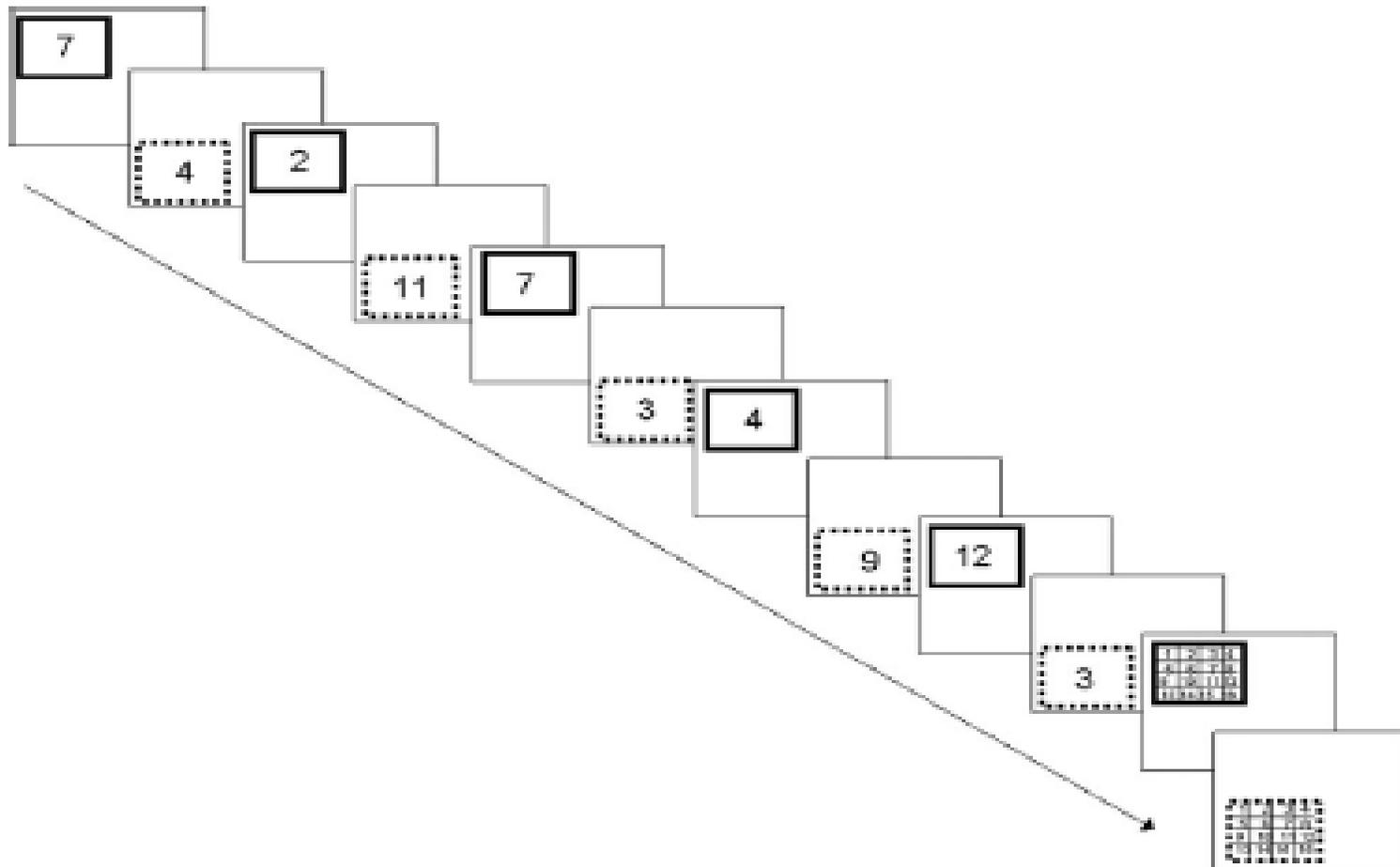
Visuospatial Repetition Detection Task

Single Series



Visuospatial Repetition Detection Task

Double Series



Repetition task + Distractor task



- Single series +
 - ▣ No additional task
 - ▣ Word repetition
 - ▣ Word generation

- Double series task +
 - ▣ No additional task
 - ▣ Word repetition
 - ▣ Word generation

Expectancy Measure



- View of cell phone use while driving
 - ▣ positive or negative
- 3 composite variables (McCarthy et al., 2006)
 - ▣ Convenience □ saves time
 - ▣ Thrill □ sense of danger
 - ▣ Avoid consequences □ getting in a wreck

Results



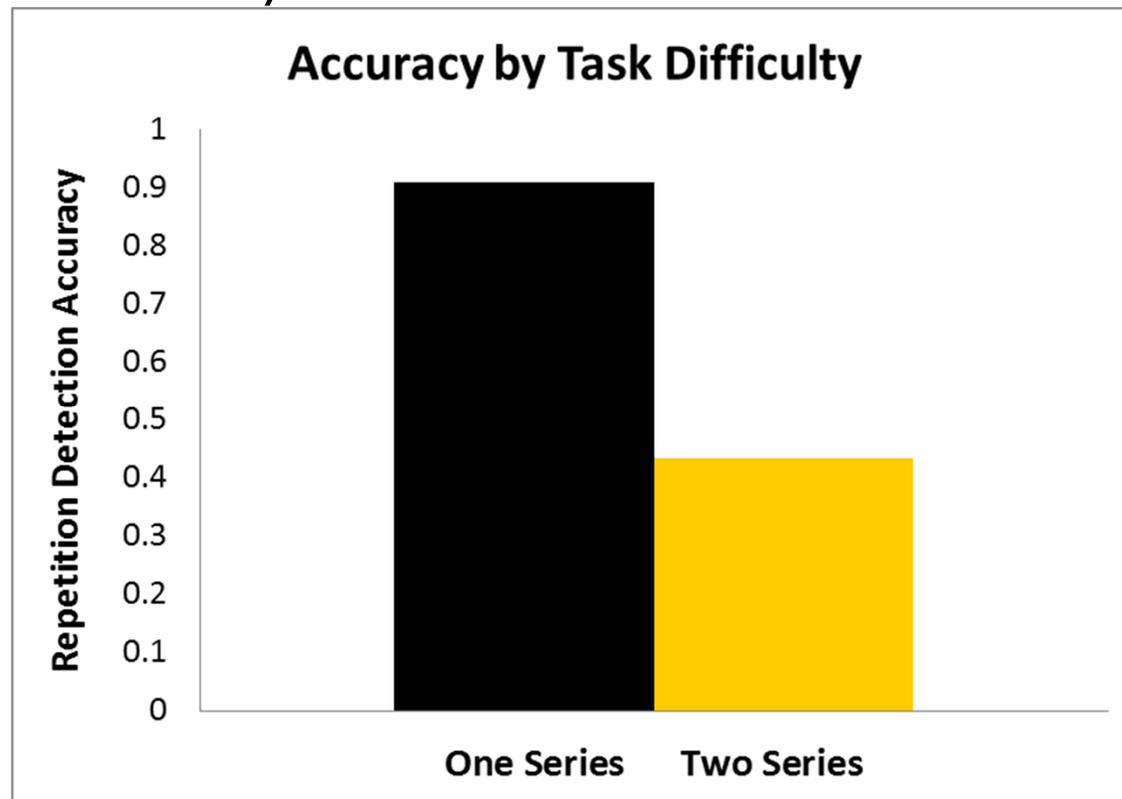
- Data analyzed with MANOVAs

- IV:
 - ▣ Easy vs. Hard Task (1 or 2 locations)
 - ▣ Difficult vs. Easy vs. No Distractor
 - ▣ Positive vs. Negative Expectancies for Cell Phone Use

- DV:
 - ▣ Reaction Time (BPT)
 - ▣ Accuracy

Results: Hypothesis One

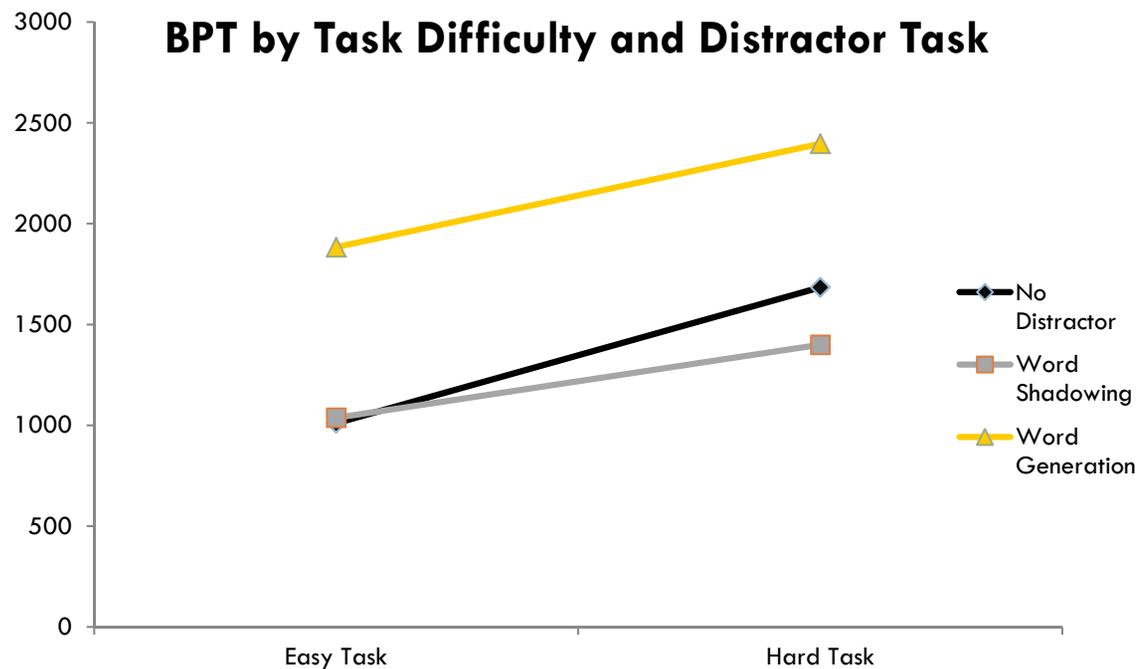
- Performance was worse on the hard task than on the easy task in terms of accuracy.



- No effect of RT- time participants took to identify repetition in the tasks was not significantly different.

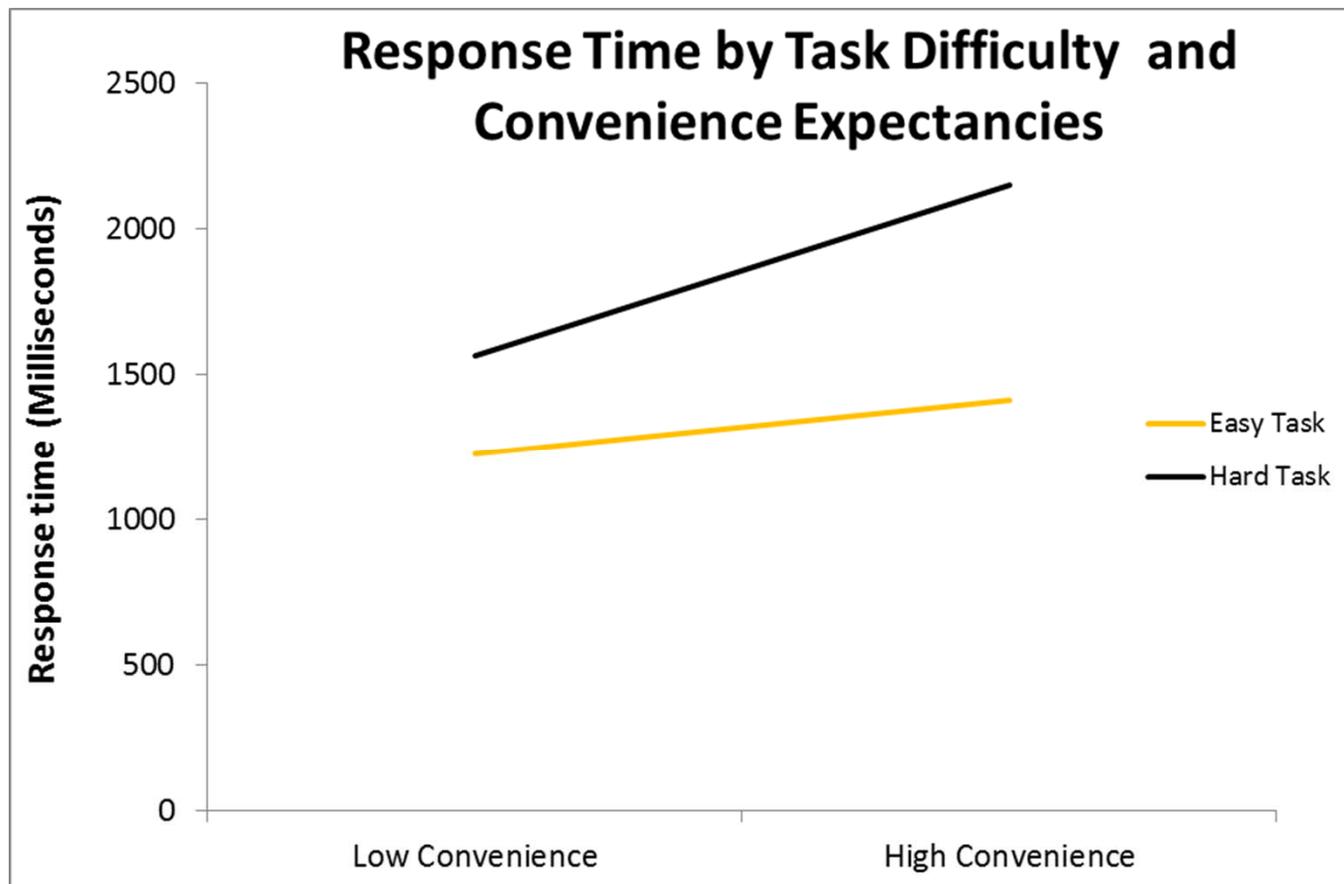
Results: Two

- Subjects were most impaired by the word generation distractor, especially during the hard task



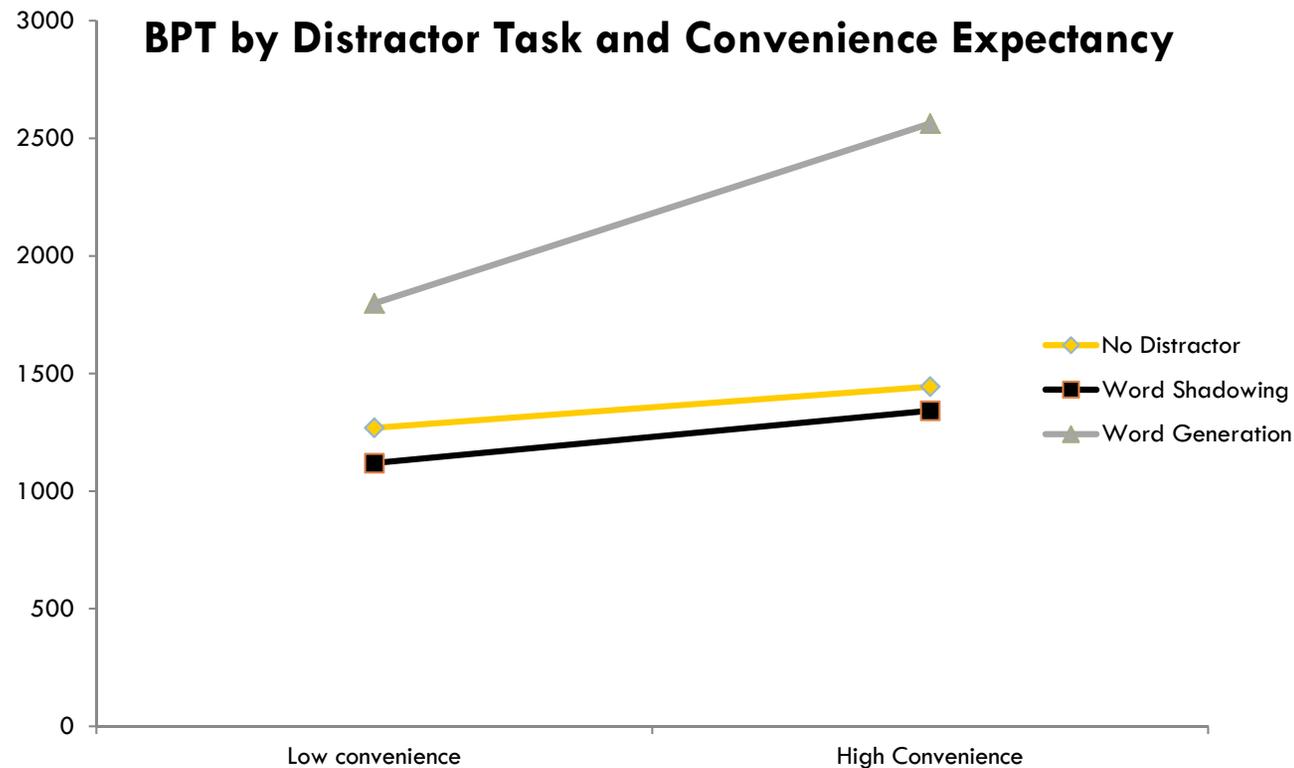
Results: Hypothesis Three

- Participants who thought cellular telephone use while driving was convenient had the lowest performance on the difficult task



Results: Hypothesis Three

- Participants who thought cellular telephone use while driving was convenient had the lowest performance with the word generation distractor



Discussion



- Hypotheses
 - ▣ Performance was worse in terms of accuracy on the hard task than the easy task was **supported**
 - ▣ Performance was worse with the difficult verbal distractor was **supported**
 - ▣ Subjects who expected that cell phone use positively affects driving performed worse than subjects who believed cell phone use impairs driving was **supported**

- Experimenter errors
 - ▣ Letters ending with “e” or “k” for word generation task
 - ▣ List repetition
 - ▣ Experimenter bias

Future Directions



- Participants
 - ▣ Equal number of gender
 - ▣ Wider age range
 - ▣ Wider geographic range
- Touch screen vs. key pad
- Remote word administrations
 - ▣ Eliminate experimental bias
- Effect of evoked emotion on performance

Acknowledgements

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