

The Effects of Divided Attention on the Testing Effect and its Transferability

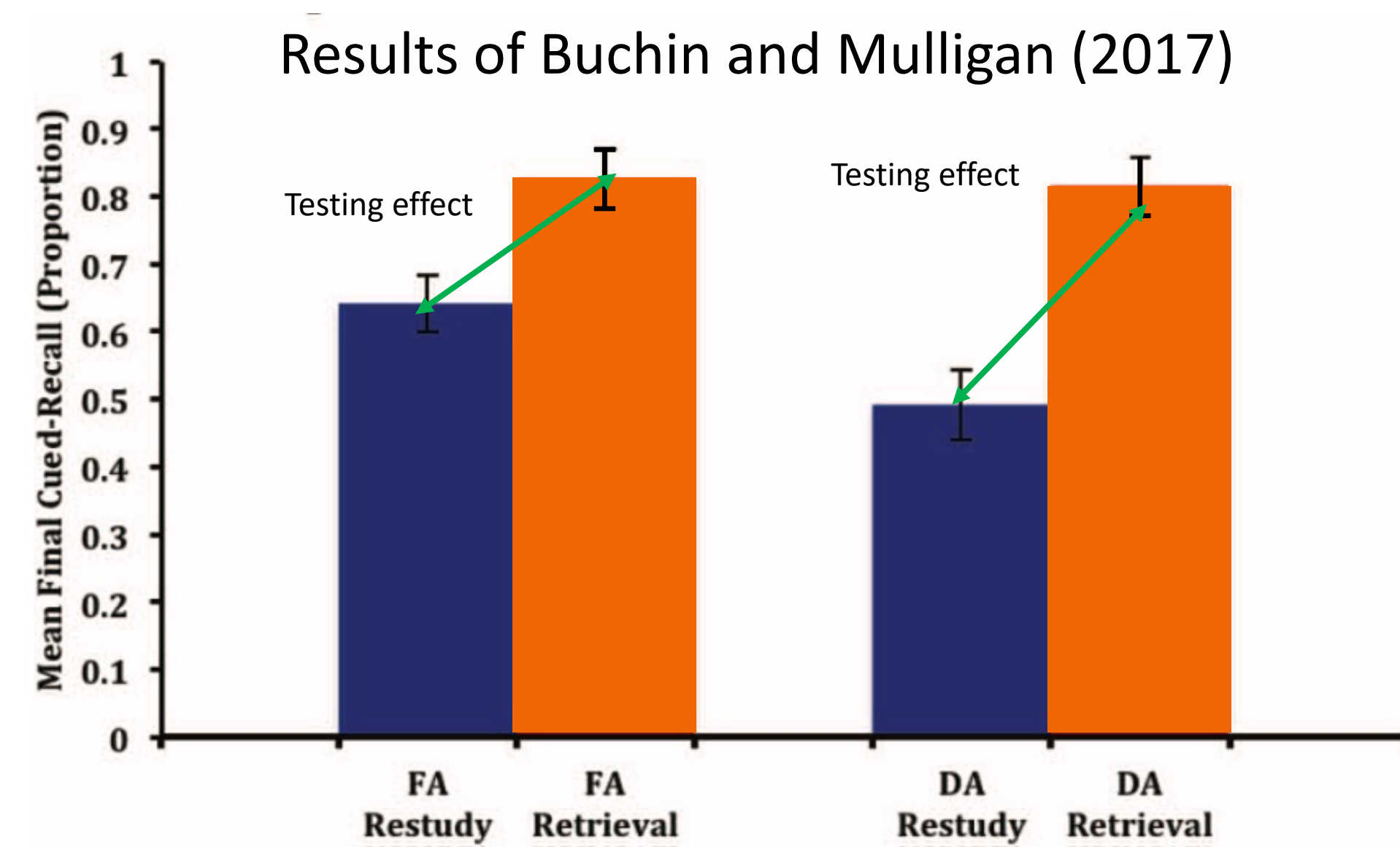
Miranda Chan, Donnelle DiMarco, & Harvey Marmurek

University of Guelph

UNIVERSITY
of GUELPH

Introduction

- **Testing effect:** occurs when retrieving material enhances subsequent memory of that material more than simply restudying the material (Carpenter, 2011)
- **Effortful processing view:** extra effort in retrieval enhances memory (Buchin and Mulligan, 2017)
 - Prediction: dividing attention (DA) should negatively impact retrieval more than restudy (Buchin and Mulligan, 2017)
 - DA should yield a smaller testing effect than Full Attention (FA) (Buchin and Mulligan, 2017)
- Buchin and Mulligan (2017), however, found DA negatively impacted restudy
- The larger testing effect with DA is inconsistent with the effortful processing view

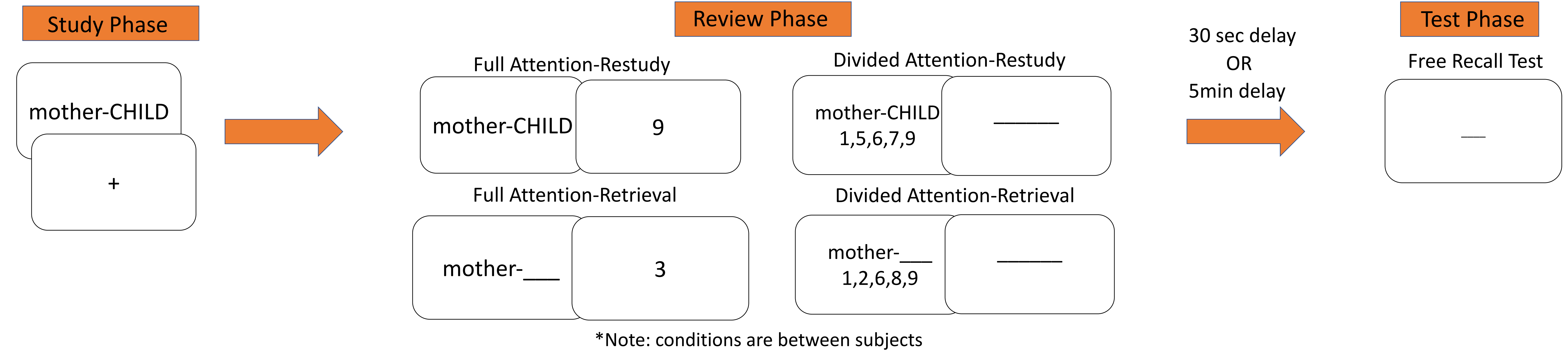


- **Secondary task performance:**
 - **Task prioritization-** restudy prioritizes secondary task; testing prioritizes retrieval (Buchin & Mulligan, 2017)
- **Transfer of Test-Enhanced Learning:** the benefit of testing occurs when the retrieval task changes (Pan & Rickard, 2018)

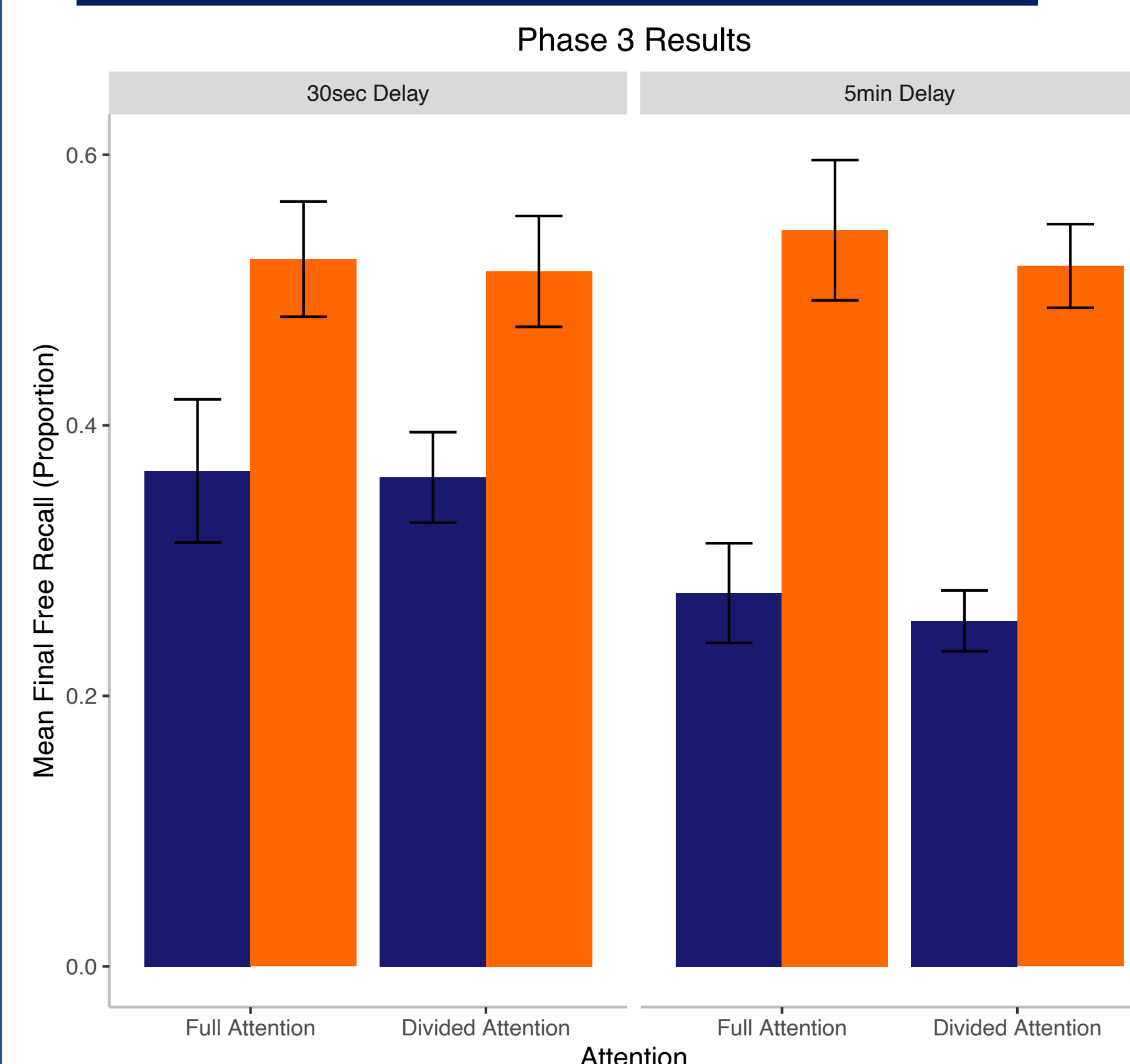
Current Study

Investigate the impact of divided attention when the final test format changes over brief and extended time delays

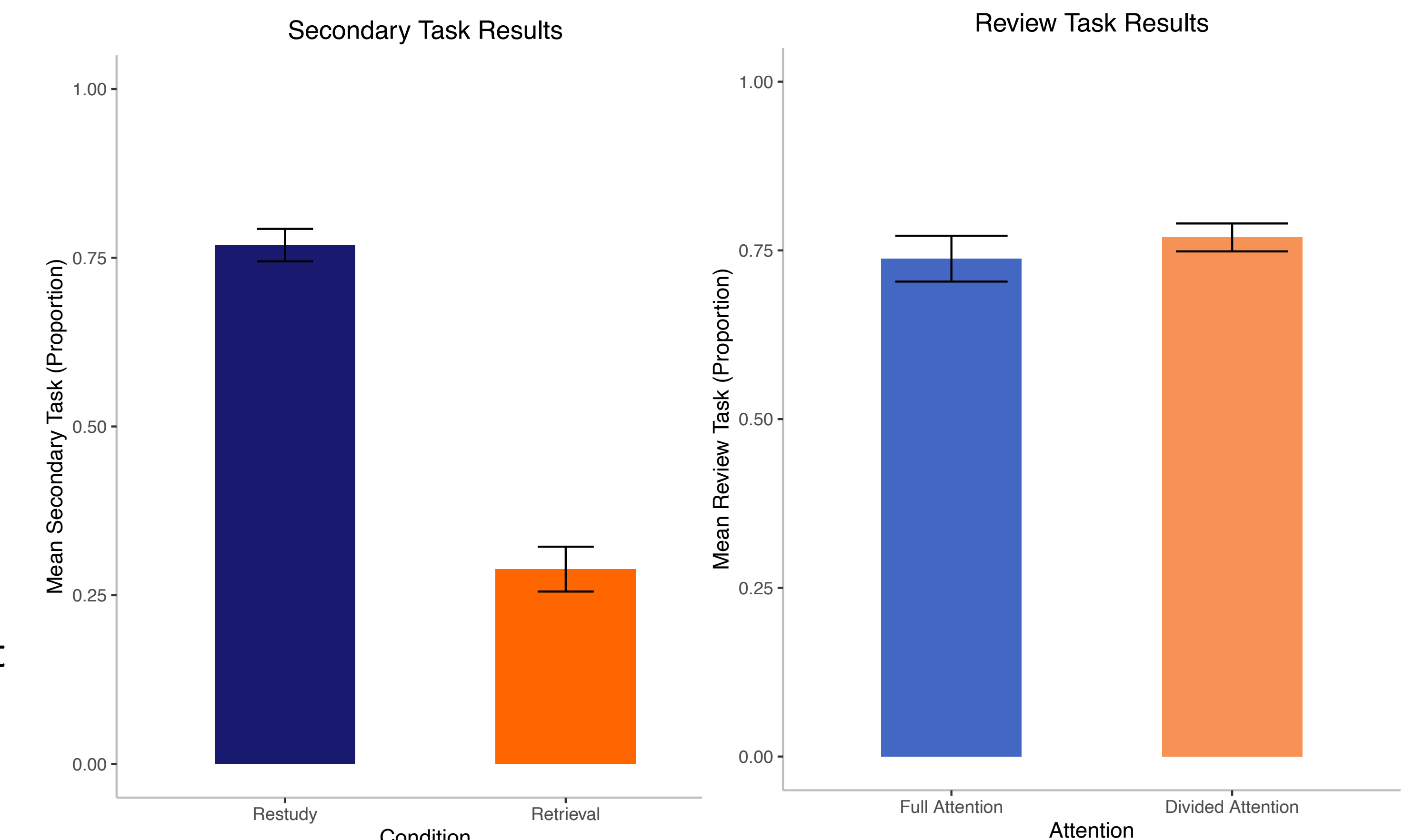
Method



Results (n=194)



- Main effect of condition: retrieval led to better recall than did restudy (transfer effect)
- Interaction Phase 2 Condition x Delay: delay affected restudy leading to a larger transfer effect



Discussion

- Magnitude of the transfer effect **did not depend** on attention
- The failure to find an interaction may be due to the **difficulty of the secondary task**
- Buchin and Mulligan (2017) also found secondary task performance was better under restudy
- It is possible that the transfer effects are **less dependent** on attention levels than are testing effects.

Conclusion

- Effects of dividing attention on restudy does not seem to occur in the presence of transfer across test formats and a longer delay
- **Future research:**
 - employ an easier secondary task used in DA conditions
 - vary the initial and final test format combinations (i.e., free-recall to cued recall; cued recall to recognition)

References

Buchin, Z. L., & Mulligan, N. W. (2017). The Testing Effect Under Divided Attention. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 43(12), 1934-1947. <https://doi.org/10.1037/xlm0000427>

Carpenter, S. K. (2011). Semantic Information Activated During Retrieval Contributes to Later Retention: Support for the Mediator Effectiveness Hypothesis of the Testing Effect. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 37(6), 1547-1552. doi: 10.1037/a0024140

Pan, S. C., & Rickard, T. C. (2018). Transfer of Test-Enhanced Learning: Meta-Analytic Review and Synthesis. *American Psychological Association*, 144(7), 710-756. <https://doi.org/10.1037/bul0000151>

Contact

mirandah@uoguelph.ca