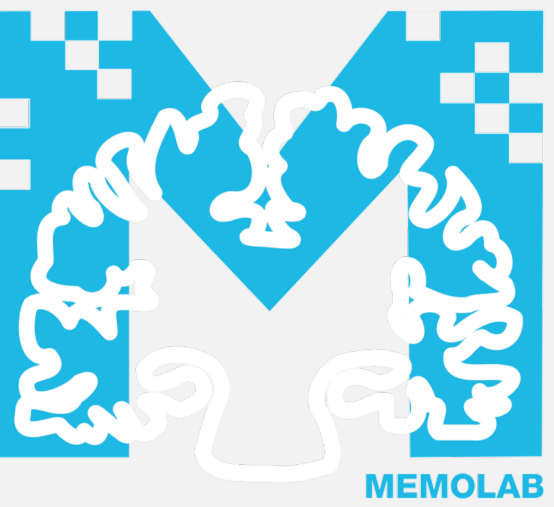




EFFECTS OF DIVIDED ATTENTION ON RECOGNITION AND SOURCE MEMORY



Maria Khoudary, Rose Cooper, & Maureen Ritchey

BACKGROUND

Semantic processing of pictures and words presented as a mixed list has been shown to induce the *picture misattribution effect*: falsely remembering seeing information presented as a picture when it was actually presented as a word.¹

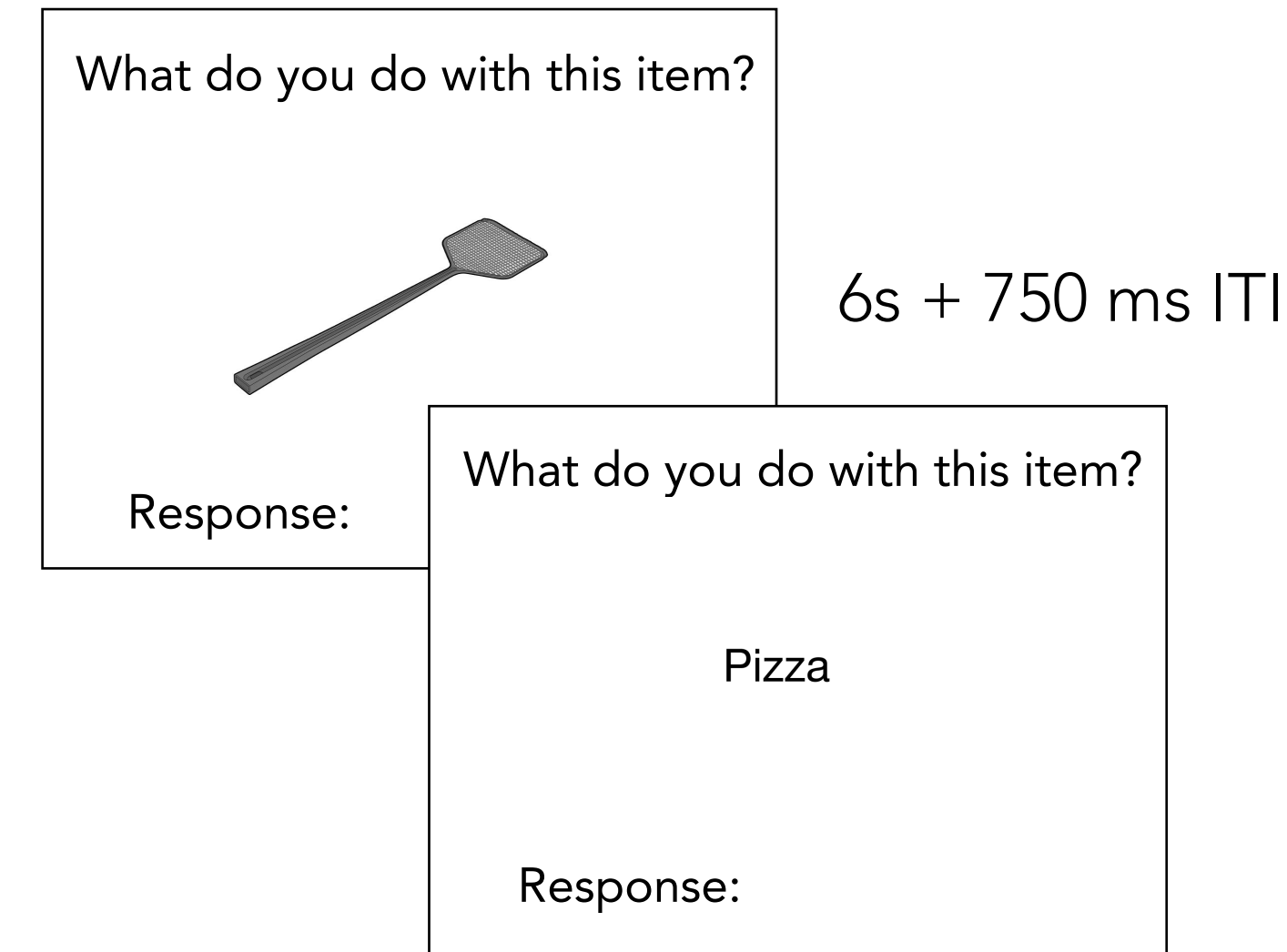
The standard explanation for this phenomenon is that spontaneous imagery corrupts veridical encoding of perceptual information, leading to erroneous interpretation by source monitoring mechanisms during retrieval.²

However, this explanation tends to be inferred via comparison to encoding manipulations that require deliberate generation of imagery.³

Because divided attention has been shown to interfere with controlled processes while leaving automatic processes intact,⁴ I used divided attention to assess the spontaneity with which the imagery purported to be driving this effect is generated.

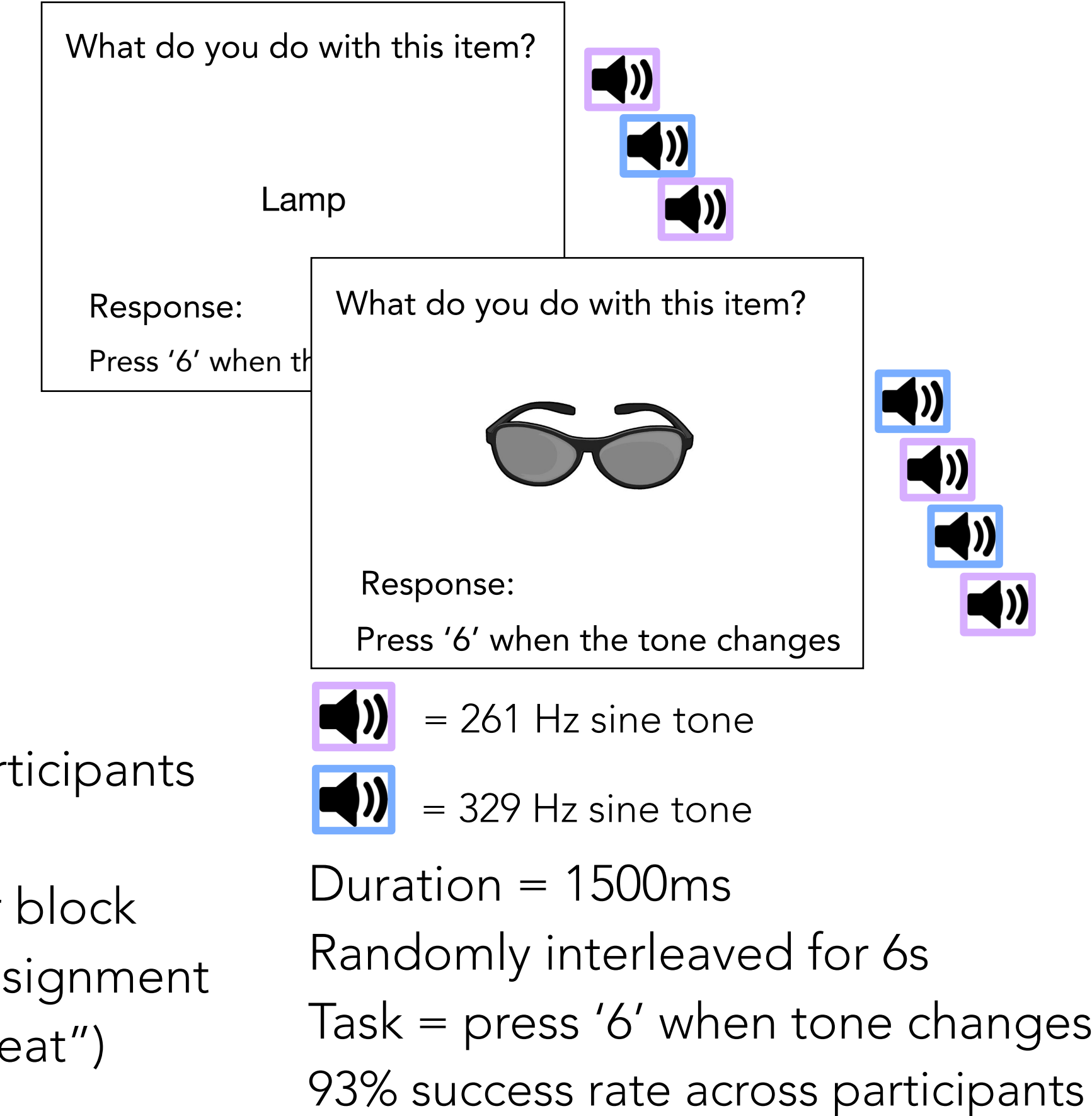
INCIDENTAL ENCODING

FULL ATTENTION



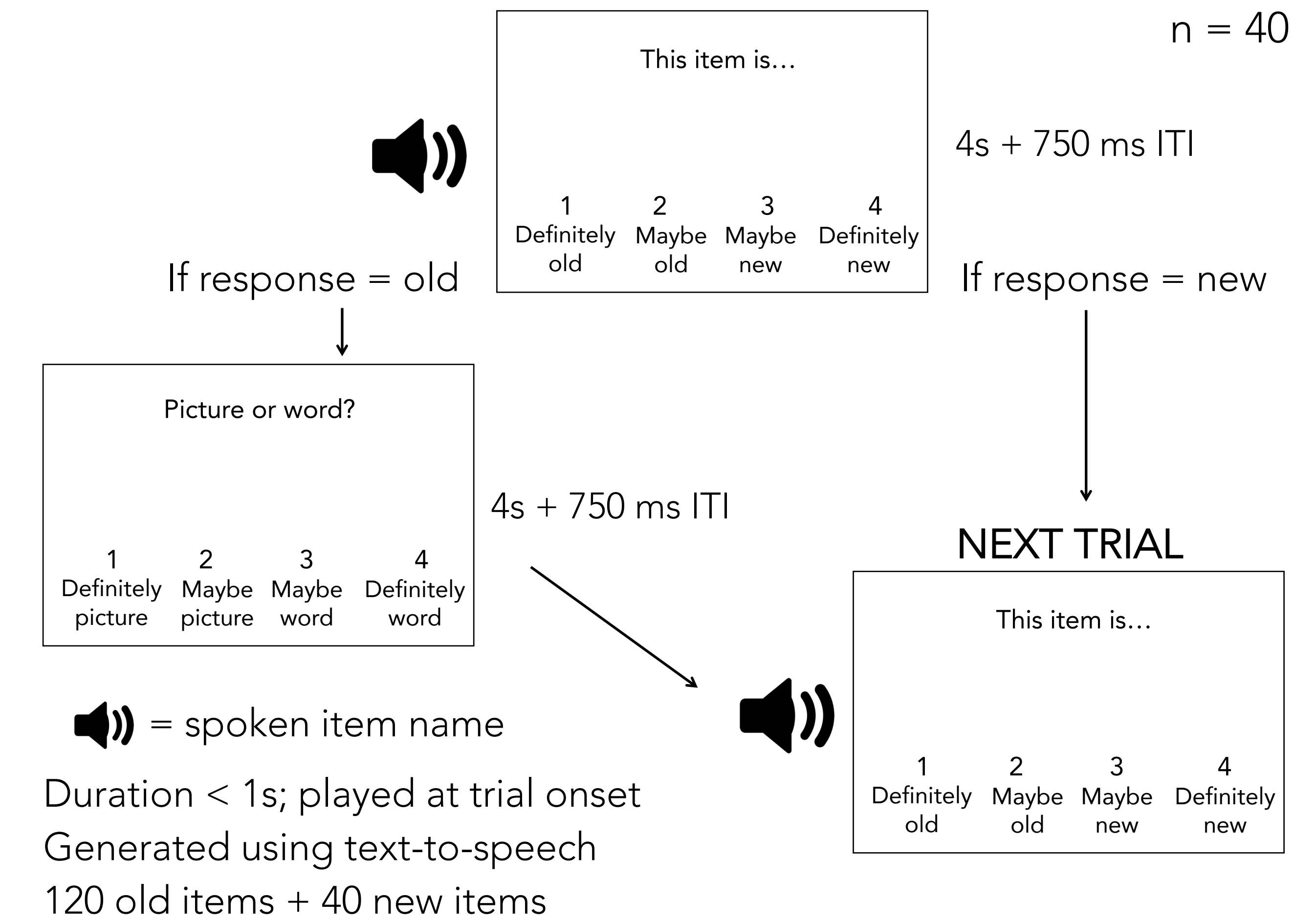
- Block order counterbalanced across participants
- 120 stimulus items, 60 items per block
- 30 pictures and 30 words presented per block
- Randomized picture-word & old-new assignment
- 1-3 word responses (e.g., "swat flies," "eat")

DIVIDED ATTENTION



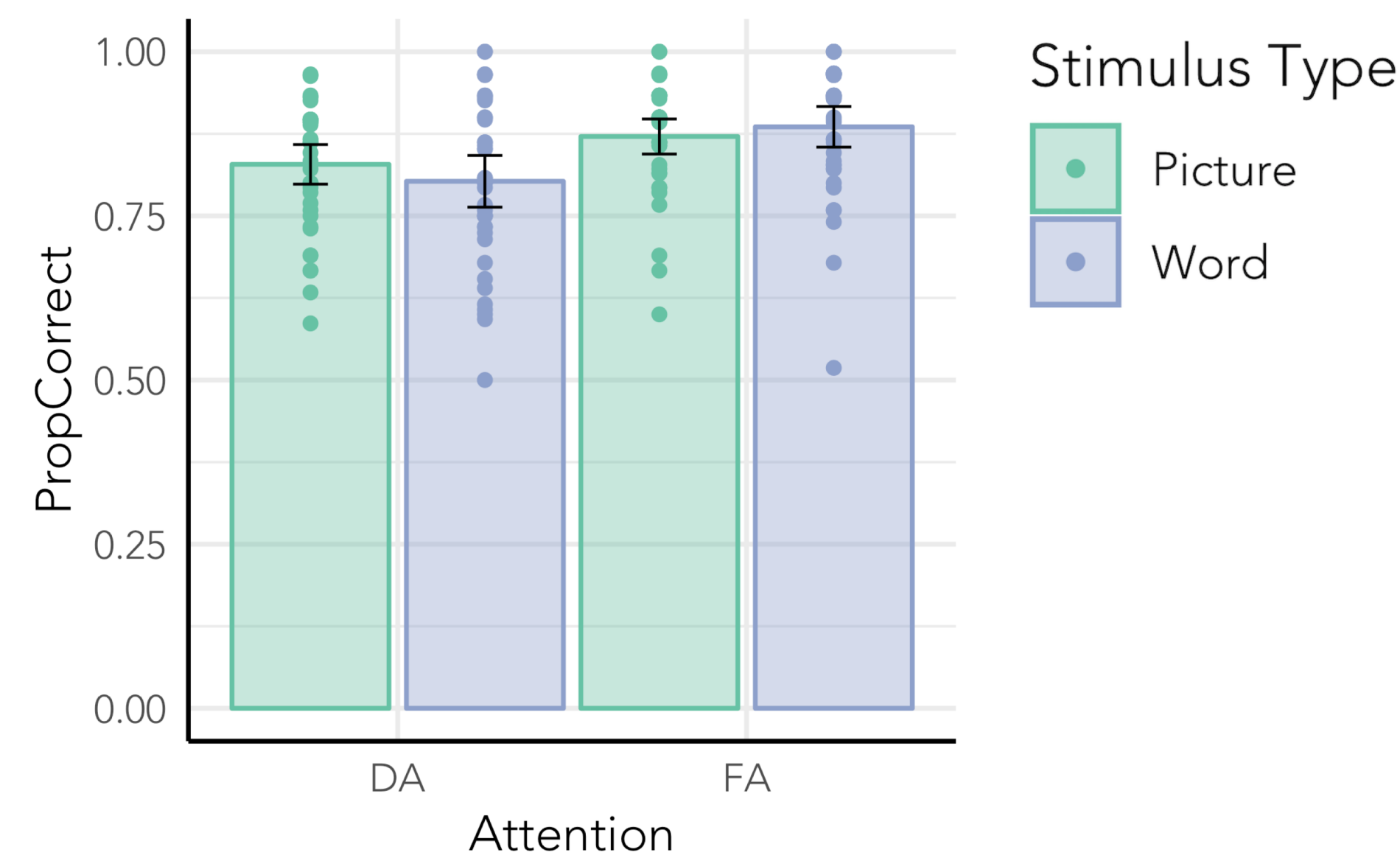
STUDY DESIGN

CUED RECOGNITION



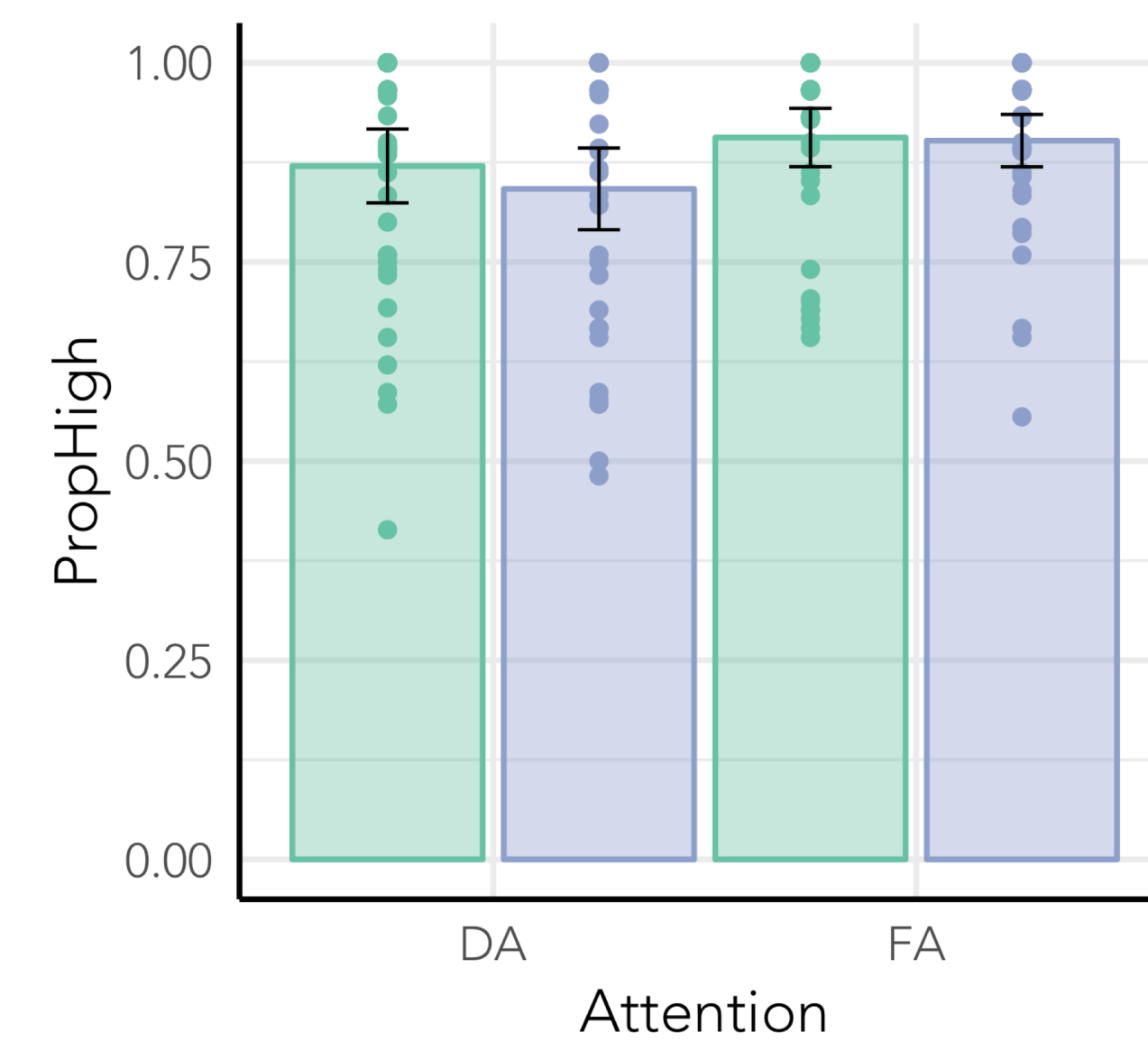
RESULTS

ACCURACY



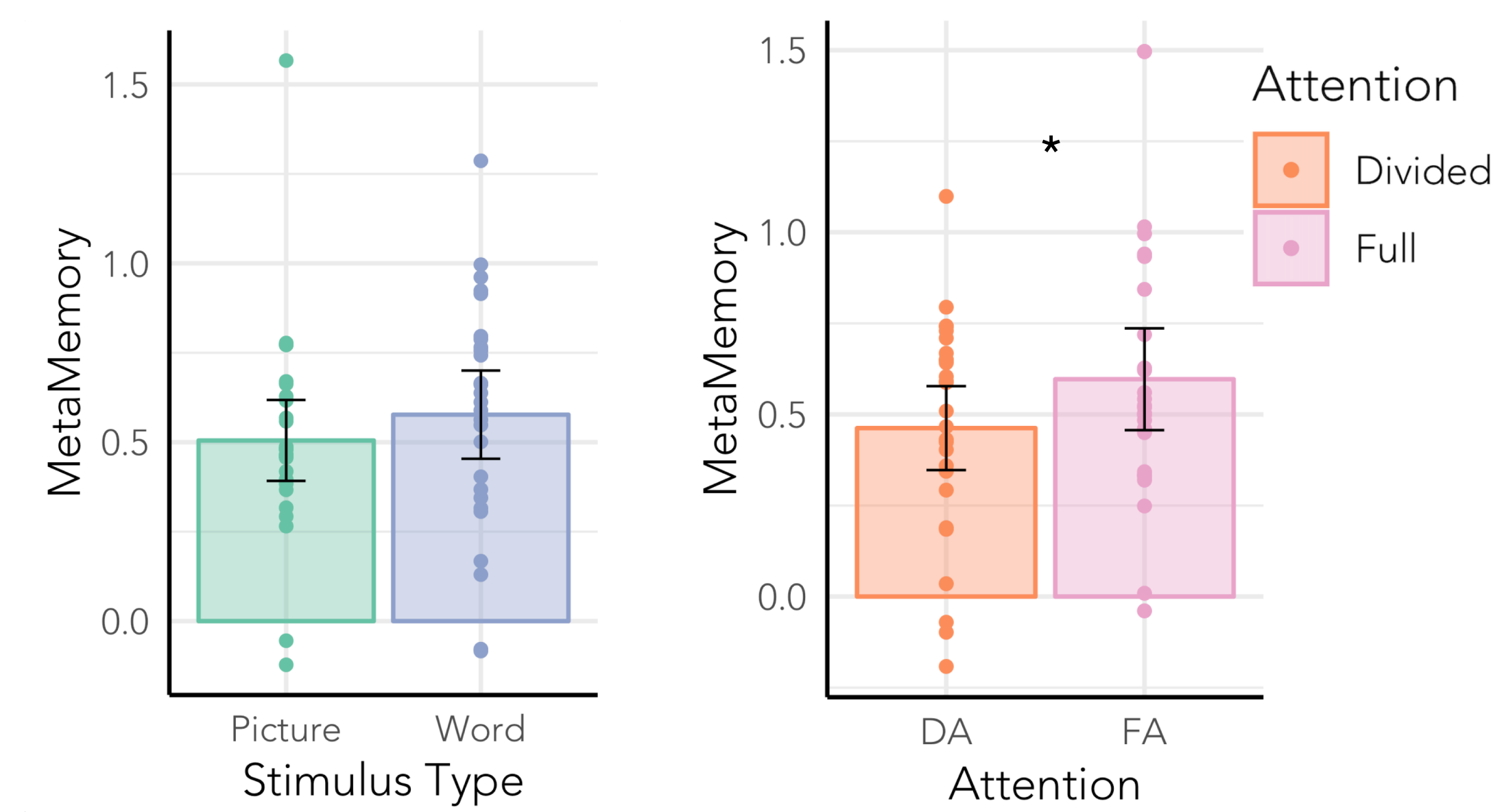
Recognition memory was worse for items studied with divided attention ($p < .001$), and disproportionately so for words (Attention \times Stimulus, $p = .04$)

CONFIDENCE



Recognition confidence was lower for items studied with divided attention ($p = .001$).

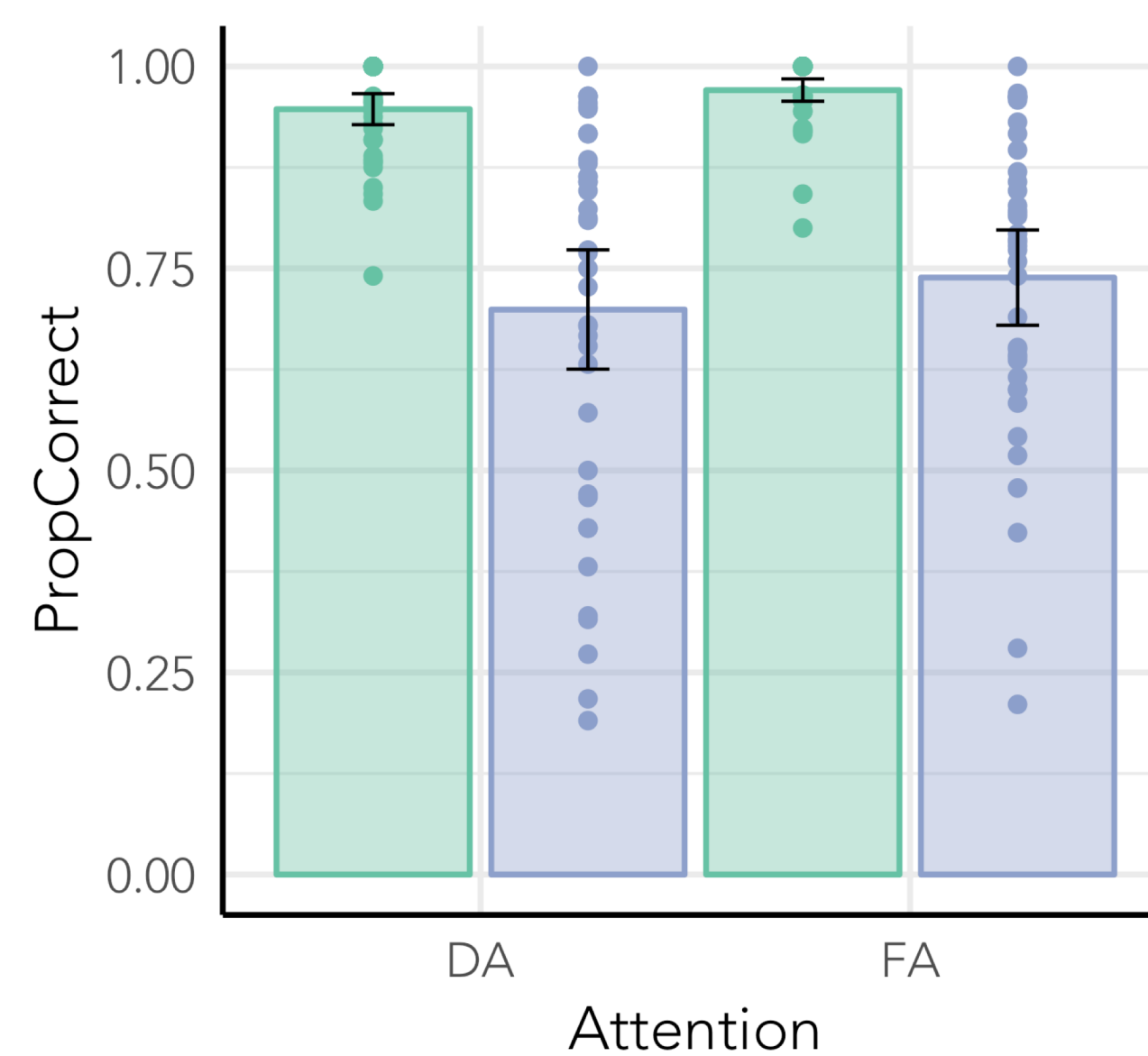
METAMEMORY



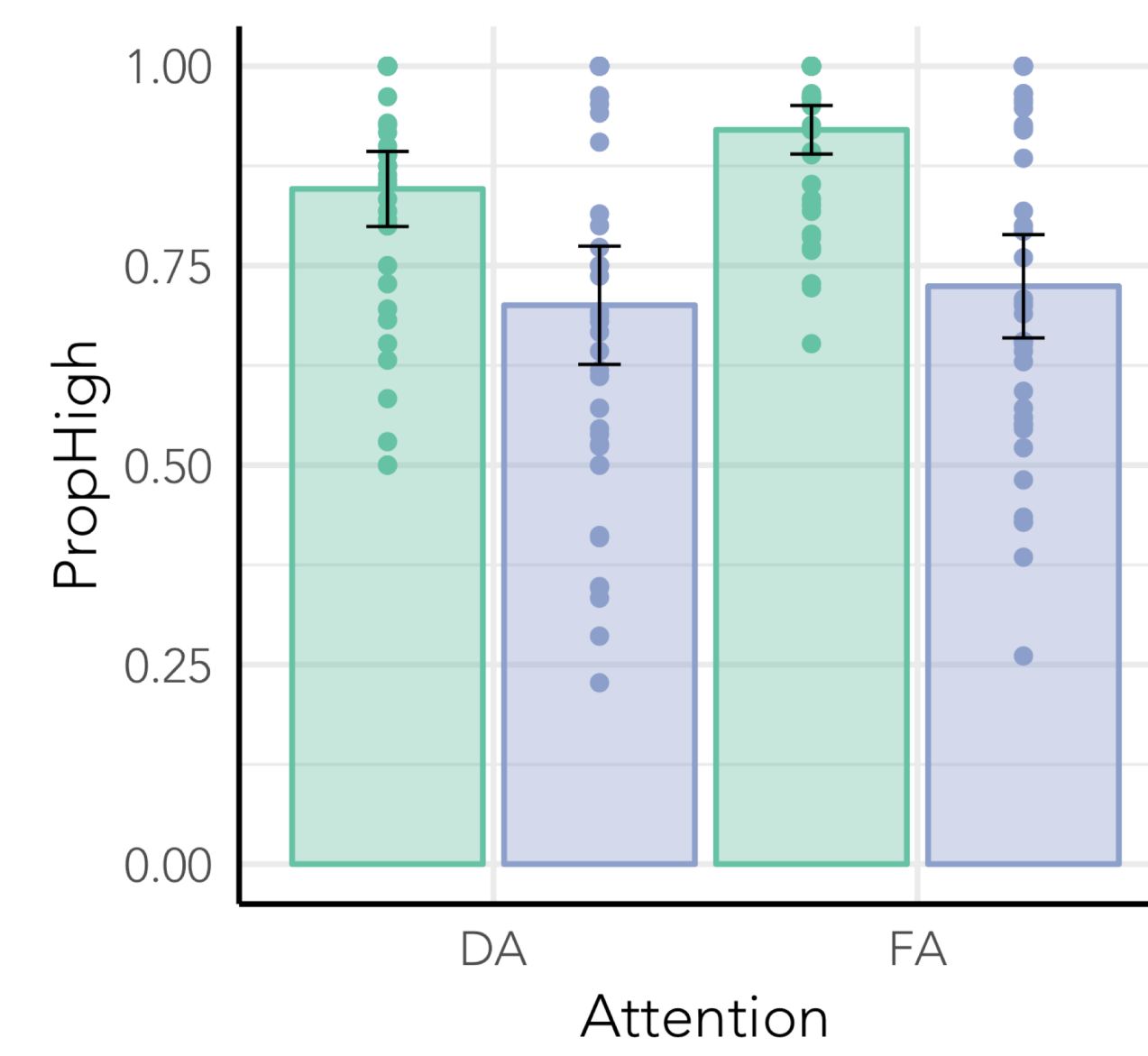
Recognition metamemory (correlation between accuracy and confidence) was poorer for items studied with divided attention ($p = .03$) and equivalent for pictures and words ($p = .19$).

RECOGNITION

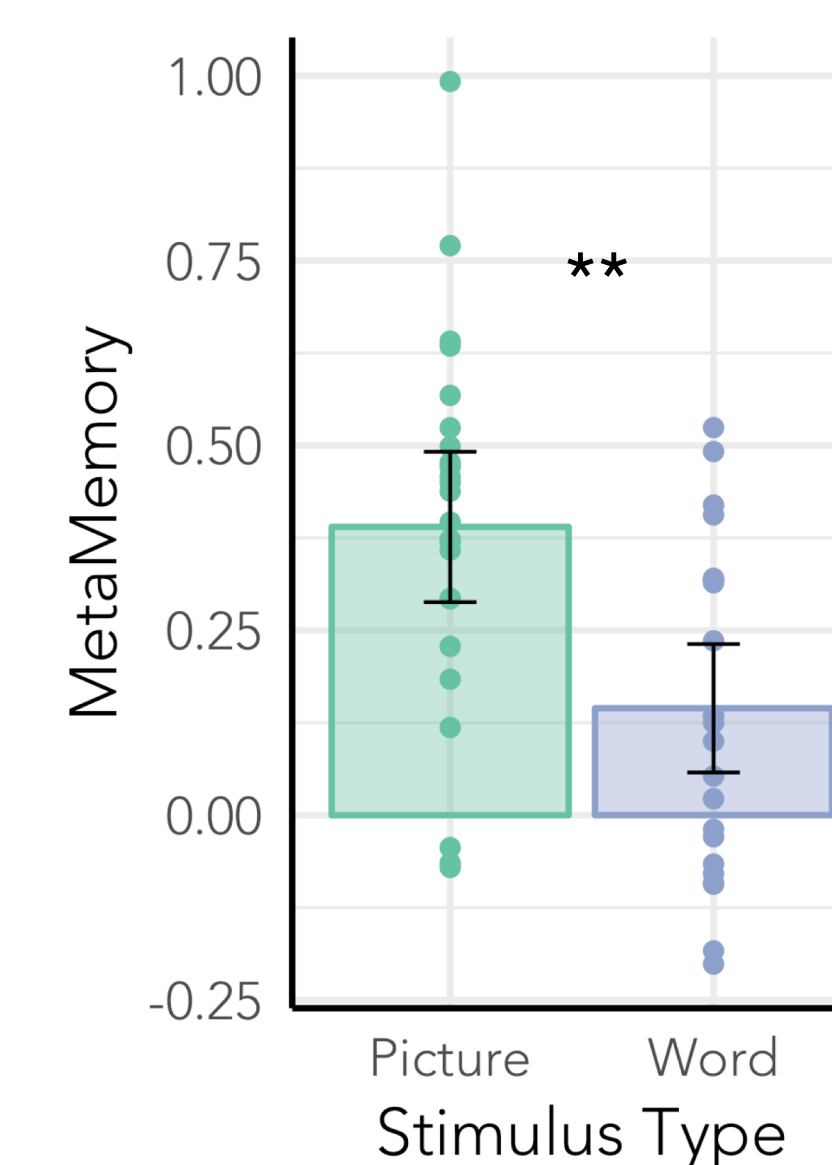
SOURCE



Source memory was worse when an item was studied with divided attention ($p = .03$) or when it was presented as a word ($p < .001$).



Source confidence was generally lower for words ($p < .001$). Divided attention decreased source confidence ($p < .001$) as well, and did so disproportionately for pictures ($p = .04$).



Source metamemory was poorer for words compared to pictures ($p = .003$) and was unaffected by divided attention ($p = .71$).

SUMMARY & CONCLUSION

SUMMARY

Divided attention

- Had no effect on subsequent picture misattributions
- Decreased recognition accuracy and confidence, with a selective accuracy impairment for words
- Decreased source accuracy and confidence, with a selective confidence impairment for pictures
- Decreased recognition metamemory accuracy

CONCLUSION

The imagery generated by semantic encoding of information presented in this mixed-list manner occurs automatically and is unaffected by decreases in cognitive resources.

Dividing attention decreases the extent to which an event can be encoded into a cohesive memory representation, which seems to be a critical factor for successful recognition and memory monitoring.

References:

1. Foley, M. A., Bays, R. B., Foy, J., & Woodfield, M. (2015). Source misattributions and false recognition errors: examining the role of perceptual resemblance and imagery generation processes. *Memory*, 23(5), 714–735.
2. Johnson, M. K., Hashtroudi, S., & Lindsay, D. S. (1993). Source monitoring. *Psychological Bulletin*, 114(1), 3–28.
3. Durso, F. T., & Johnson, M. K. (1980). The effects of orienting tasks on recognition, recall, and modality confusion of pictures and words. *Journal of Verbal Learning and Verbal Behavior*, 19(4), 416–429.
4. Hasher, L., & Zacks, R. T. (1979). Automatic and effortful processes in memory. *Journal of Experimental Psychology: General*, 108(3), 356.