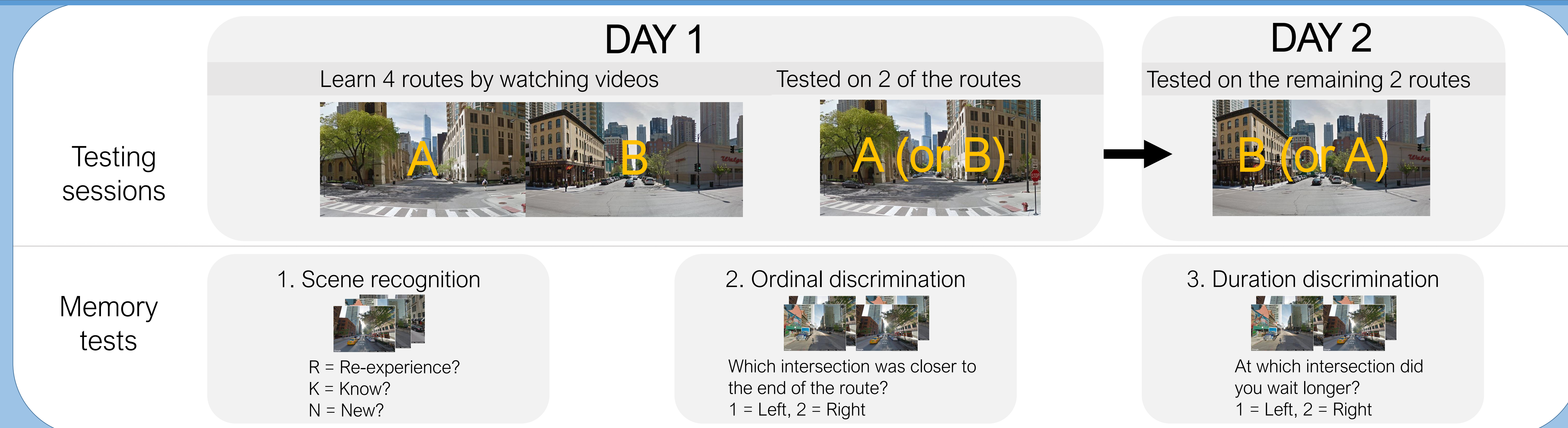




Background

- When spatial locations are experienced in a sequence, their individual duration (*temporal* information) and sequential position (*ordinal* information) are encoded.¹
- Prior research suggests that even a short delay prior to a memory test can greatly enhance performance on an ordinal memory task²
- Here, we explore possible differences in ordinal and duration memory immediately after learning novel routes and after an extended delay of 24 hours.

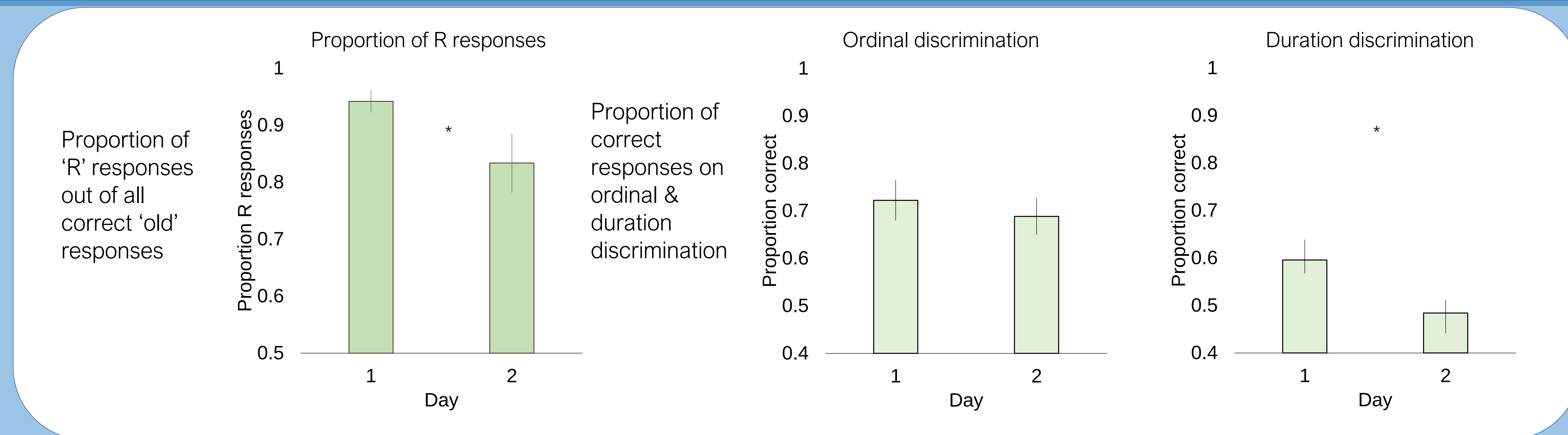
Procedure



Hypotheses

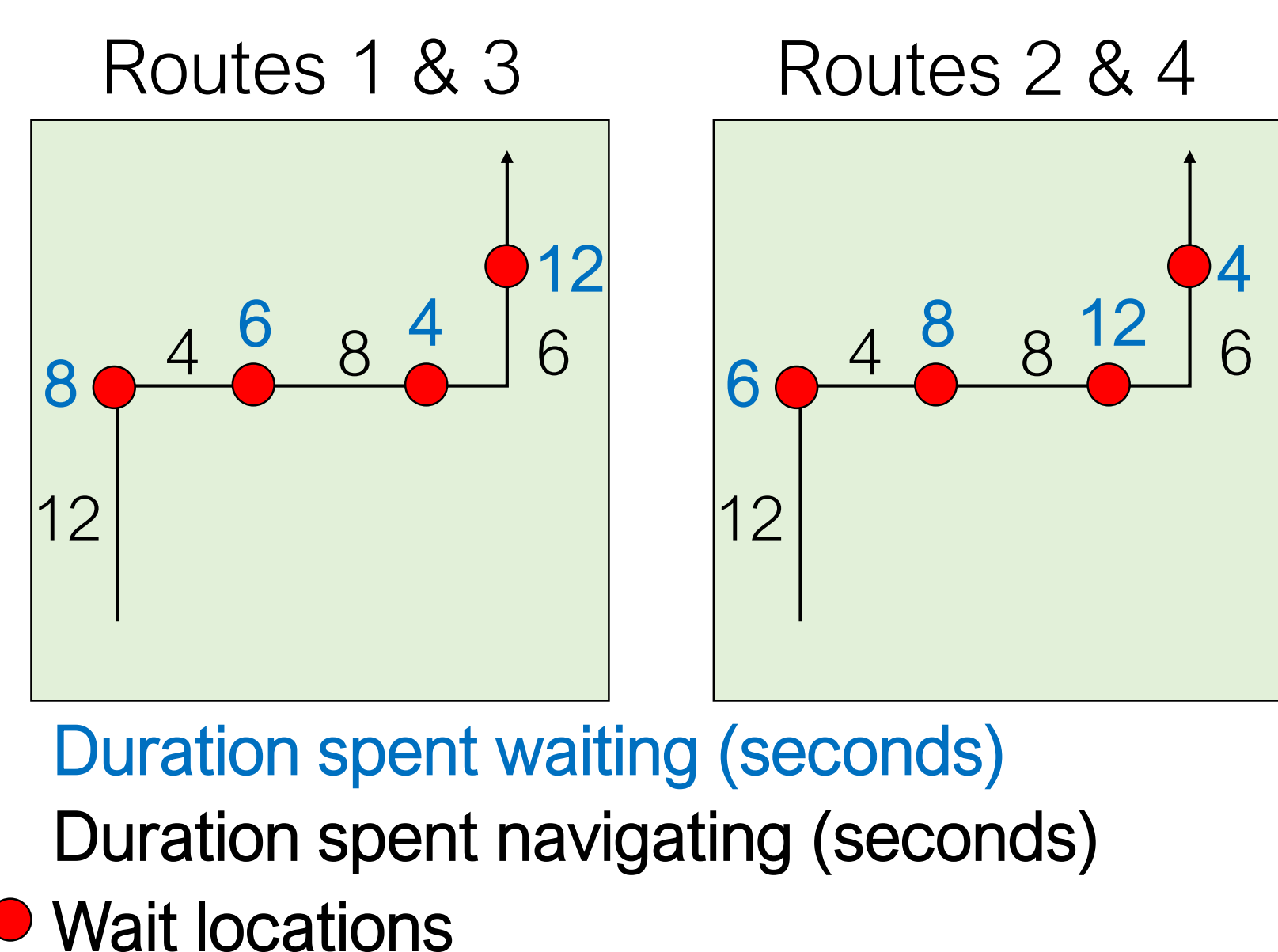
- Recollection of spatial locations will drop after a 24 hour delay
- Ordinal information is consolidated by rest.²
- Duration information may not be consolidated by rest, and may be more likely to decay due to its dynamic and fine-grained nature.

Results



Experiment overview

- Participants (n = 20) learn 4 non-overlapping routes, wait at 4 intersections on each route, repeat 7x.
- Wait durations are pre-determined to form two different temporal structures.



Conclusions

- The proportion of 're-experience' responses drops significantly from day 1 to day 2, suggesting that after 24 hours, the memory becomes less rich and vivid.
- Immediate memory for duration and order was matched (no sig. difference), and different consolidation patterns were observed.
- Ordinal information is consolidated after a delay of 24 hours
- Duration information is not consolidated after a delay of 24 hours because it may be more susceptible to interference and decay.

Future directions

1. Compare performance on the paradigm in younger adults (YA), healthy older adults (OA) and older adults at risk of cognitive decline (AROA)
2. Compare consolidation patterns for routes in a novel environment versus in a familiar environment
3. Conduct the experiment in fMRI

References

1. Brunec, I. K., Ozubko, J. D., Barense, M. D., & Moscovitch, M. (2017). *Learning & Memory*, 24(3), 104-114.
2. Craig, M., Dewar, M., Della Sala, S., & Wolbers, T. (2015). *Hippocampus*, 25(9), 1017-1027.