

# The influence of partial and distributed tests on learning and retrieval-induced forgetting

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## BACKGROUND

- Testing facilitates subsequent learning of new information, a phenomenon known as the *forward testing effect*.
- The effect is often investigated in multi-list procedures, where studied lists are followed by a retrieval test, or a control task such as restudying, and learning is compared on the final list.
- In most studies of the effect, tests include all material from the preceding list.
- In educational settings, tests will typically include only some of the learned material, as well as material taught over multiple separate classes and lessons.

### Research Question

Are tests that are partial (not including all studied items) and distributed (including retrieval of items from earlier lists) effective in enhancing new learning?

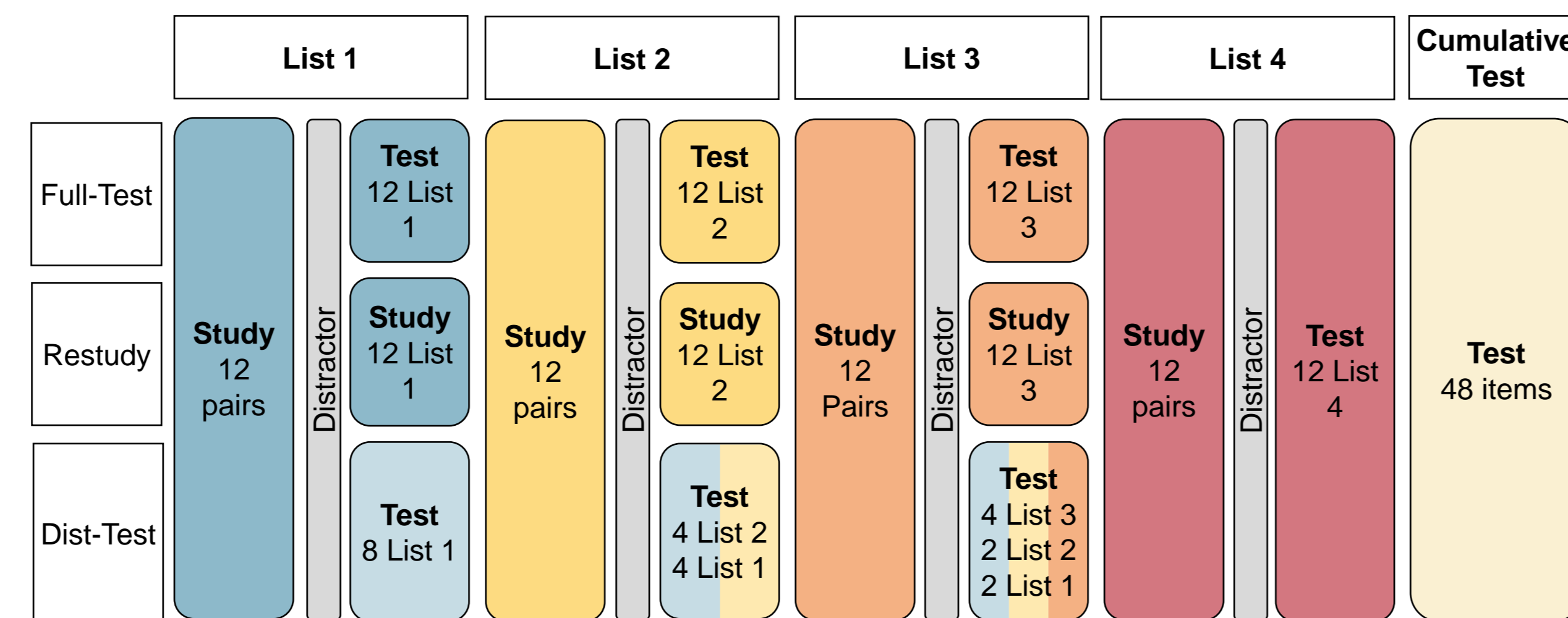
## CONCLUSIONS

- Testing of all studied material is not necessary to produce beneficial effects on new learning, or to reduce intrusions.
- The beneficial effects of testing were substantially mediated by reduced proactive interference.
- There was little evidence that the forward learning benefits of partial and distributed tests are offset by a cost to untested items via retrieval-induced forgetting.

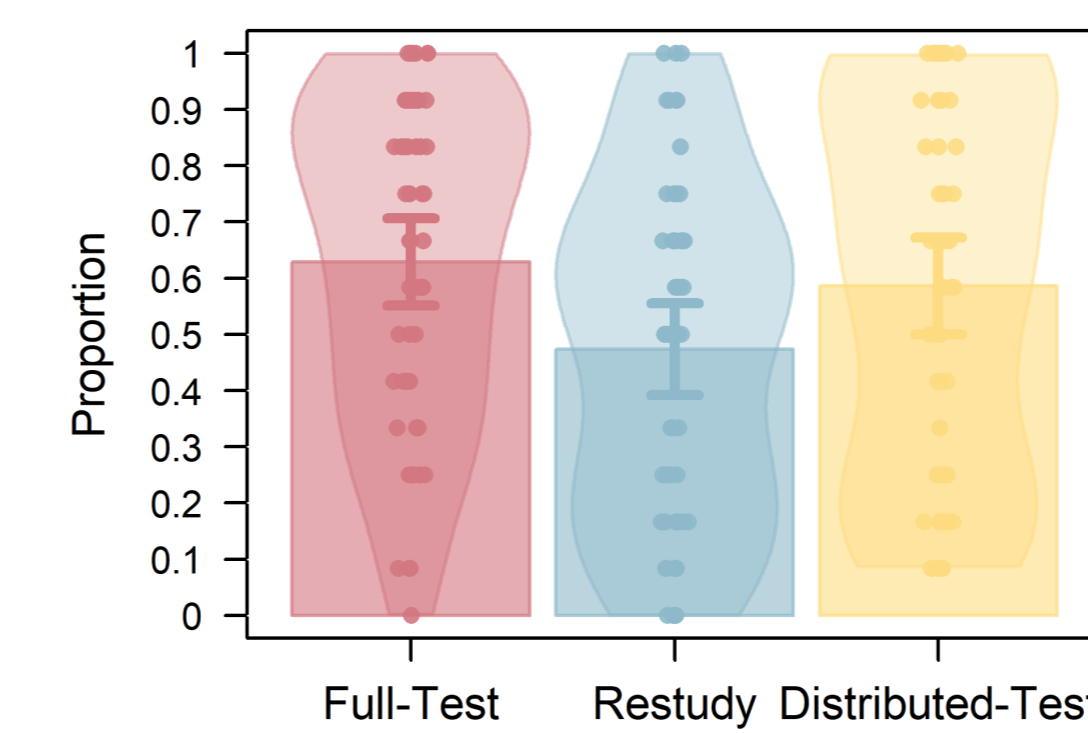
Don, H. J., Yang, C., Boustani, S., & Shanks, D. R. (2022). Do partial and distributed tests enhance new learning?. *Journal of Experimental Psychology: Applied*. <https://doi.org/10.1037/xap0000440>

## METHODS AND RESULTS

### Experiment 1

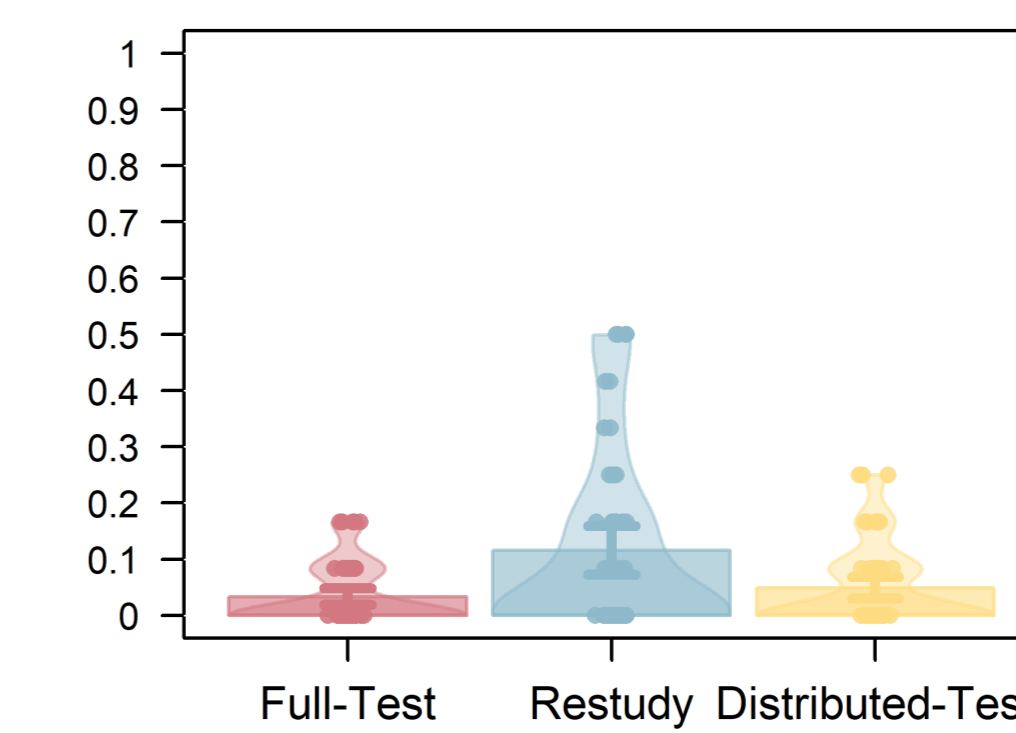


#### List 4 recall



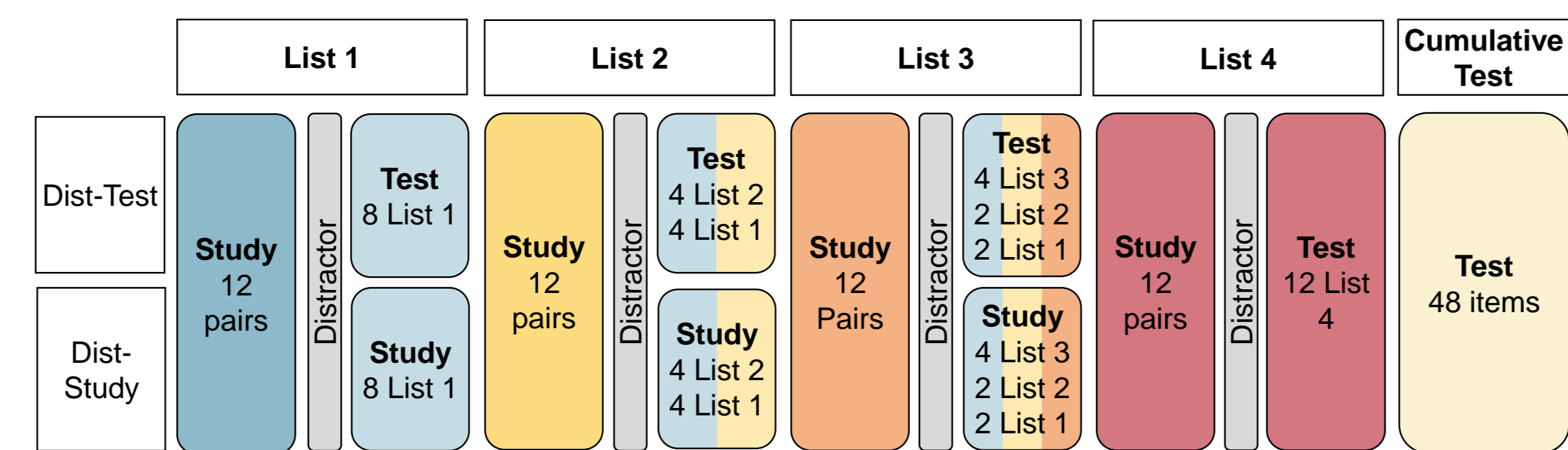
Distributed tests provide a significant benefit to new learning

#### Intrusions

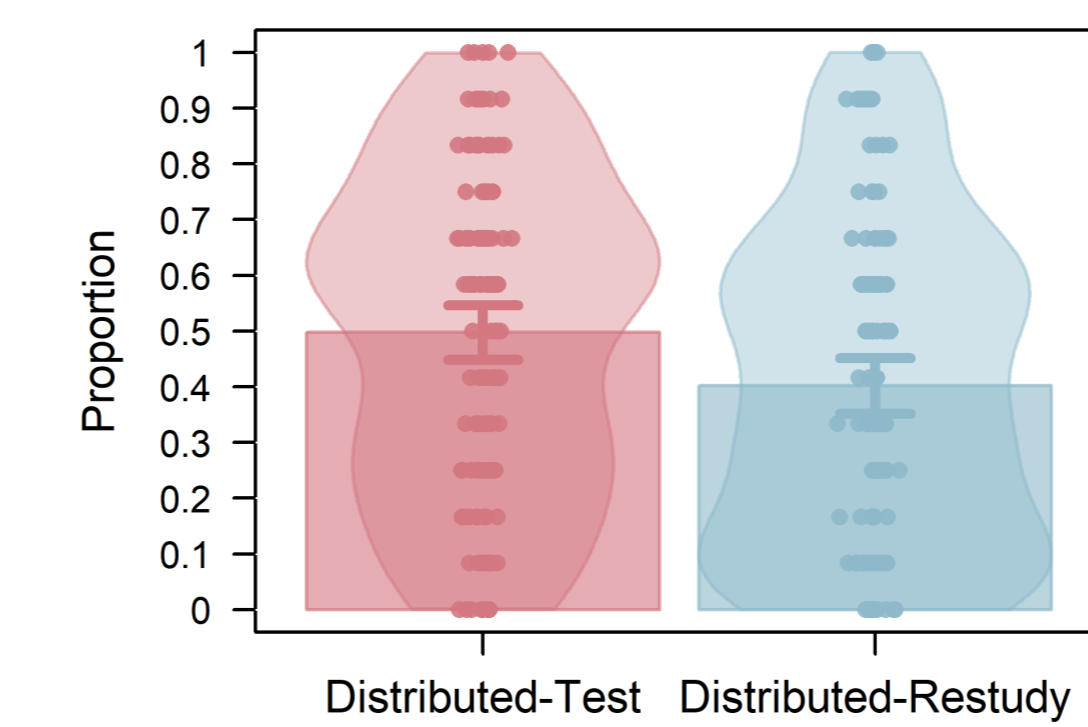


Distributed tests significantly reduced intrusions compared to Restudy

### Experiment 2

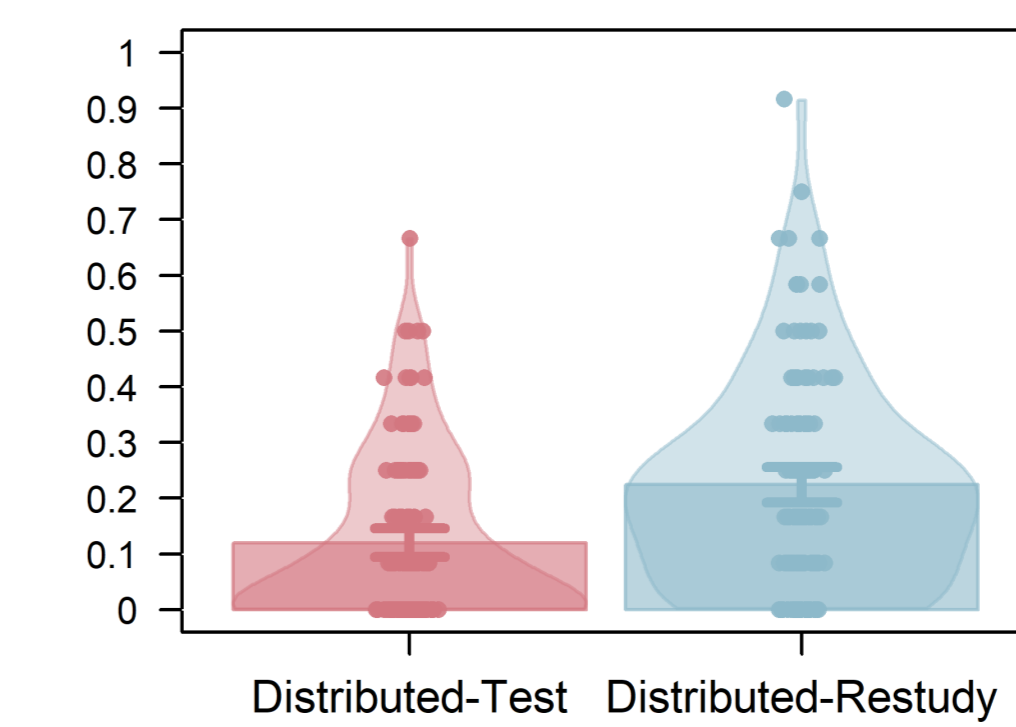


#### List 4 recall



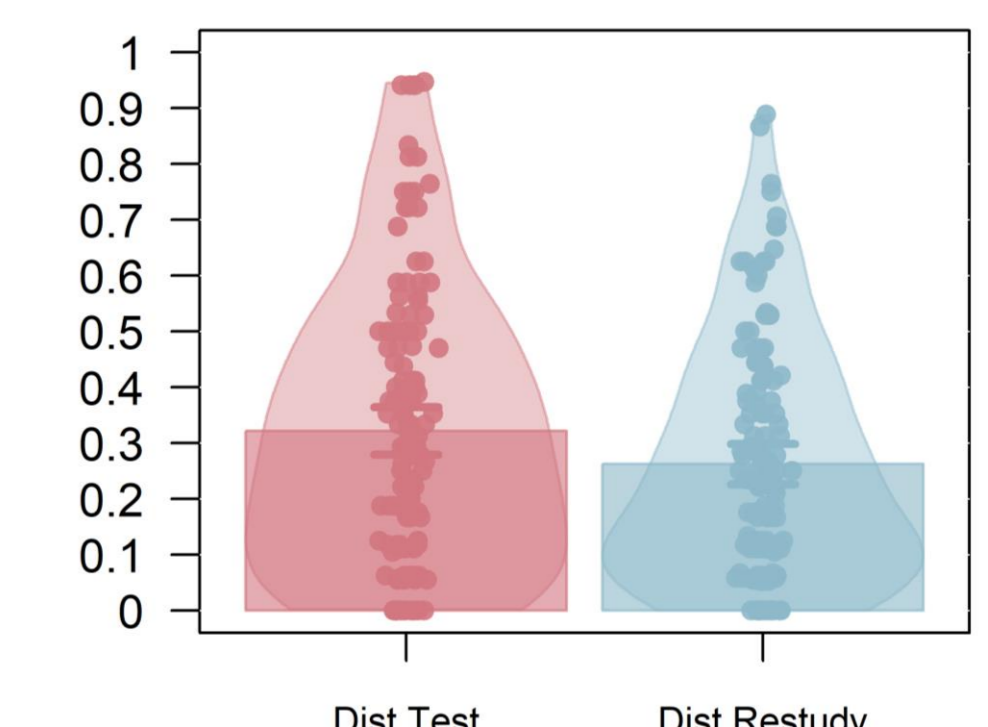
Distributed tests provide a significant benefit to new learning

#### Intrusions



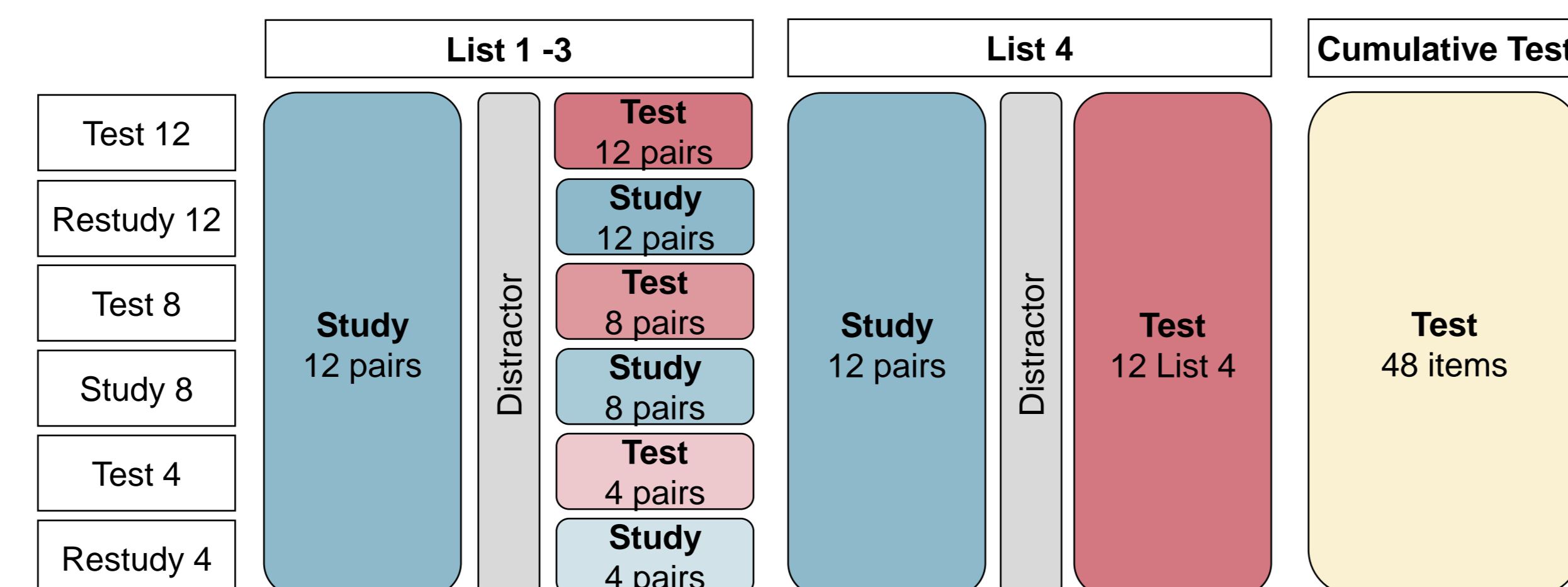
Distributed tests significantly reduced intrusions compared to Distributed Restudy

#### Untested item recall

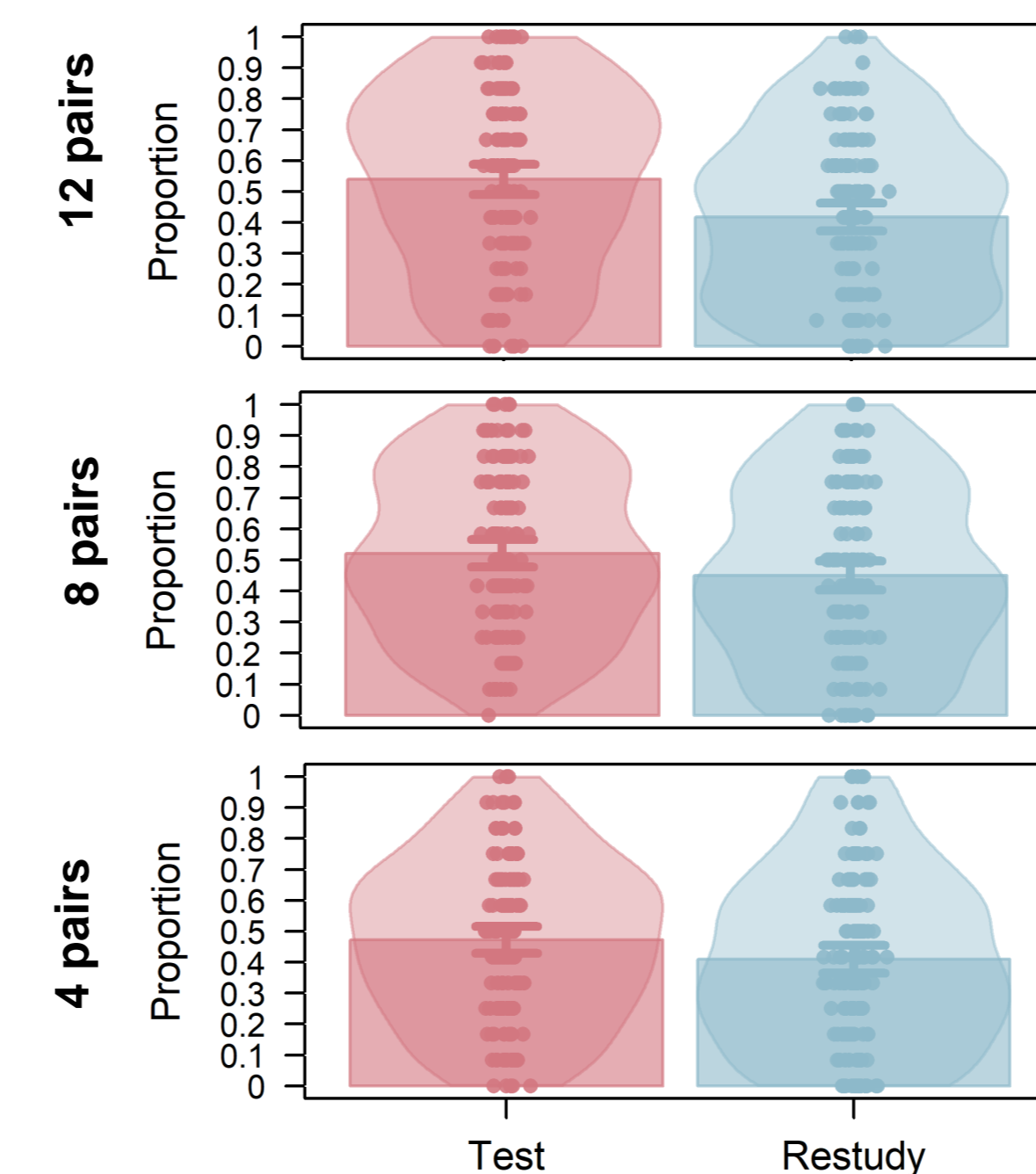


No evidence of retrieval-induced forgetting

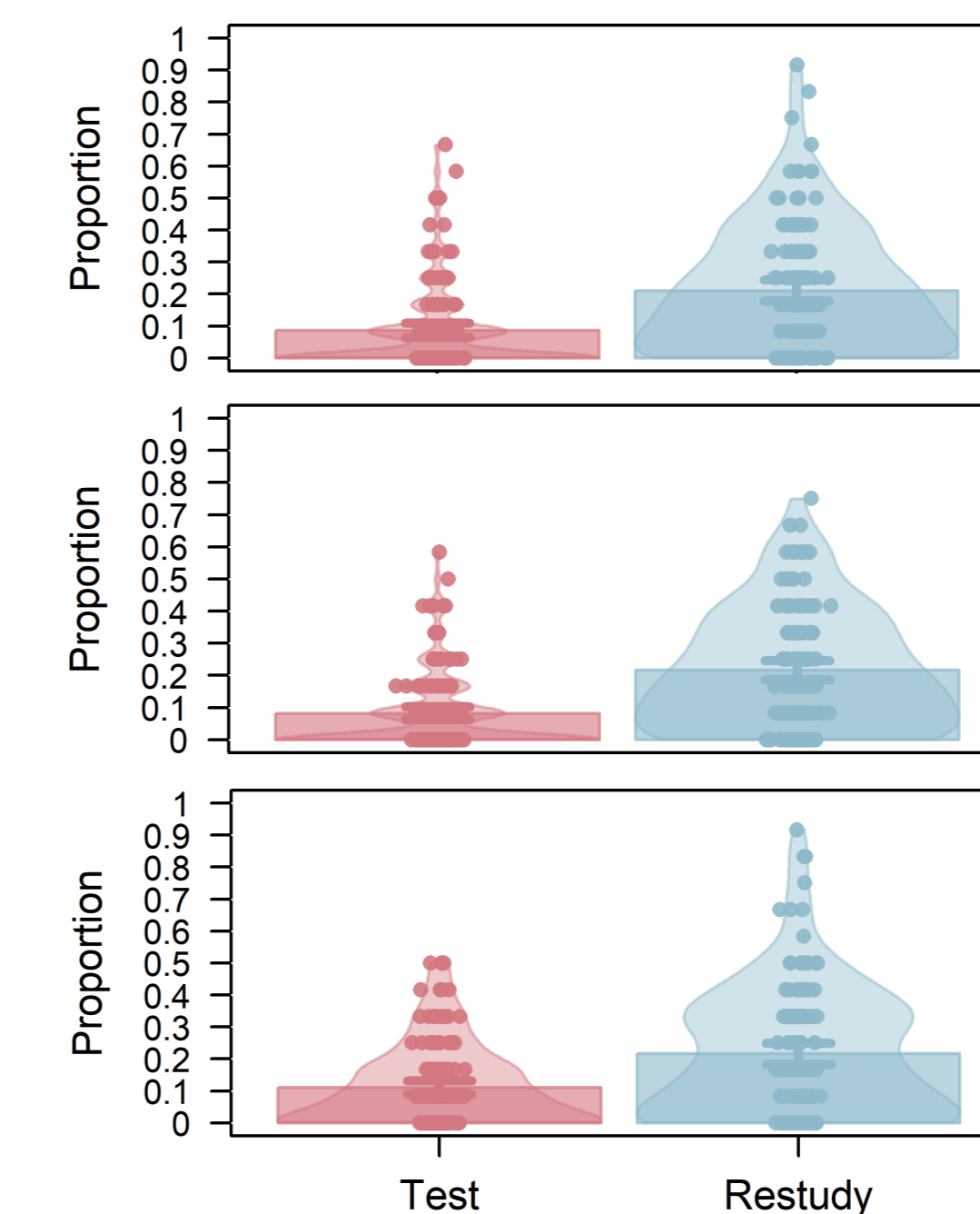
### Experiment 3



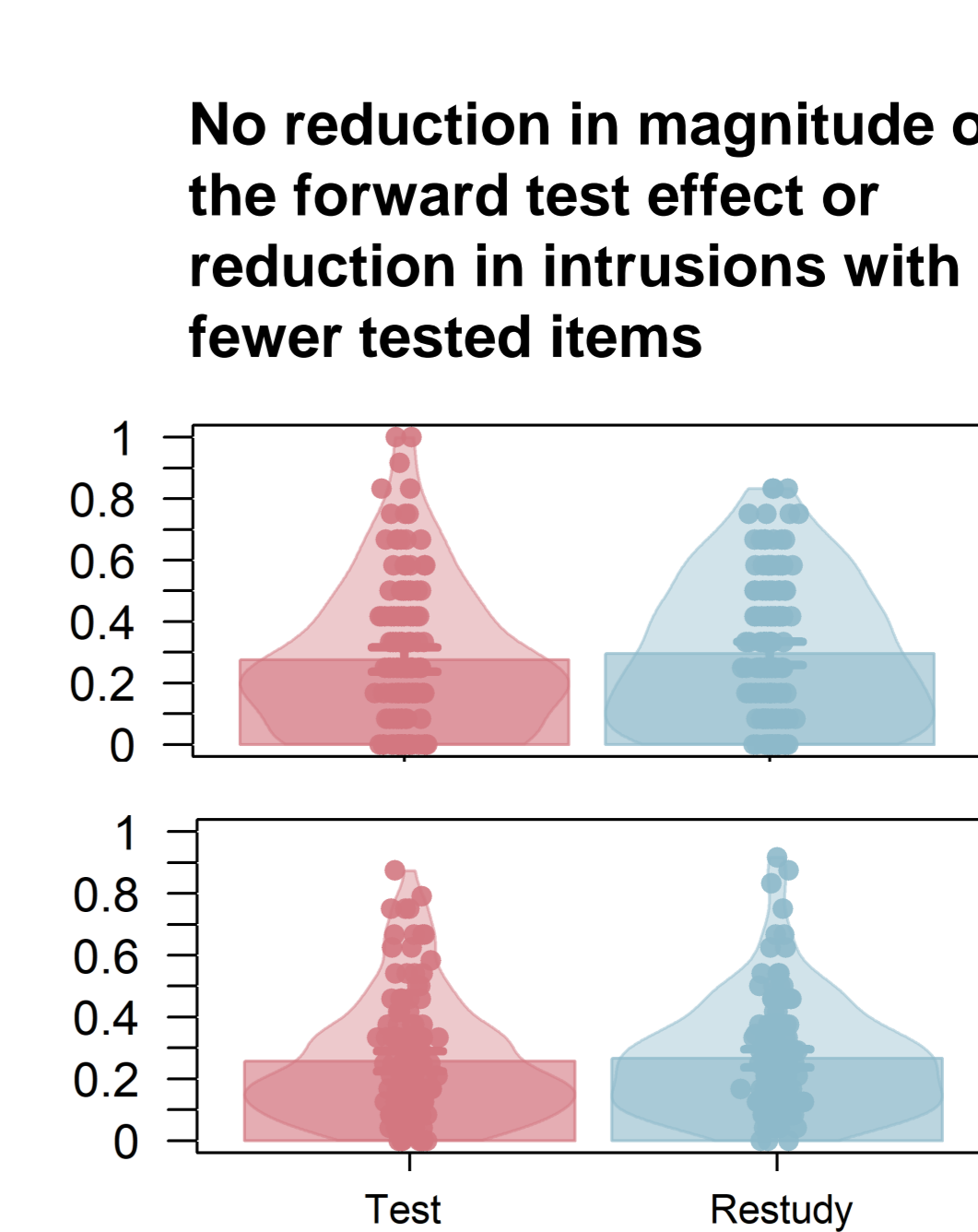
#### List 4 recall



#### Intrusions



#### Untested item recall



No reduction in magnitude of the forward test effect or reduction in intrusions with fewer tested items

No evidence of retrieval-induced forgetting