

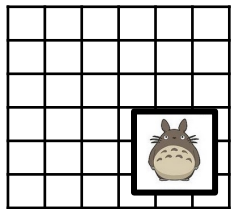
Modestly related memories for **WHEN** and **WHERE** an object was seen in a Massive Memory paradigm.

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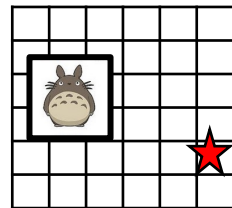


The Task



Objects appear in a 7x7 grid

If it is new, Click "new"



If it is a repeat, Click where you think you saw it the first time.

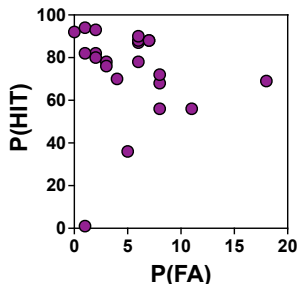


And click on a timeline to say when you first saw that item.

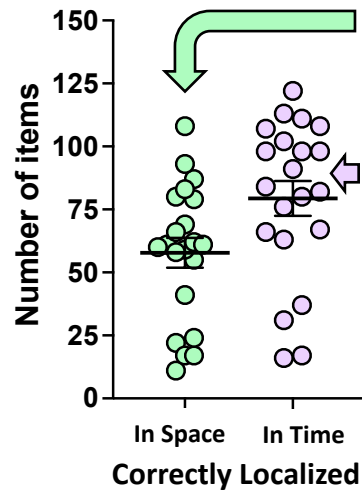
Repeat for 150 items ~300 trials

Basic Massive Memory Result

Most Os can remember around 80% of items with few false alarms



Spatial and Temporal Massive Memory Result

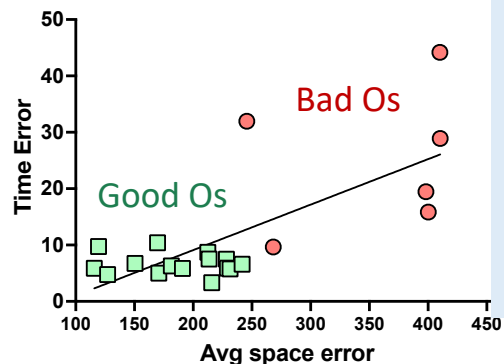


How many items (out of 150) are localized within +/- 1 cell?

How many items (out of 150) are localized within 10% of timeline?

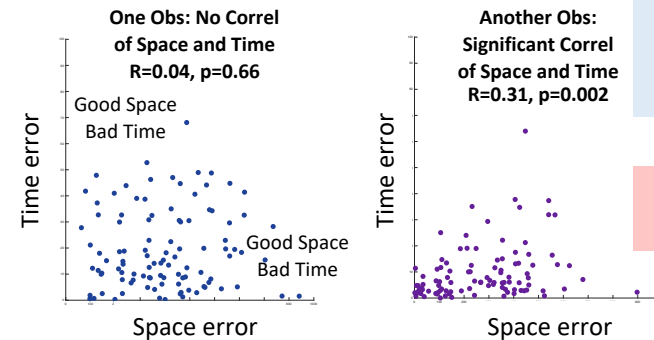
Os can recall the location of dozens of items in space and time

If Os remember space, do they remember time (and vice versa)?



Comparing across Os, there is a correlation of space and time but only if you include the bad Os. Some Os are just bad at both.

Within Os: If you remember this item's location, do you remember when it was last seen? And vice versa

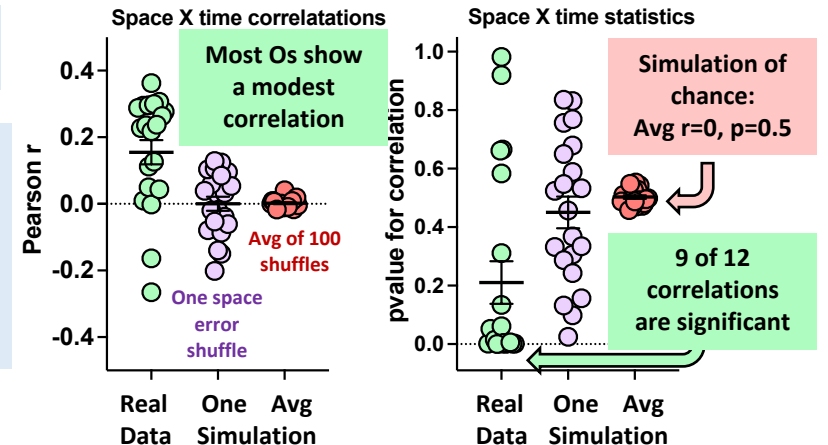


Example scatterplots of time x space errors. Each dot is one trial. 2 of 21 Obs.

Time and space are not very tightly bound to each other

Summary Data for all 21 Os

Does the correl of space and time arise by chance? Simulate chance by shuffling the order of the spatial errors.



Conclusion: Sometimes you know you have seen something, but where and when get lost. Still, your memory for where and when is quite massive (dozens of items, at least).

What and when do covary, but not very strongly. (jwolfe@bwh.harvard.edu)