

# Perceptual Comparisons Induce Lasting Memory Distortions

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## Research Question

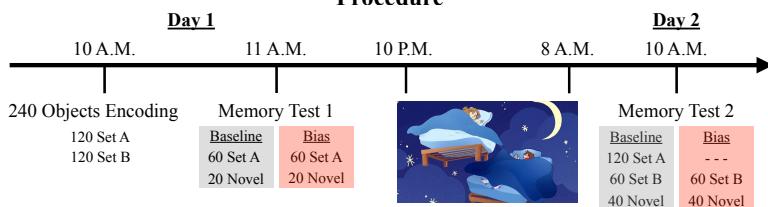
Recent work\* suggests that perceptual comparisons using an active VWM representation can induce systematic memory biases in the representation

**Are LTM representations vulnerable to *similarity-induced bias*?**  
**Do similarity-induced biases permanently distort memory?**

\*See poster *Recognition-induced memory bias (RIMB) in visual working memory* (Fukuda et al.)

## Method

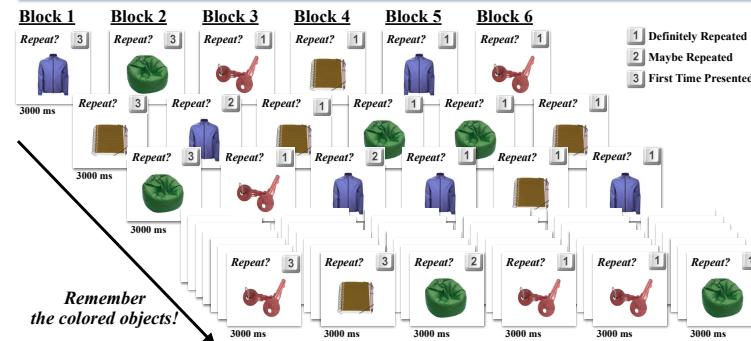
### Procedure



## Encoding Task

Participants encoded 240 objects presented 6 times across 6 blocks (1x/block)

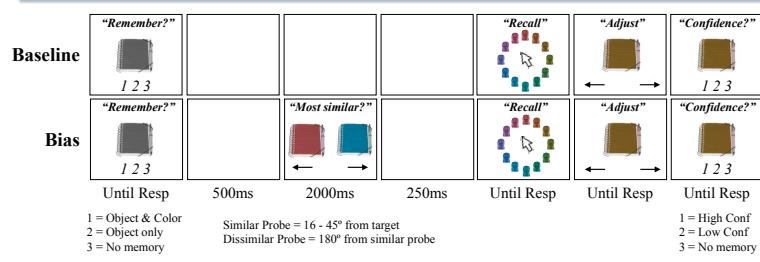
Participants indicate when they remember seeing object presented previously



## Memory Test

Participants recall object and report its color with a confidence rating

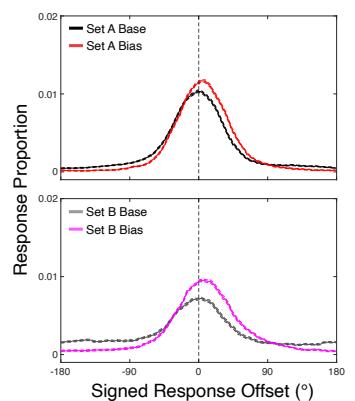
Complete similarity judgment during maintenance by selecting more similar object



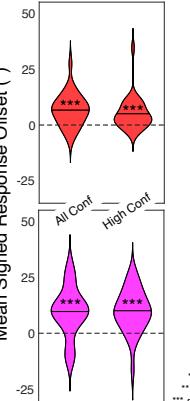
## Results

How do task-relevant perceptual comparisons affect retrieved LTM representations?

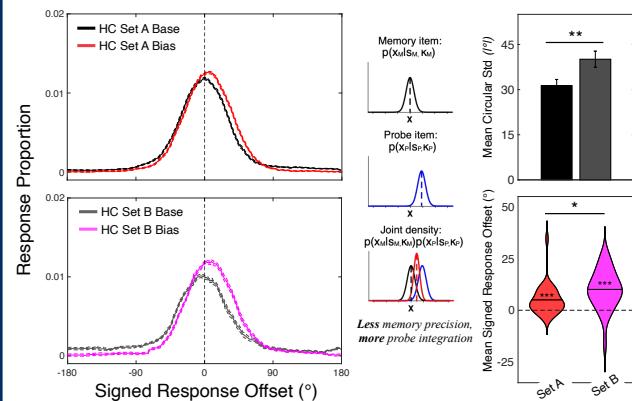
### Is there bias?



### Size of the bias?

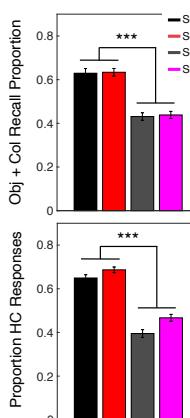


### Larger bias in consolidated memories?

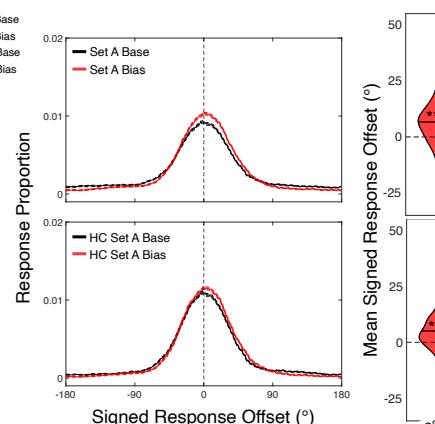


## Does similarity-induced bias permanently distort LTM representations?

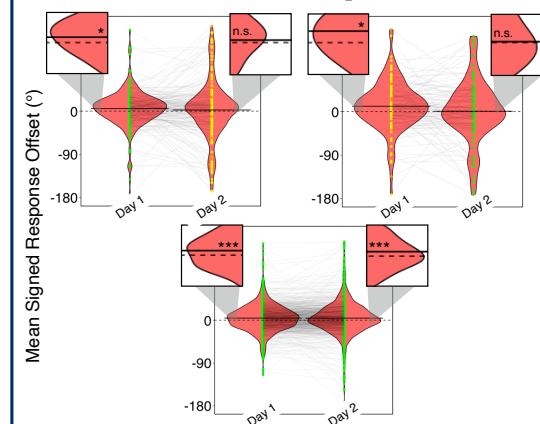
### Did recall help memory?



### Do memories recover from bias?



### When does bias persist?



Despite **reliable benefits in memory confidence** following recall practice, subsequent recall episodes show **mixed evidence of bias recovery**

Bias is preserved **in memories recalled confidently over multiple retrieval episodes**

## Future Directions

How does a similarity judgment change a memory's representational space?  
 Can integration mechanisms be biased towards memory differentiation instead?  
 Are biases produced by similar percepts driven exclusively by post-perceptual processes?