Perceptual Comparisons Induce Lasting Memory Distortions
Joseph M. Saito¹ & Keisuke Fukuda¹,²
¹University of Toronto, ²University of Toronto Mississauga

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

Day 1
240 Objects Encoding
10 A.M.
120 Set A
120 Set B

Day 2
Memory Test 1
11 A.M.
60 Set A
60 Set B
20 Novel
20 Novel
Memory Test 2
8 A.M.
120 Set A
60 Set B
40 Novel
40 Novel

Encoding Task
Participants encoded 240 objects presented 6 times across 6 blocks (1x/block) Participants indicate when they remembering 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?

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?