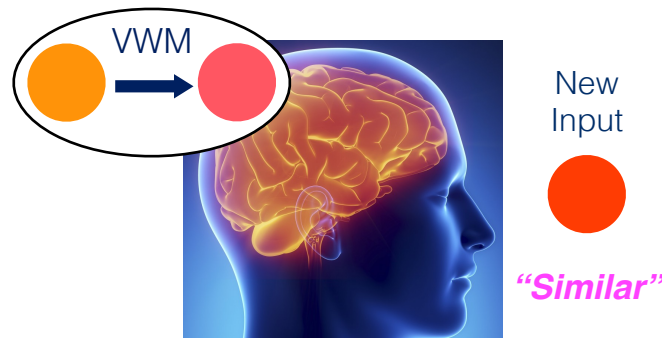


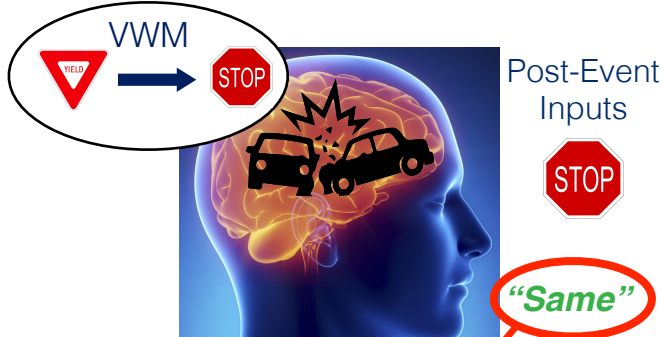
Background

Visual working memory (VWM) allows one to use prior perceptual experiences to accomplish current tasks.

However, VWMs can be **systematically biased** during perceptual comparisons when new inputs are **perceived as similar**:



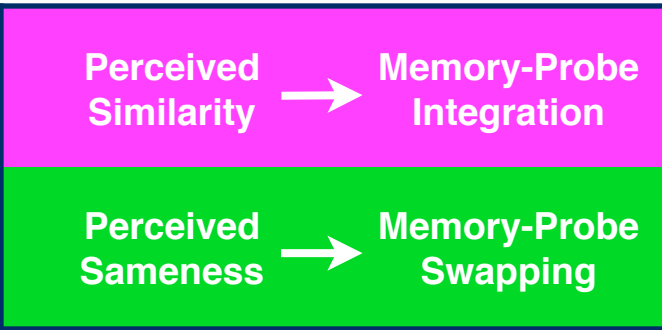
But what about memory distortions that are **not easily explained by bias**?



Perceived sameness triggers swapping?

Hypothesis

Qualitatively **different judgments** during perceptual comparisons predict qualitatively **different types of memory updating**



Fukuda, K., Pereira, A.E., Saito, J.M., Tang, T.Y., Tsubomi, H., & Bae, G.Y. (in press). Working memory content is distorted by its use in perceptual comparisons.

Loftus, E.F., Miller, D.G., & Burns, H.J. (1978). Semantic integration of verbal information into a visual memory.

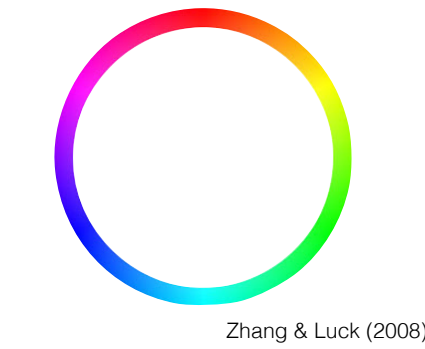
Saito, J.M., Kolinsky, M., & Fukuda, K. (2020). Perceptual comparisons modulate memory biases induced by overlapping visual input.

Tousignant, J.P., Hall, D., & Loftus, E.F. (1986). Discrepancy detection and vulnerability to misleading postevent information.

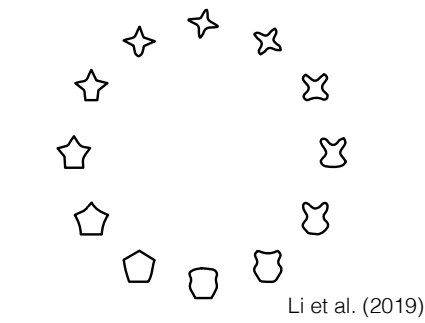
Zaragoza, M.S., & Lane, S.M. (1994). Source misattributions and the suggestibility of eyewitness memory.

Stimuli

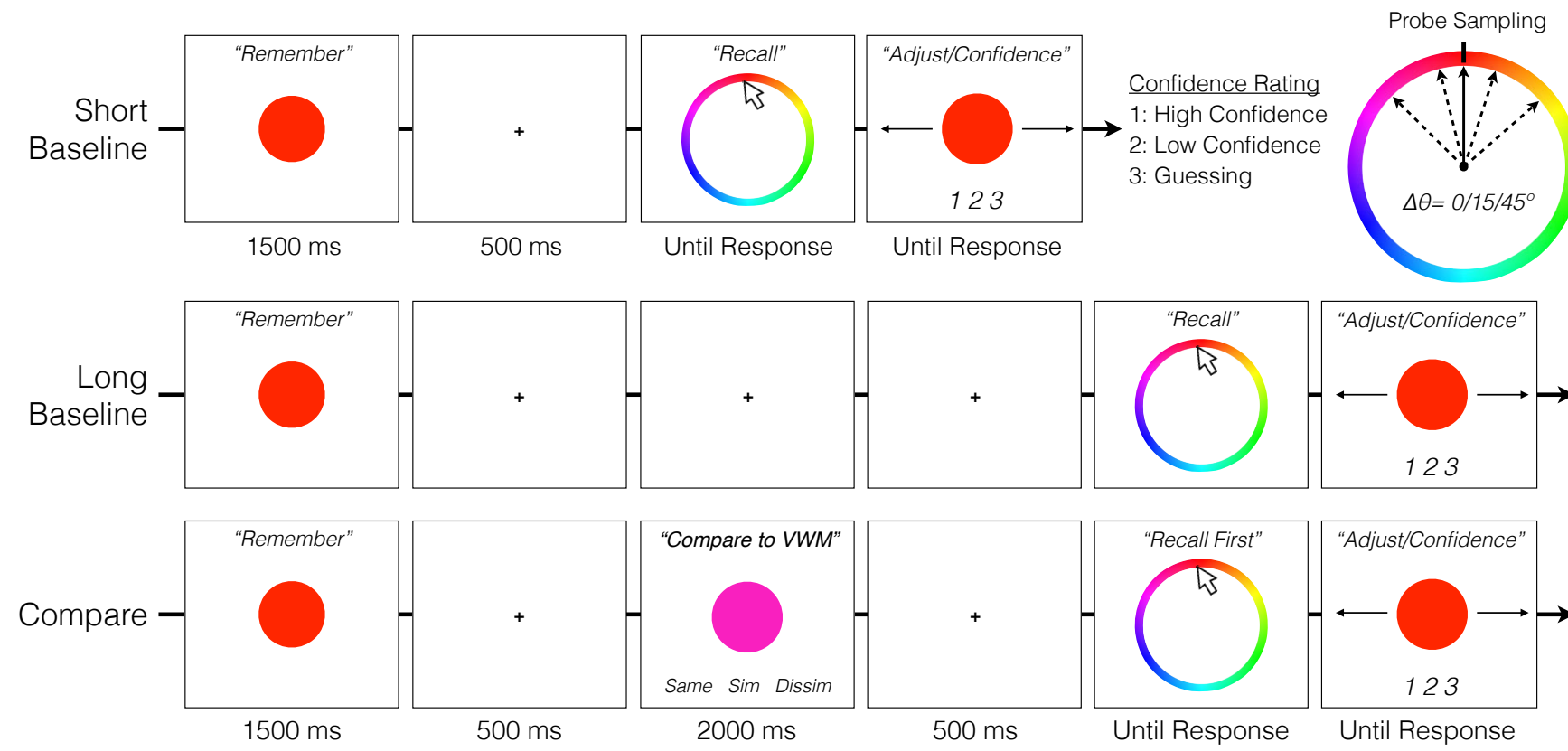
Circular Color Space



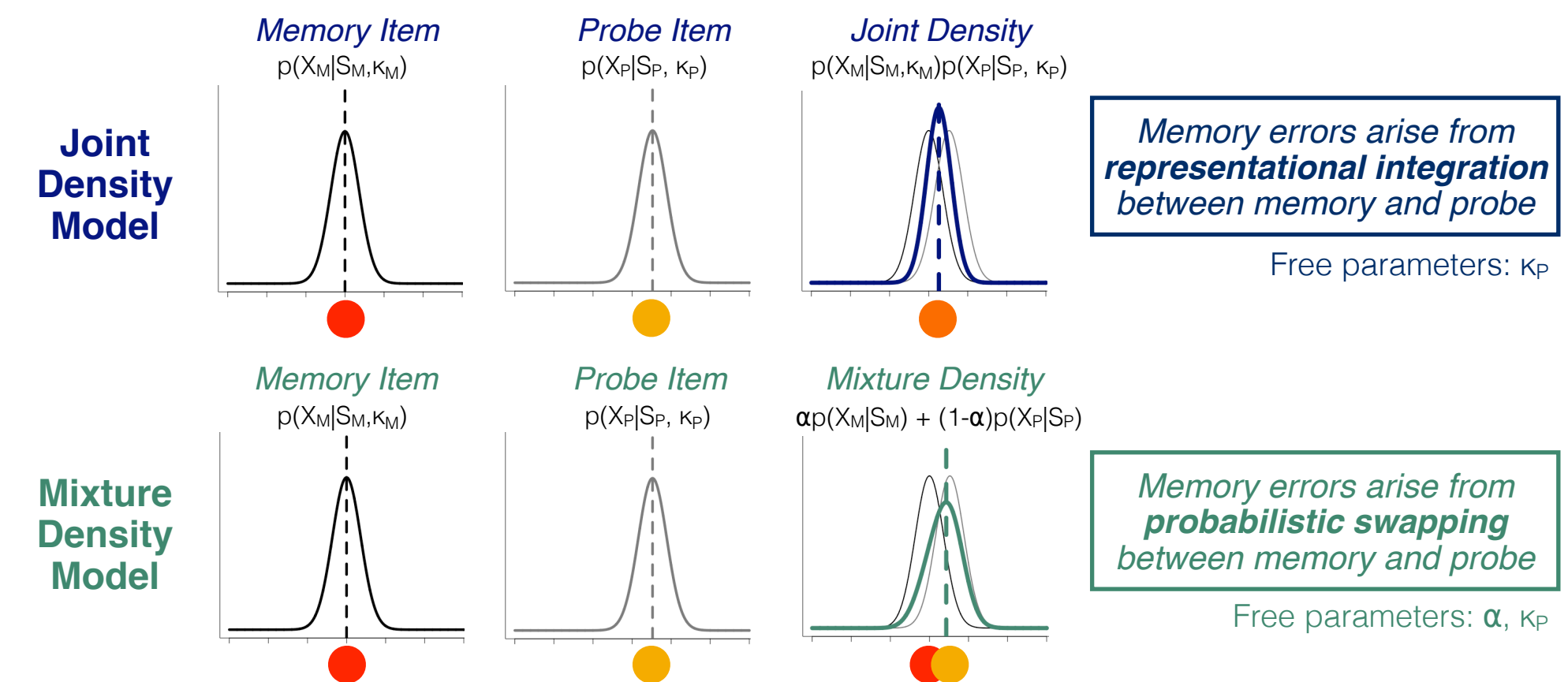
Circular Shape Space



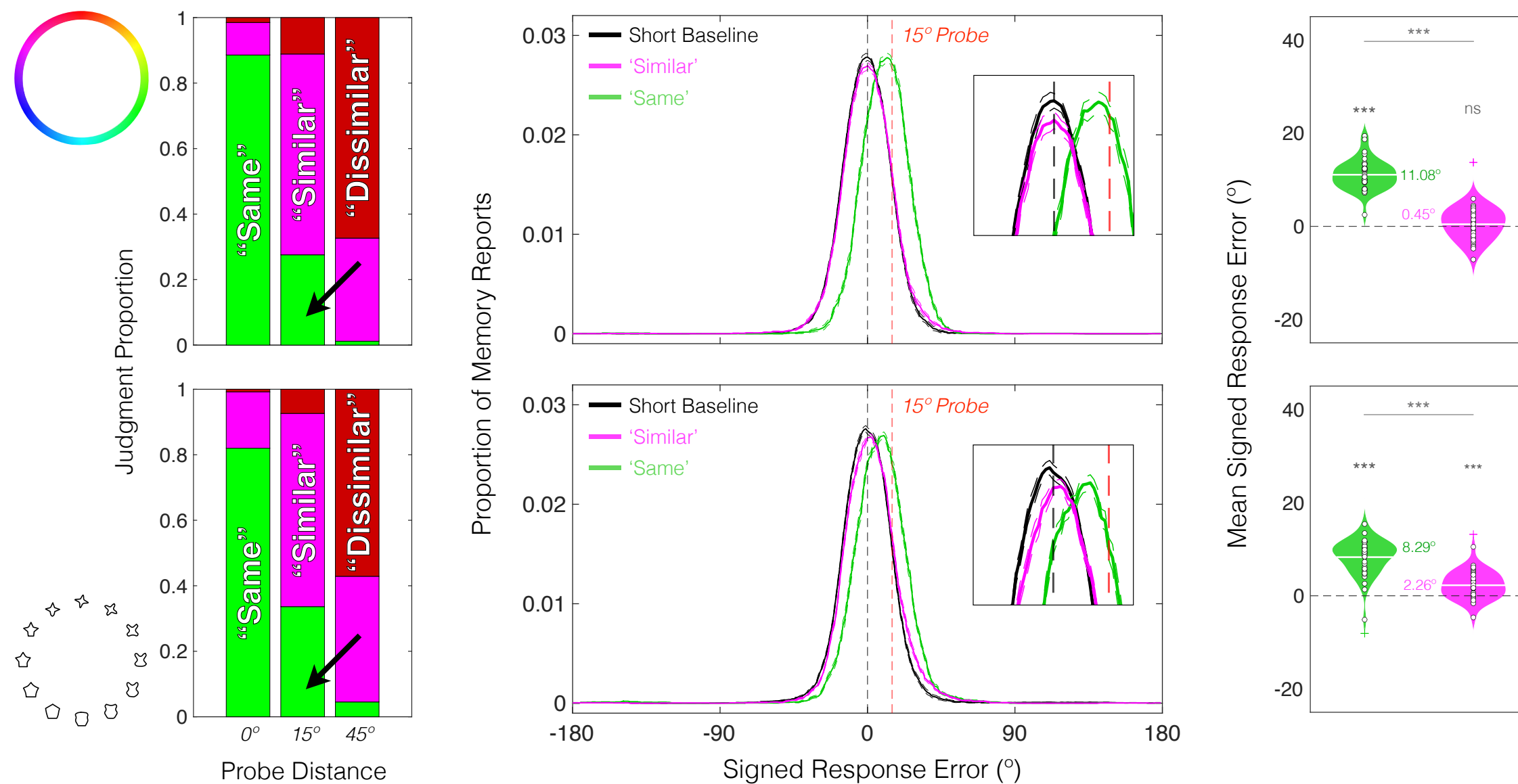
Task Procedure



Computational Modelling of Memory Errors



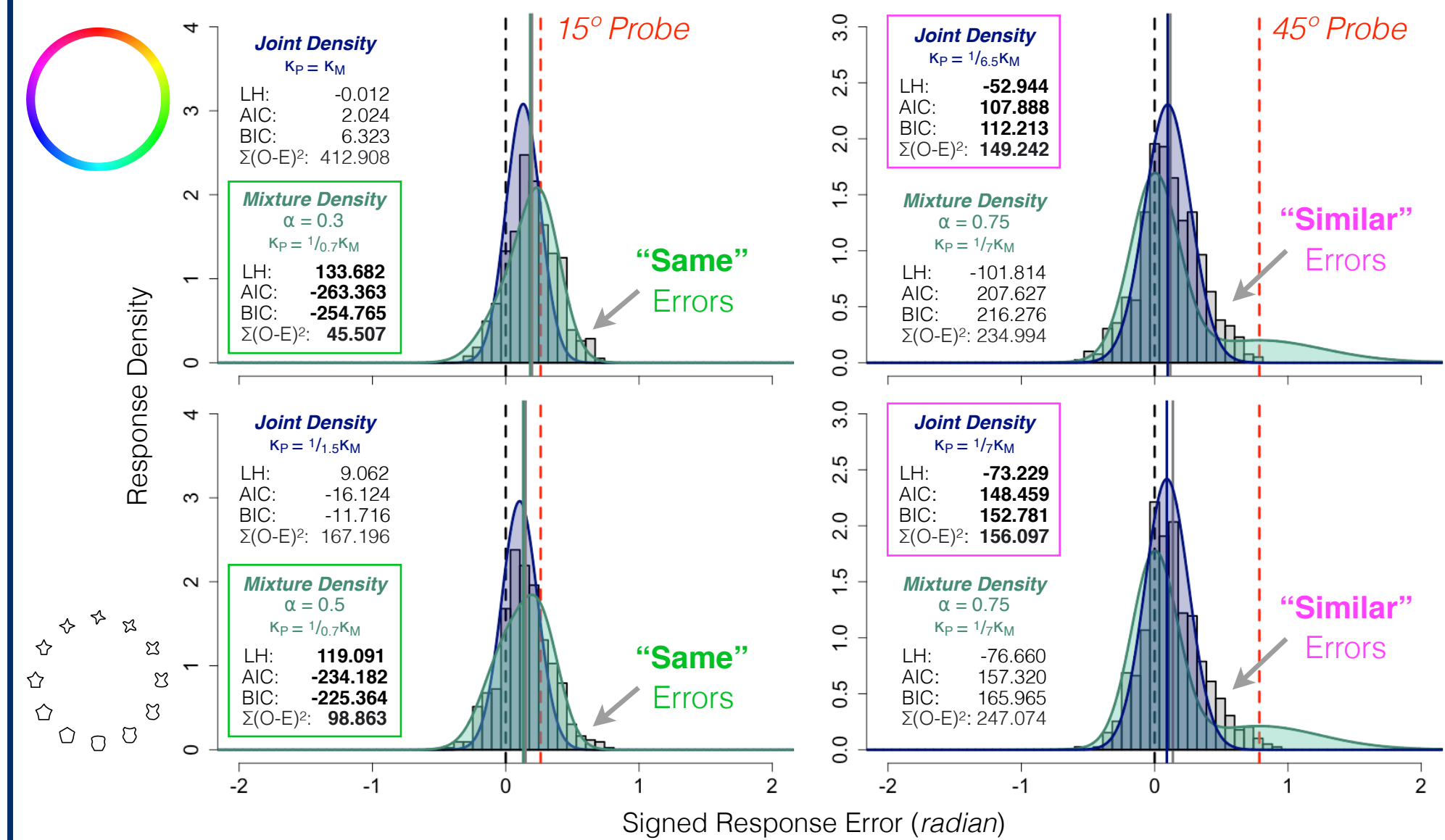
Do differences in perceived overlap result in different sized memory errors?



Participants frequently perceived 15° probes to be the 'same'

Differences in error magnitude between 'same' & 'similar' judgments are consistent with distinct updating mechanisms

Are differences in memory errors due to different updating mechanisms?



Perceived sameness triggers memory-probe swapping

Perceived similarity triggers memory-probe integration