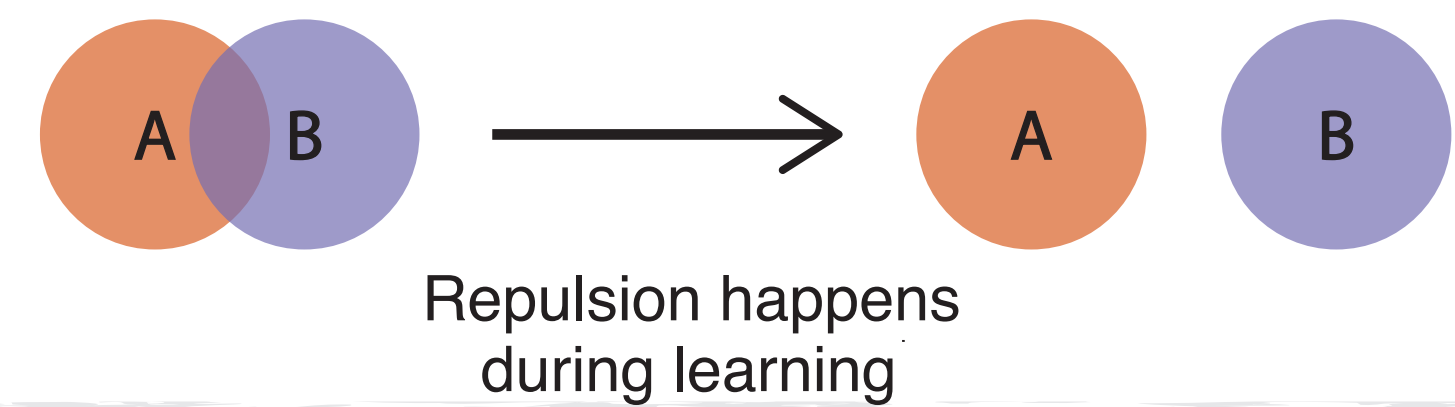


Introduction

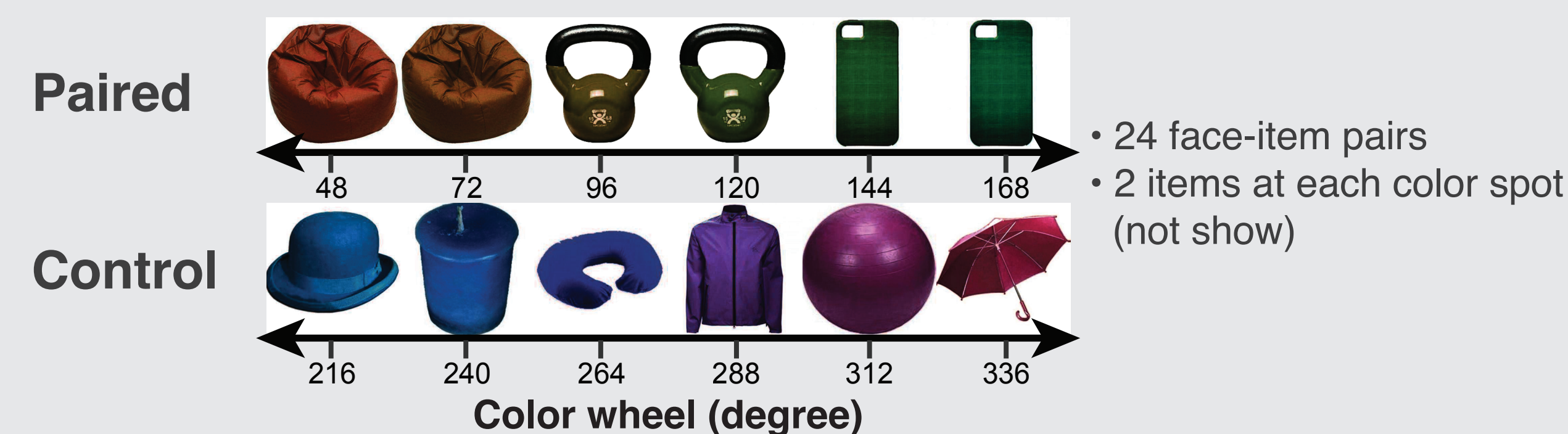
- Feature overlap between memories triggers repulsion of neural activity patterns.^{1,2,3,4,5}
 - Overlapping memories' neural representations become less similar than non-overlapping memories'.
- Repulsion is thought to be adaptive (less interference).²



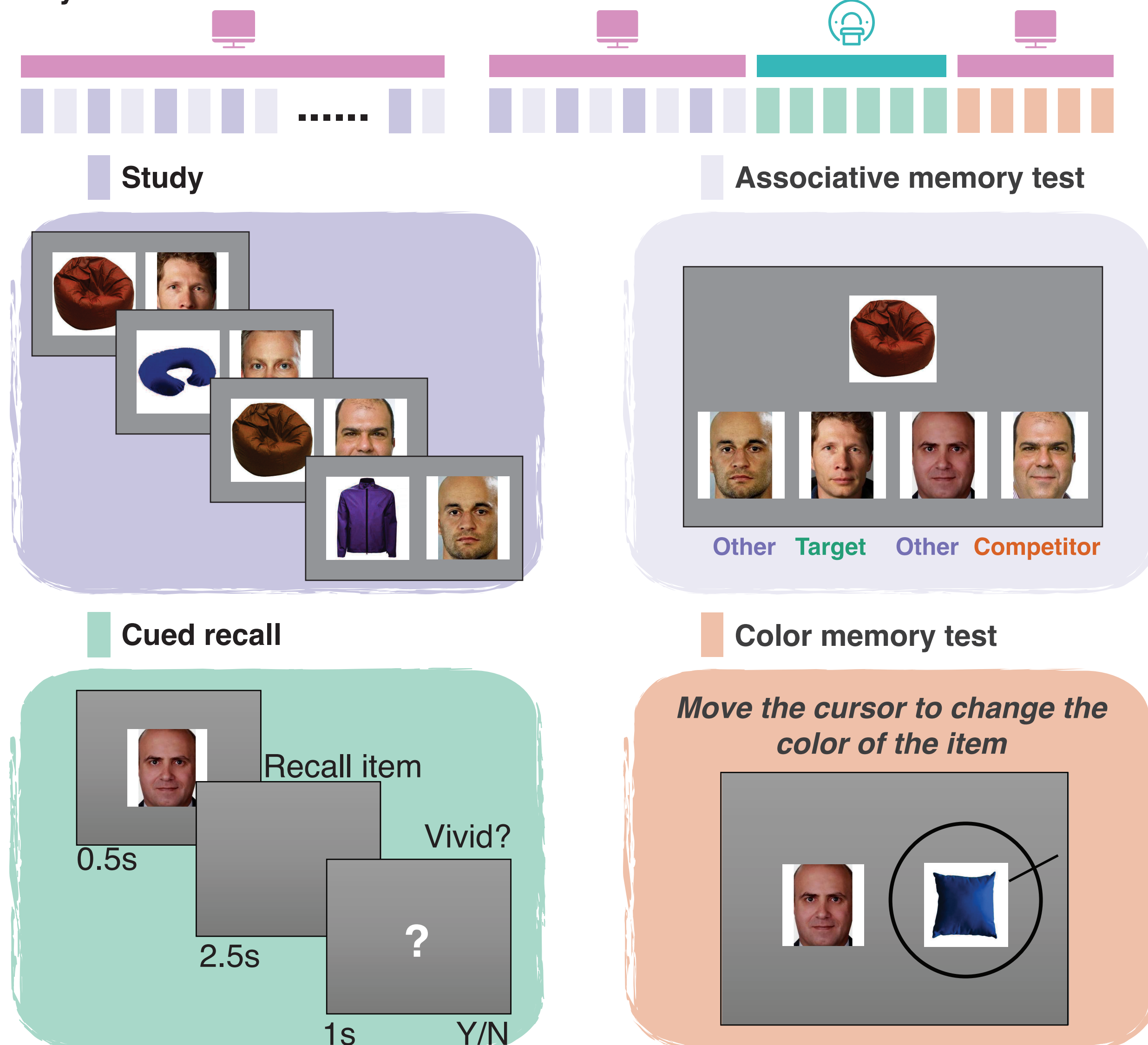
If neural representations are exaggerated, are the memory features exaggerated?

Method

- Approach** Use a memory feature that is continuous and can be reported
- Subjects** N = 23
- Stimuli**
 - Select colors every 24 degrees along the color wheel
 - Create **Same Object Similar Colors** pairs and **Control** pairs
 - Pair each item with a unique neutral male face

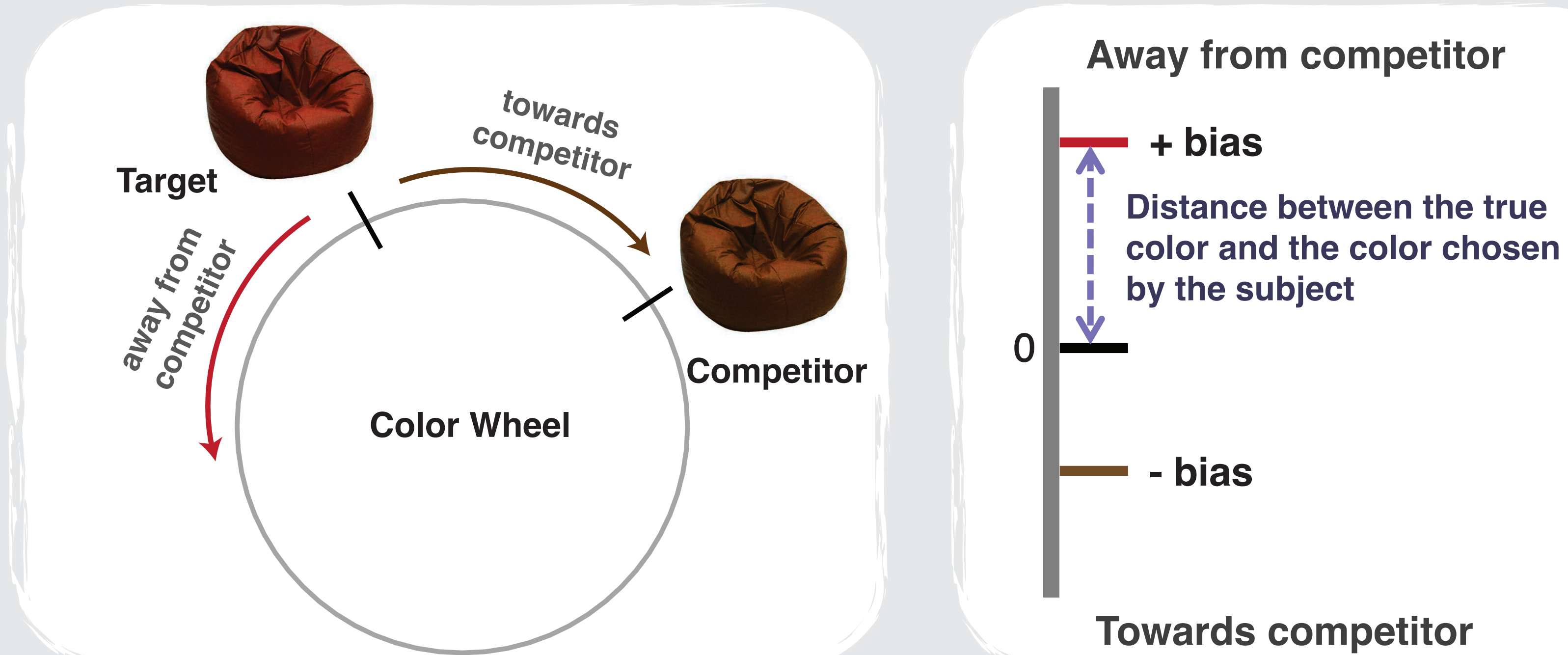


- Paradigm**
 - Day 1: Behavioral (Study)
 - Day 2: Behavioral (Associative memory test), In scanner (Cued recall, Color memory test)

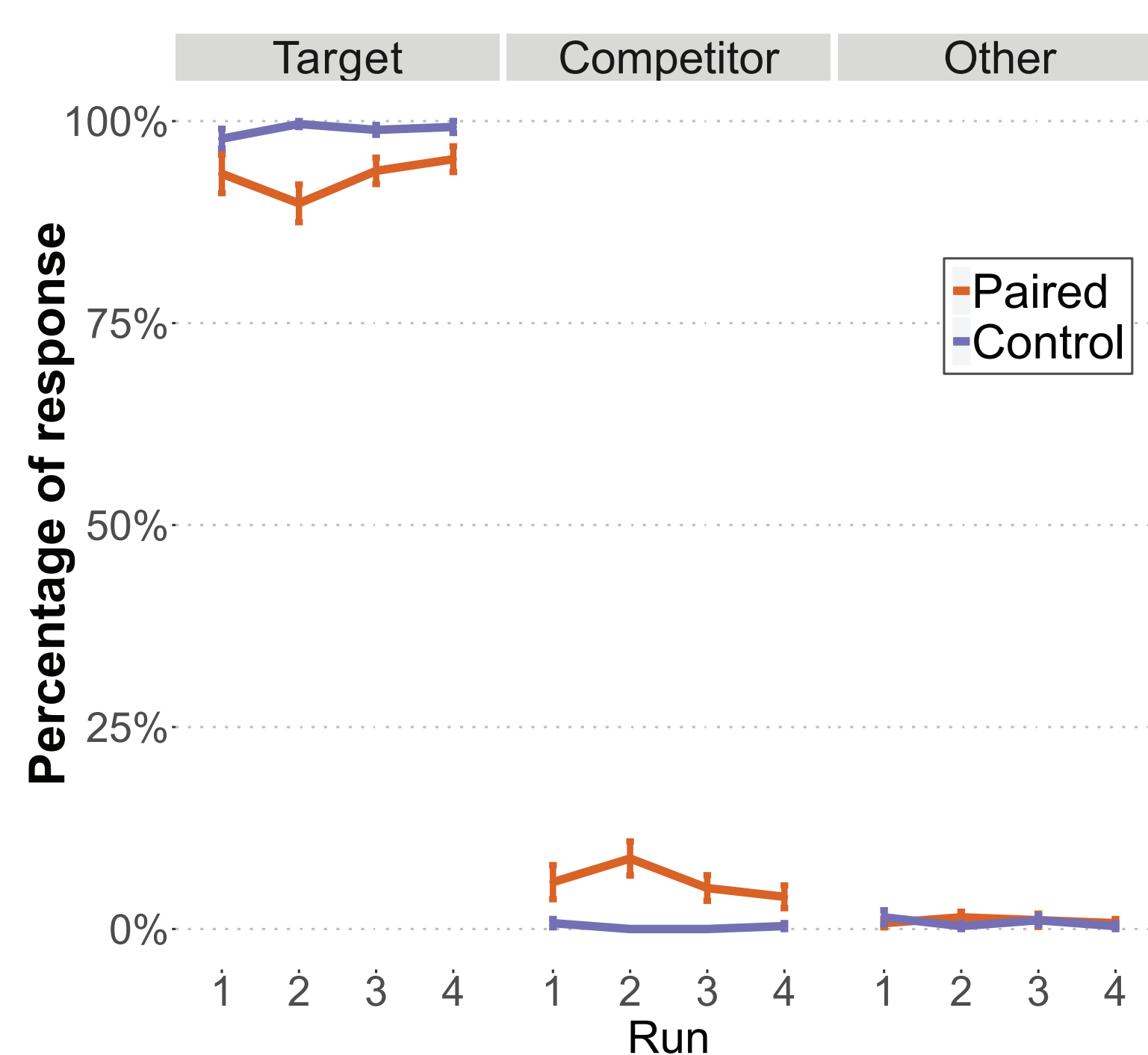


Behavioral Results

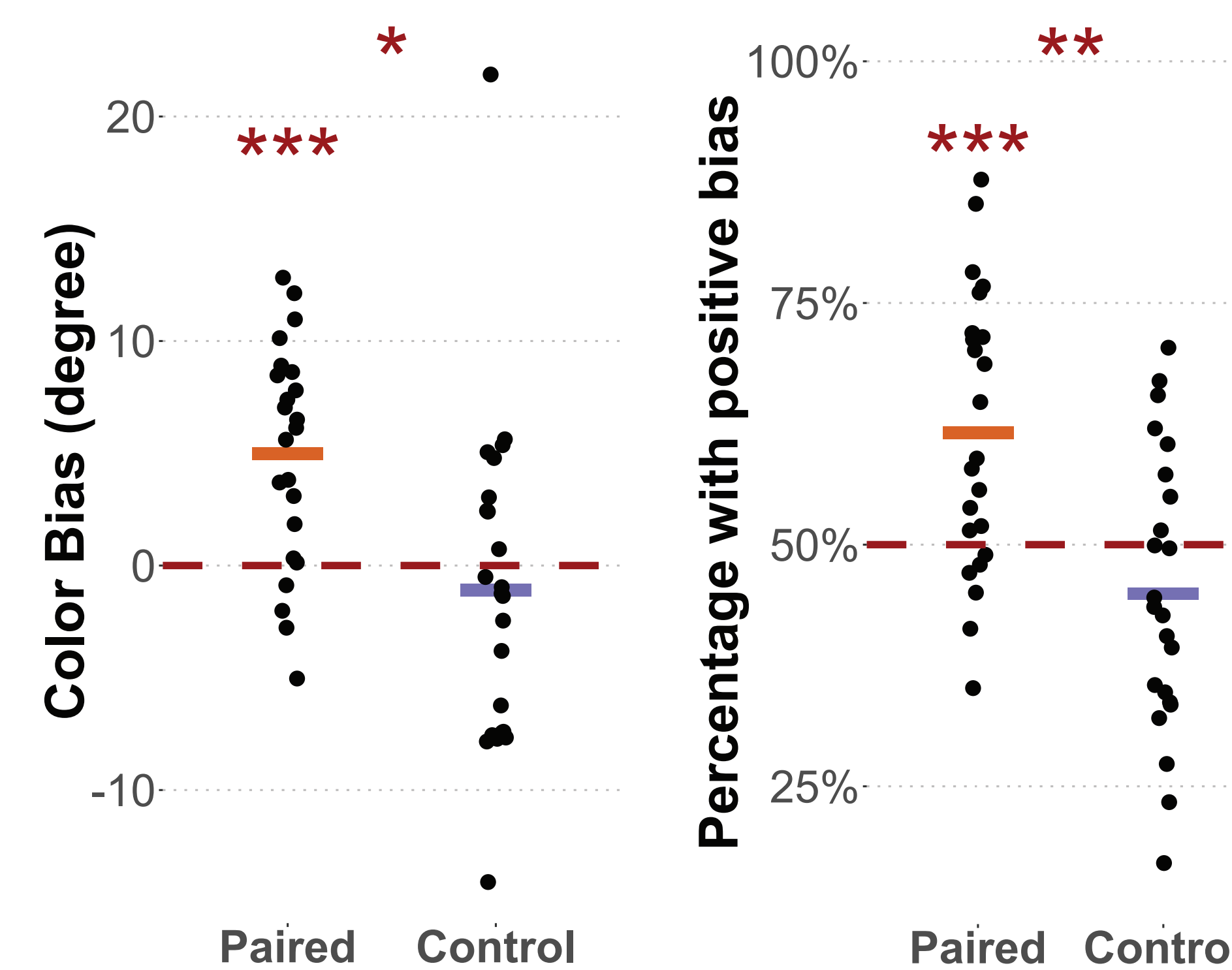
- Measuring the color bias**



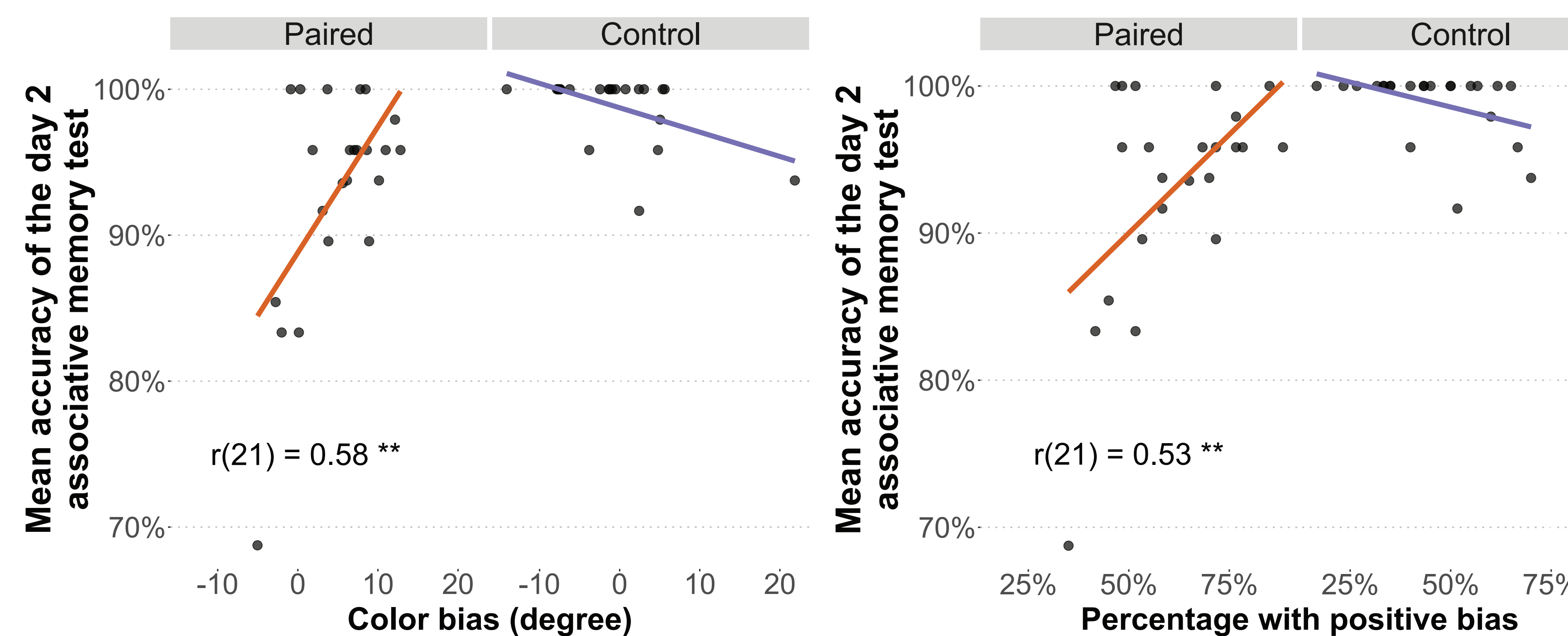
- Associative memory test** (4 runs on Day 2)



- Color memory test**

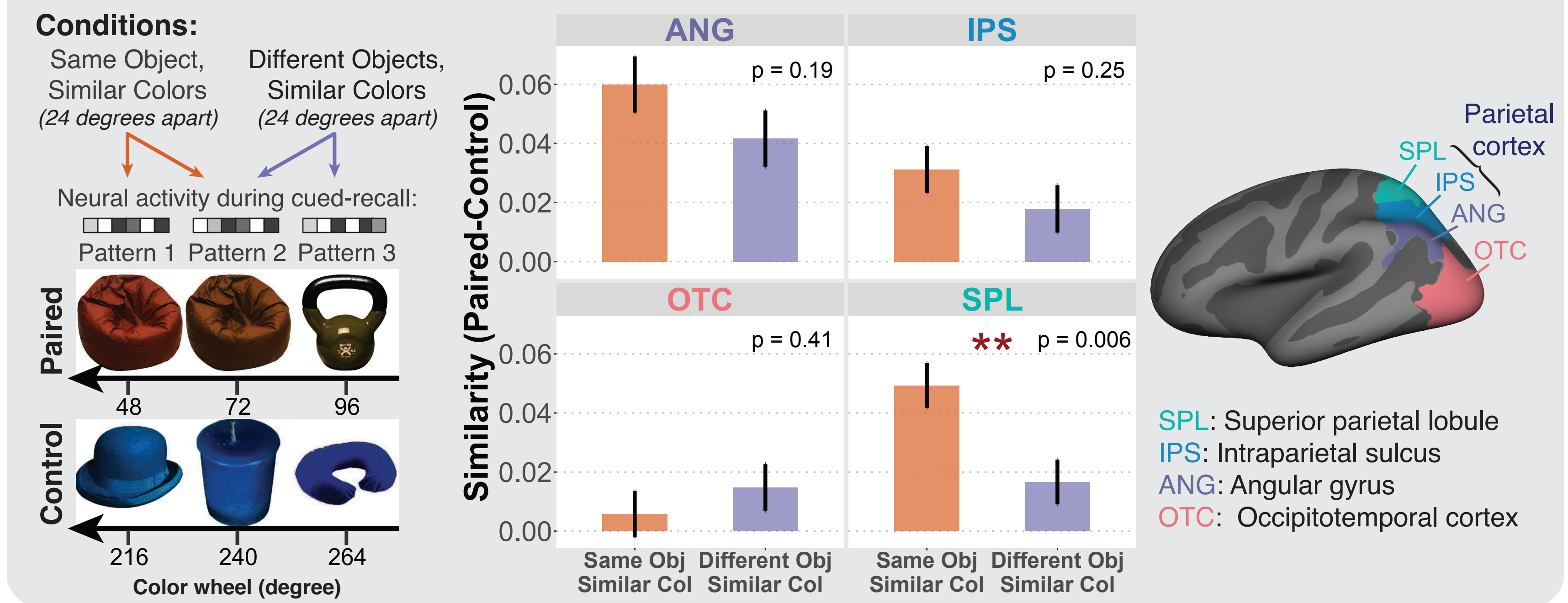


- Color repulsion is adaptive: Greater color repulsion = Better associative memory**

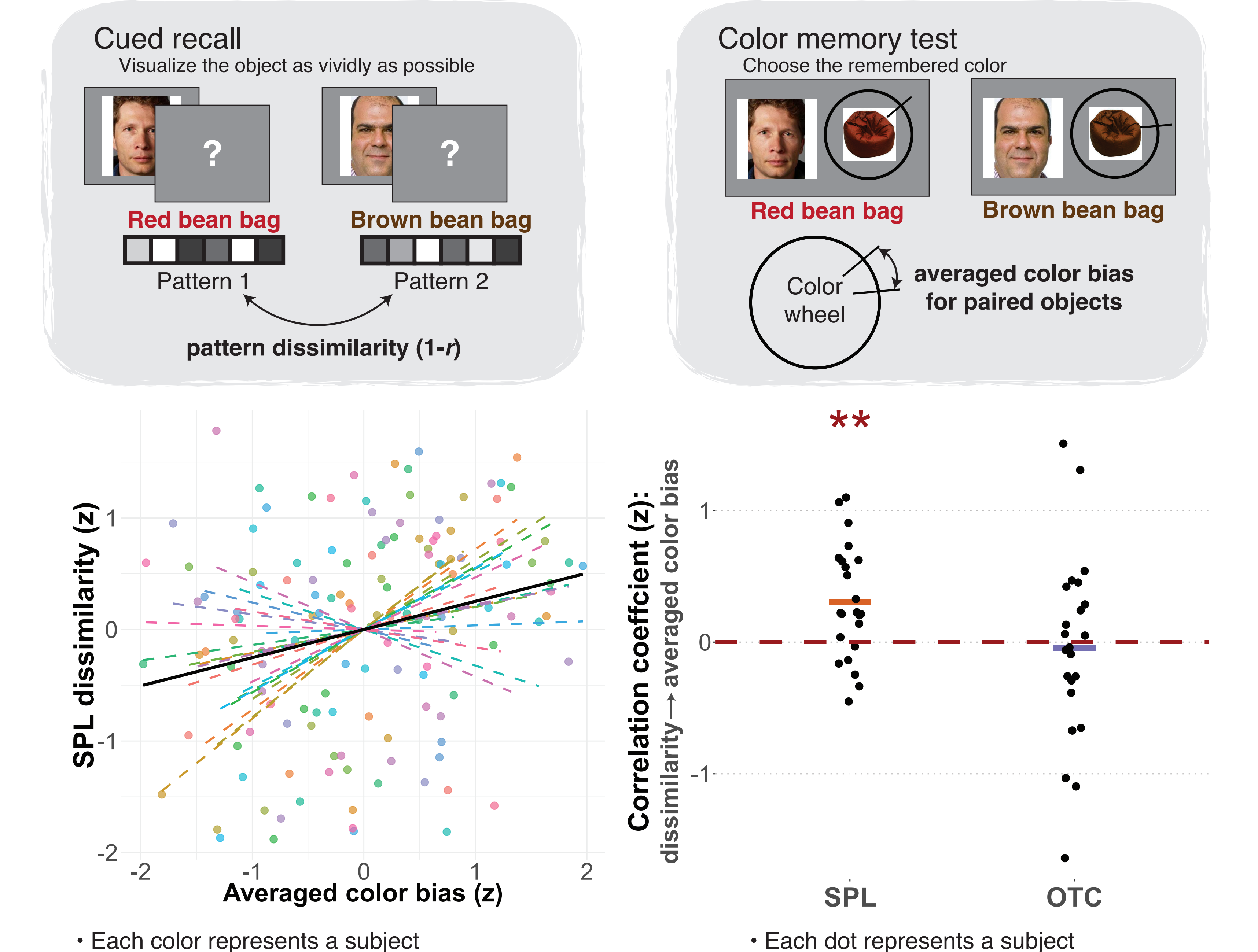


fMRI Results

- Parietal cortex is sensitive to the similarity of paired associations**



- Dissimilarity in parietal cortex during retrieval predicts color repulsion**



Greater dissimilarity of SPL patterns = Greater color repulsion

Discussion

- Overlap triggers repulsion of feature memory.
- Repulsion of features is adaptive (less interference).
- Parietal activity patterns reflect similarity of remembered object information.
- Greater dissimilarity of SPL patterns = Greater color repulsion
 - Consistent with prior evidence of adaptive feature representations in parietal cortex.⁶

This research was supported by grants: NIH-NINDS R01 NS107227 to B.A.K. and NSF CAREER Award BCS-1752921 to B.A.K.

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