The Role of Perceptual Similarities in Determining the Asymmetry in the Mixed-Category Advantage

Background
- The phenomenon - Mixed-categories enhance memory performance.
- Previous studies - Not all categories benefit equally from being mixed.
- Research question - Is the sharing of basic features involved in creating the mixed-category asymmetry?

Experiment 1 (N=27)
- Poses - A significant mixed-category asymmetry (a replication; $F = 21.35$, $p < .001$).
- Animals - A significant mixed-category asymmetry ($F = 35.44$, $p < .001$).
- Colors - No difference in advantages ($F = 1.36$, $p = .25$).

Experiment 2 (N=27)
- Polygons - An impairment in memory performance (indicated by the red arrow).
- Colors - No difference in advantages.

Experiment 3 (N=29)
- Polygons - Replication of the impairment in memory performance (indicated by the red arrow).

Conclusions
- Perceptual similarity has a significant role in the mixed-category asymmetric performance.
- Our findings highlight the significant role of low-level similarities in the asymmetric mixed-category performances, for both novel and familiar categories.
- Current theories would struggle to explain why sensitivity for 1-2 polygons dropped in the mixed condition (with animals), compared to when polygons were presented alone (set size of 3 polygons).
- Post-hoc suggestion:
  - Basic-feature inhibition is elicited by the higher-level (e.g., semantic) representation of the items.

For further questions