Organizing Object Knowledge by Real-World Size
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Introduction
Object categories have distinct distributed patterns of activity (e.g., Haxby et al., 2001)
Patterns are reliable with increased spatial smoothing (Op de Beeck, 2010)

This suggests a large-scale organization of object knowledge in ventral visual cortex

Question
What is this large-scale organization?
Proposal: Object representations are organized by their real-world size

Small Objects > Big Objects Contrast

Is there a sizeotopic map of object representations?

Expt 1: Phase-Encoding

All objects presented at the same retinal size

N=8
672 unique objects
1 Object/sec; 24 objects/sweep
7 sweeps/run; 8 runs total

Some subjects show a gradient of selectivity; others show two poles

Expt 2: Blocked Design

Whole-brain contrasts revealed no medium-object selective areas
BigV and SmallA regions of interest localized from an independent localizer for each subject
FusA region drawn anatomically between functionally localized BigV and SmallA Regions

Results
Whole-brain contrasts revealed no medium-object selective areas

BigV and SmallA regions of interest localized from an independent localizer for each subject
FusA region drawn anatomically between functionally localized BigV and SmallA Regions

Conclusion

1) Sizeotopic Organization?
Reliable big and small poles but only a mild preference for medium objects in between

2) Reliable Large-Scale Patterns
Peak of activity shifts across cortex with increasing object size