Dissociable Representations of Objects, Scenes, and Intermediate Views

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Presentation Abstract Summary Using human neuroimaging and computational methods, we asked how intermediate scales of space, such as views of the tops of desks or kitchen counters, are processed relative to objects and scenes. Neural responses to these “reachspaces” were compared with responses to scene and objects. In scene- and object- selective regions, reachspaces consistently elicited intermediate levels of activation. Furthermore, we found evidence for a region in the posterior lingual gyrus that preferred reachspaces to both scenes and objects, although with weaker selectivity than in classic category-selective regions. Finally, a deep CNN trained on object and scene classification revealed differences in the representations of object, scene and reachspaces emerging in higher layers. Taken together, these results suggest that intermediate scales of space have a distinct representational signature from both scenes and objects.

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