BRIEF SUMMARY

Simons, J. S., Koutstaal, W., Prince, S., Wagner, A. D., & Schacter, D. L. (2003). Neural mechanisms of visual object priming: Evidence for perceptual and semantic distinctions in fusiform cortex. *NeuroImage, 19,* 613–626.

Previous functional imaging studies have shown that facilitated processing of a visual object on repeated, relative to initial, presentation (i.e., repetition priming) is associated with reductions in neural activity in multiple regions, including fusiform/lateral occipital cortex. Moreover, activity reductions have been found, at diminished levels, when a different exemplar of an object is presented on repetition. In one previous study, the magnitude of diminished priming across-exemplars was greater in the right relative to the left fusiform, suggesting greater exemplar specificity in the right. Another previous study, however, observed fusiform lateralization modulated by object viewpoint, but not object exemplar. The present fMRI study sought to determine whether the result of differential fusiform responses for perceptually different exemplars could be replicated. Furthermore, the role of the left fusiform in object recognition was investigated via the inclusion of a lexical/semantic manipulation. Right fusiform cortex showed a significantly greater effect of exemplar change than left fusiform, replicating the previous result of exemplar-specific fusiform lateralization. Right fusiform and lateral occipital cortex were not differentially engaged by the lexical/semantic manipulation, suggesting their role in visual object recognition is predominantly in the discrimination of specific objects. Activation in left fusiform cortex, but not left lateral occipital cortex, was modulated by both exemplar change and lexical/semantic manipulation, with further analysis suggesting a posterior-to-anterior progression between regions involved in processing visuoperceptual and lexical/semantic information about objects. The results are consistent with the view that the right fusiform plays a greater role in processing specific visual form information about objects, whereas the left fusiform is also involved in lexical/semantic processing.