

BRIEF SUMMARY

Buckner, R. L., Goodman, J., Burock, M., Rotte, M., Koutstaal, W., Schacter, D. L., Rosen, B., & Dale, A. M. (1998). Functional-anatomic correlates of object priming in humans revealed by rapid presentation event-related fMRI. *Neuron, 20*, 285–296.

Human functional-anatomic correlates of object repetition were explored in a cohort of 20 subjects using fMRI. Subjects performed an object classification task where the target objects were either novel or repeated. Objects appeared rapidly, one every 2 s, in a randomly intermixed task design similar to traditional behavioral, event-related potential (ERP), and single-unit physiological studies. Recently developed event-related fMRI methods were used to analyze the data. Clear effects of repetition were observed. Brain areas in mid-levels of the processing hierarchy, including extrastriate visual cortex extending into inferotemporal cortex and left dorsal prefrontal cortex, showed reductions in the amount of activation after repetition. By contrast, early visual areas and output motor areas were activated equally by both novel and repeated objects and did not show effects of repetition, suggesting that the observed correlates of repetition were anatomically selective. We discuss these findings in relation to previous positron emission tomography (PET) and fMRI studies of item repetition and single-unit physiological studies; we also address the broad impact that rapid event-related fMRI is likely to have on functional neuroimaging.
