

## Supplementary Material

### Supplementary Table 1.

A priori region of interest (ROI) analysis for new item retrieval orientation effects. Tabulated coordinates are taken from the earlier studies of Woodruff and Hornberger. ROIs had radius = 5 mm and were centered on the closest xyz coordinates in the current study. Results are given of paired *T*-tests on parameter estimates for early and late covariates, extracted and averaged across each ROI (see Procedure: fMRI Analysis for details). ‘Late’ in the region column indicates a region for which the differential activity in the original study loaded on the late (delayed) covariate. The ‘early covariate’ column contains results from the present study using parameter estimates from the canonical HRF. The ‘late covariate’ column contains results from the present study for parameter estimates from the late HRF covariate (for regions loading on the late covariate, plots of fitted responses also confirmed that there was a clear difference in the peak HRF). \*\* Indicates  $T(17)$  significant at  $P < .005$ ; \* indicates  $T(17)$  significant at  $P < .05$ . Region labeling is taken from the original studies. The contrasts in Hornberger et al. (2006) were of activity elicited by visual word test probes when either the corresponding pictures (Pic) or auditorily-presented words (Word) had been studied. The contrasts in Woodruff et al. (2006) were of item-related activity elicited by visual word test probes when either the corresponding pictures (Pic) or visually-presented words (Word) had previously been studied. The retrieval tasks in both studies involved recognition of old and rejection of new (unstudied) items. The reader is referred to the original studies for further details.

Location of ROI center	Brodmann area	Region	Early covariate	Late covariate
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(x, y, z)

**Regions previously showing Picture > Word effects for new items****Hornberger et al. (2006):**

-27, 24, 18	--	Subcortical–intramedullary
-42, -33, -18	BA20	Left inferior temporal/fusiform gyrus
-24, -36, -21	BA35/36	Left parahippocampal gyrus
6, -90, 0	BA17	Right striate cortex

**Woodruff et al. (2006):**

-36, -12, 0	BA33	Left insula
-24, -45, -12	BA37	Left fusiform/parahippocampal gyrus
51, 9, -21	BA21	Right middle temporal gyrus
51, -42, -18	BA20	Right middle temporal gyrus

**Regions previously showing Word > Picture effects for new items****Hornberger et al. (2006):**

45, 54, 0	BA10	Right frontomarginal gyrus	Word>Pic **
-9, 54, 12	BA9	Left frontopolar gyrus	
-33, 15, 57	BA6	Left middle frontal gyrus	
-63, -30, 0	BA21	Left middle temporal gyrus	
-48, -33, 27	BA40/41	Left parietal operculum	Word>Pic *
54, -33, 27	BA40/41	Right parietal operculum	Word>Pic *    Word>Pic
48, -63, 45	BA7	Right angular gyrus	

**Woodruff et al. (2006):**

-36, 24, 45	BA8	Left middle frontal gyrus	
-60, -21, -3	BA21	Left superior/middle temporal gyrus	Word>Pic *
-27, -57, 39	BA7	Left superior parietal cortex	Word>Pic *
-12, -78, 45	BA7	Precuneus	
-39, 54, 3	BA10	Left anterior prefrontal cortex (late)	
-27, -12, 45	BA6	Left middle frontal gyrus (late)	