

Figure S1. Relative Timings of Face and Scene Selective Regions in MPC and MTL. Related to Figure 3. Between-patient averaged BGA (mean  $\pm$  SEM) responses in MPC (A,B; n = 6 patients) and MTL (C,D; n = 6 patients) in face selective (FS; A,C) or scene selective (SS; B,D) cortex in an ROI. This analysis reveals that FS electrodes in MPC are category selective later than the MPC SS electrodes.



**Figure S2. Visual Feature Sensitivity. Related to Figure 3.** Contrasts between the greyscale scrambled faces (blue) and the color scrambled scenes (red) across the whole brain surface (MEMA) (A) and within all responsive MPC and MTL electrodes (B). Visually derived differences between stimulus classes were primarily located in early visual regions, inferior to the parieto-occipital fissure and as far as posterior fusiform in the antero-posterior axis. Calculated for the 500-1000 ms window. Regions in black did not have consistent coverage for reliable MEMA results. Electrodes with no significant preference (q>0.05) shown in black. There was no significant correlation between the amplitude of face-scene differences and scrambled greyscale-color differences in either MPC (r = -0.10, p = 0.24) or MTL (r = -0.11, p = 0.12).



**Figure S3. Selectivity of Full Faces over Face Parts. Related to Figure 3.** 31 patients also performed a face part categorization task naming photos of eyes, ears, mouths and noses (A). (B) Localization of face responsive electrodes in both ROIs, contrasting full faces against face parts. Time courses of BGA in face responsive electrodes in MPC (C) and MTL (D).



**Figure S4. Category Selectivity in Ventral Occipitotemporal Cortex (vOTC). Related to Figure 3.** (A) Face/Scene preference of electrodes in vOTC in all patients who performed both the faces and scenes tasks. Calculated for a 100-400 ms window. Electrodes with no significant preference (q>0.05) shown in black. (B) Contrast MEMA generated for the same time window. Regions in black did not have consistent coverage for reliable MEMA results. Both analyses demonstrate the traditional lateral-to-medial, face-to-scene transition.



**Figure S5.** Population conjunction map of category selective identification sensitivity. Related to Figure 4. Binarized MEMA representation of significant selectivity to correct over incorrect naming trials for faces (blue), scenes (red) and their overlap (purple). Regions in bilateral MPC and MTL and left vOTC and supplementary motor area show regions of overlap between face and scene identity. Regions in black did not have consistent coverage for reliable MEMA results.