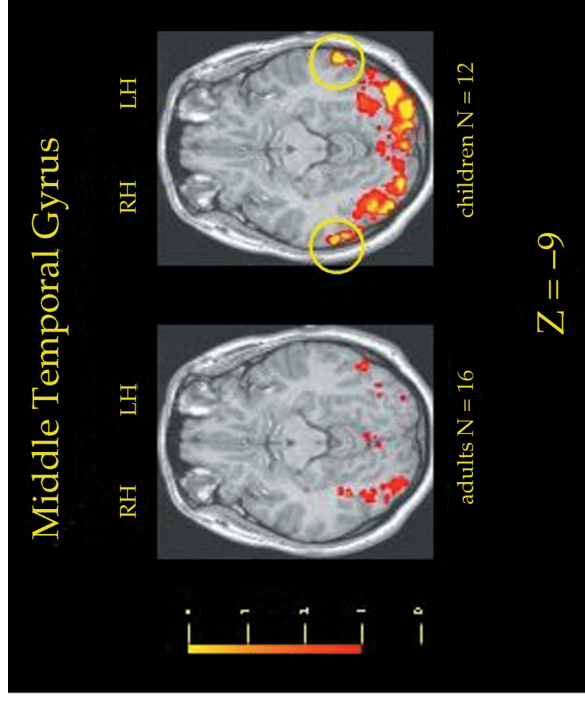
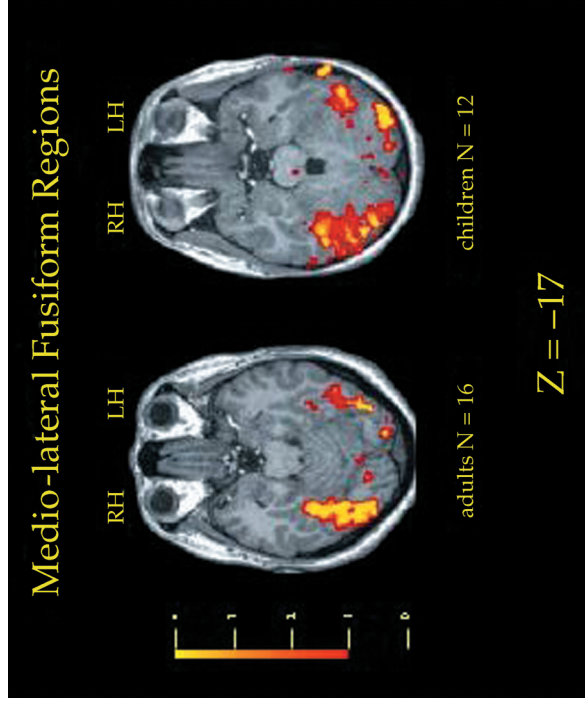


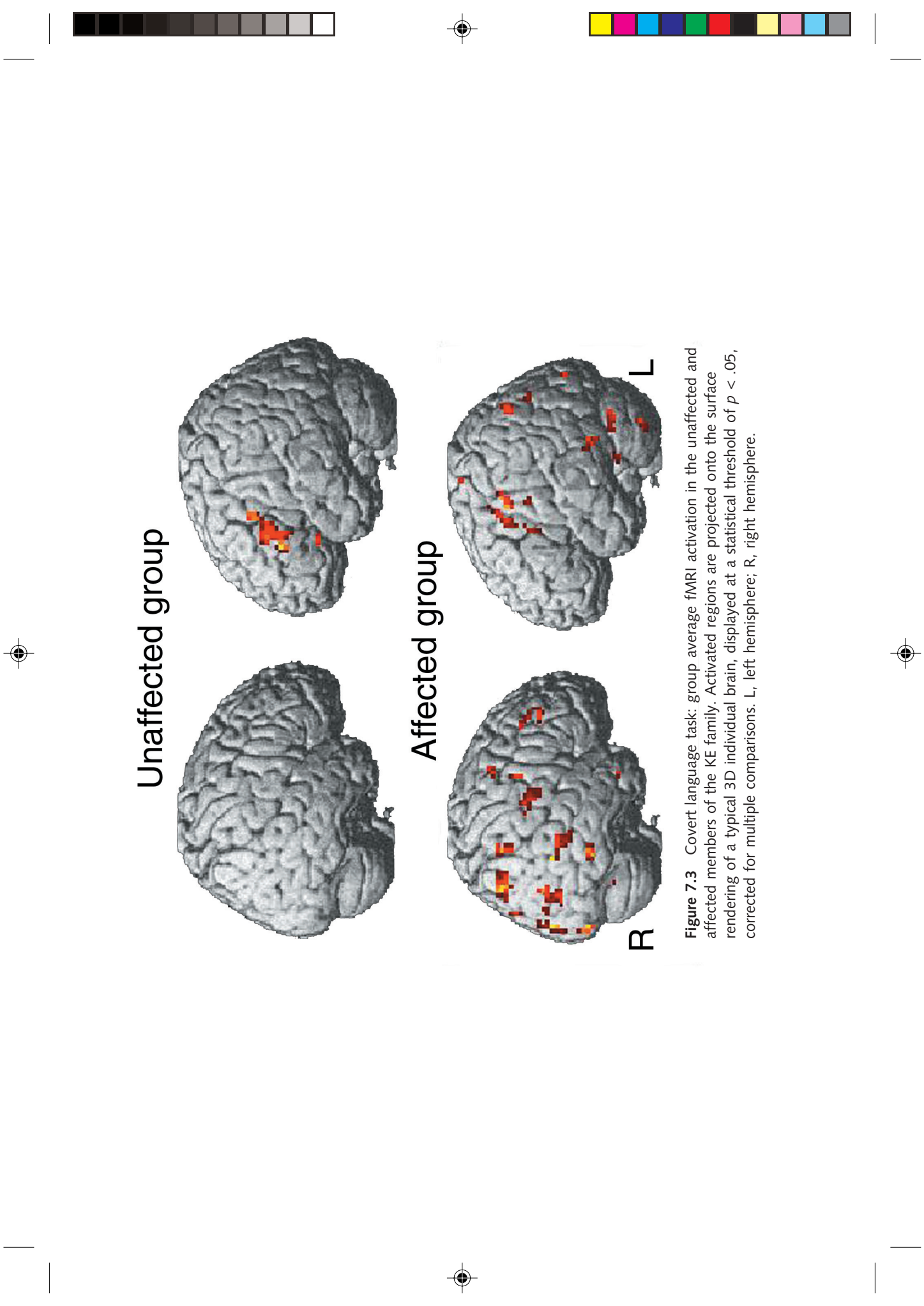
**Figure 4.3** Gamma-band EEG activity recorded from infants in the Kaufman, Csibra, and Johnson (2003) experiment. (a) Time-frequency analysis of the average EEG at three electrodes over the right temporal cortex (around T4) during the phase in which the tunnel was lifted showed higher activations when the object should have been below the tunnel. Black asterisks below the maps indicate a significant difference from baseline; red asterisks indicate a significant difference between conditions in the average gamma activity in 200 ms-long bins. (b) A topographical map of the between-condition difference of Gamma-band (20–60 Hz) activity during the occlusion-related peak Gamma activity (from -400 to -200 ms) revealed a right-temporal focus. Circles signify right-temporal electrode sites.



(A)

(B)

**Figure 5.6** Face-matching task. (A) Significant clusters of functional activation in medio-lateral fusiform regions for the face-matching task, in 16 adults (left-hand side) and 12 children (right-hand side). (B) Significant clusters of functional activation in the middle temporal gyrus (BA 21) in adults (left-hand side) and children (right-hand side). Circled in yellow is the bilateral middle temporal gyrus activation, which is present only in children, not in adults. Note that posterior activation is within the middle (BA 19) and inferior (BA 18) occipital gyrus. The Z coordinates refer to the distance in mm of the axial slices (e.g. brain slices according to a superior-to-inferior axis) from the intercommissural (anterior commissure–posterior commissure) plane. The colored bar to the left represents the percent increase in intensity of activation in the experimental task, as compared to the control task. Note that according to the radiological convention the left side of the brain represents the right hemisphere (RH), and the right side of the brain represents the left hemisphere (LH).



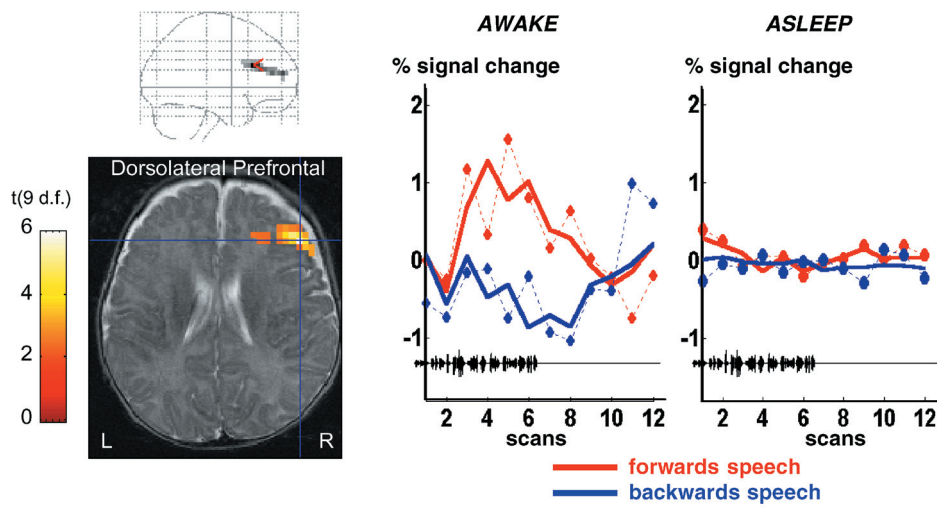
Unaffected group

Affected group

L

R

**Figure 7.3** Covert language task: group average fMRI activation in the unaffected and affected members of the KE family. Activated regions are projected onto the surface rendering of a typical 3D individual brain, displayed at a statistical threshold of  $p < .05$ , corrected for multiple comparisons. L, left hemisphere; R, right hemisphere.



**Figure 8.1** Interaction between wakefulness and the linguistic nature of the stimuli. This comparison isolated a right dorsolateral prefrontal region that showed greater activation by forward speech than by backward speech in awake infants, but not in sleeping infants.