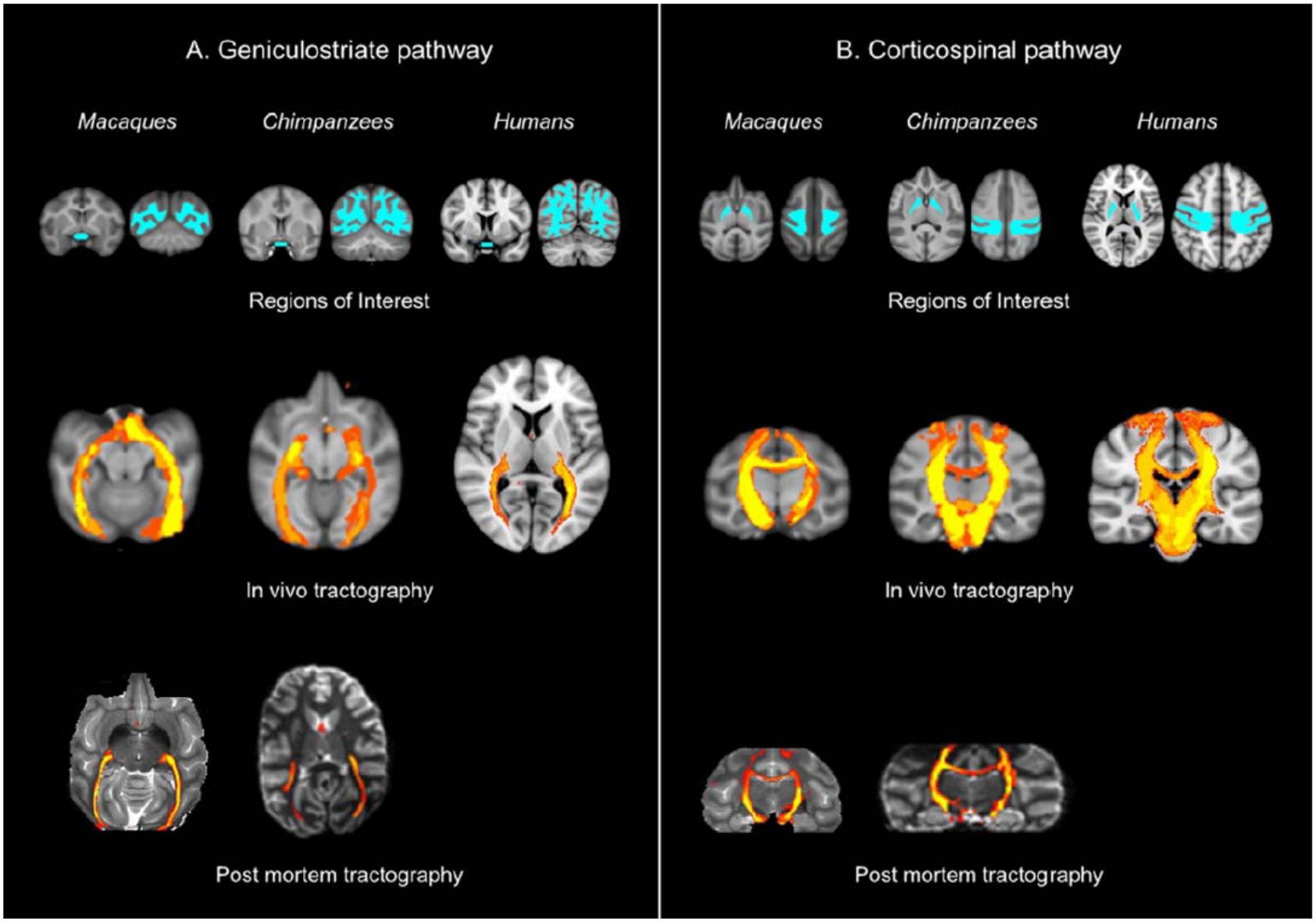
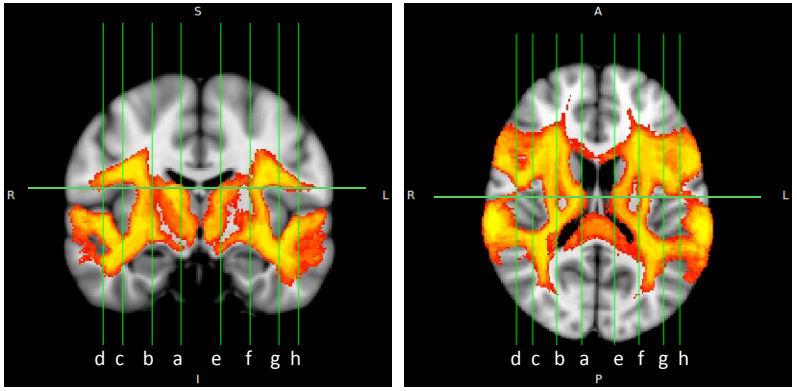
SUPPLEMENTARY FIGURE 1: Control Tractography

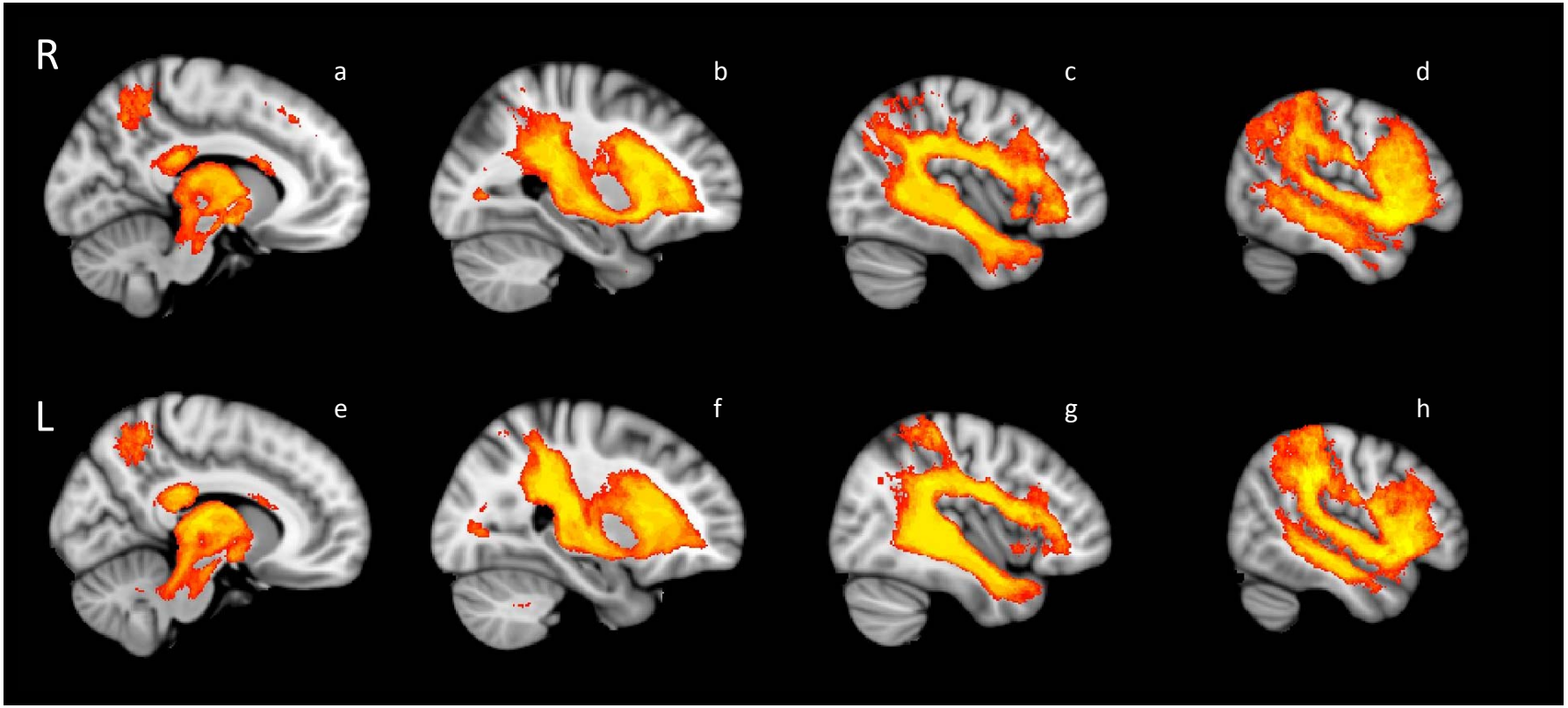


A. Geniculostriate pathway: probabilistic tractography between the optic chiasm and occipital white matter.
B. Corticospinal tract: probabilistic tractography between the internal capsule and the white matter beneath sensorimotor cortex.

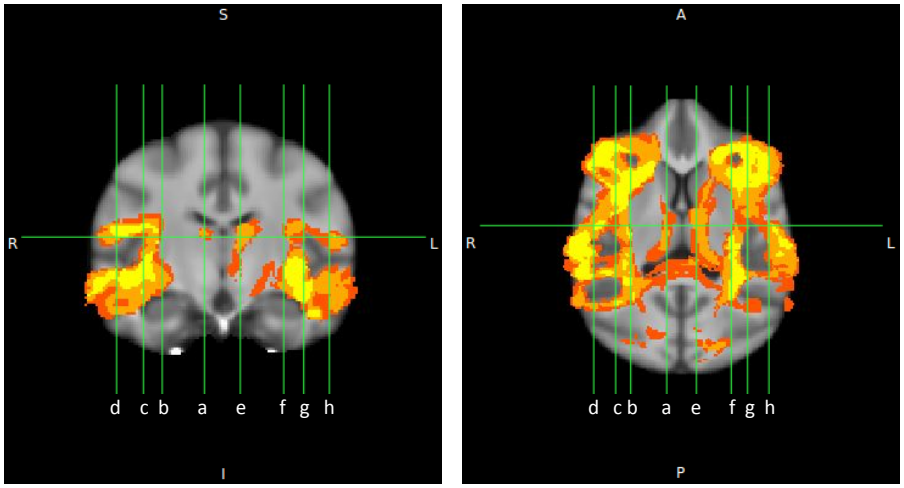
Results are similar across species and between post mortem and in vivo subjects. Furthermore, the geniculostriate tract conforms to known species differences in the location of V1. Thus we can detect species differences in features known to vary across species, but do not detect species differences in features known to be similar across species. This indicates that our analysis avoids both false positive and false negative results. Images are shown in radiological convention (right side of image corresponds to left side of brain).

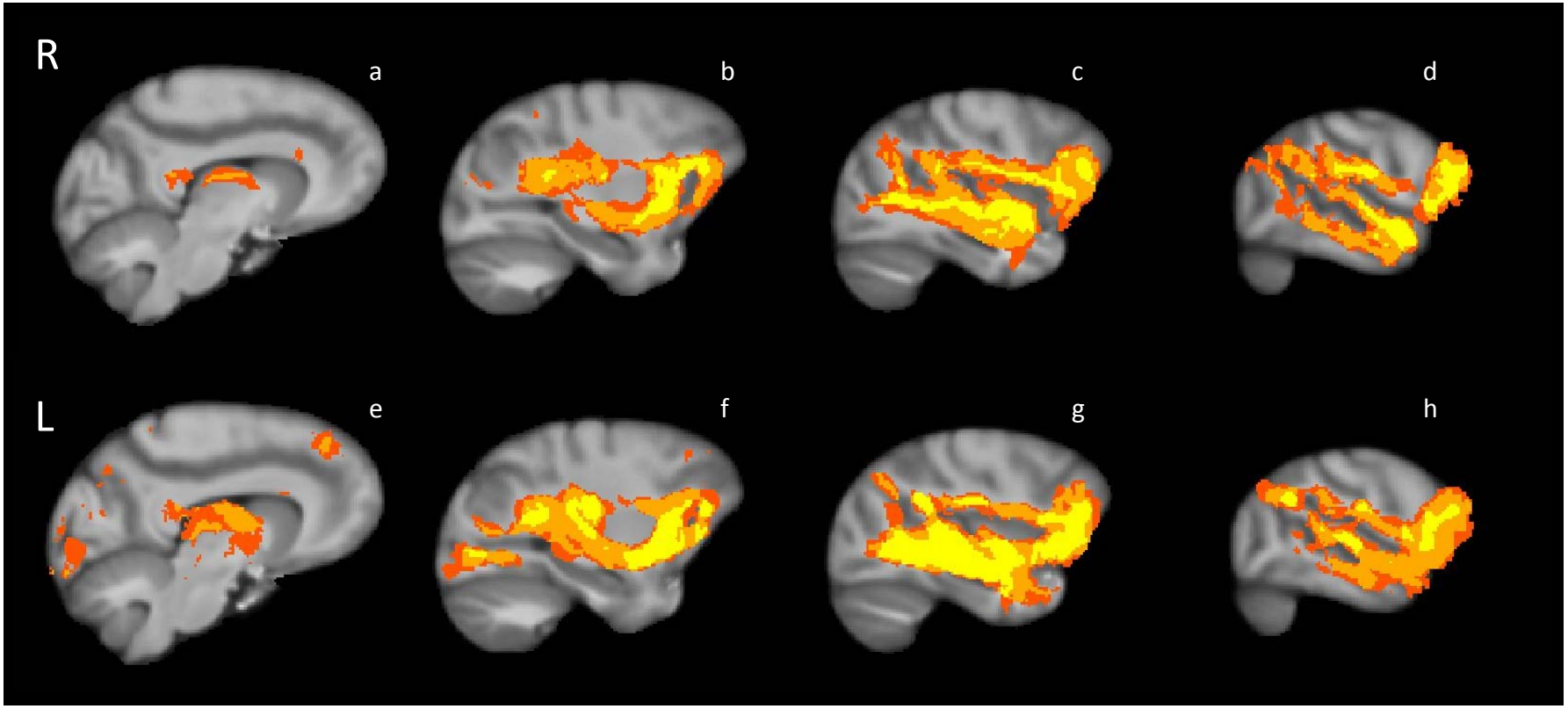
SUPPLEMENTARY FIGURE 2: Additional views of connections between frontal mirror region, parietal mirror region, and superior temporal sulcus
A. In vivo humans



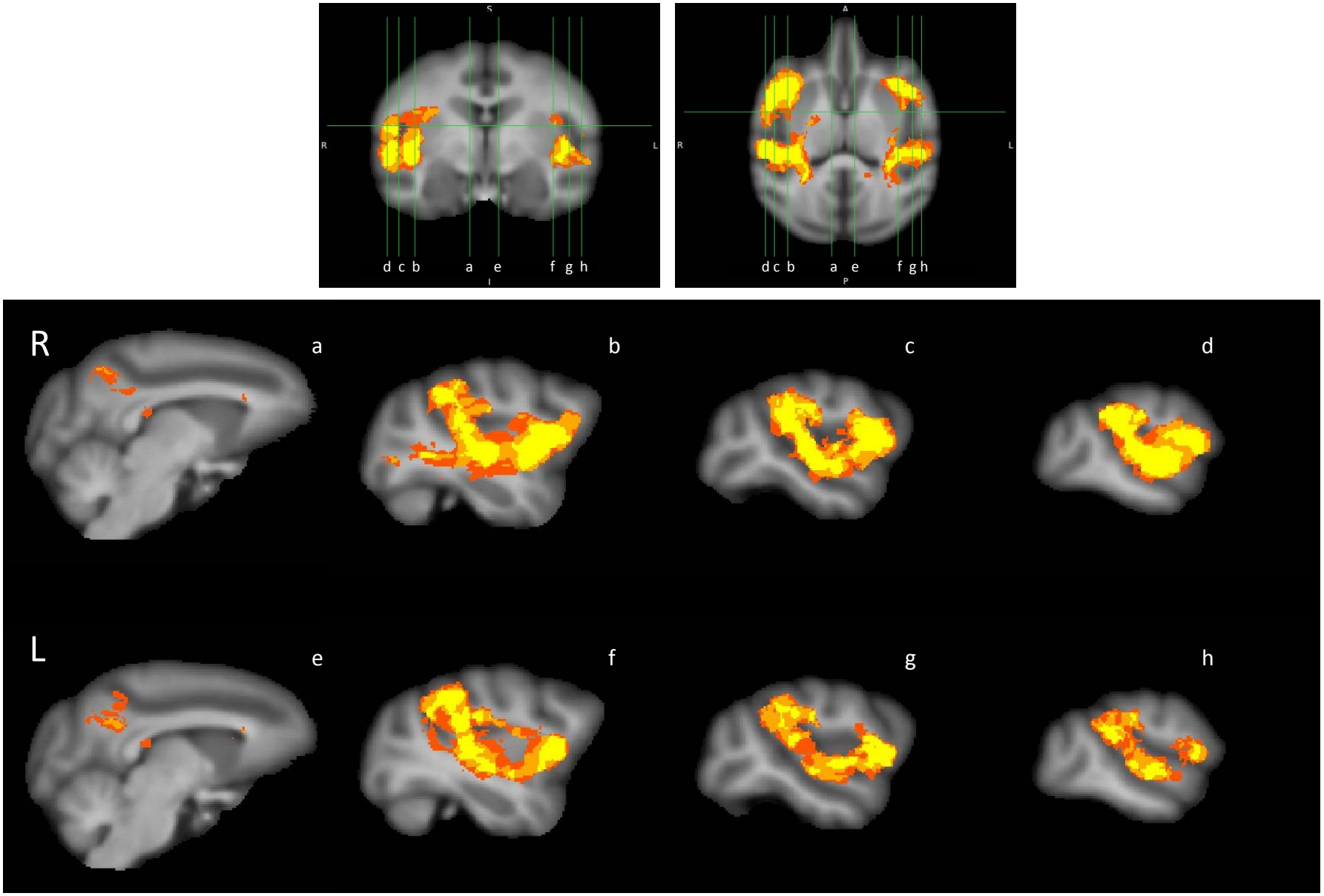


SUPPLEMENTARY FIGURE 2: Additional views of connections between frontal mirror region, parietal mirror region, and superior temporal sulcus B. *In vivo* chimpanzees

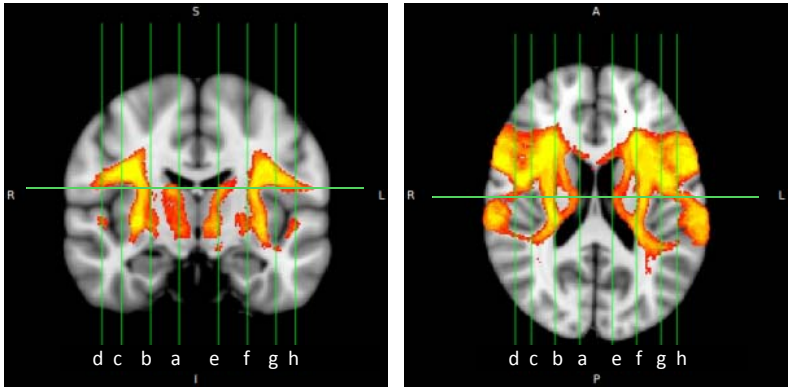


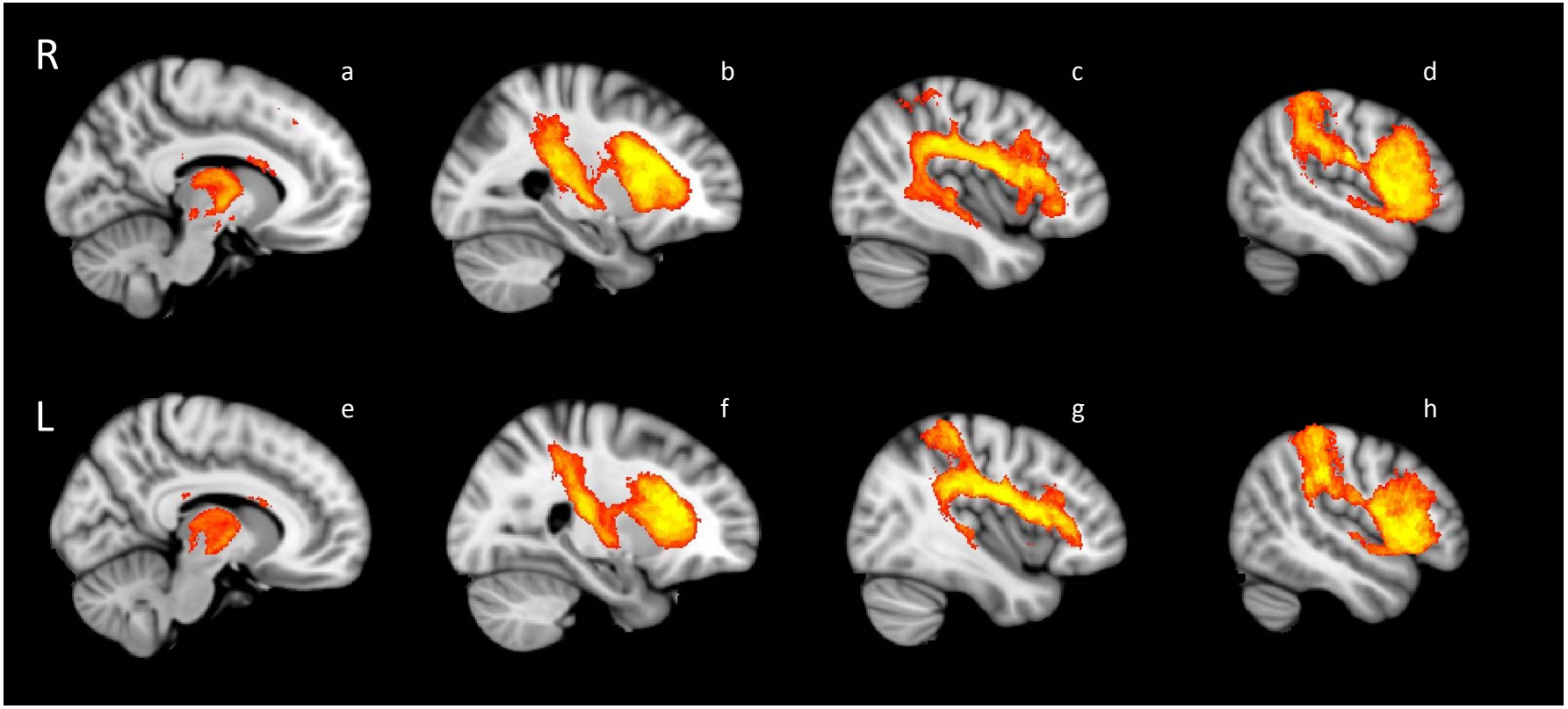


SUPPLEMENTARY FIGURE 2: Additional views of connections between frontal mirror region, parietal mirror region, and superior temporal sulcus
C. *In vivo* macaques

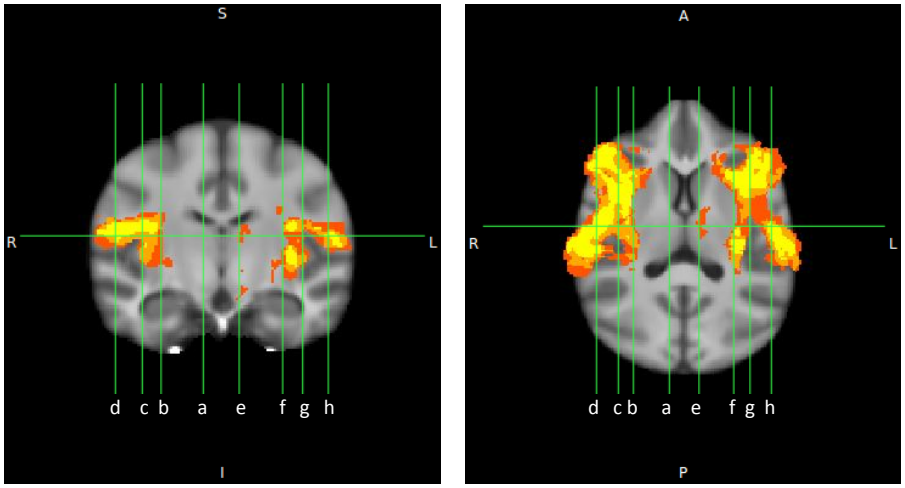


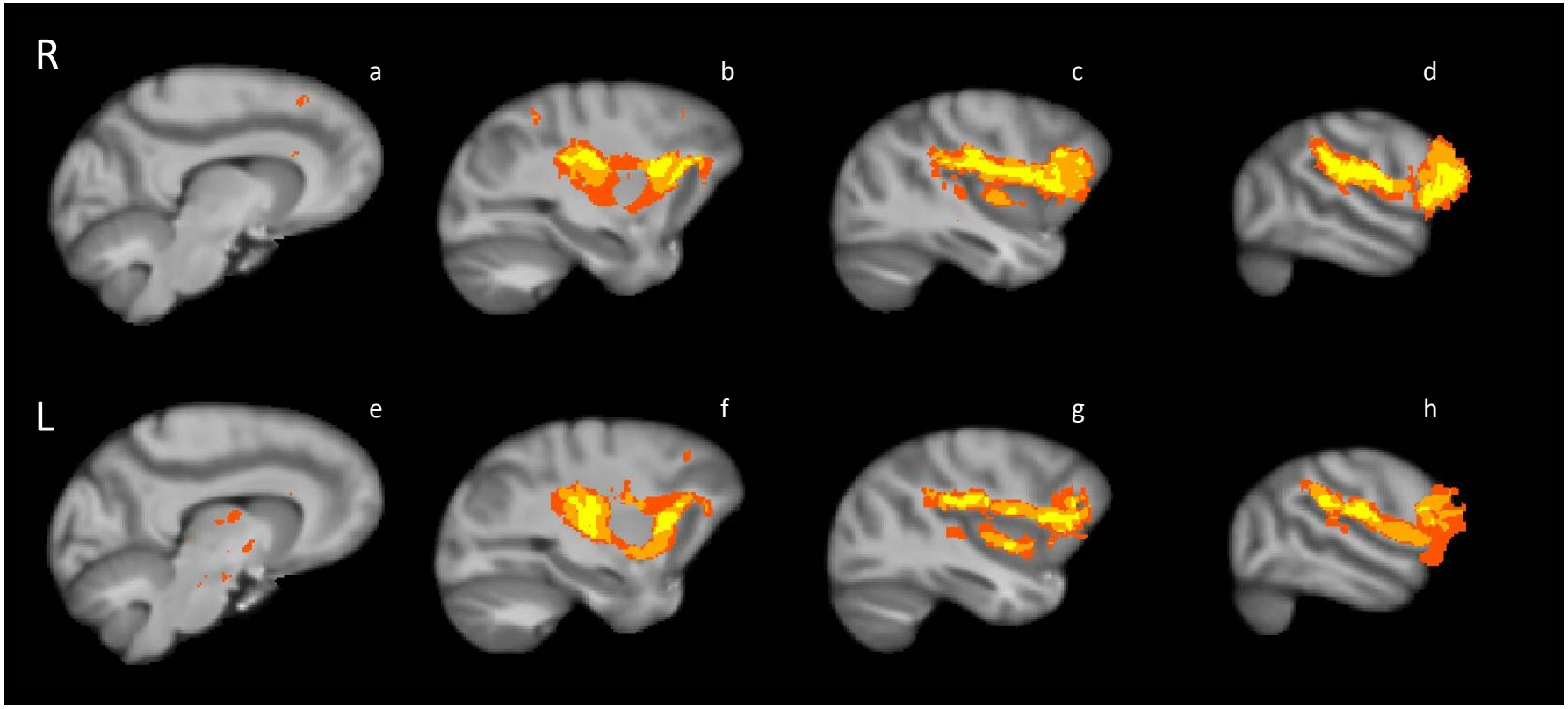
SUPPLEMENTARY FIGURE 3: Additional views of connections between frontal mirror region and parietal mirror region
A. *In vivo* humans



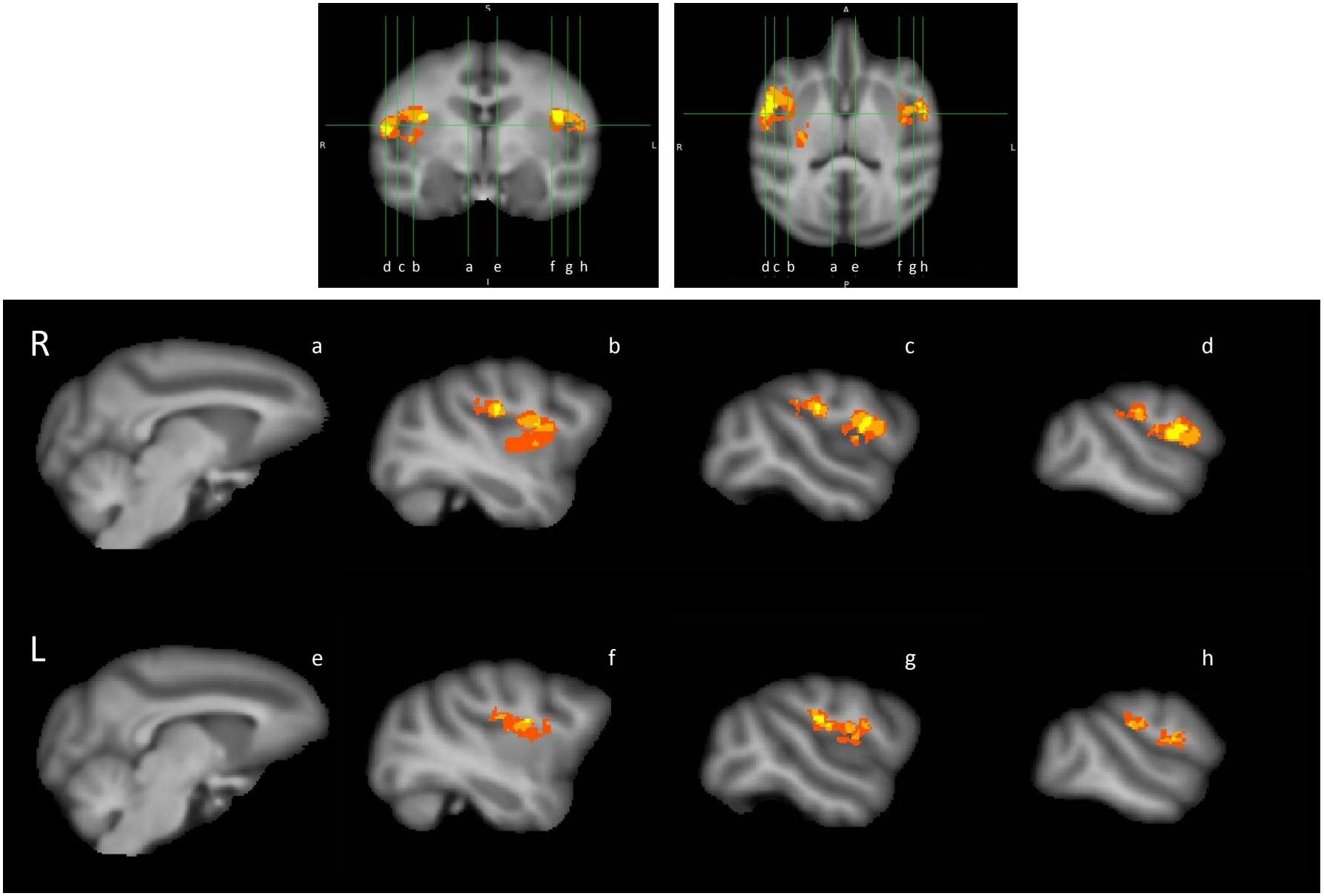


SUPPLEMENTARY FIGURE 3: Additional views of connections between frontal mirror region and parietal mirror region
B. *In vivo* chimpanzees

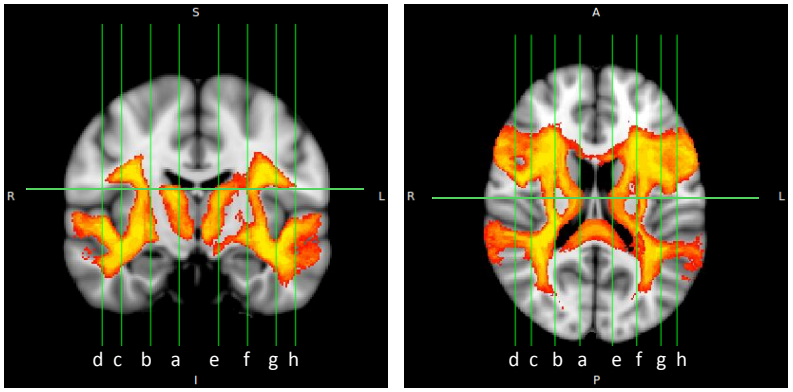


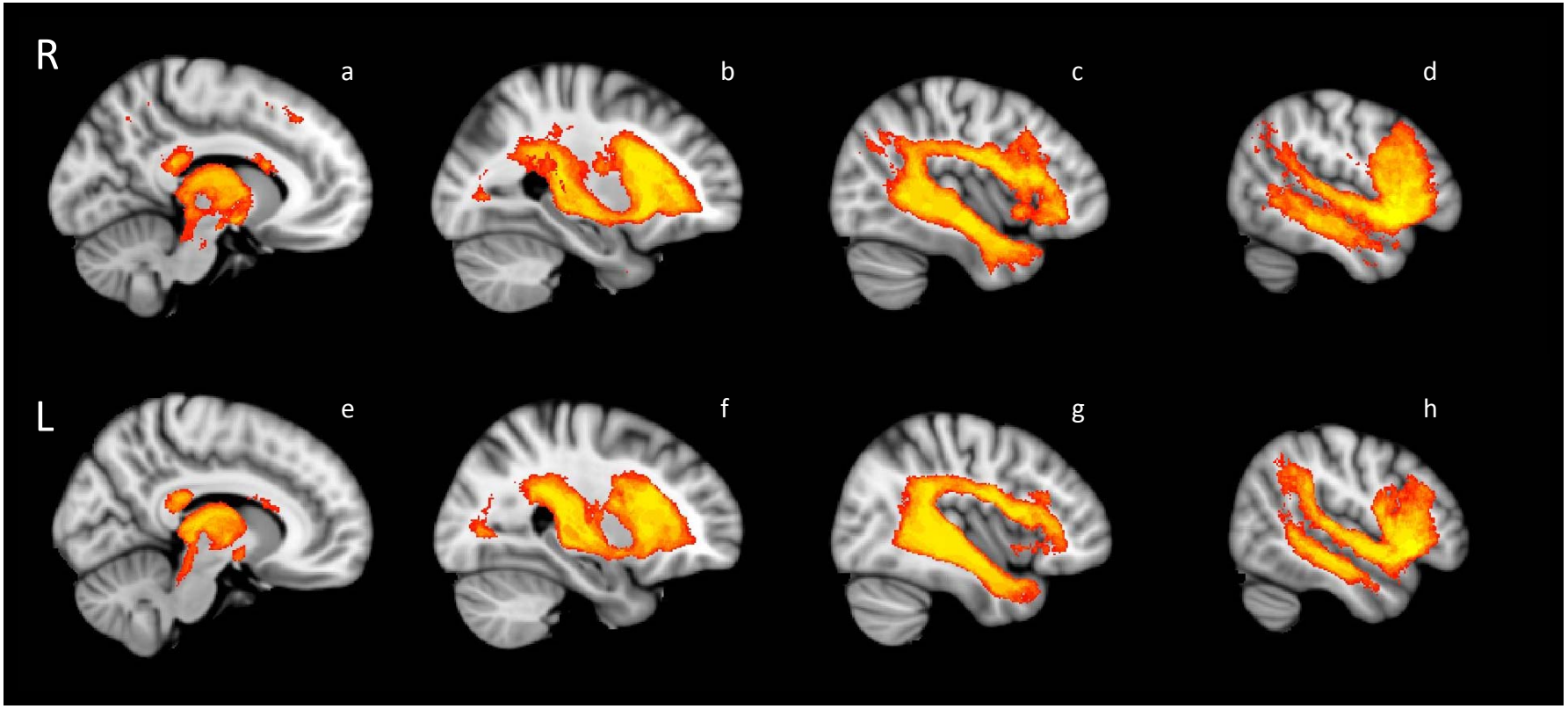


SUPPLEMENTARY FIGURE 3: Additional views of connections between frontal mirror region and parietal mirror region
C. *In vivo* macaques

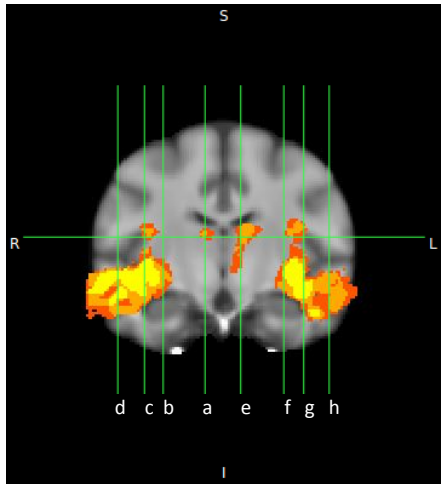


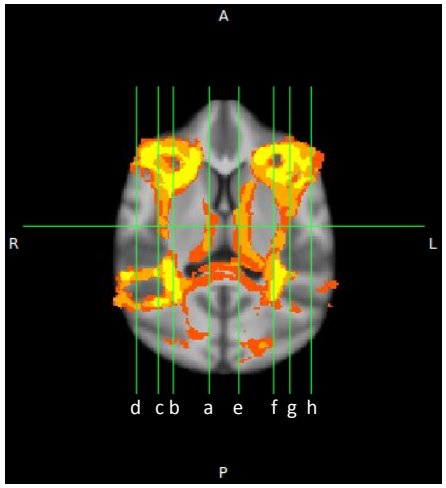
SUPPLEMENTARY FIGURE 4: Additional views of connections between frontal mirror region and superior temporal sulcus
A. *In vivo* humans

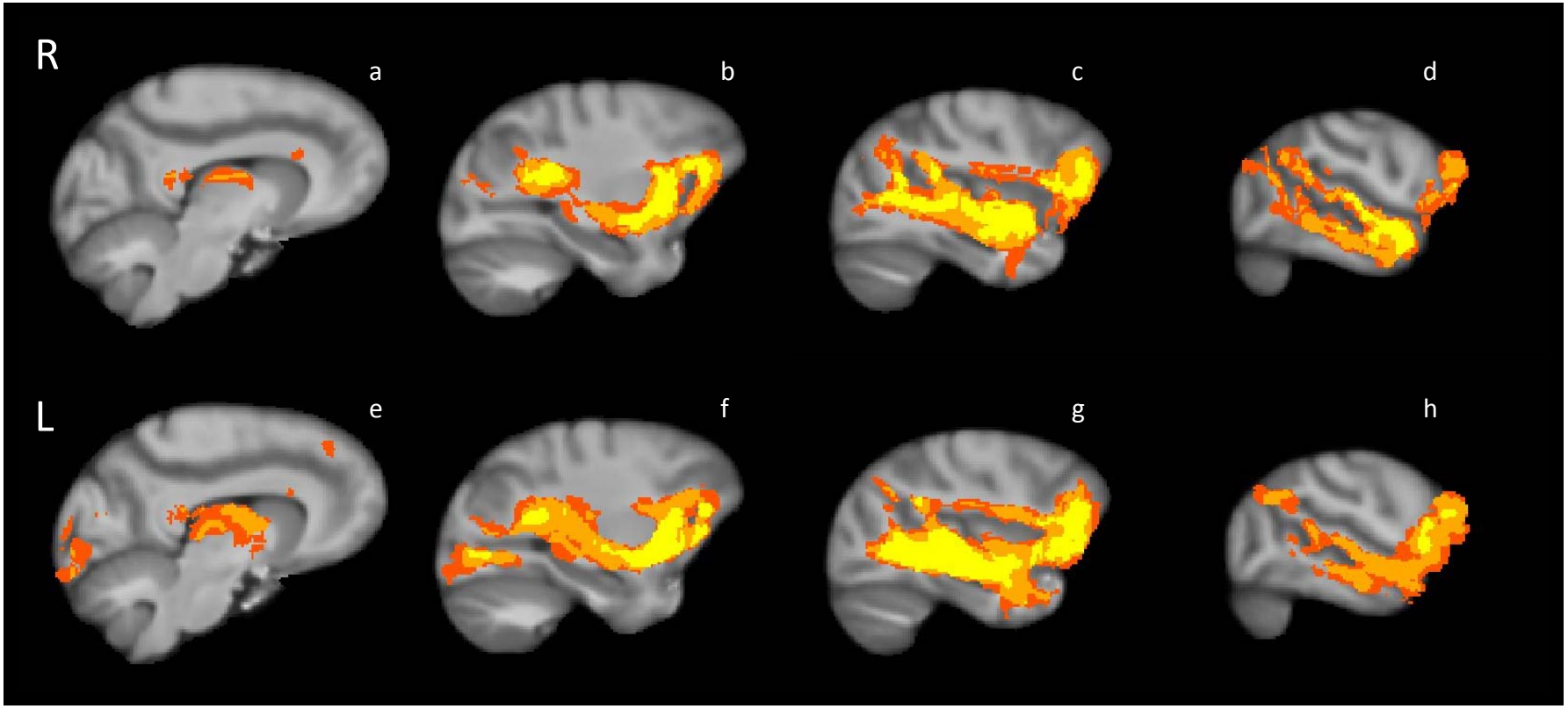




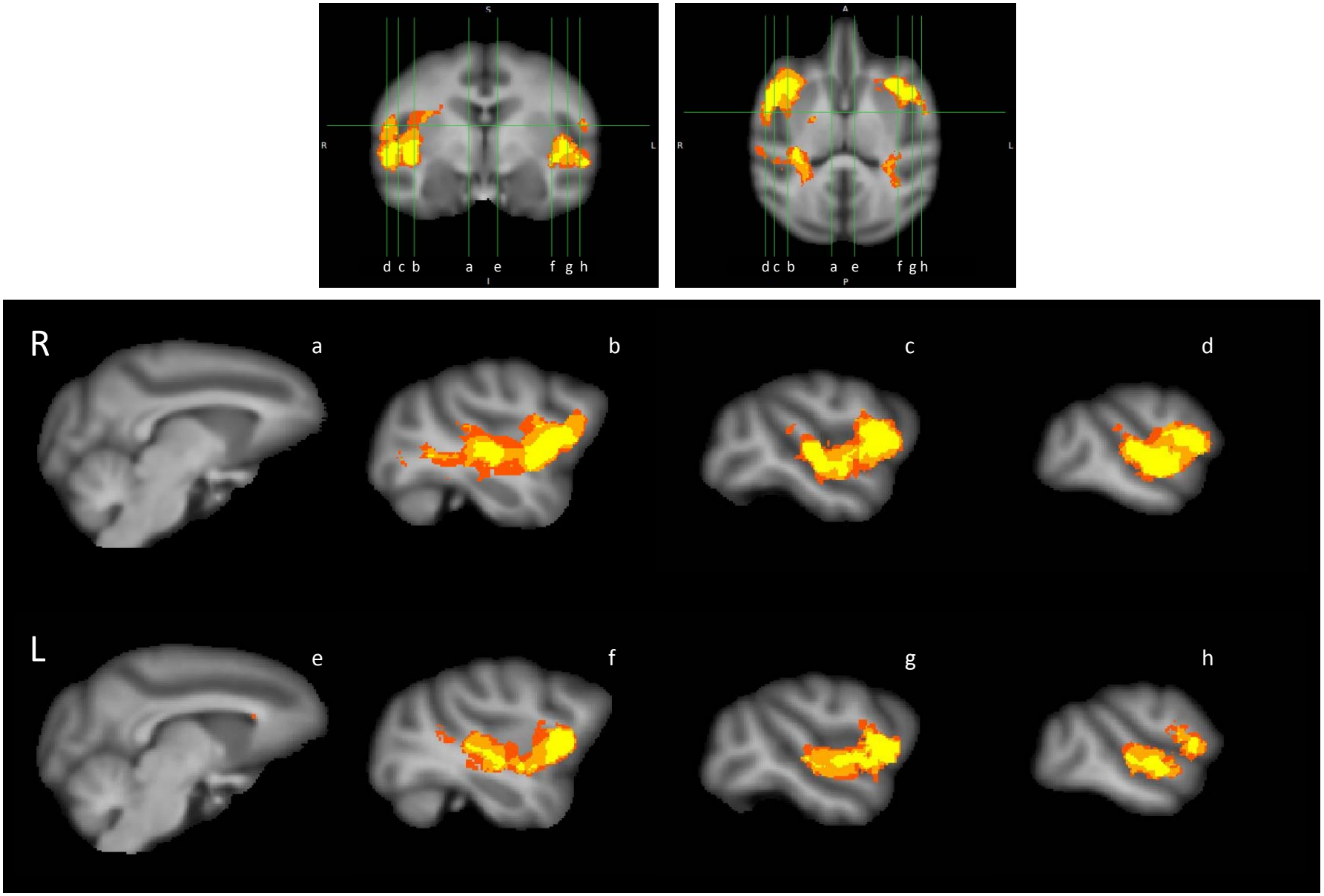
SUPPLEMENTARY FIGURE 4: Additional views of connections between frontal mirror region and superior temporal sulcus
B. *In vivo* chimpanzees



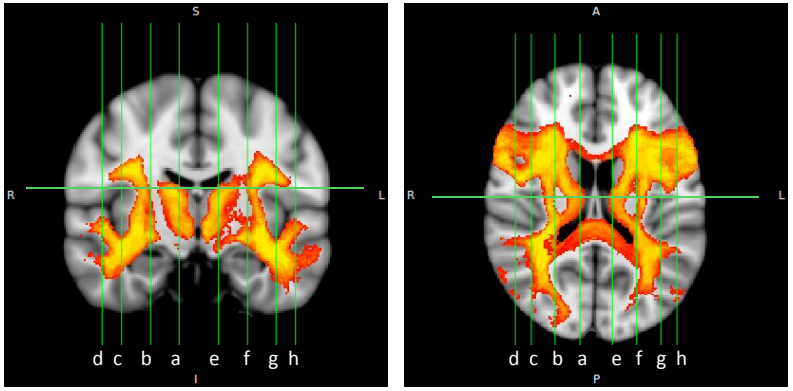


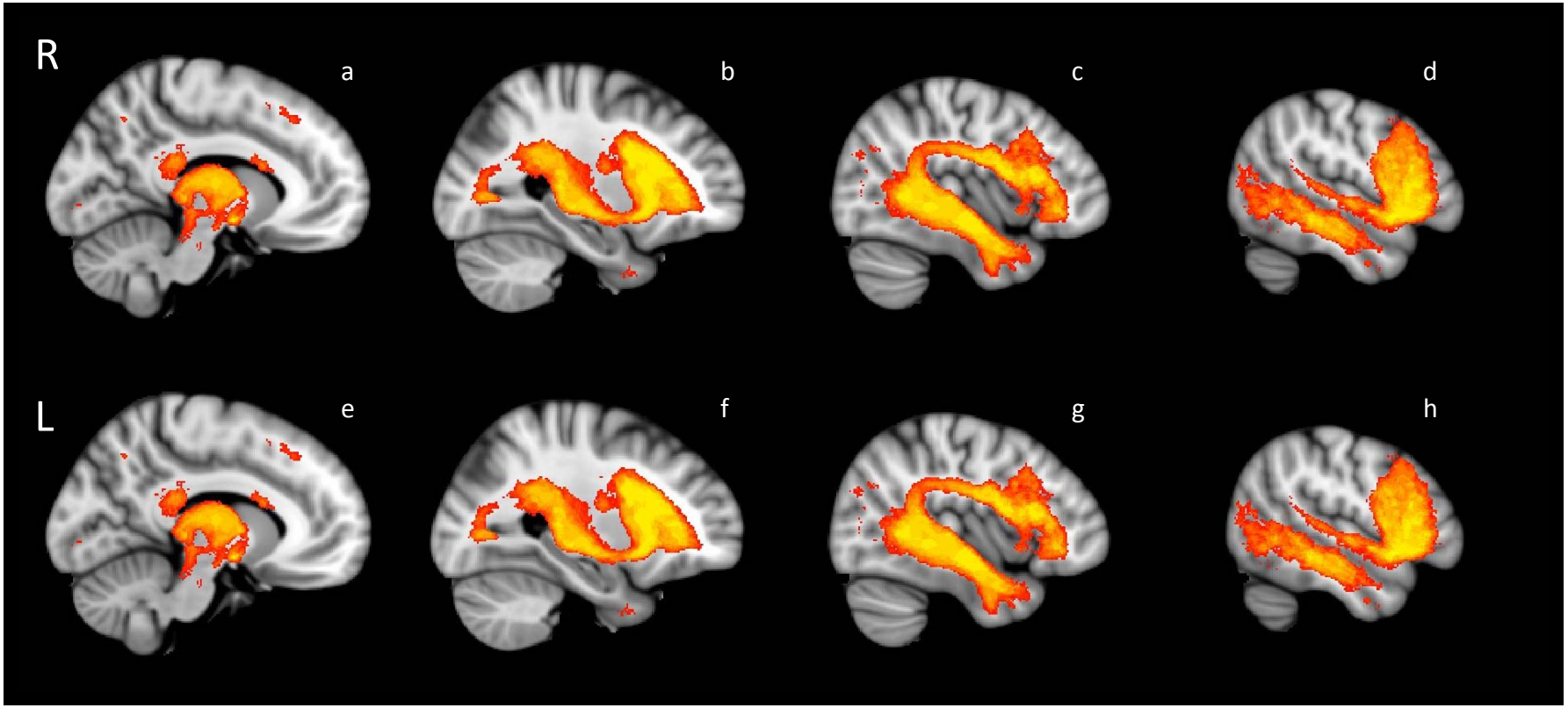


SUPPLEMENTARY FIGURE 4: Additional views of connections between frontal mirror region and superior temporal sulcus
C. *In vivo* macaques

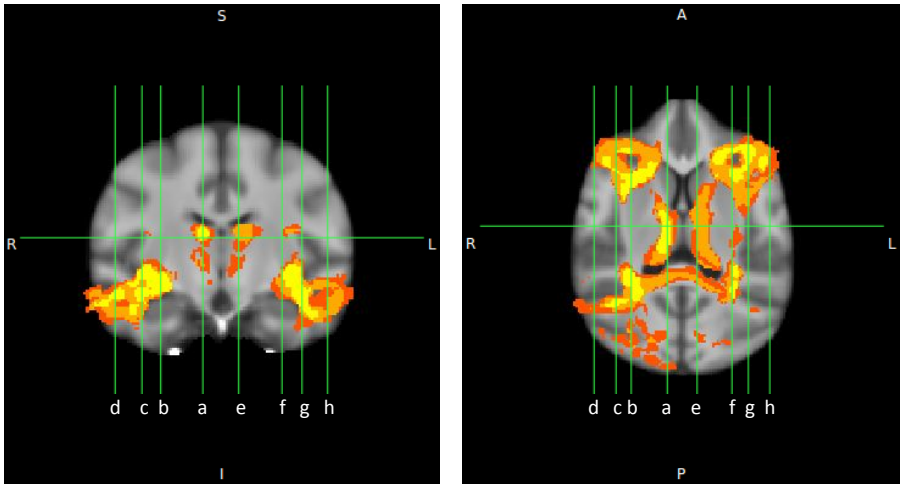


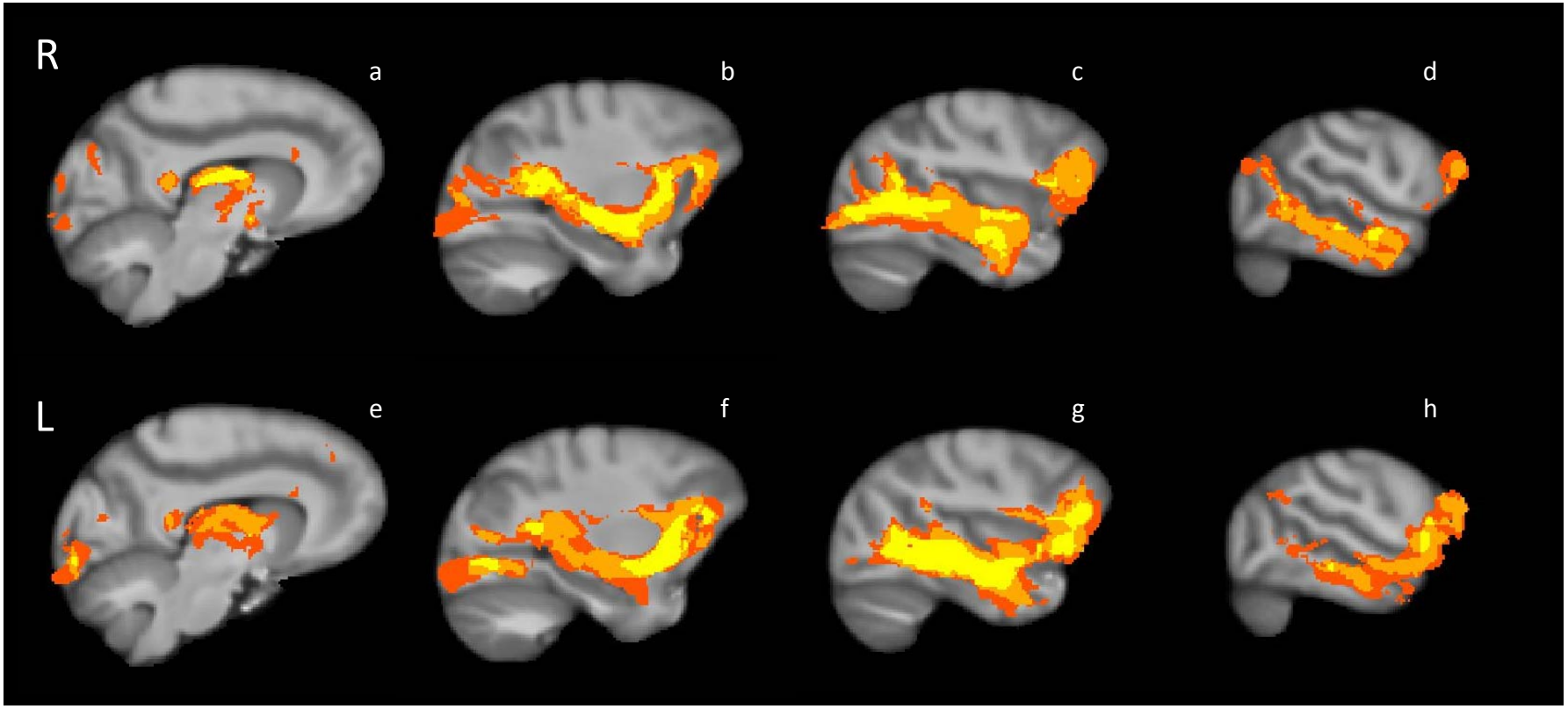
SUPPLEMENTARY FIGURE 5: Additional views of connections between frontal mirror region and inferior temporal cortex
A. *In vivo* humans



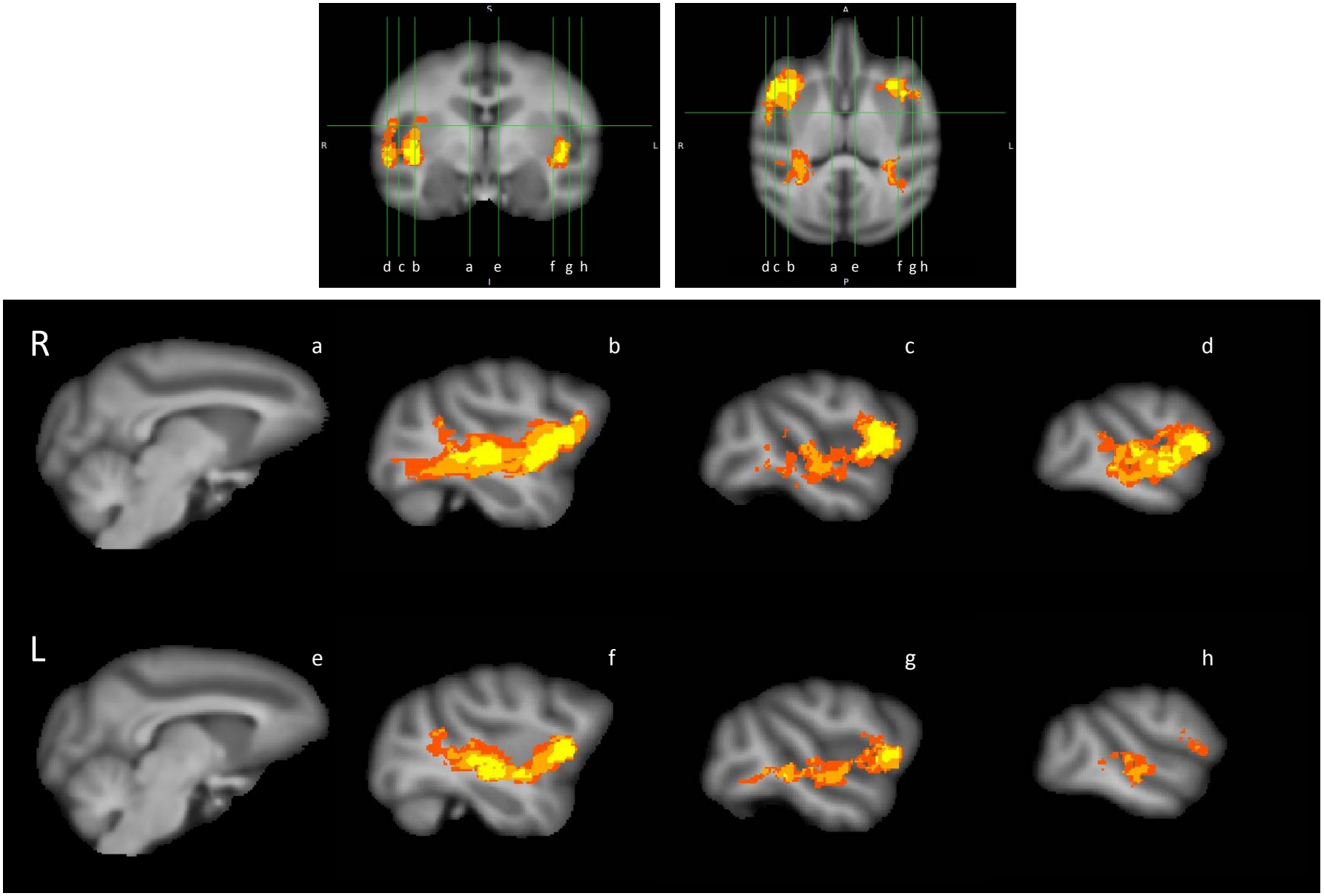


SUPPLEMENTARY FIGURE 5: Additional views of connections between frontal mirror region and inferior temporal cortex
B. *In vivo* chimpanzees

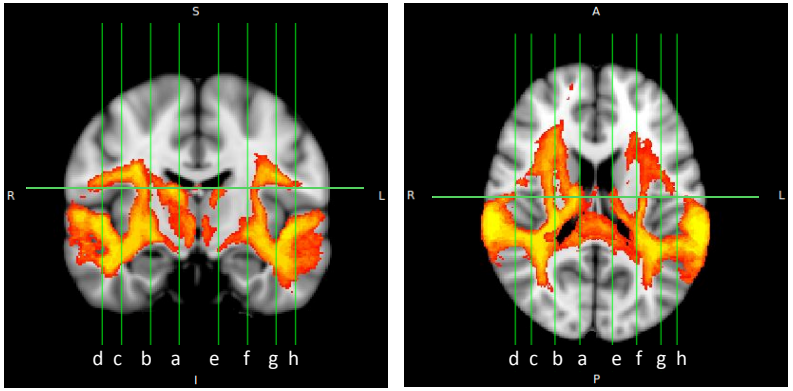


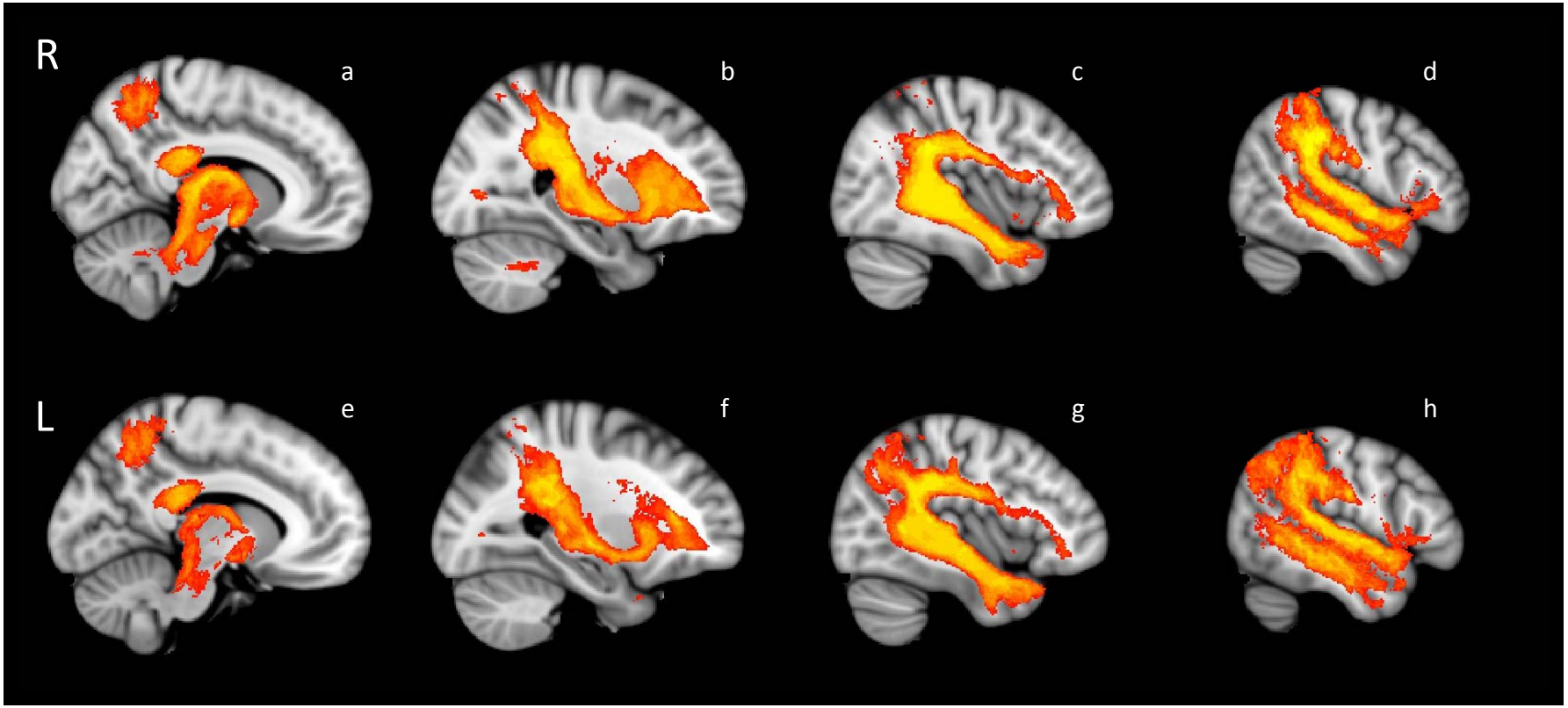


SUPPLEMENTARY FIGURE 5: Additional views of connections between frontal mirror region and inferior temporal cortex
C. *In vivo* macaques

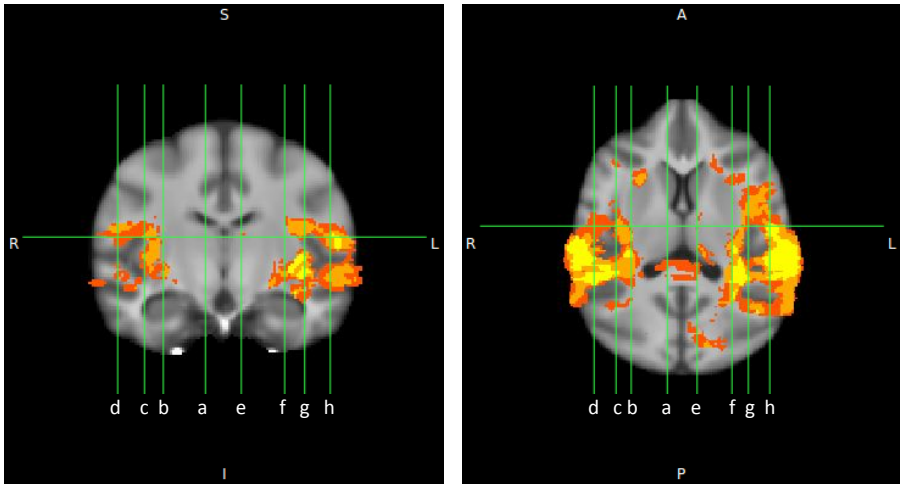


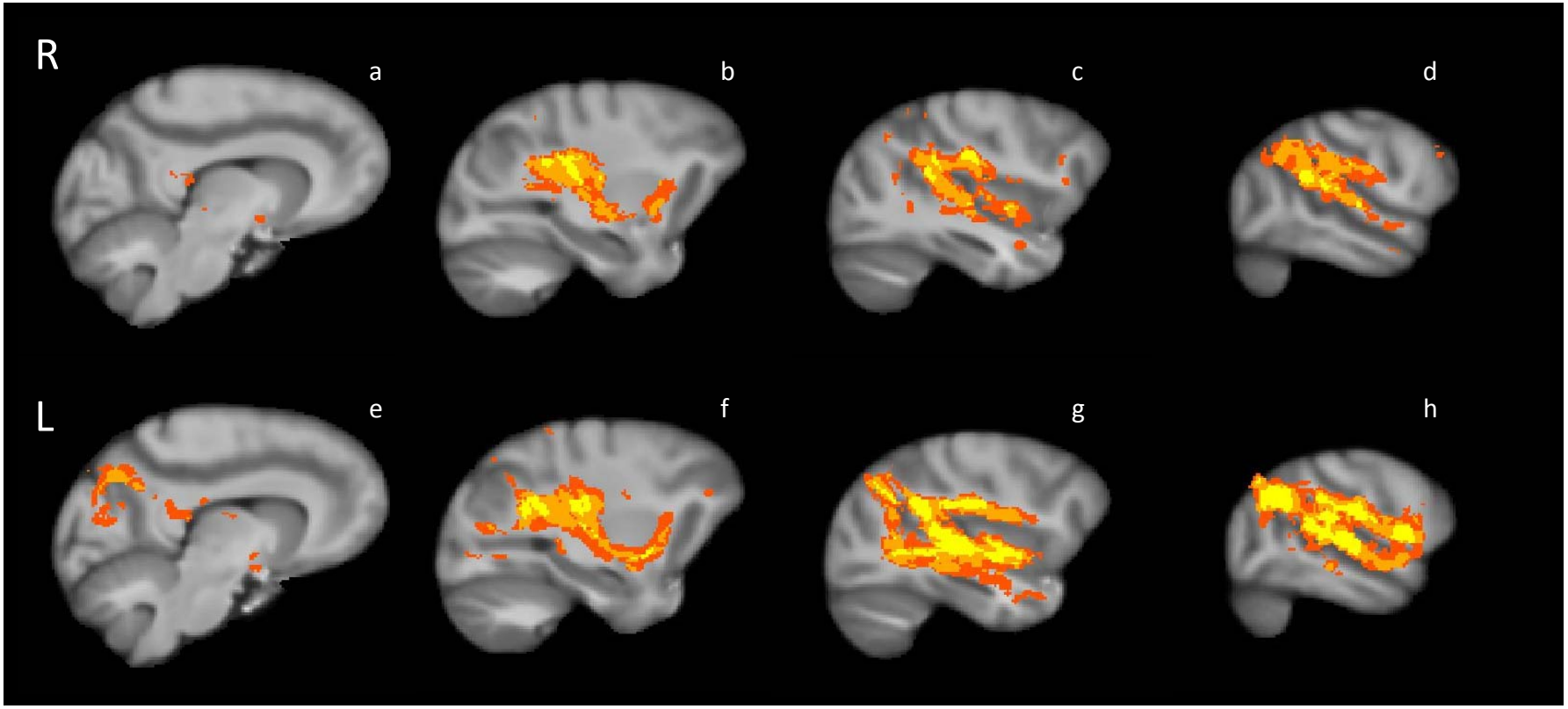
SUPPLEMENTARY FIGURE 6: Additional views of connections between parietal mirror region and superior temporal sulcus
A. *In vivo* humans



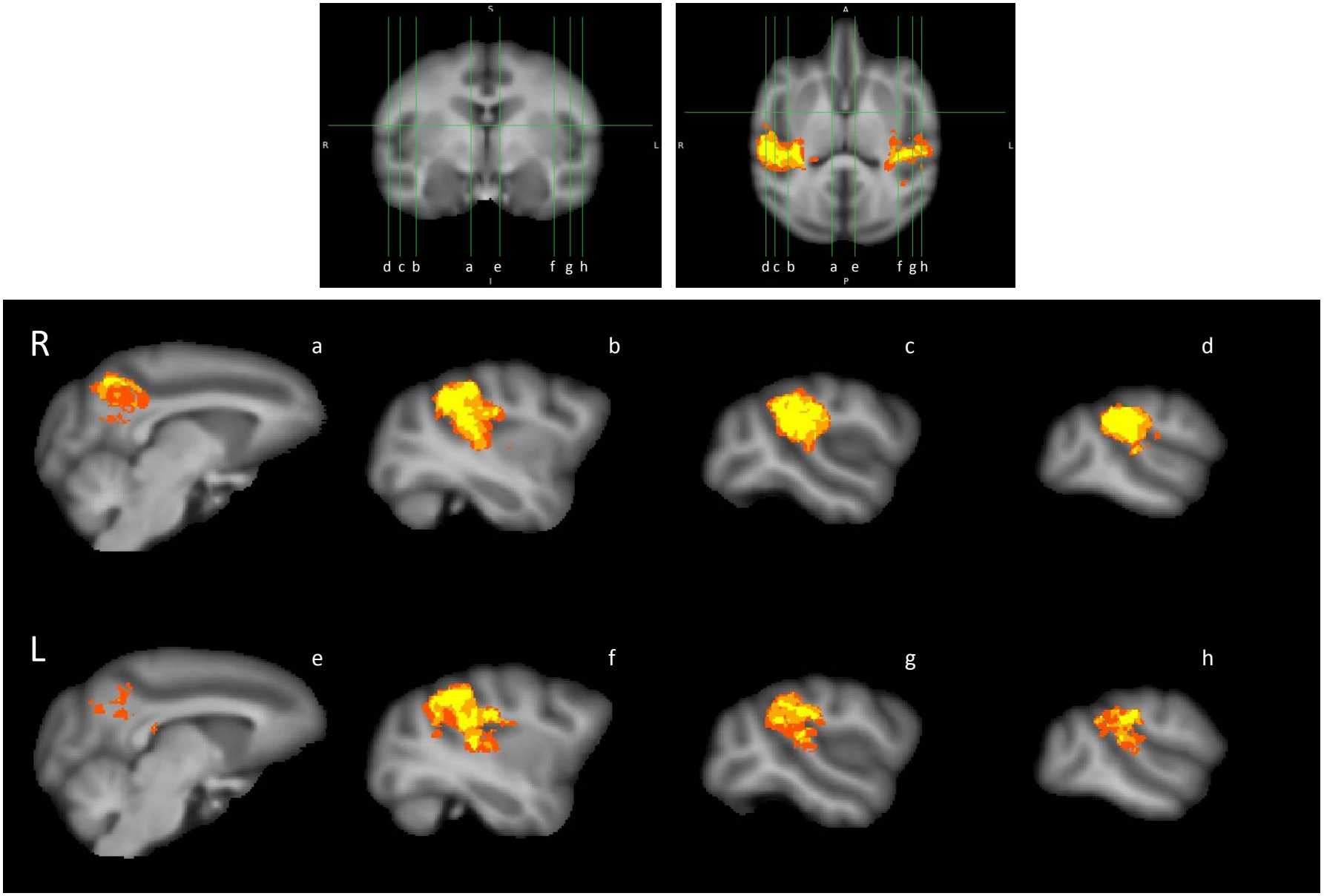


SUPPLEMENTARY FIGURE 6: Additional views of connections between parietal mirror region and superior temporal sulcus
B. *In vivo* chimpanzees

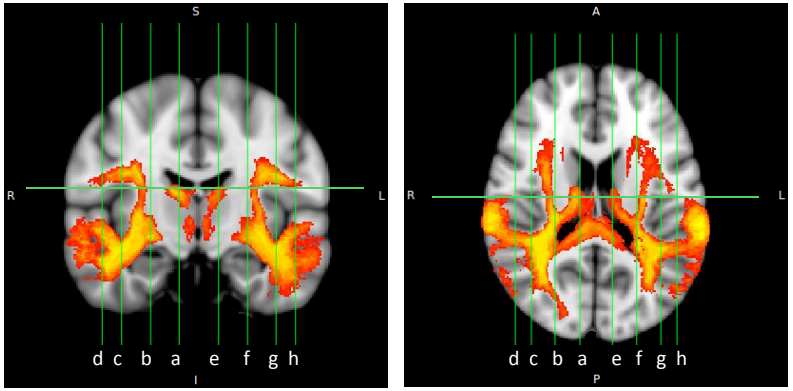


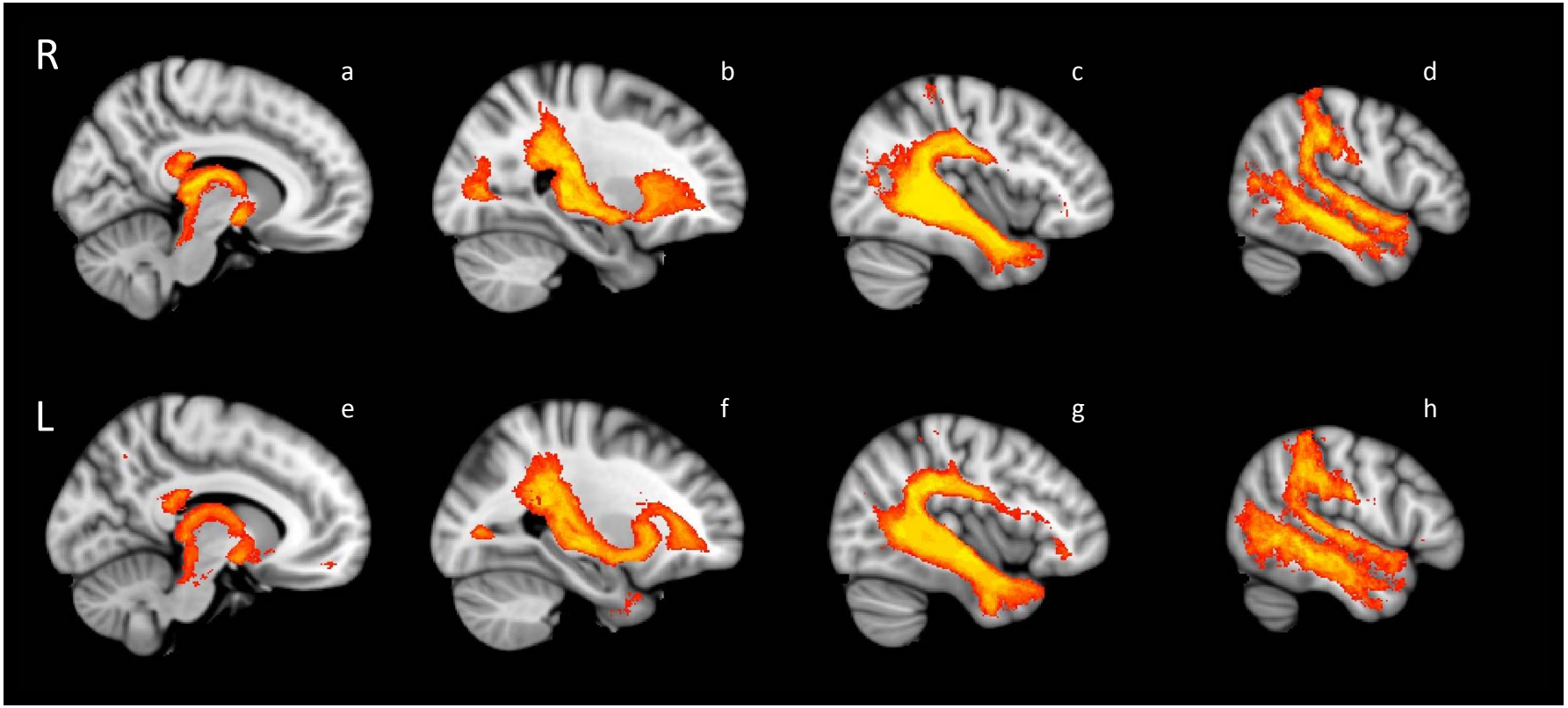


SUPPLEMENTARY FIGURE 6: Additional views of connections between parietal mirror region and superior temporal sulcus
C. *In vivo* macaques

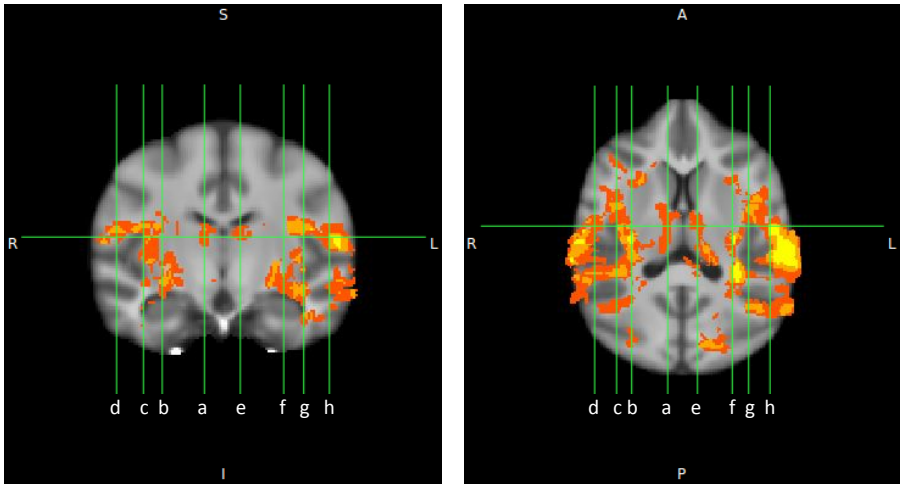


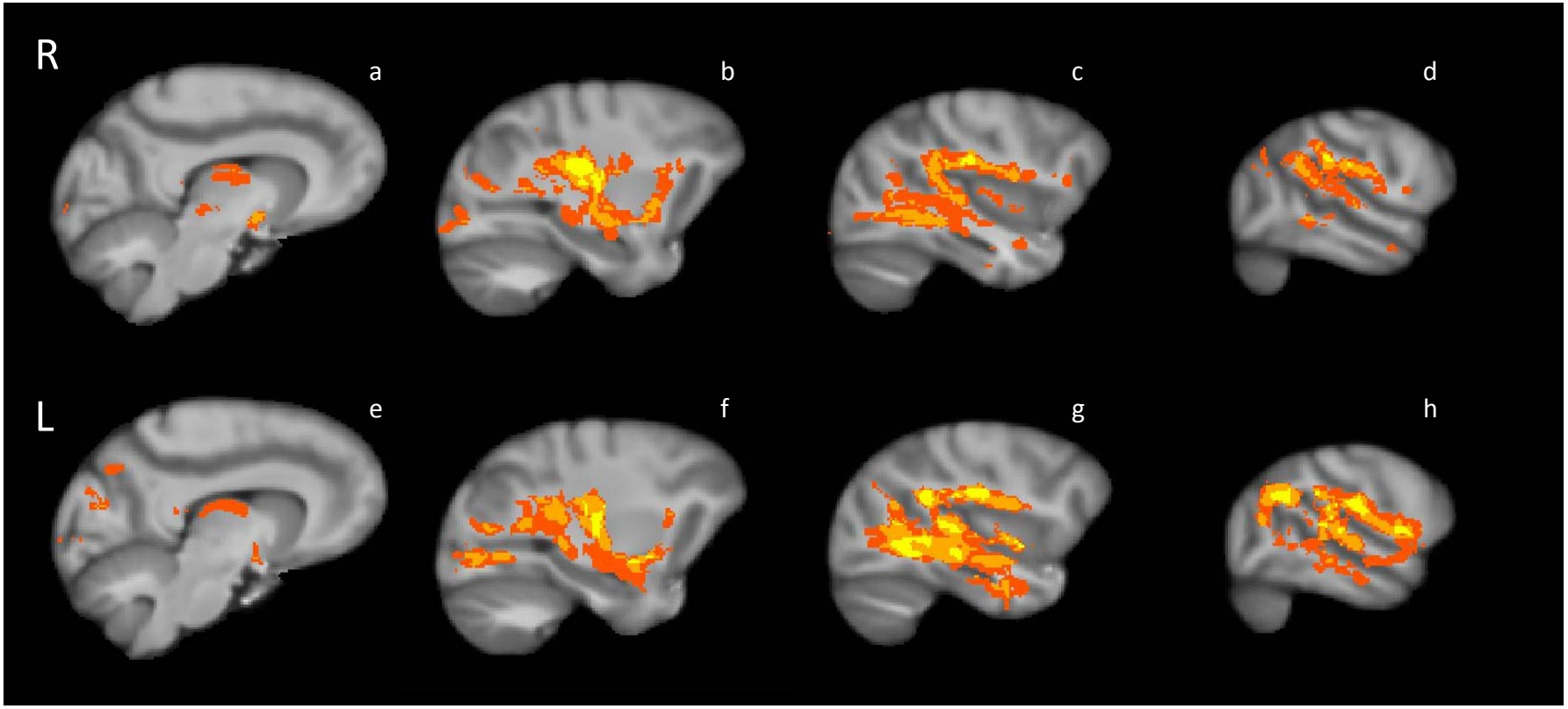
SUPPLEMENTARY FIGURE 7: Additional views of connections between parietal mirror region and inferior temporal cortex
A. *In vivo* humans





SUPPLEMENTARY FIGURE 7: Additional views of connections between parietal mirror region and inferior temporal cortex
B. *In vivo* chimpanzees





SUPPLEMENTARY FIGURE 7: Additional views of connections between parietal mirror region and inferior temporal cortex
C. *In vivo* macaques