Supporting Information

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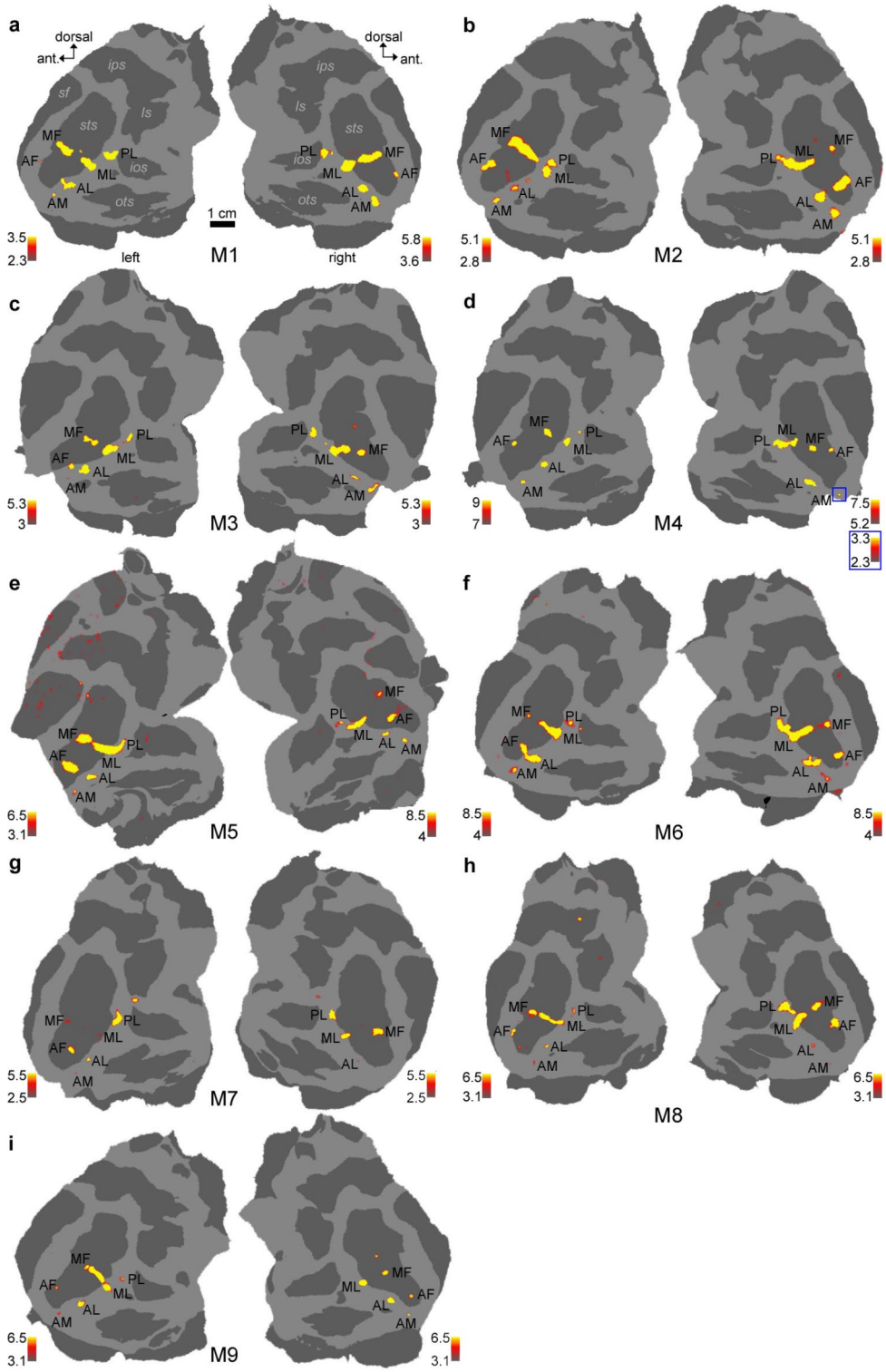

Fig. S1. Face-selective regions in 9 macaque (*a–i*), superimposed on flattened cortical surfaces. See Fig. 1 for procedures and abbreviations. 1. (*d Inset*) Data from the same experiment at lower threshold.

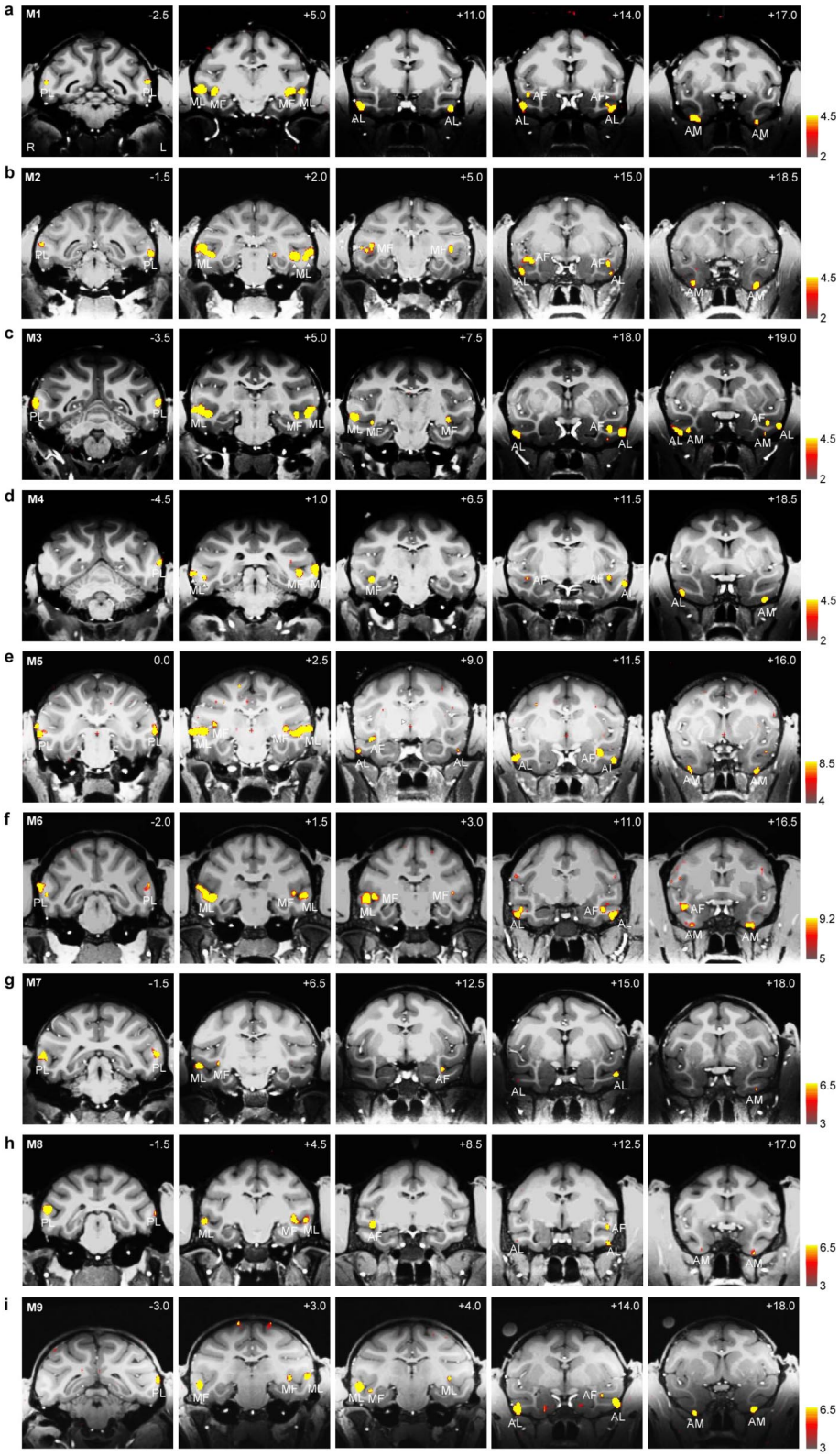

Fig. S2. Face-selective patches in the left and right temporal lobes of 9 macaques (*a–i*), shown on coronal slices (millimeters relative to the interaural line indicated by numbers at top right corner). Face-patch abbreviations are as in Fig. 1.

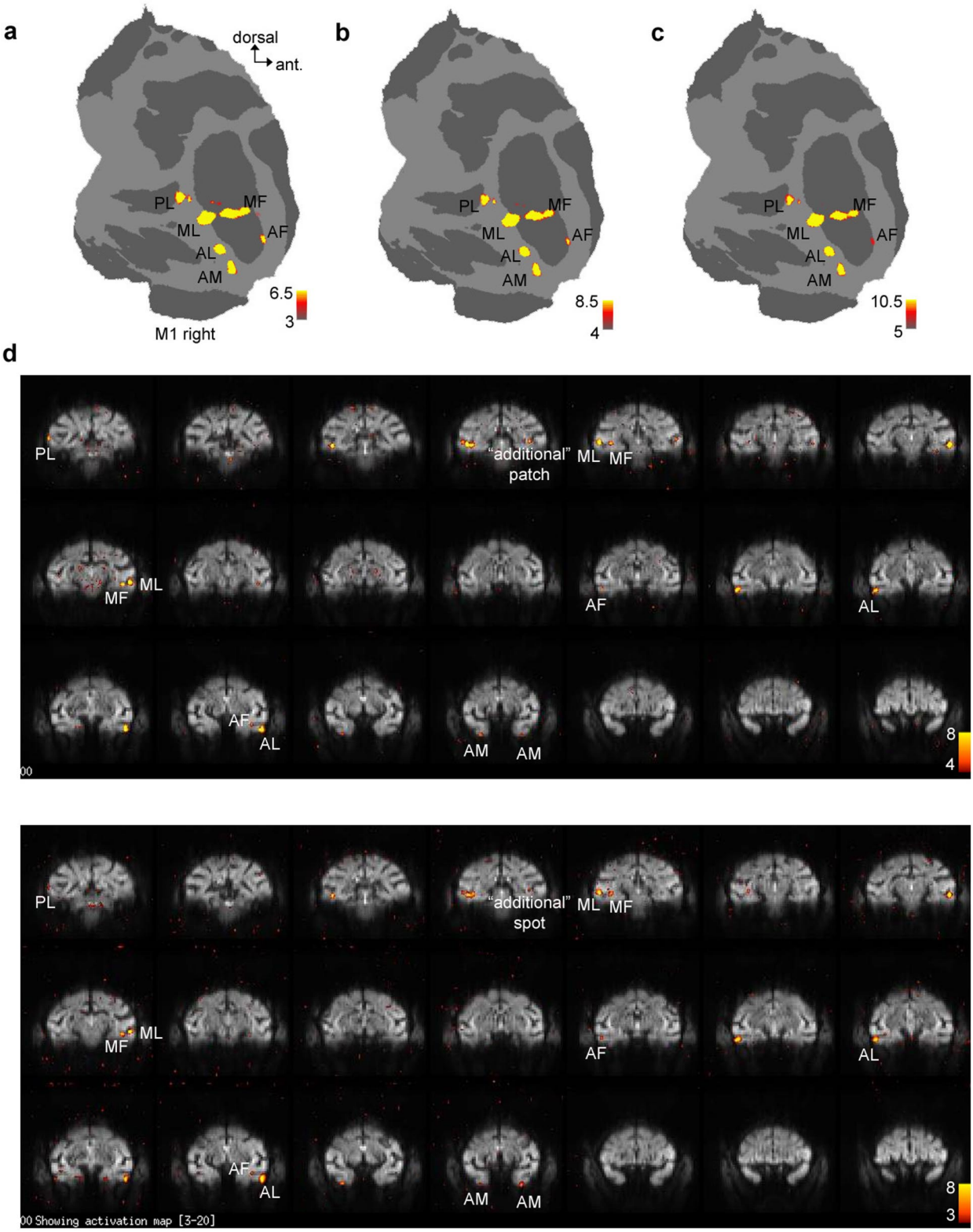

Fig. S3. Robustness of macaque face-selective regions. (*a*–*c*) Face-selective regions in the right hemisphere of monkey M1 at 3 different thresholds; the 6 face patches were robust across all 3 thresholds. (*d*) Reproducibility of face patches in monkey M9 across 2 independent sets of scans. Both the 6 primary patches and an additional patch in the fundus of STS posterior to MF in the right hemisphere were reproducible. Activation was overlaid on raw echo planar image (EPI) slices.

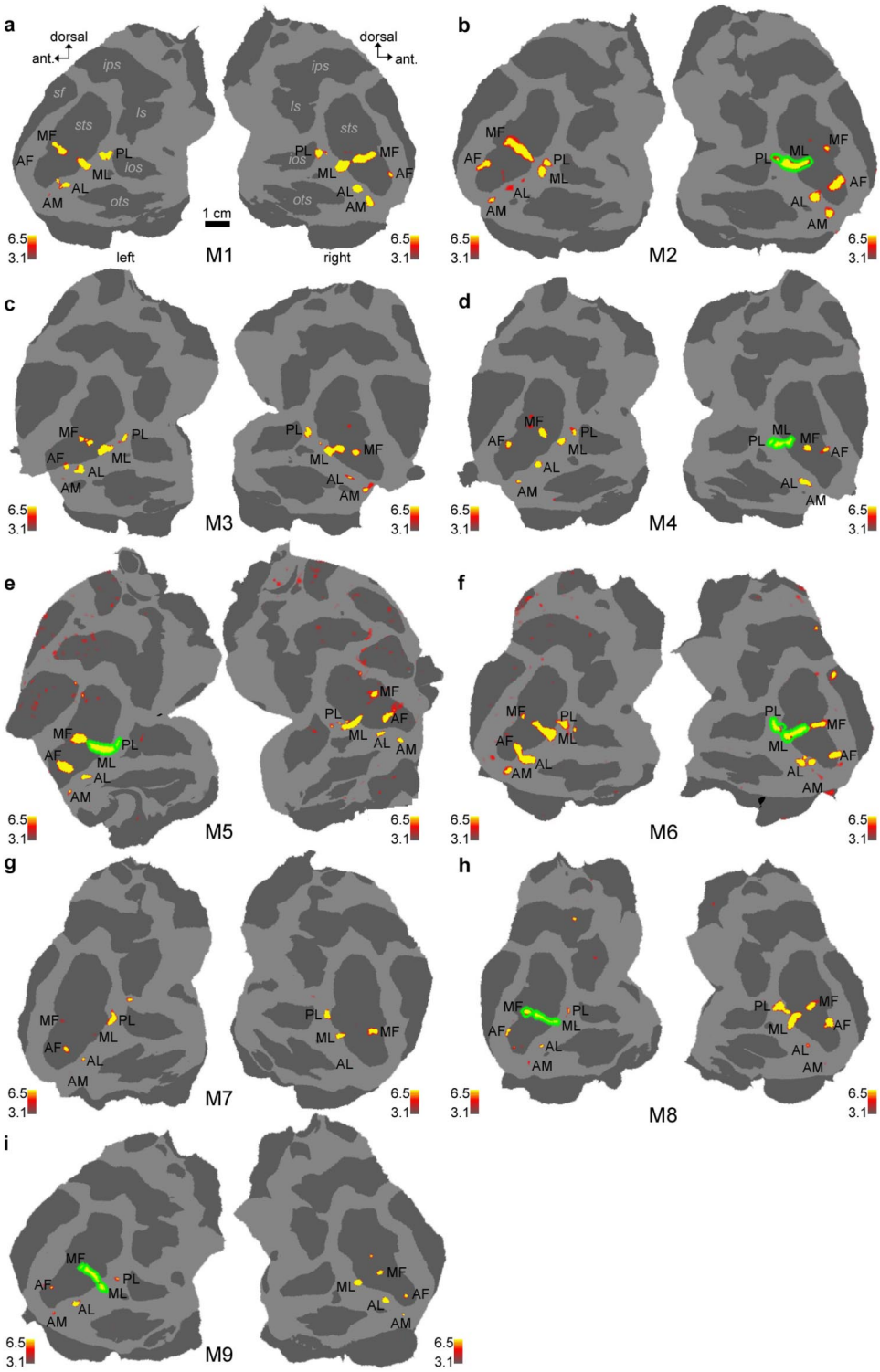

Fig. S4. Macaque face patches shown at a common threshold of $P = 10^{-3.1}$. See Fig. 1 for conventions and abbreviations. The green outlines indicate the subdivision of confluent patches used for the analyses of Fig. S8 and Table S2.

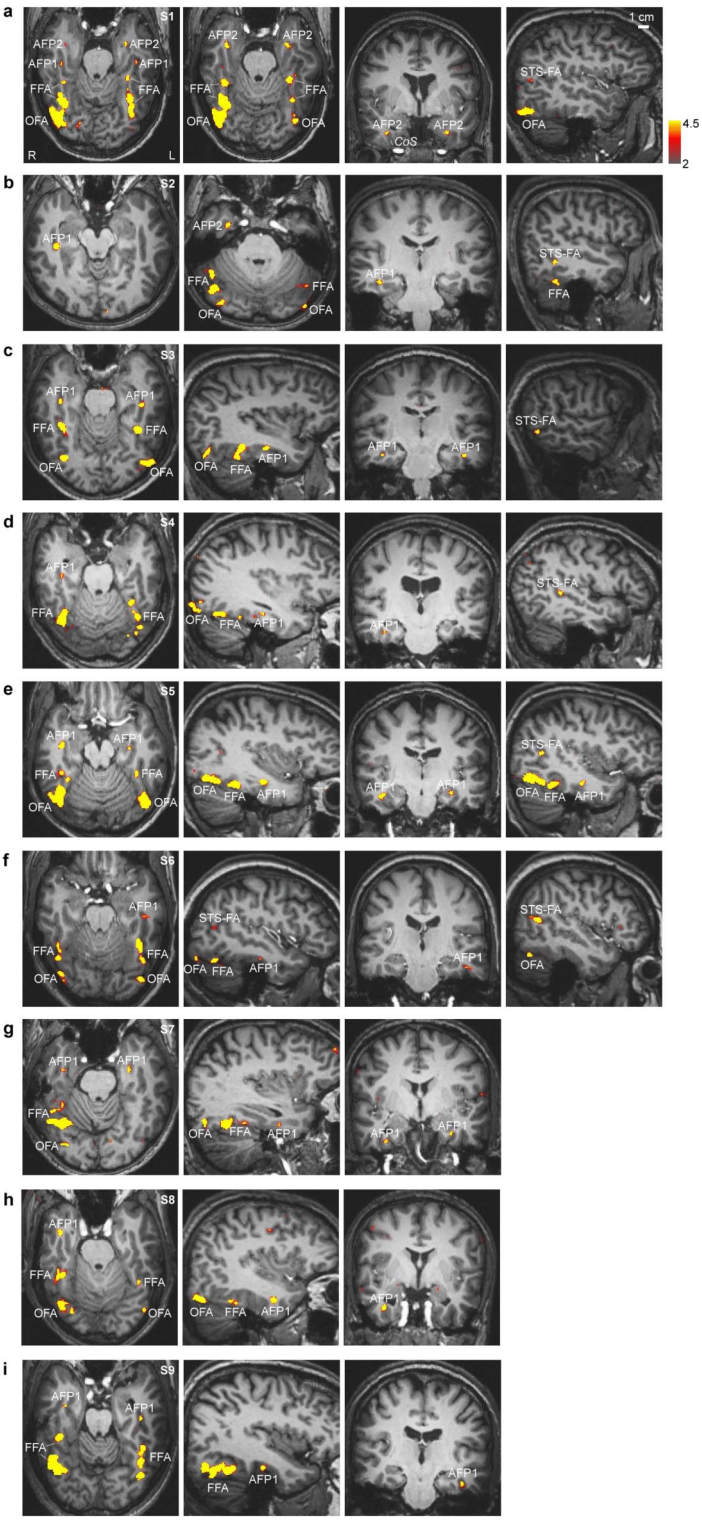

Fig. S5. Face-selective regions in the left and right temporal lobes of 9 human subjects (*a*–*i*), shown on coronal, horizontal, and sagittal MRI slices. Face-region abbreviations are as in Fig. 2. The different apparent size of face-selective regions across subjects is partly because of the choice of slice. Subjects 1 and 2 (*a* and *b*) had 2 anterior face patches (AFP1, AFP2), whereas the remaining subjects (*c*–*i*) each had 1 anterior face patch (AFP1).

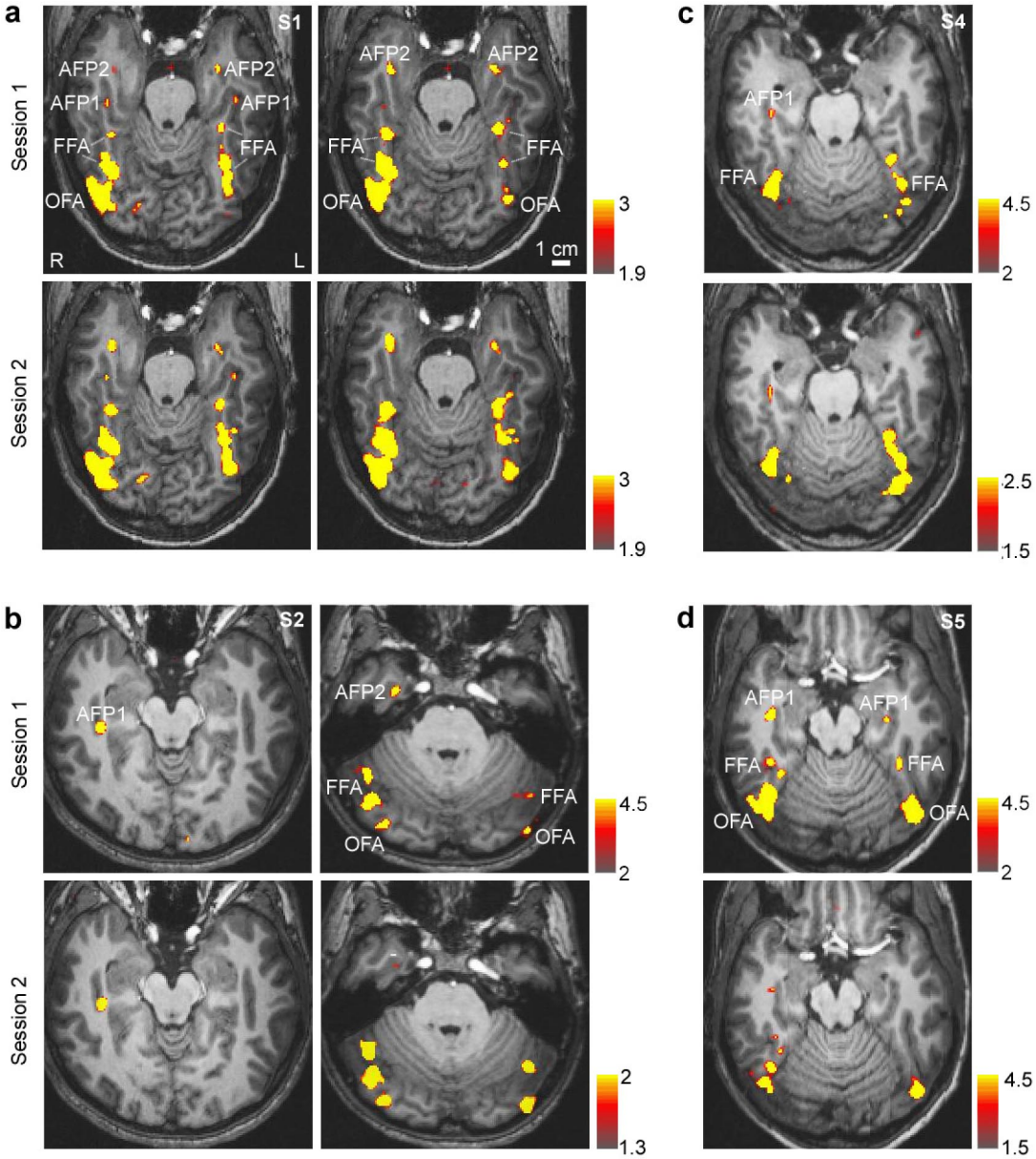

Fig. S6. Reproducibility of the human face-selective regions. (*a–d*) Face-selective regions obtained in 2 independent scan sessions for 4 subjects (S1, S2, S4, and S5). Comparison of the top (Session 1) and bottom (Sessions 2) rows for each subject shows that face-selective regions, including AFP1 and AFP2, were reproducible (with the exception of subject S5; right hemisphere AFP1 and FFA were not activated in Session 2 in this subject). Face region abbreviations are as in Fig. 3. The 2 scan sessions were separated by 98, 7, 7, and 14 days, respectively, for subjects S1, S2, S4, and S5.

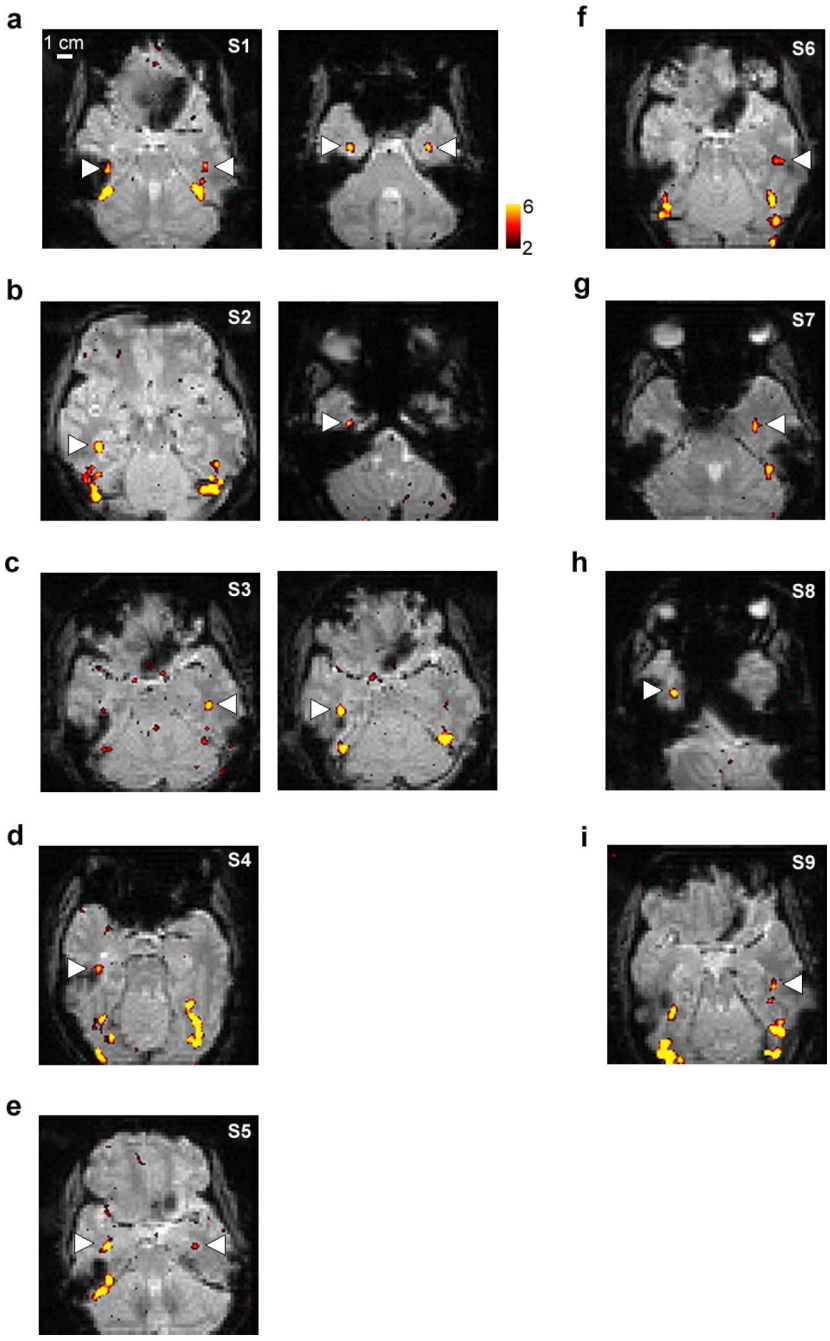

Fig. S7. Human anterior face regions for 9 subjects shown on raw EPI slices (*a–i*). The anterior face patches, indicated by arrows, were often located close to the susceptibility artifact induced by the ear canals. This artifact is stronger on 1 side of the brain than the other (for readout direction from right to left, as in all our scans, the artifact is stronger on the right).

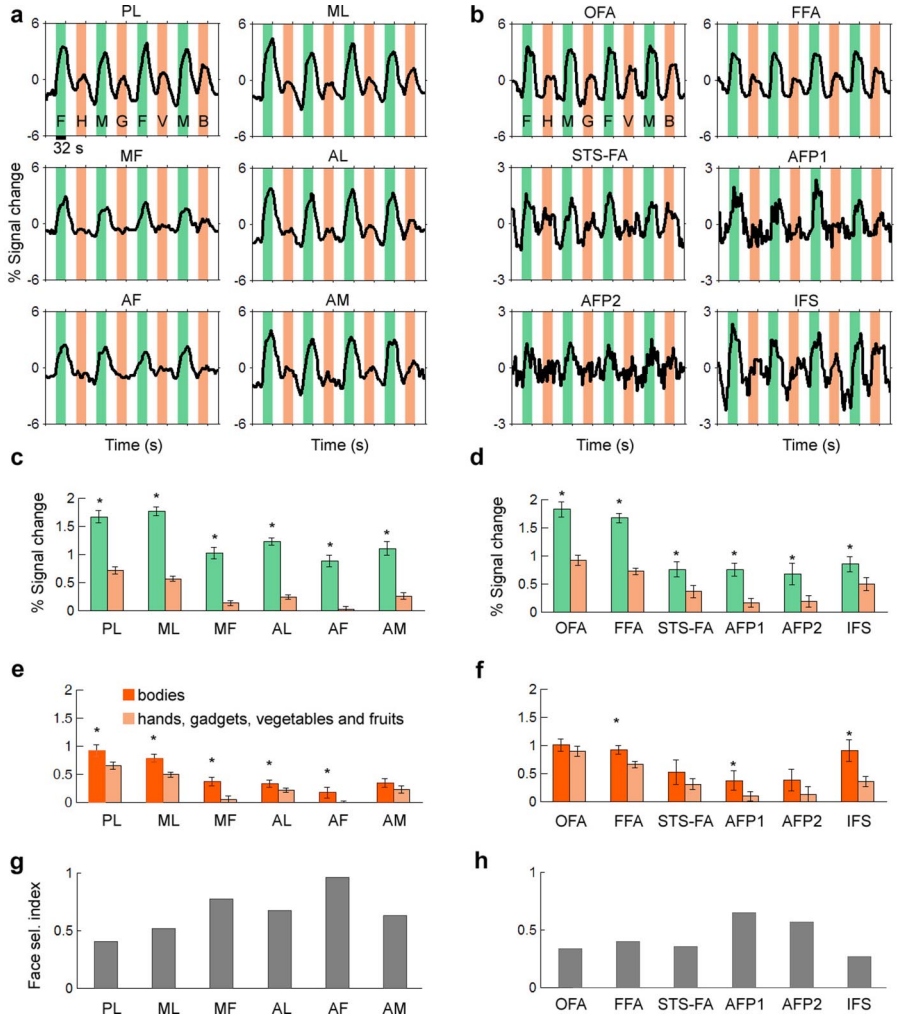

Fig. S8. Response profiles from macaque and human face patches. (*a*) Mean time courses extracted from the macaque face patches, averaged across 9 animals (shown in Figs. 1 and S1) and across hemispheres. Three different visual stimulation conditions are presented: faces (green epochs; F, human faces; M, monkey faces), nonface objects (orange epochs; H, hands; G, gadgets; V, vegetables and fruits; B, headless bodies), and scrambled versions of the same images (white epochs). Face region abbreviations are given in Fig. 1 for the macaque and Fig. 2 for the human; IFS, inferior frontal sulcus. (*a*–*d*) Even runs were used to define regions of interest (ROIs), and odd runs to extract time courses and percentage signal changes from the ROIs. (*b*) Mean time courses extracted from human face areas, averaged across 9 human subjects (shown in Figs. 2 and S5). Conventions are as in *a*. For OFA, FFA, STS-FA, and AFP1, data were averaged across both hemispheres of all 9 human subjects that showed an AFP1. For AFP2, data were averaged across the 2 subjects that showed an AFP2. For IFS, data were averaged across the 3 subjects that showed a prefrontal face-selective region in the inferior frontal sulcus. (*c*) Bar graphs showing percentage fMRI signal change to faces (green bars) and to nonface objects (orange bars) in the 6 macaque face regions. Error bars indicate 95% confidence intervals. (*c*–*f*) Asterisks mark a significant difference at $P < 0.01$; *t* tests confirmed that the response to faces was significantly greater than that to nonface objects at $P = 10^{-4}$ in all 6 macaque face patches. Data were averaged across both hemispheres of all 9 macaques. (*d*) Bar graphs showing percentage fMRI signal change to faces nonface objects in the 6 human face regions; *t* tests confirmed that the response to faces was significantly greater than that to nonface objects at $P = 10^{-4}$ in all 6 human face regions. Data were averaged as in *b*. (*e* and *f*) Bar graphs showing percentage fMRI signal change to bodies (dark orange bars) and to 3 other nonface object categories (hands, gadgets, vegetables and fruits, light orange bars) in the 6 macaque (*e*) and 6 human (*f*) face patches. The response to bodies was significantly greater than that to the other 3 nonface categories in all macaque face patches at $P = 0.001$ except for in AM ($P = 0.02$). In humans, the *P* values for the comparison of bodies with other nonface objects were as follows: 0.1 (OFA), 1e-8 (FFA), 0.07 (STS-FA), 0.003 (AFP1), 0.03 (AFP2), 1.6e-6 (IFS). (*g* and *h*) Bar graphs showing the face selectivity index = $(\text{Response}_{\text{face}} - \text{Response}_{\text{nonface}})/(\text{Response}_{\text{face}} + \text{Response}_{\text{nonface}})$ for each macaque and human face-selective area. In both species, the posterior-most face patch (PL in macaques and OFA in humans) was the least selective.

Table S1. Summary of experiments

ID	Sessions	Runs	No. of slices	Resolution	Slice thickness
M1	3	35	28	1.25 × 1.25	1.25
M2	2	15	28	1.25 × 1.25	1.25
M3	3	18	28	1.25 × 1.25	1.25
M4	3	23	28	1.25 × 1.25	1.25
M5	3	19	28	1.25 × 1.25	1.25
M6	1	12	28	1.5 × 1.5	1.50
M7	3	44	28	1.25 × 1.25	1.25
M8	1	12	42	1.5 × 1.5	1.50
M9	3	29	28	1.5 × 1.5	1.50
M10	14	99	28	1.25 × 1.25	1.25
S1	3	38	44	2.5 × 2.5	2.00
S2	2	21	44	2.5 × 2.5	2.00
S3	1	10	44	2.5 × 2.5	2.00
S4	2	21	44	2.5 × 2.5	2.00
S5	2	21	44	2.5 × 2.5	2.00
S6	1	10	44	2.5 × 2.5	2.00
S7	2	18	44	2.5 × 2.5	2.00
S8	2	25	44	2.5 × 2.5	2.00
S9	1	10	44	2.5 × 2.5	2.00
S10	2	26	44	2.5 × 2.5	2.00
S11	1	11	44	2.5 × 2.5	2.00
S12	2	25	44	2.5 × 2.5	2.00
S13	2	27	44	2.5 × 2.5	2.00

The table lists the number of independent scan sessions, the number of runs within each session, and the scan parameters for each session (number of slices, in-plane resolution, and slice thickness) for the 10 macaque subjects and 13 human subjects used in this study.

Table S2. Volumes of the different macaque face patches

	PL		ML		MF		AL		AF		AM	
ID	L	R	L	R	L	R	L	R	L	R	L	R
M1	56.6	43.0	50.8	84.0	35.2	37.1	46.9	50.8	5.9	7.8	11.7	46.9
M2	56.6	46.9	68.4	70.3	5.9	3.9	62.5	60.5	17.6	23.4	35.2	21.5
M3	23.4	35.2	74.2	111.3	27.3	15.6	82.0	62.5	19.5	5.9	7.8	21.5
M4	21.5	31.3	56.6	41.0	31.3	15.6	44.9	44.9	15.6	9.8	25.4	3.9
M5	21.5	27.3	107.4	76.2	31.3	15.6	33.2	54.7	29.3	31.3	17.6	21.5
M6	23.6	64.1	74.3	40.5	33.8	54.0	74.3	37.1	23.6	47.3	30.4	23.6
M7	60.5	29.3	13.7	50.8	13.7	23.4	17.6	15.6	15.6	2.0	7.8	5.9
M8	37.1	60.8	43.9	77.6	13.5	13.5	16.9	13.5	10.1	20.3	6.8	6.8
M9	77.6	16.9	141.8	77.6	40.5	23.6	87.8	74.3	20.3	13.5	33.8	23.6
Avg.	42.1	39.4	70.1	69.9	25.8	22.5	51.8	46.0	17.5	17.9	19.6	19.5
Std.	21.2	15.7	37.1	22.7	11.9	14.9	26.5	20.7	6.9	14.4	11.7	13.2

Shown is the size (in mm^3) of the six temporal face patches in the left and right hemispheres of 9 macaques at $P < 0.001$.

Table S3. Volumes of the different human face patches

	STS-FA		FFA		OFA		AFP1		AFP2		IFS	
ID	L	R	L	R	L	R	L	R	L	R	L	R
S1	150.0	87.5	975.0	875.0	362.5	787.5	37.5	112.5	75.0	62.5	200.0	362.5
S2	0.0	187.5	925.0	1037.5	275.0	275.0	0.0	75.0	0.0	12.5	0.0	0.0
S3	0.0	87.5	375.0	525.0	337.5	300.0	37.5	62.5	0.0	0.0	0.0	0.0
S4	62.5	325.0	475.0	375.0	87.5	250.0	0.0	50.0	0.0	0.0	0.0	0.0
S5	0.0	137.5	262.5	725.0	425.0	687.5	12.5	100.0	0.0	0.0	0.0	0.0
S6	50.0	150.0	375.0	262.5	225.0	237.5	112.5	0.0	0.0	0.0	0.0	0.0
S7	0.0	0.0	762.5	912.5	12.5	112.5	87.5	12.5	0.0	0.0	0.0	0.0
S8	0.0	0.0	175.0	175.0	337.5	312.5	0.0	112.5	0.0	0.0	0.0	125.0
S9	0.0	0.0	562.5	975.0	212.5	100.0	50.0	25.0	0.0	0.0	0.0	0.0
Avg.	29.2	108.3	543.1	651.4	252.8	340.3	37.5	61.1	8.3	8.3	22.2	54.2
Std.	51.5	107.2	286.4	325.6	134.2	238.6	40.5	42.6	25.0	20.7	66.7	122.8

Shown is the size (in mm^3) of the six temporal face regions in the left and right hemispheres of 9 human subjects at $P < 0.001$.