

Activation peaks obtained during the naming task by Patient 1, Patient 2 and healthy subjects. For each peak, we documented the cerebral lobe, the region, the hemisphere, the number of voxels (k), the x, y, z MNI coordinates, the t values, and the anatomical regions according to AAL. All activations were obtained at $t > 6.5$, $p < 0.05$ FWE corrected and $k > 5$ for contrast (Naming-Control) as well as for the reverse contrast for the control group (see Perrone-Bertolotti et al. [2015] for more detailed description of the NEREC protocol).

Table 1S. Activation peaks obtained during the naming task by P1, P2 and healthy subjects.

Patient 1

Contrast	Lobe	Hemisphere	Regions	AAL label	t	k	MNI coordinates (peak)						
							x	y	z				
[Naming-Control]	Frontal	Left	Superior frontal gyrus	Frontal_Sup_L	6.94	12	█	-12	█	31	█	62	
	Frontal	Left	Superior frontal gyrus	Frontal_Sup_Medial_L	7.53	33	█	-7	█	61	█	11	
	Frontal	Right	Inferior frontal gyrus	Frontal_Inf_Oper_R	6.67	█	54	█	42	█	15	█	32
	Frontal	Right	Middle frontal gyrus	Frontal_Mid_R	6.83		66		32		51		23
	Frontal	Right	Superior frontal gyrus	Frontal_Sup_R	7.22	█	32	█	18	█	-11	█	77
	Temporal	Left	Middle temporal gyrus	Temporal_Mid_L	7.12		85	█	-65	█	-18	█	5
	Temporal	Right	Parahippocampal gyrus	ParaHippocampal_R	7.56		14	█	25	█	-10		-34
	Temporal	Right	Superior temporal gyrus	Temporal_Pole_Mid_R	7.38		67	█	51	█	15		-31
	Temporal	Right	Superior temporal gyrus	Temporal_Sup_R	6.57	█	39	█	62	█	1	█	-7
	Occipital	Left	Fusiform	Fusiform_L	7.88		156		-41		-54		-19
	Occipital	Right	Fusiform	Fusiform_R	7.28		177		39		-43		-19

Patient 2

Contrast	Lobe	Hemisphere	Regions	AAL label	t	k	MNI coordinates(peak)		
							x	y	z
[Naming-Control]	Frontal	Left	Inferior frontal gyrus	Frontal_Inf_Oper_L	7.27	19	-37	3	23
	Frontal	Left	Inferior frontal gyrus	Frontal_Inf_Tri_L	7.36	39	-39	33	8
	Frontal	Left	Insula	Insula_L	6.65	28	-30	21	-10
	Frontal	Left	Precentral gyrus	Precentral_L	7.54	19	-49	-9	47
	Frontal	Left	Supp. motor area	Supp_Motor_Area_L	7.04	18	-3	3	68
	Frontal	Right	Inferior frontal gyrus	Frontal_Inf_Tri_R	6.53	14	57	17	20
	Frontal	Right	Middle frontal gyrus	Frontal_Mid_R	7.34	16	32	5	62
	Frontal	Right	Inferior frontal gyrus	Frontal_Inf_Oper_R	6.87	15	39	3	21
	Frontal	Right	Supp. motor area	Supp_Motor_Area_R	8.17	17	16	3	70
	Temporal	Left	Middle temporal gyrus	Temporal_Mid_L	7.46	53	-60	-29	5
	Temporal	Right	Middle temporal gyrus	Temporal_Mid_R	7.24	31	48	-66	-1
	Temporal	Right	Superior temporal gyrus	Temporal_Sup_R	7.9	78	53	-2	20
	Occipital	Left	Middle occipital gyrus	Occipital_Mid_L	7.23	39	-35	-75	20
	Occipital	Left	Inferior occipital gyrus	Occipital_Inf_L	6.73	55	-44	-71	-7
	Occipital	Right	Middle occipital gyrus	Occipital_Mid_R	7.47	57	30	-71	26

Control group

Contrast	Lobe	Hemisphere	Regions	AAL label	t	k	MNI coordinates(peak)		
							x	y	z
[Naming-Control]	Frontal	Left	Supp. motor area	Supp_Motor_Area_L	11.45	38	-2	3	59
	Frontal	Left	Insula	Insula_L	7.05	137	-32	21	-7
	Frontal	Left	Inferior frontal gyrus	Frontal_Inf_Oper_L	7.61	44	-51	12	8
	Frontal	Right	Insula	Insula_R	6.78	13	32	19	-10
	Temporal	Left	Hippocampus	Hippocampus_L	7.46	9	-32	-13	-16
	Temporal	Right	Inferior temporal gyrus	Temporal_Inf_R	9.26	35	41	-52	-13
	Temporal	Right	Hippocampus	Hippocampus_R	6.72	39	30	-9	-16
	Parietal	Left	Superior parietal gyrus	Parietal_Sup_L	6.58	8	-28	-57	59
	Parietal	Right	Superior parietal gyrus	Parietal_Sup_R	7.36	8	27	-59	53
	Sub-lobar	Left	Pallidum	Pallidum_L	8.11	54	-19	1	5
	Sub-lobar	Right	Thalamus	Thalamus_R	8.31	91	11	-9	14
	Occipital	Left	Inferior occipital gyrus	Occipital_Inf_L	11.05	31	-32	-82	-7
	Occipital	Left	Fusiform	Fusiform_L	11.66	13	-42	-68	-13
	Occipital	Left	Middle occipital gyrus	Occipital_Mid_L	12.86	9	-32	-87	17
	Occipital	Left	Fusiform	Fusiform_L	9.76	13	-42	-68	-13
	Occipital	Right	Inferior occipital gyrus	Occipital_Inf_R	12.34	47	44	-61	-16
	Occipital	Right	Middle occipital gyrus	Occipital_Mid_R	15.99	93	41	-82	2
	Cerebellum	Right	Cerebellum	Cerebellum_8_R	7.64	41	11	-71	-46
[Control-Naming]	Cingulate	Right	Cingulum	Cingulum_Mid_R	7.02	18	7	-27	35
	Parietal	Right	Angular gyrus	Angular_R	9.90	55	50	-66	32
	Parietal	Right	Supramarginal gyrus	SupraMarginal_R	6.62	40	60	-36	44
	Parietal	Right	Precuneus	Precuneus_R	7.09	44	4	-61	38
	Parietal	Right	Supramarginal gyrus	SupraMarginal_R	7.07	46	64	-20	32
	Occipital	Left	Middle occipital gyrus	Occipital_Mid_L	7.43	62	-39	-75	38

Mean FA values, t', p and interval of confidence for Patient 1, Patient 2 and healthy subjects. The mean FA for the different intra- and inter- hemispheric FOIs studied and the associated statistics (t' comparisons between one single subject and the control group) are presented. For the control group, the mean FA values and standard deviations are presented. Significant differences ($p < 0.05$) are shown in bold with an asterisk. ILF: inferior longitudinal fascicle; IFOF: inferior fronto-occipital fascicle; SLF: superior longitudinal fascicle; Arc: arcuate; Unc: uncinate; Cing: cingulum; Fox: fornix; CC: corpus callosum; GCC: genu of the corpus callosum; BCC: body of the corpus callosum; SCC: splenium of the corpus callosum.

Table 2S. Mean FA values, t', p and interval of confidence (IC) for P1, P2 and healthy subjects.

Patient 1	LEFT ASSOCIATION FASCICLES							RIGHT ASSOCIATION FASCICLES							COMMISSURES		
	ILF	IFOF	Arc	SLF	Unc	Cingulum	Fox stria	ILF	IFOF	Arc	SLF	Unc	Cingulum	Fox stria	CorpusCallosum body	genu	splenium
FA (mean)	0,50	0,47	0,42	0,43	0,39	0,47	0,49	0,48	0,44	0,40	0,44	0,39	0,44	0,48	0,62	0,61	0,68
t'	-2,17	0,06	-1,10	-1,71	-1,78	-0,38	-1,80	-1,65	-0,74	-1,48	-1,56	-1,92	-0,64	-1,60	-0,18	-0,84	-0,77
p	.03*	.4	.1	.06	.05*	.3	.06	.06	.2	.08	.07	.04*	.3	.07	.4	.2	.2
IC	[0,04; 12,39]	[30,71; 73,53]	[3,11; 34,78]	[0,35; 20,03]	[0,27; 18,76]	[16,33; 57,84]	[1,7; 22,37]	[0,45; 21,22]	[8,05; 45,81]	[0,88; 25,04]	[0,64; 23,18]	[0,14; 16,2]	[9,96; 48,99]	[0,55; 22,32]	[22,53; 64,09]	[6,33; 42,59]	[7,47; 44,77]

Patient 2	LEFT ASSOCIATION FASCICLES							RIGHT ASSOCIATION FASCICLES							COMMISSURES		
	ILF	IFOF	Arc	SLF	Unc	Cingulum	Fox stria	ILF	IFOF	Arc	SLF	Unc	Cingulum	Fox stria	CorpusCallosum body	genu	splenium
FA (mean)	0,56	0,45	0,41	0,45	0,40	0,45	0,47	0,55	0,45	0,37	0,45	0,44	0,44	0,49	0,5950	0,6383	0,6886
t'	0,65	-0,41	-1,35	-0,71	-1,67	-0,82	-1,75	0,17	-0,31	-3,43	-1,32	-0,63	-0,30	-1,34	-1,92	-0,09	-0,05
p	.3	.3	.1	.2	.05*	.2	.06	.4	.3	< .05*	.1	.3	.4	.1	< .05*	.5	.5
IC	[51,36; 90,26]	[15,64; 56,97]	[1,37; 28]	[8,55; 46,67]	[0,42; 20,87]	[6,56; 43,04]	[0,3; 19,37]	[34,62; 77,2]	[18,52; 60,51]	[0; 2,35]	[1,54; 28,82]	[10,13; 49,25]	[18,78; 60,81]	[1,46; 28,43]	[0,14; 16,2]	[25,4; 68,17]	[26,93; 69,75]

Controls	LEFT ASSOCIATION FASCICLES							RIGHT ASSOCIATION FASCICLES							COMMISSURES		
	ILF	IFOF	Arc	SLF	Unc	Cingulum	Fox stria	ILF	IFOF	Arc	SLF	Unc	Cingulum	Fox stria	CorpusCallosum body	genu	splenium
FA (mean)	0,54	0,47	0,44	0,47	0,48	0,48	0,53	0,51	0,46	0,42	0,47	0,47	0,46	0,52	0,63	0,63	0,70
FA (sd)	0,03	0,05	0,02	0,02	0,05	0,04	0,03	0,02	0,03	0,01	0,02	0,04	0,03	0,02	0,03	0,03	0,02