

Supplementary Table 1. Coordinates and Z-scores of whole-brain activations across all subjects (controls, patients with L-TLE and patients with R-TLE) during auditory naming and picture naming shown corrected for multiple comparisons (FWE,  $p < 0.05$ ).

	Auditory naming				Picture naming			
	Left Hemisphere		Right Hemisphere		Left Hemisphere		Right Hemisphere	
	Z	Coordinates	Z	Coordinates	Z	Coordinates	Z	Coordinates
Inf temp G	7.11	-48 -50 -18					7.34	42 -64 -10
	6.05	-52 -50 -8						
Mid temp G	4.99	-52 -34 -4						
	5.02	-54 -6 -22						
	4.60	-52 -16 -14						
Fusiform G					7.21	-34 -46 -16		
Inf front G	7.41	-46 14 22	5.21	42 22 -16	5.45	-44 8 26		
	7.39	-48 30 14			5.28	-46 24 20		
	6.64	-44 26 -10						
Suppl motor	6.82	-4 18 54			5.63	-4 16 54		
Sup front G	4.58	-10 50 48						
	4.44	-18 42 52						
Lingual G	7.57	-6 -56 0						
Inf occipit G					>8	-42 -74 -8	>8	40 -86 -2
Mid occipit G					7.72	-36 -88 -4		
Sup occipit G	4.55	-24 -80 34	4.45	12 -100 18				
Cerebellum			4.53	28 -72 -24			6.93	30 -42 -26
Thalamus	6.65	-2 -12 -2	4.47	20 -18 18				
Ant Cingulate	4.43	-4 30 30						

Note: Front = frontal; G = gyrus inf = inferior; L-TLE = left temporal lobe epilepsy; mid = middle; occipit = occipital; R-TLE = right temporal lobe epilepsy; suppl motor = supplementary motor region; temp = temporal.

Supplementary Table 2. Coordinates and Z-scores of correlations of auditory and picture naming activations with naming scores across all subjects (controls, patients with L-TLE and patients with R-TLE shown) at  $p < 0.001$  uncorrected, extent threshold 10 voxels, corrected for multiple comparisons using a small volume correction within a sphere of 8 mm radius (FWE;  $p < 0.05$ ) at the location of activation maximum in the temporal and frontal lobe regions of interest.

	Correlations with naming scores							
	Auditory naming				Picture naming			
	Left Hemisphere		Right Hemisphere		Left Hemisphere		Right Hemisphere	
	Z	Coordinates	Z	Coordinates	Z	Coordinates	Z	Coordinates
Inf temp G	4.41	-48 -58 -16						
Thalamus	3.56	-4 -22 -2						
Suppl motor	3.36	-6 20 60						
Fusiform G					3.23	-44 -46 -16		

Note: G = gyrus, inf = inferior; L-TLE = left temporal lobe epilepsy; occipit = occipital; R-TLE = right temporal lobe epilepsy; temp = temporal.

Supplementary Table 3. Coordinates and Z-scores of whole-brain functional connectivity (psychophysiological interaction; PPI) of the left temporal lobe seed region during auditory and picture naming across all subjects (controls, patients with L-TLE and patients with R-TLE) shown corrected for multiple comparisons (FWE,  $p < 0.05$ ).

	PPI Auditory naming				PPI Picture naming			
	Left Hemisphere		Right Hemisphere		Left Hemisphere		Right Hemisphere	
	Z	Coordinates	Z	Coordinates	Z	Coordinates	Z	Coordinates
Sup temp G (post)			5.91	64 -18 0				
Sup temp G (ant)	5.69	-64 -20 0			4.90	-62 -14 6		
	4.82	-44 -20 -8			4.75	-60 -6 4		
Sup temp G (pole)			5.65	58 4 -6	4.72	-56 10 -6		
Mid temp G (post)	5.97	-62 -34 4	5.98	66 -26 -2				
Mid temp G (ant)	5.12	-58 -4 -8						
Inf temp G (ant)	4.48	-48 -20 -20						
Fusiform G(post)					6.75	-26 -86 -18		
Trans temp G (Heschl)	4.43	-34 -26 8						
Precentral G	5.28	-54 -10 52	4.71	50 -10 54	7.48	-50 -6 30	4.74	46 -8 30
	5.07	-58 -6 42	4.46	48 -8 34	4.83	-48 -2 56		
	4.94	-46 -12 34	4.70	20 -36 62				
Suppl mot	4.80	-6 4 64						
Inf occipit G							7.59	34 -82 -14
Cerebellum	5.48	-16 -62 -14	4.91	16-74 -18			7.39	26 -72 -18
			4.48	24 -62 -28				

Note: G = gyrus inf = inferior; L-TLE = left temporal lobe epilepsy; mid = middle; occipit = occipital; PPI = psychophysiological interaction; R-TLE = right temporal lobe epilepsy; sup = superior; suppl motor = supplementary motor region; temp = temporal.

Supplementary Table 4. Correlation of functional connectivity (psychophysiological interaction; PPI) of the left temporal lobe seed region during auditory and picture naming with clinical naming scores across all subjects (controls, patients with L-TLE and patients with R-TLE), shown at  $p < 0.001$  uncorrected, extent threshold 10 voxels, corrected for multiple comparisons using a small volume correction within a sphere of 8 mm radius (FWE;  $p < 0.05$ ) at the location of connectivity value maximum in the temporal and frontal lobe regions of interest.

	Correlations of PPI activations with naming scores							
	PPI Auditory naming				PPI Picture naming			
	Left Hemisphere		Right Hemisphere		Left Hemisphere		Right Hemisphere	
	Z	Coordinates	Z	Coordinates	Z	Coordinates	Z	Coordinates
Orbitofront G	3.13	-22 38 -6						
Precentral G					3.61	-50 -4 26		

Note: G = gyrus; L-TLE = left temporal lobe epilepsy; PPI = psychophysiological interaction, R-TLE = right temporal lobe epilepsy.

Supplementary Table 5. Coordinates and Z-scores of positive correlations of functional connectivity (psychophysiological interaction; PPI) of the left temporal lobe seed region during auditory and picture naming with age of onset of epilepsy and negative correlations with disease duration in patients with L-TLE and patients with R-TLE, shown at  $p < 0.001$  uncorrected, extent threshold 10 voxels.

Correlations of PPI activations with disease characteristics					
Group	Location	PPI Auditory naming: Age of Onset		PPI Picture naming: Age of Onset	
		Z	Coordinates	Z	Coordinates
<b>L-TLE</b>	Left mid temp G	3.21	-56 -2 -24		
	Left inf front G	3.89	-38 14 12		
	Left precentral G			3.17	-52 -4 38
<b>L-TLE&gt;R-TLE</b>	Left mid temp G	3.32	-56 -2 -28		
	Left precentral G			3.32	-60 6 26
Group	Location	PPI Auditory naming: Disease duration		PPI Picture naming: Disease duration	
		Z	Coordinates	Z	Coordinates
<b>L-TLE</b>	Left sup temp G	3.12	-64 -30 18	3.45	-44 18 -34
	Left precentral G	3.43	-48 -2 34	3.82	-54 4 40
<b>L-TLE&gt;R-TLE</b>	Left precentral G	3.17	-50 8 48		

Note: G = gyrus; mid = middle; L-TLE = left temporal lobe epilepsy;  
PPI = psychophysiological interaction; R-TLE = right temporal lobe epilepsy sup = superior;  
temp = temporal.