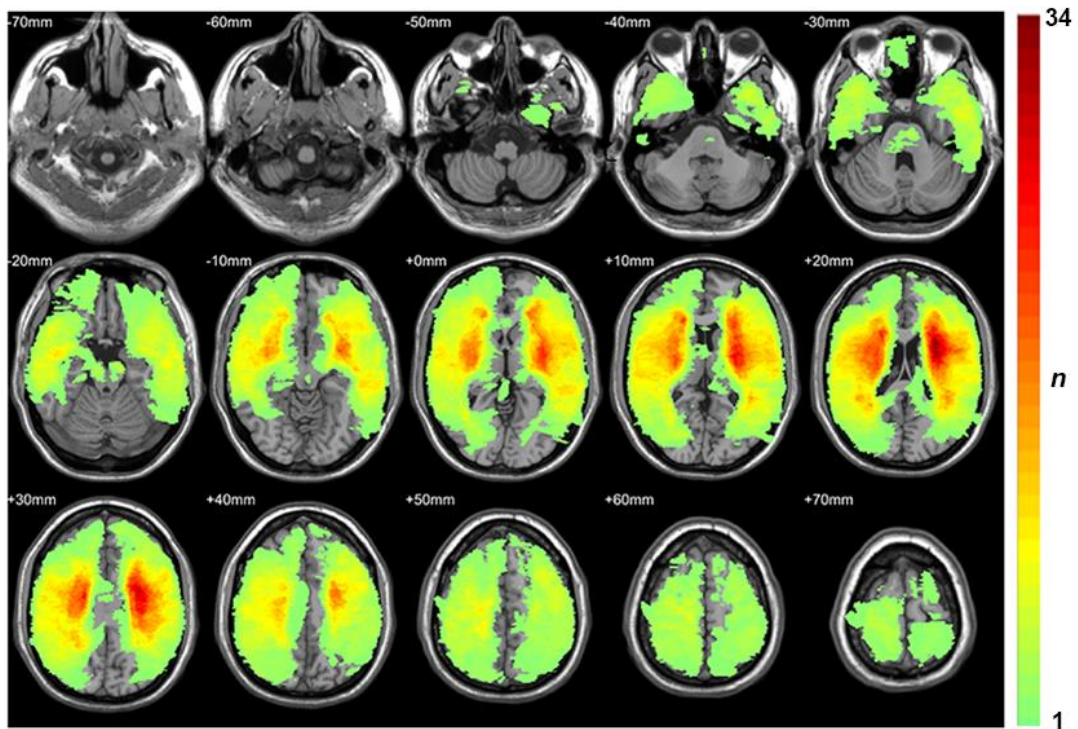


iScience, Volume 24

Supplemental information

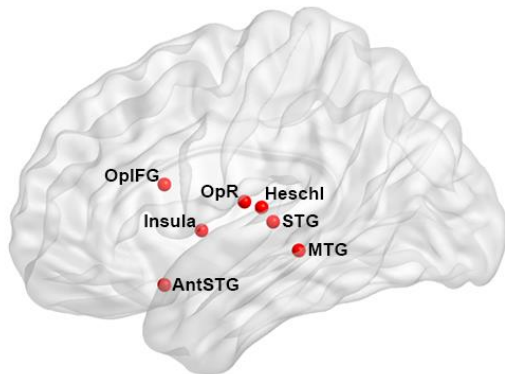
**White matter network of oral word
reading identified by network-based
lesion-symptom mapping**

Mingyang Li, Luping Song, Yumei Zhang, and Zaizhu Han

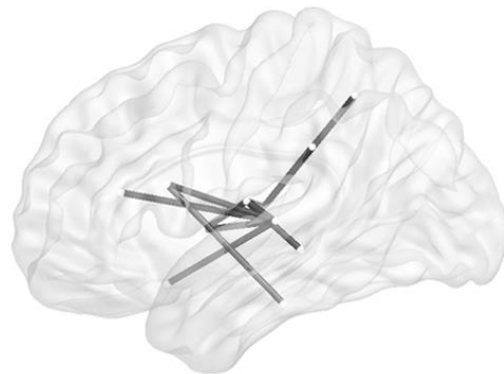


Supplemental Figure 1. Lesion overlap map of the 84 patients (the n value of each voxel denotes the number of patients with lesion). Related to Figure 2

(A) Reading-relevant regions obtained by the RLSM

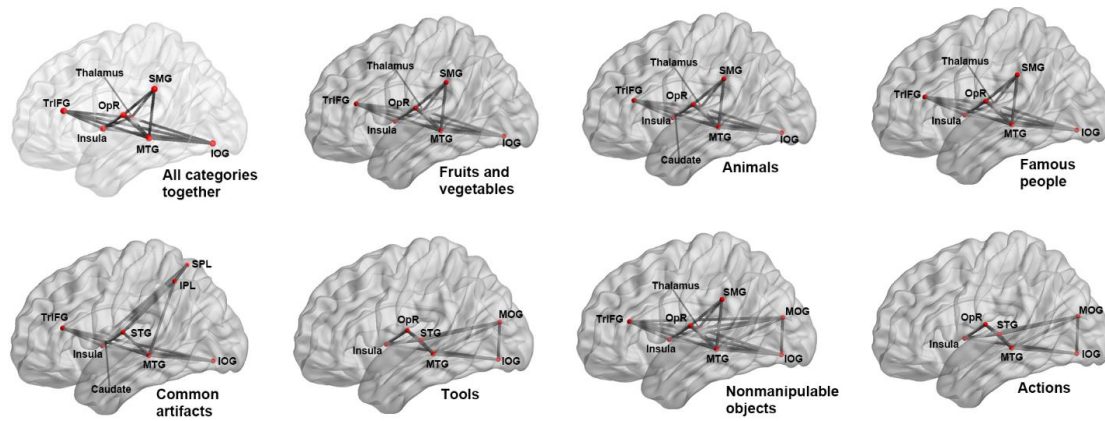


(B) Reading-relevant tracts obtained by the TLSM



Supplemental Figure 2. Reading subnetworks obtained by different methods. Related to STAR Methods

Abbreviations: MTG: middle temporal gyrus; STG: superior temporal gyrus; OpR: rolandic operculum; AntSTG: anterior superior temporal gyrus; OpIFG: operculum inferior frontal gyrus; RLSM: region-based lesion-symptom mapping; TLSM: tract-based lesion-symptom mapping.



Supplemental Figure 3. Reading networks identified by network-based lesion symptom mapping (NLSM) for collapsing all categories together and each individual category. Related to Figure 3

Abbreviations: IOG: inferior occipital gyrus; MTG: middle temporal gyrus; SMG: supramarginal gyrus; TriFG: triangular inferior frontal gyrus; MOG: middle occipital gyrus; OpR: Rolandic operculum; STG: superior temporal gyrus; IPL: inferior parietal lobe; SPL: superior parietal lobe).

Supplemental Table 1. Results of RLSM and TLSM. Related to STAR Methods

Regions or tracts having significant effects	<i>r</i> value of lesion-behavior correlation	Corrected <i>p</i> value
Region-based lesion-symptom mapping (RLSM)		
Left insula	-0.58	7.84×10 ⁻⁷
Left MTG	-0.56	2.21×10 ⁻⁶
Left STG	-0.55	4.70×10 ⁻⁶
Left Heschl	-0.52	4.01×10 ⁻⁵
Left OpR	-0.51	5.62×10 ⁻⁵
Left OpIFG	-0.42	5.74×10 ⁻³
Left antSTG	-0.42	6.34×10 ⁻³
Tract-based lesion-symptom mapping (TLSM)		
Left TrIFG - Left STG	0.58	7.73×10 ⁻⁶
Left insula - Left STG	0.56	2.18×10 ⁻⁵
Left OpR - Left MTG	0.55	7.41×10 ⁻⁵
Left STG - Left AntSTG	0.55	7.91×10 ⁻⁵
Left OpR- Left STG	0.53	1.61×10 ⁻⁴
Left OpIFG - Left ITG	0.53	2.57×10 ⁻⁴
Left SMG - Left thalamus	0.52	3.59×10 ⁻⁴
Left OpIFG - Left STG	0.51	7.20×10 ⁻⁴
Left OpR - Left thalamus	0.49	1.73×10 ⁻³
Left IPL - Left thalamus	0.47	7.97×10 ⁻³
Left OpR - Left putamen	0.46	9.61×10 ⁻³

Note: The full name of each region is provided in Table S4.

Supplemental Table 2. The regions in reading networks identified by NLSM for collapsing all categories together and each individual category (“√” demotes that the region appeared in the reading network). Related to Figure 3

	Left IOG	Left MTG	Left SMG	Left Thalamus	Left OpR	Left Insula	Left TrIFG	Left MOG	Left STG	Left Caudate	Left SPL	Left IPL	Behavior-network correlation coefficient
All categories together	√	√	√	√	√	√	√						0.74
Fruits and vegetables	√	√	√	√	√	√	√						0.74
Animal	√	√	√	√	√	√	√			√			0.70
Famous people	√	√	√	√	√	√	√						0.69
Common artifacts	√	√			√	√	√			√	√	√	0.72
Tools	√	√			√	√		√	√				0.70
Nonmanipulable objects	√	√	√	√	√	√	√	√					0.71
Actions	√	√			√	√		√	√				0.76

Abbreviations: IOG: inferior occipital gyrus; MTG: middle temporal gyrus; SMG: supramarginal gyrus; TrIFG: triangular inferior frontal gyrus; MOG: middle occipital gyrus; OpR: Rolandic operculum; STG: superior temporal gyrus; IPL: inferior parietal lobe; SPL: superior parietal lobe).