

Glossary of Brain Imaging/Neurophysiological Methods & Aphasiology

Agrammatism: common symptom of nonfluent aphasia involving the systematic reduction of structural complexity, telegraphic speech, and difficulties with verbs and functional words and morphemes

Aphasia: language disorder due to stroke, neurodegeneration, or other brain injury

ECoG: *electrocorticography*. Neurophysiological technique where electrodes are placed directly on the brain, typically during surgery for epilepsy. Very high temporal and spatial precision, but often limited to small part of one hemisphere

EEG: *electroencephalography*. Neurophysiological technique that measures fast changes in electric waves from neural activity. Very high temporal precision, moderate spatial precision

Fluency: degree to which speech production is fluid, not effortful, coherent, and error-free

fMRI: *functional magnetic resonance imaging*. Neuroimaging technique that measures slow changes in blood flow in the brain related to neural activity. Very high spatial precision, slow timing information

MEG: *magnetoencephalography*. Neurophysiological technique that measures fast changes in magnetic waves reflecting electrical neural activity. Very high temporal precision, moderate spatial precision

Noncanonical sentences: sentences with nonstandard word order such as passives (e.g. the boy was kicked by the girl) that are often difficult for people with aphasia to comprehend

Paragrammatism: common symptom of fluent aphasia involving grammatical errors not attributable to overall reduction and/or simplification

PET: *positron emission tomography*. Neuroimaging technique that measures very slow energy consumption in the brain related to neural activity. High spatial precision, very slow timing information

(V)LSM: *(Voxel-based) Lesion Symptom Mapping*. Statistical technique that associates brain damage with behavioral measures. Good spatial precision, no timing information, but allows for causal inferences about brain-function relationships

Glossary of Neuroanatomical Terms

AG/TPJ: angular gyrus/temporo-parietal junction (part of inferior parietal lobule)

Broca's area: IFGoper and IFGtri combined, some scientists include IFGorb

FG: fusiform gyrus

Fissure: a particularly large/deep sulcus

Gyrus: a fold or ridge of the cortex

IFG: inferior frontal gyrus

IFGoper: pars opercularis

IFGtri: pars triangularis

IFGorb: pars orbitalis

ITG: inferior temporal gyrus

ITS: inferior temporal sulcus

MFG: middle frontal gyrus

MTG: middle temporal gyrus

MT/V5: middle temporal visual area

pSTS-bio: posterior superior temporal sulcus, biological motion area

SMG: supramarginal gyrus (part of inferior parietal lobule)

Sulcus: a groove or furrow of the cortex

STG: superior temporal gyrus

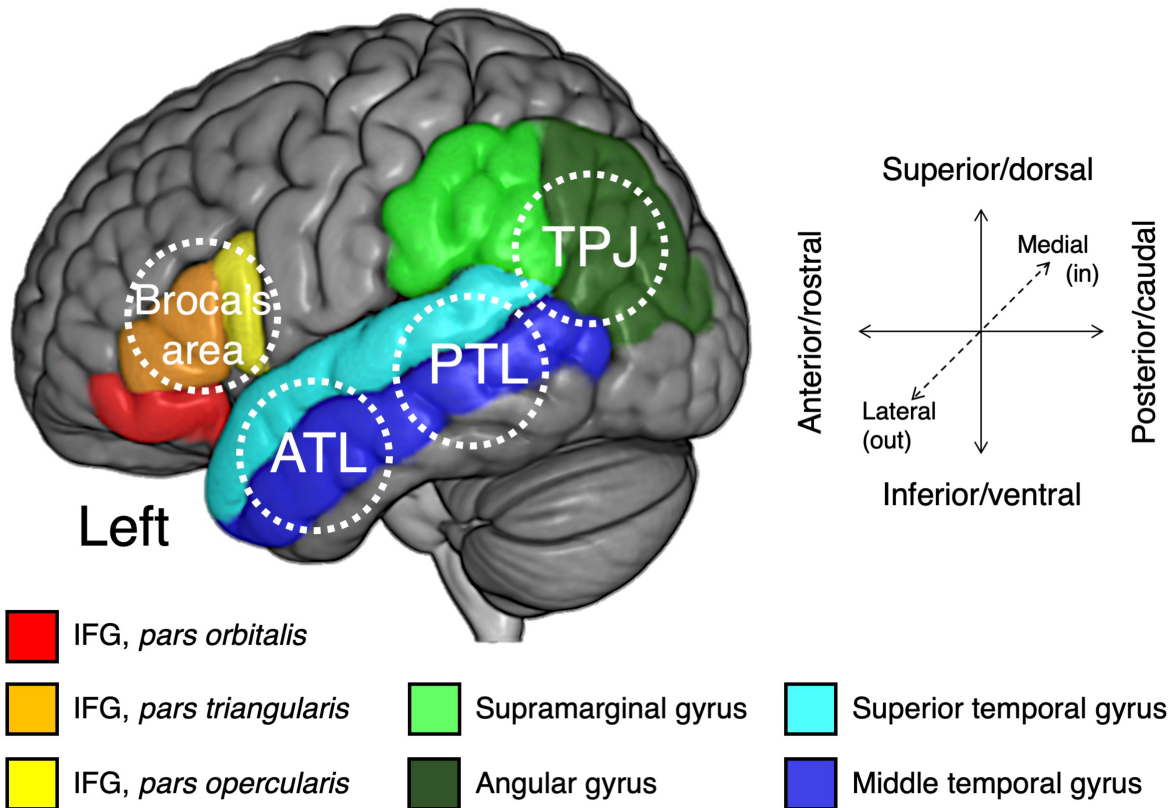
STS: superior temporal sulcus. aSTS = anterior, pSTS = posterior

SFG: superior frontal gyrus

TP: temporal pole

Wernicke's area: somewhat obsolete anatomical term, posterior superior temporal and/or inferior parietal lobe

Language & Brain Navigation Map & Glossary



Adapted from Matchin, W. (2021 – *Cambridge Handbook of Experimental Syntax*, Goodall, G., Editor)