



**“NOUS PARLON AVEC
L’HEMISPHERE GAUCHE”**

fMRI: Language




**“NOUS PARLON AVEC
L’HEMISPHERE GAUCHE”**

Paul Broca 1865.



What's next

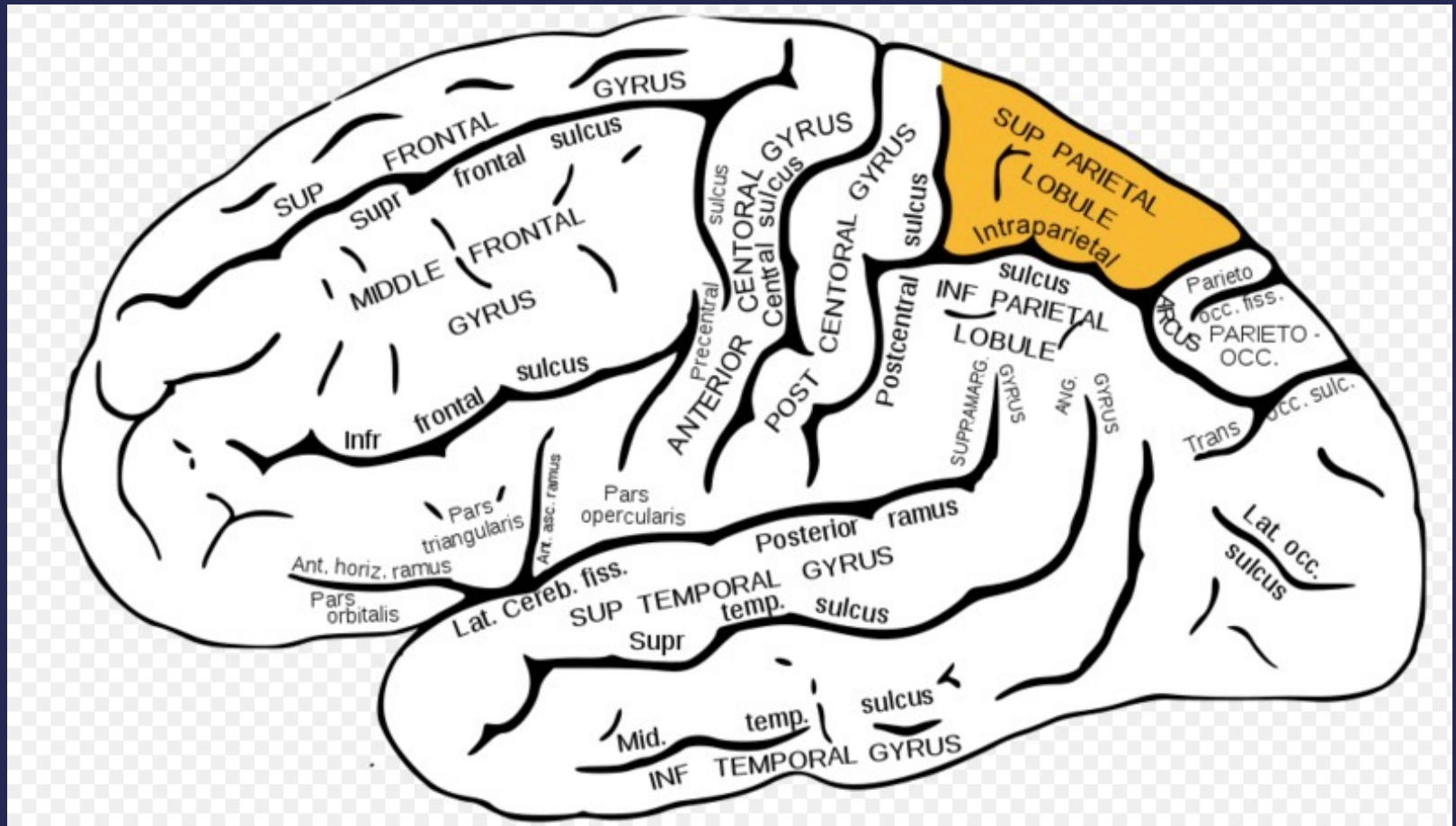
- Resting fMRI - connectivity
 - Intra-operative mapping
 - Tractography
 - Cases
- 



Plan


- Review - Motor
- Identify – Language

Motor





Questions

- Name three language areas
 - Name three language tracts
- 

Language

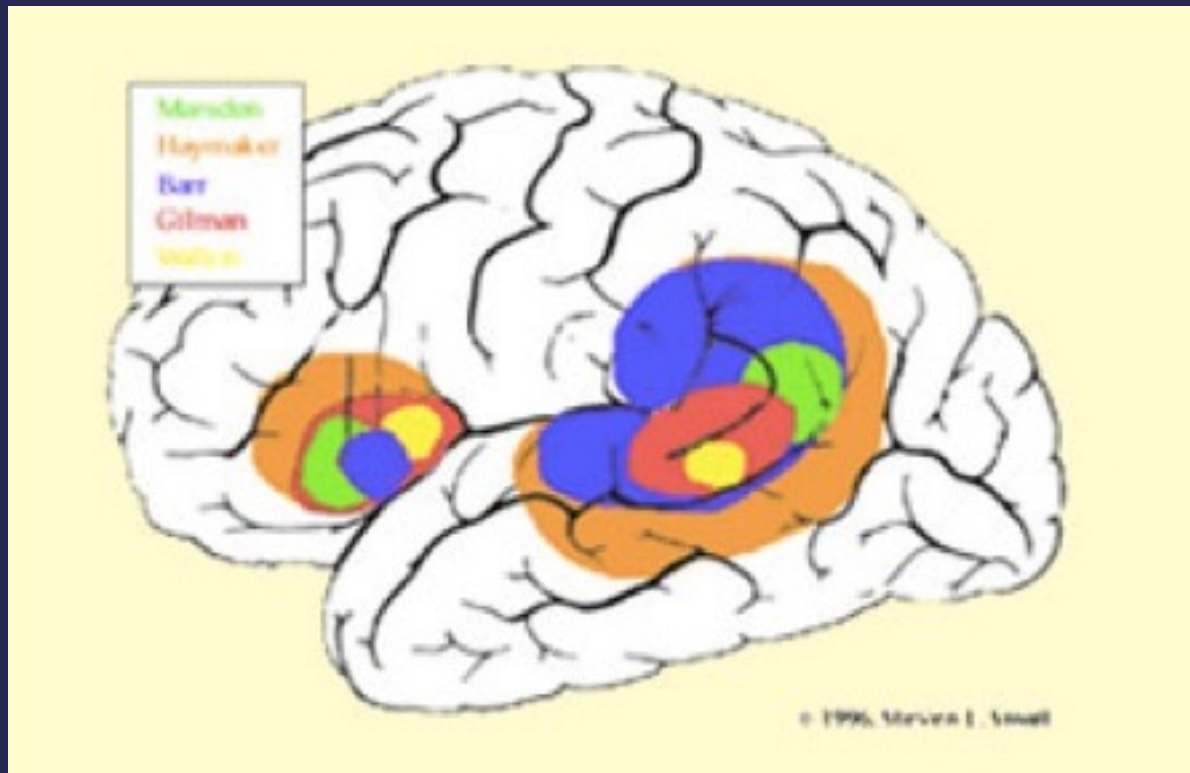




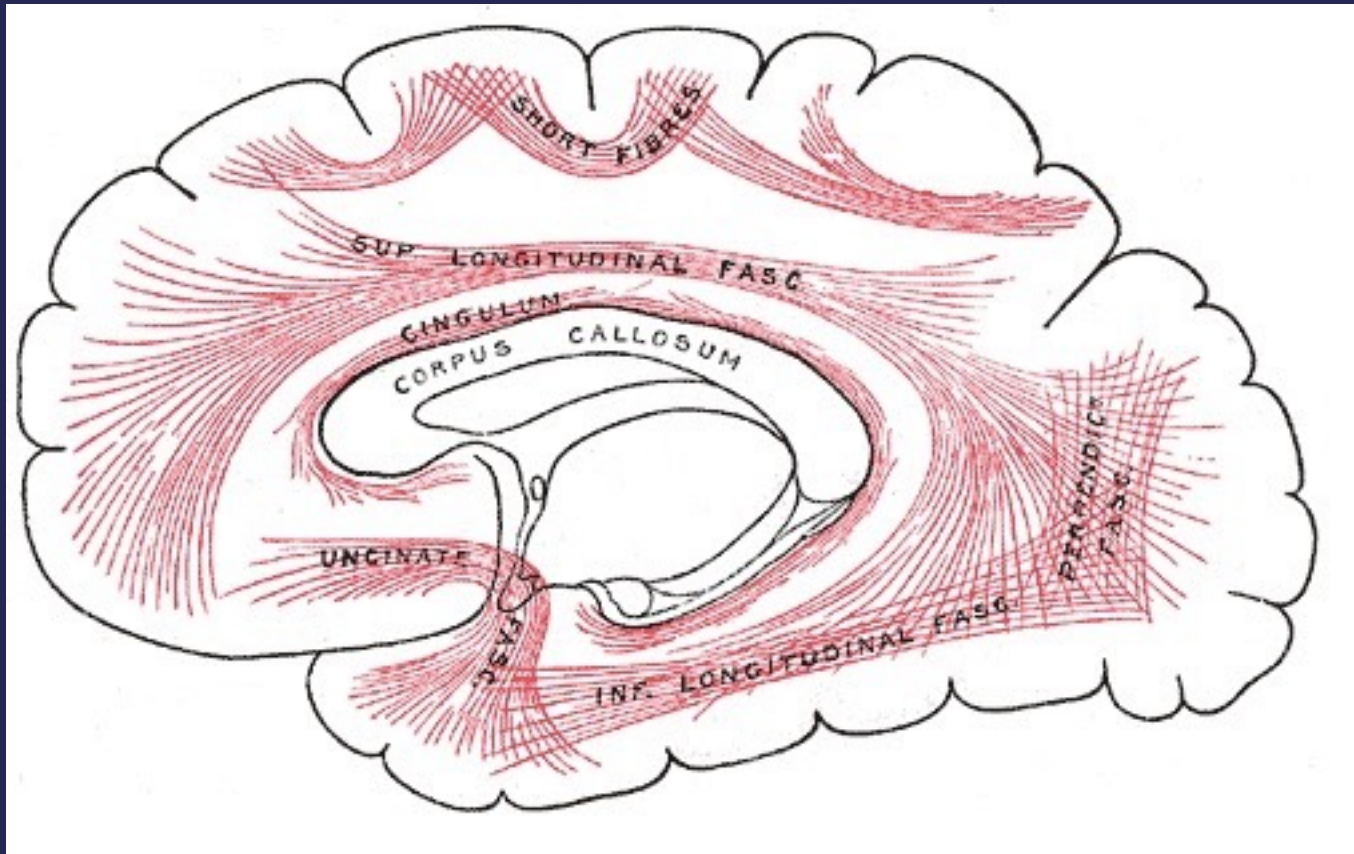
Language

- Broca and Wernicke
- Arcuate fasciculus
 - ▣ Aka Superior longitudinal fasciculus
- Inferior parietal lobule

Wernicke's



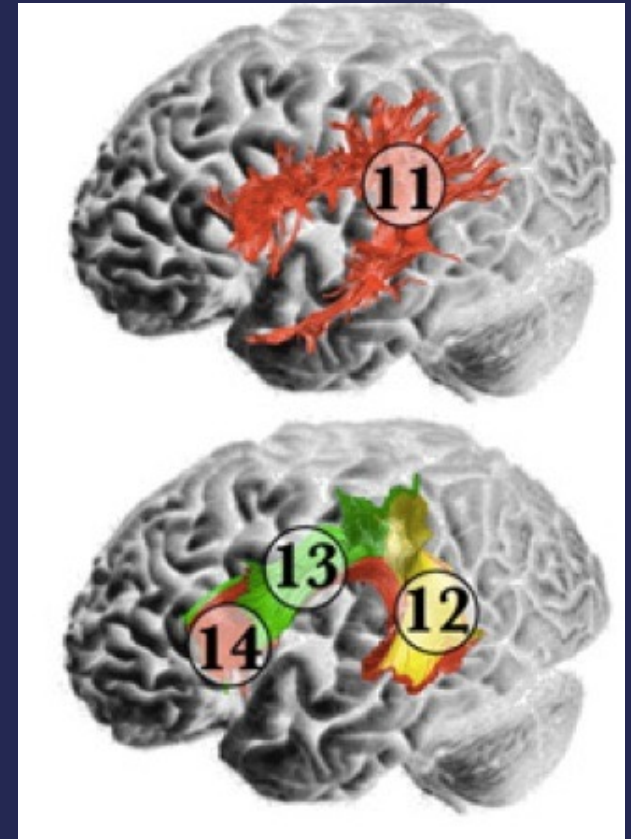
tracts



What is the deficit with disrupting arcuate fasciculus?

“Geschwind’s territory”

- Inferior Parietal lobule
 - ▣ Supramarginal gyrus
 - ▣ Angular gyrus
- Anterior & posterior tracts
- Integrate emotions and sense



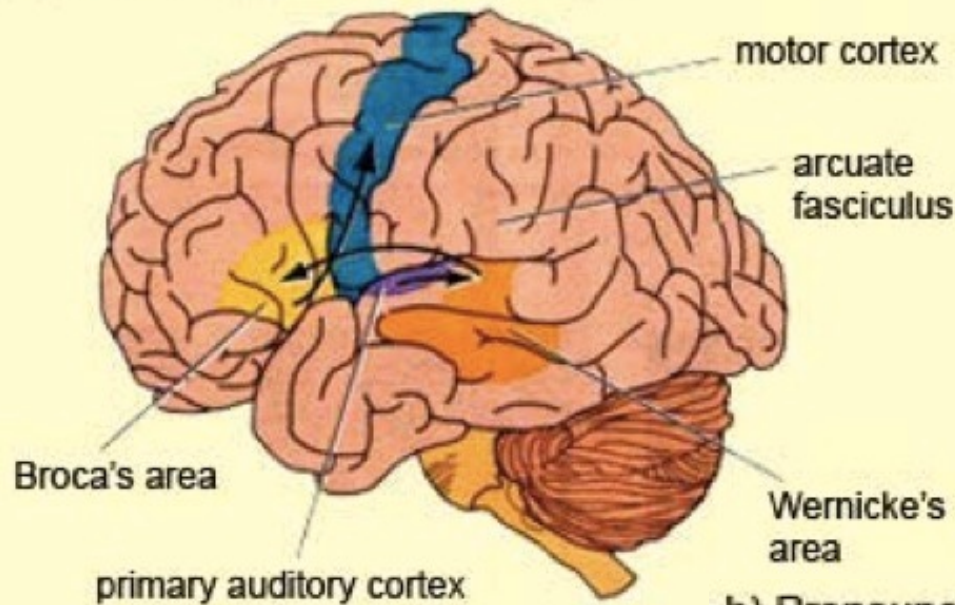
Heschl's gyrus

Auditory cortex

- Superior temporal gyrus

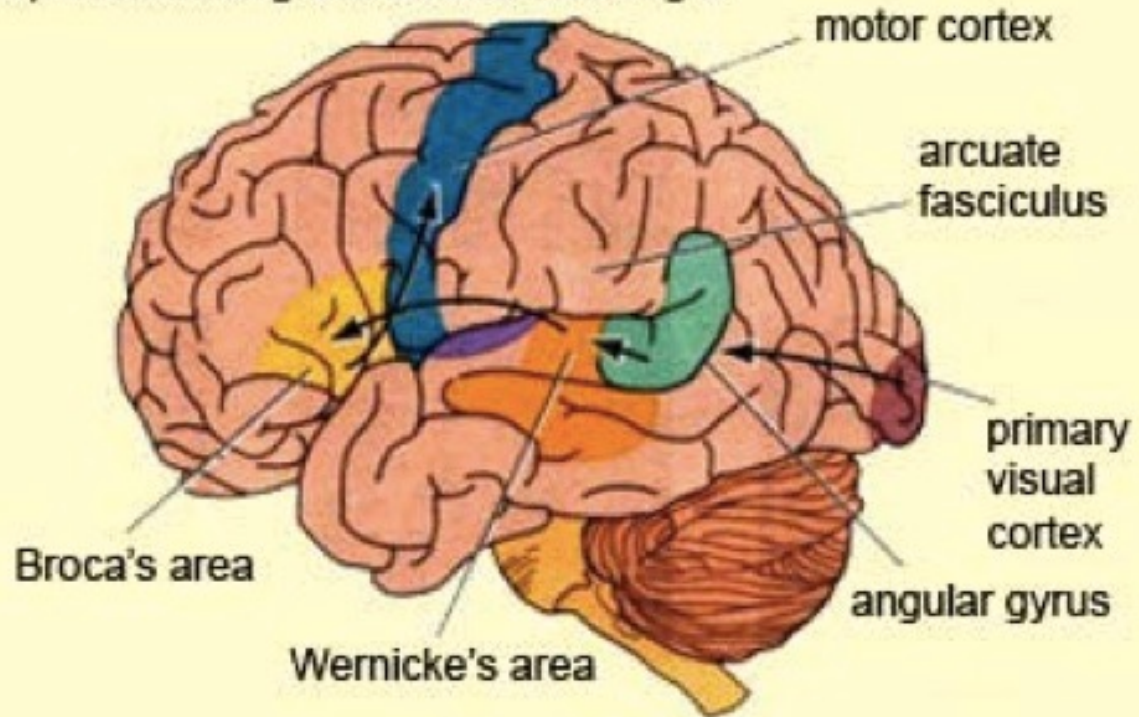


(a) Pronouncing a word after hearing it



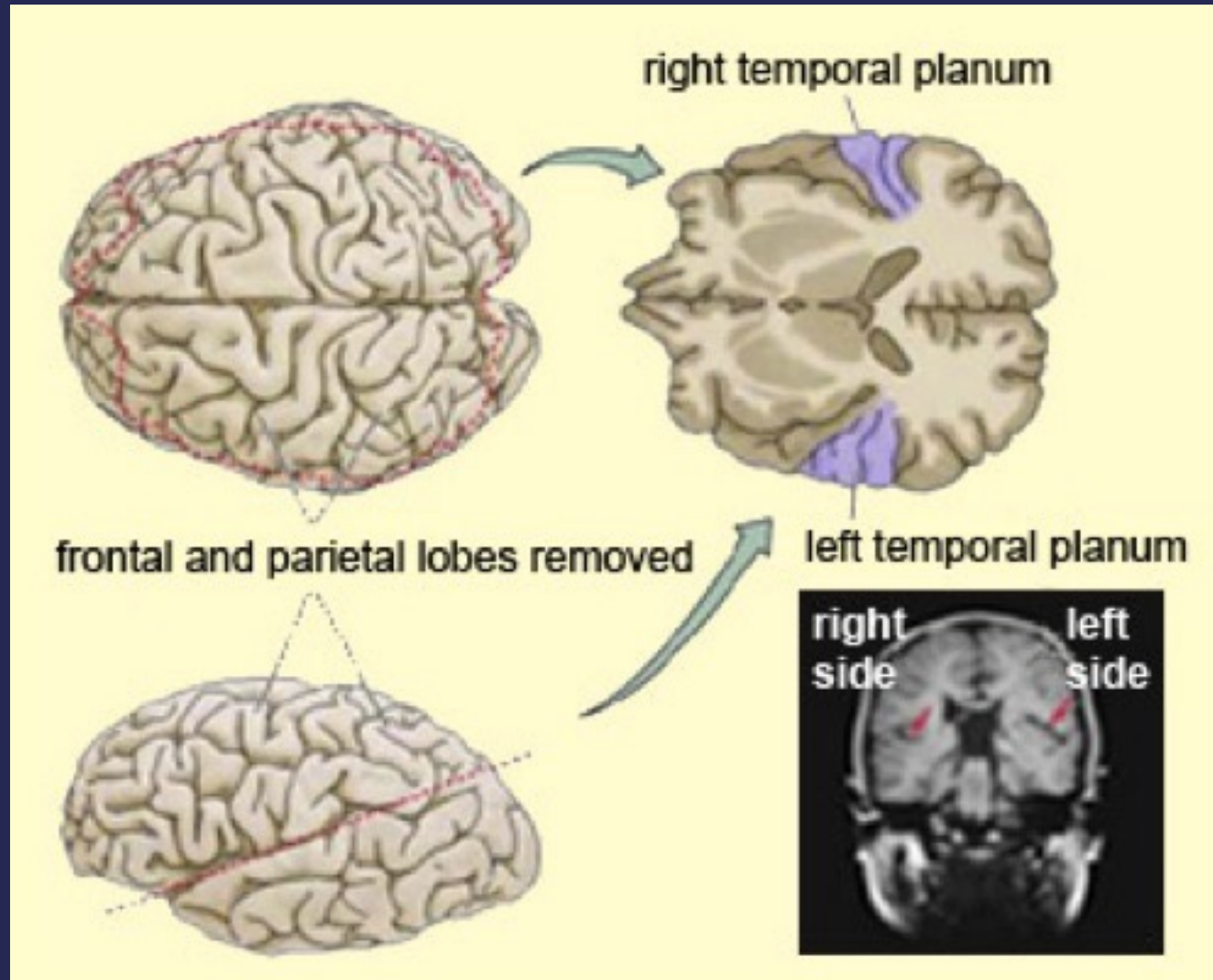
Multi-sensory

b) Pronouncing a word after reading it

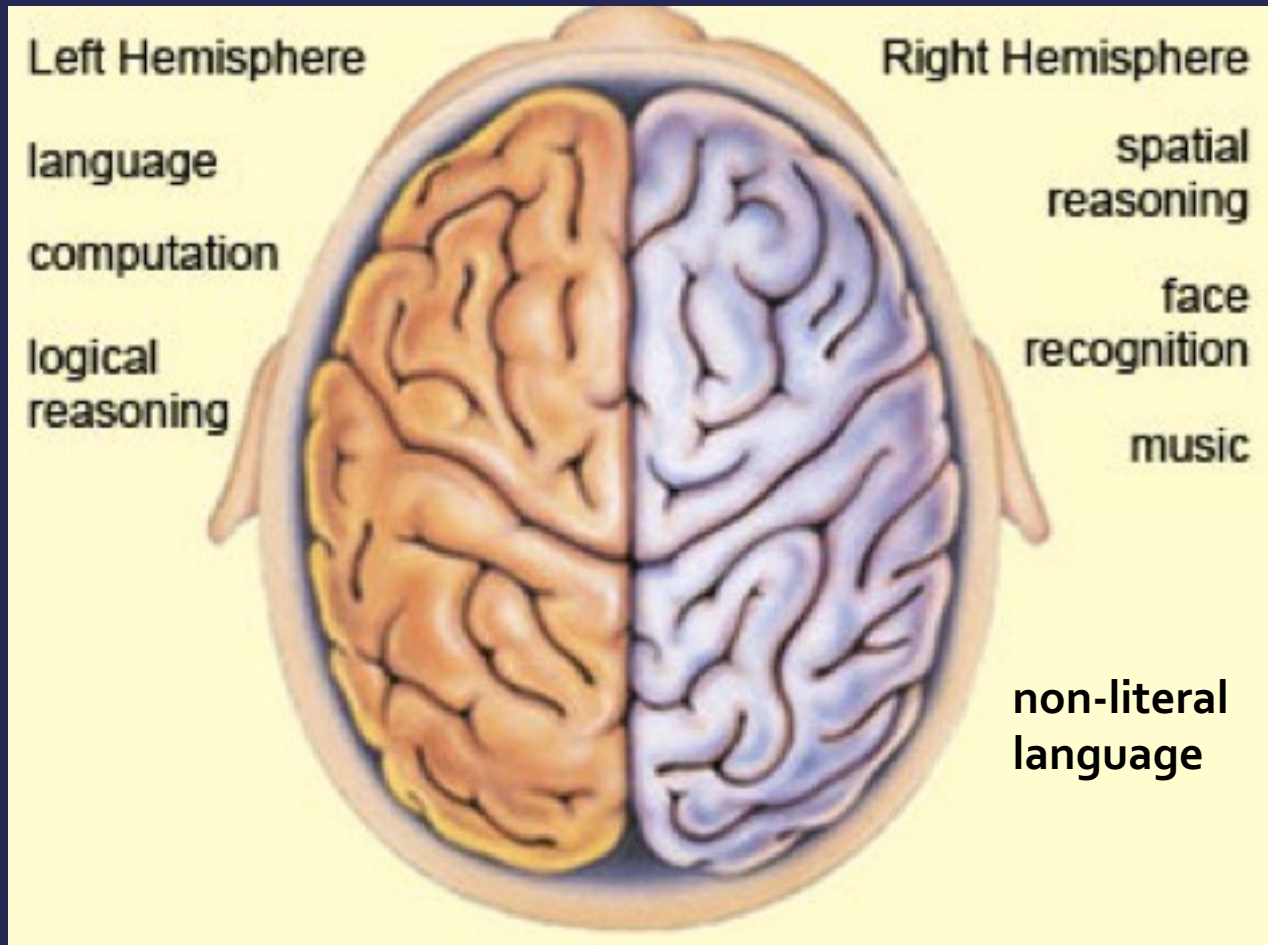


Memory
Motor
Auditory
Visual

Laterality



Laterality



93% Left brain for language

Right Hand

- Population 90%
- Left language 95%

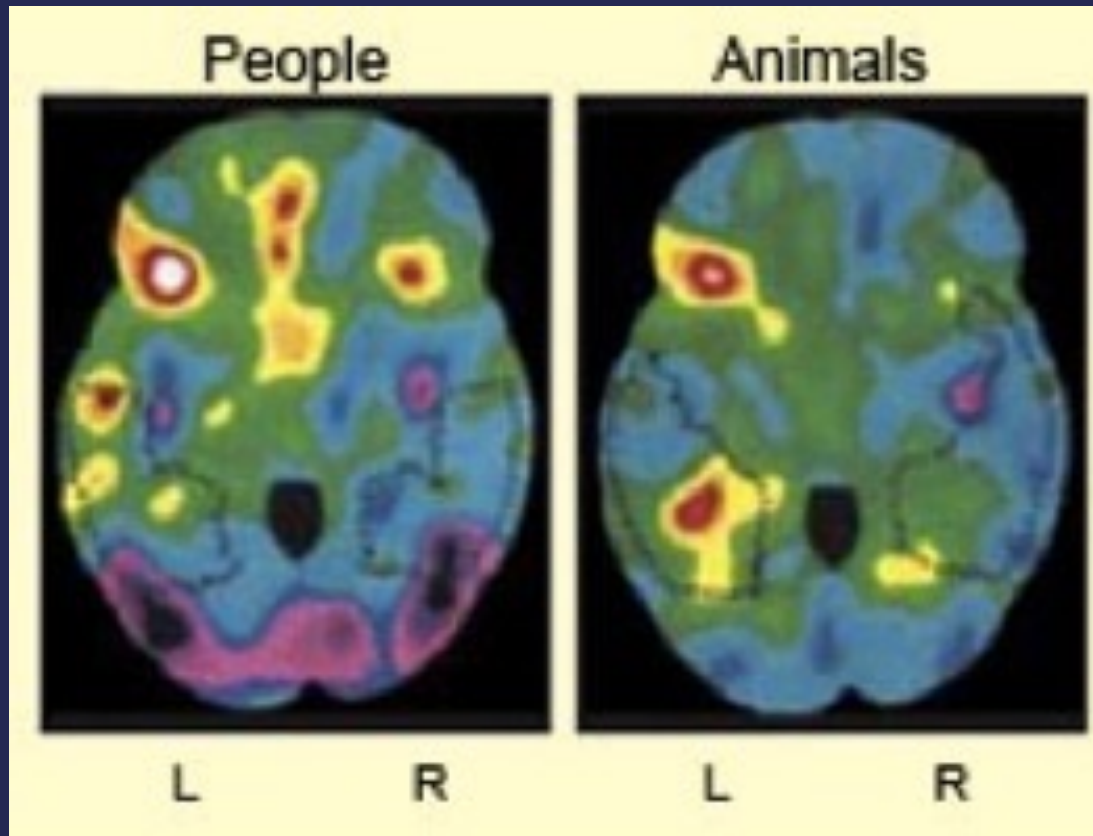
Left Hand

- Population 10%
- Left Language 70%
- Right Language 15%
- Bilateral 15%

Famous people

Temporal pole

Mid inferior
temporal lobe

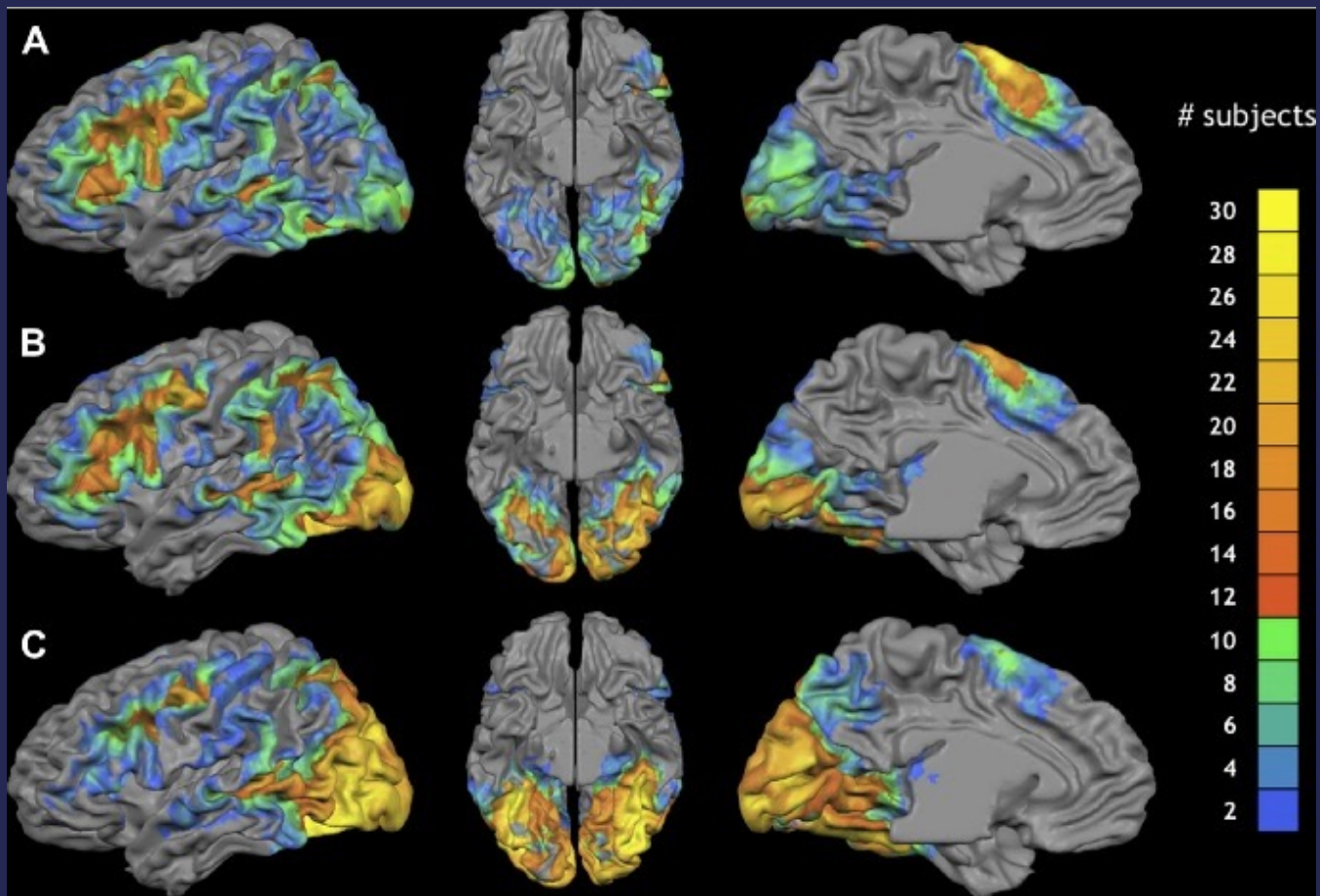


Show language fMRI

- Verb Generation
 - Best
- Sentence Comprehension
 - Less Broca
- Word Completion
 - Less Inferior parietal lobule

Language task

Word



Verb

Sentence



Language and memory

- Is language lateralization on fmri better WADA for memory?



END



Famous people vs animals

Naming

- Kangaroo
 - “That’s an animal that hops on its hindlegs. From downunder. It carries its young in its pouch.”
- George Burns
 - ‘He’s a famous comedian. He lived to be nearly one hundred I think, but he’s dead now. He always smoked big cigars. He also played God in a couple of movies.”

Recognition

- Fox
 - “That’s a cat.” “Sure. You might keep it as a pet. It likes to chase mice.”
- Susan Sarandon
 - “Michael Jackson. He is a great pop singer. Now he’s in trouble with the law.



Broca

- Anterior Broca
 - Posterior Broca
- 



Further laterality

- Famous people – temporal pole
- Animal -