CNS-Speech

SPEECH

- Ability to Express in the form of Language,
- Reading and Writing –Related to Speech,

Two types of Speech

1. Sensory Speech
2. Motor Speech

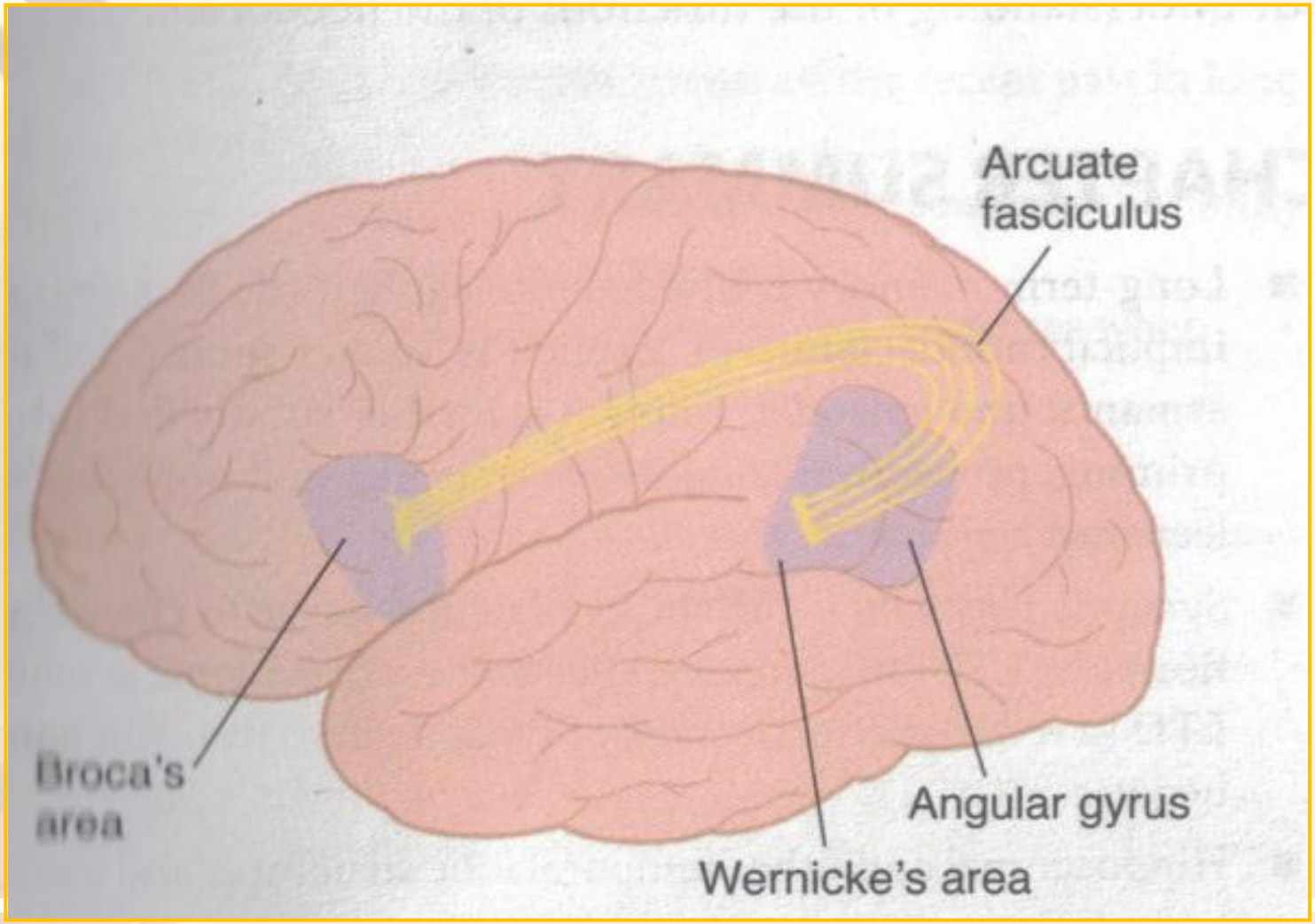
SENSORY SPEECH

- Ability to understand written & Spoken Language
- Centre-Wernickes Area-Posterior end of Superior Temporal Gyrus,
- Brodmanns Area -22
- Interprets the Meaning of written & Spoken words

SENSORY SPEECH

- Well developed on 'Dominant Hemisphere'
- Spoken Speech → Stimulate Auditory Receptors → Auditory Pathway →Cortex →Processed in Wernickes Area,
- Written Speech →Visual Pathway →Cortex →Processed in Wernickes Area

Speech Areas



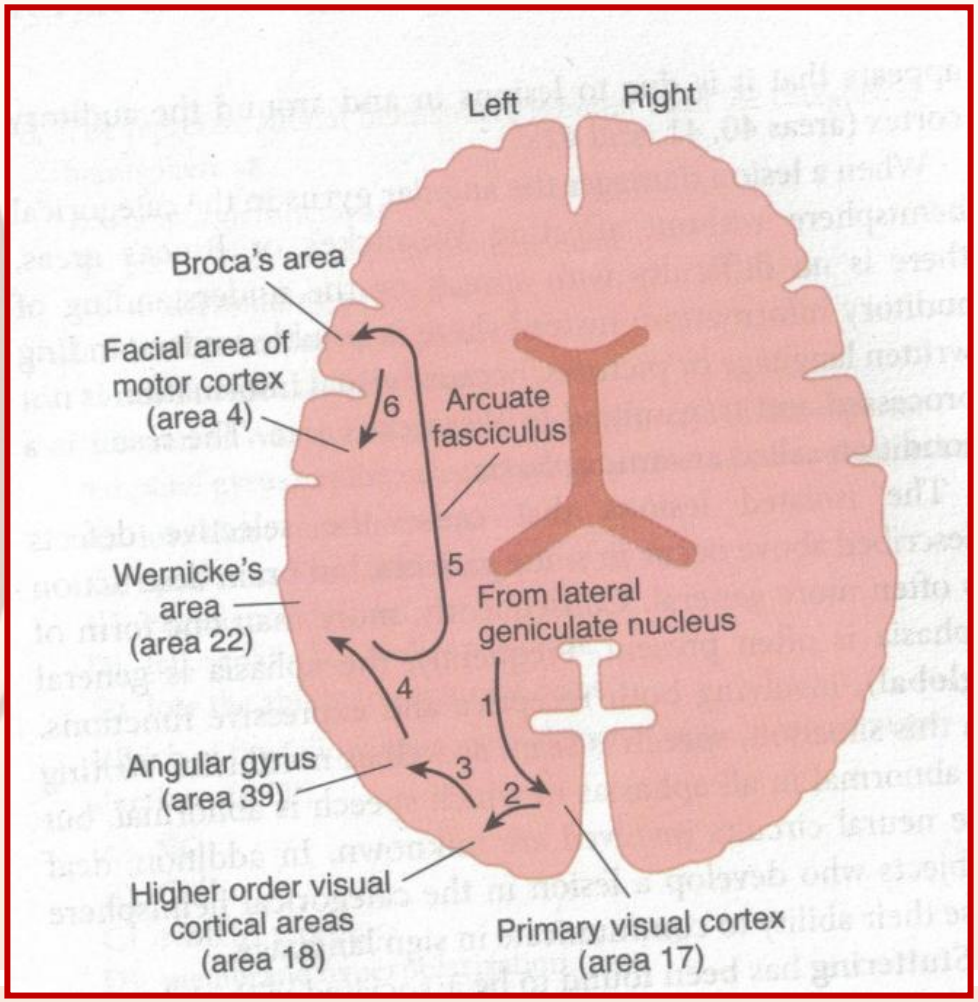
MOTOR SPEECH

- Ability to speak or write
- Motor Speech Centre-Brocas Area-44-in frontal lobe close to lateral sulcus
- Controls muscles of Speech,
- Planning & Programming of Speech occurs in Brocas area,

MOTOR SPEECH

- Brocas Area → Information to Primary Motor Cortex →Muscles of mouth, Pharynx, Larynx → Coordinated action of speech Muscles
- Brocas Area →Primary motor cortex →muscles of respiration to regulate flow of air,
- Tract connecting Wernickes & Brocas area-Arcuate Fasciculus
- In 97% of people, Speech areas located in left Cerebral Hemisphere.

Path taken by Impulses when a subject names a visual objects



SPEECH DISORDERS

- Defect in Speech due to lesions in speech centres.
- Loss of Production **or**

  Comprehension of Spoken and/or Written Language

Sensory aphasia(Fluent Aphasisa)

- Due to lesions in Wernickes area or Arcuate Fasciculus,
- Inability to understand what is heard or read,
- Persons can't communicate with others
- Person can say something without meaning.

SPEECH DISORDERS

Motor aphasia(Non-Fluent Aphasisa)

- Brocas area-Lesion
- Person can't speak or write or both
- Is able to understand spoken and written speech,

Global aphasia

- Lesion of both sensory and motor speech centres

Anarthria

- Defective speech due to lesions of Pyramidal, Extrapyramidal tracts

Dysarthria

- Deffective speech due to cerebellar or Basal ganglia lesions

Complementary Specialisation of hemispheres versus Cerebral dominance

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Categorical Hemisphere

- For sequential, analytic process, language function.
- Lesion produce language disorders

Representational Hemisphere-Visuospatial Relations.

- Lesions-Astereognosis-inability to identify objects by feeling them.

Hemispheric specialisation is related to handedness.

- In 96% of Right handed persons-Left hemisphere-categorical hemisphere
- In 70% of left handed persons-Left hemisphere is categorical.