

Study of sounds of language

Unit 2, Class 7

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Section 1

Introduction



What are the levels of language?

- Phonetics



What are the levels of language?

- Phonetics
- Phonology



What are the levels of language?

- Phonetics
- Phonology
- Morphology
- Syntax
- Semantics
- Pragmatics



Study of speech sounds

- Articulatory phonetics: production of speech sounds
- Acoustic phonetics: physical properties (e.g., properties of sound waves)
- Auditory/perceptual phonetics: perception of speech sounds

Production → Transmission → Perception/interpretation



- How is aerodynamics converted into speech sound?

Organs of speech production

Consonants, vowels, diphthongs... ..



- What are the physical properties of speech sound?
- RMS amplitude of a waveform
- Fundamental frequency
- Time-frequency analysis
- Signal processing

and so on.



- Hearing speech sounds and speech perception
- Relationship between speech stimuli and listeners' perception
- Perception mediated by sensory processing and central & peripheral auditory system



Section 2

Speech production



Organs of speech production

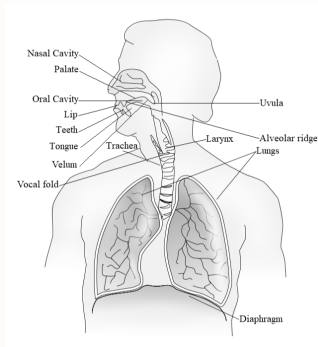


Figure 1: Speech production organs.



Organs of speech production: closer look

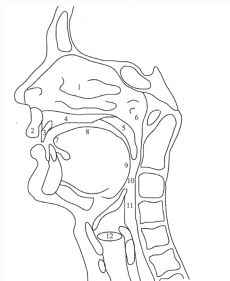
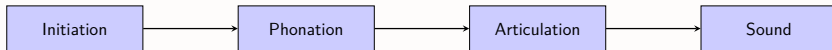


Figure 2: Principal organs of speech production.

- | | |
|-----------------------|---------------------|
| ① Nasal cavity | ⑦ Tongue tip (apex) |
| ② Lips | ⑧ Tongue blade |
| ③ Upper incisor teeth | ⑨ Tongue root |
| ④ Hard palate | ⑩ Oral pharynx |
| ⑤ Soft palate (velum) | ⑪ Laryngeal pharynx |
| ⑥ Nasal pharynx | ⑫ Vocal folds |



Process of speech production



- *Initiation*: Respiration – diaphragm, intercostals, trachea, and lungs
- *Phonation*: Vocalization – larynx, glottis, vocal folds
- *Articulation*: Tongue, lips, lower jaw, velum, teeth, alveolar ridge, hard palate, uvula

