English Consonants & Vowels

- Phonetics: a study on speech

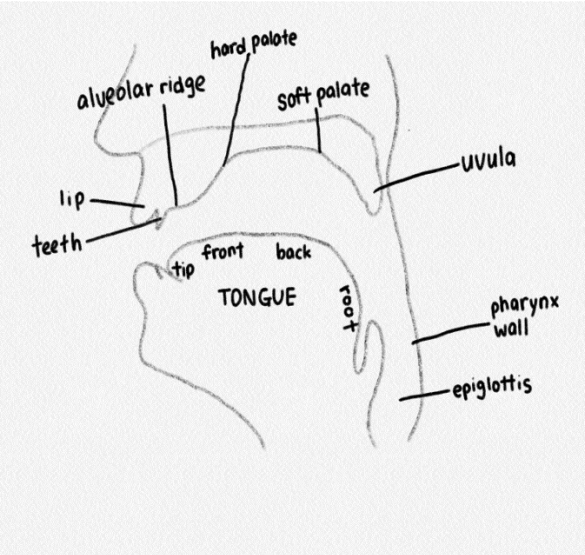
  articulatory phonetics (from mouth) → how to produce speech

  acoustic phonetics (through air) → how to transmit speech

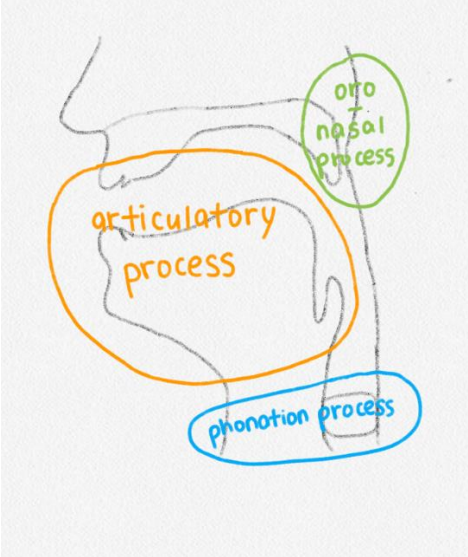
  auditory phonetics (to ear) → how to hear speech

Articulation

- Vocal tract:



- 5 speech organs = constrictors = articulators



Phonation Process in Larynx

- larynx = voicebox: voiced → can feel vibration

  ex. v, z, l, m, a, i

  voiceless → can't feel vibration

  ex. f, s, k, p, h

Oro-nasal Process in Velum

- nasal: when velum lowered

  ex. m, n, ng

Articulatory Process

- lips / tongue tip / tongue body

Control of Constrictors(Articulators)

- Each constrictor needs to be more specific in geometry

  constriction location(CL) / constriction degree(CD)

- Constriction location: Lips → bilabial / labiodental

  Tongue body → palatal / velar

  Tongue tip → dental / alveolar / retroflex / palate-alveolar

- Constriction degree: stops > fricatives > approximants > vowels

How to Produce English Consonants and Vowels

- constrictors / CD / CL / velum / larynx
- Phonemes: individual sounds that form words
  a combination of speech organs' actions

Acoustics

- Praat: duration > select(click and drag on waveform or spectrogram) →
  read a value (sec.) on the top → zoom in (if not visible)
  intensity > show intensity → click on green → read a value (dB) on the right
  pitch > show pitch → pitch setting – pitch range (65-200Hz male / 145-276Hz female)
  → click on blue → read a value (Hz) on the right
  formant > show formants → place the cursor on one of the trajectories
  → read a value (Hz) on the left
- the number of occurrences of a repeating event per second (Hz)
  repeating event = vibration of vocal folds / repeating > sine wave = pure wave