Phonetics

Places and Manner of articulation

Recap

- Airstream mechanism
- Stages of speech production
- Vocal folds
- Articulators
Lecture outline

- The concept of articulation
- Active and passive articulators
- The main places of articulation for consonant sounds

Classification of speech sounds

Speech Sounds

Consonants
- Made by a closure or narrowing in the vocal tract

Vowels
- Without closure or narrowing
Articulation of consonants

- Refers to the narrowing or constriction of the vocal tract
- The airstream is obstructed in the vocal tract
- Active articulators= bits that move (lips and tongue)
- Passive articulators= non-mobile parts (upper surface)

Articulation of consonants

- How we classify the production of consonants involves
  1. the place of articulation
  2. the manner of articulation
  3. whether the vocal cords are set to vibrate,
  4. whether it’s oral or nasal
  5. and whether it’s central or lateral
Articulation of consonants

- Depending on the area of contact, we have different consonants
- Labial articulation= using lips
- Coronal articulation= using tip or blade of the tongue
- Dorsal articulation= using back of the tongue
- E.g. *topic*

Place of articulation

- What parts of the vocal tract are used to produce a sound
- Name is based on passive articulator
- Types of obstruction required in the description of English consonants
**Places of articulation**

**Bilabial**

- Close both lips to produce [p], [b] or [m].
- Pie – buy – my
Labiodental consonants

Active articulator
upper teeth

Passive articulator
lower lip

f  fine  v  vine

Dental consonants

Passive
upper teeth

Active articulator
tip of tongue

θ  thin  ð  this
Alveolar consonants

Passive articulator
alveolar ridge

Active articulator
tip/blade of tongue

tie  die  Sue  z  zoo

night  l  light

Retroflex

- The tongue tip is curled up to touch the back of the alveolar ridge.
- May occur initially in words like 'rye, row, ray'
Post-alveolar / palato-alveolar consonants

ʃ  shoe, pressure  ʒ  pleasure
ʧ  cheap  ʤ  jeep  r  rack

Palato-alveolar

- The active articulator is the blade of the tongue and the passive articulator is the back of the alveolar ridge.
- 'shy, she, show' [ʃ]
Palatal

- The active articulator is the front of the tongue body and the passive articulator is the hard palate.
- ‘You’

Velar consonants

- Passive articulator: velum
- Active articulator: back of tongue

- $k$, $\textit{curl}$, $g$, $\textit{girl}$, $\eta$
Articulation of consonants

- What can you tell from the descriptions of these articulation? How can they be classified according to the terms *labial*, *coronal* and *dorsal*?
- Say ‘fee, theme, see, she’

The oro-nasal process

- Consider the consonants at the end of “rang, ran, ram”
- Velar, alveolar and bilabial
- The air is coming out through the nose.
- No velic closure = nasal sound
- Raising or lowering the velum controls the oro-nasal process.
The oro-nasal process

Manner of articulation

- How close the active and passive articulators come to each other?
- Refers to the way in which the airstream is modified in the vocal tract
  - Closure
  - Narrowing
  - Approximation
Stops

- A complete closure at the place of articulation
- Two types: oral and nasal
- Oral stops
  - Velum is raised
  - Articulators are close enough (in different points) to build pressure in the oral cavity.
  - Airstream is released with a burst of sound

Bilabial closure: p b
Alveolar closure: t d
Velar closure: k g
Nasal stops

(Velum is lowered, allowing air to enter the nasal cavity)

Nasal stops

Bilabial closure: m  Alveolar closure: n  Velar closure: n
Fricatives

- Think of *friction*
- Airstream partially obstructed
- Hissing sounds
- *sibilants* = high-pitched hissing sounds [s] and [ʃ]

Fricatives

Labiodental: f v  
Alveolar: s z  
Palato-alveolar or post-alveolar: ʃ ʒ
Approximant

- Articulators approach each other but do not touch
- [j] in ‘yes’ and [w] in ‘we’
- Always voiced

[w]  [j]
Lateral (approximant)

- Airstream obstructed at a point along the center of the vocal tract and air flows over sides of tongue.
- [l] in ‘lie’

Affricates

- An affricate is a stop with an extended and controlled fricative phase following the obstruction.
- a combination of stop + fricative):
  - ʧ = voiceless post-alveolar affricate
  - ʤ = voiced post-alveolar affricate
Other consonants

- **Tap (a.k.a. flap)**
  - The tip or blade of the tongue touch quickly
  - No time for air pressure to build up
  - American English ‘better’ and ‘atom’
- **Trill (a.k.a. roll)**
  - Sound produced by vibrations between the articulators
  - Scottish English ‘raw’
  - Spanish ‘perro’

Summary

- Consonants can be described according to five parameters
  - [s] voiceless alveolar central oral fricative
  - [k]
  - [m]
See you next class 😊