

LING 830 - August 7

Vowels and syllables

# Recap and preview

- Last week: Consonants + acoustics
  - Manners of articulation
  - Stop releases
  - Glottalization
  - Fricative noise
  - Pronunciation among learners
- This week: Vowels + articulation
  - Consonants
  - Today: vowels and syllables
  - Tomorrow: rhythm and intonation

# Ultrasound imaging as a window inside our mouths...

- Visualizing speech as a tool for pronunciation learning
  - Bliss et al. (2018) Seeing speech: Ultrasound based multimedia resources for pronunciation learning in Indigenous languages. *Language Documentation and Conservation* 12: 315-338.  
<https://scholarspace.manoa.hawaii.edu/handle/10125/24771>
  - Bliss et al. (2017) See speech: A pronunciation toolkit for Indigenous language teaching and learning. E-poster presented at ICLDC 5, Honolulu Hawaii.  
<https://scholarspace.manoa.hawaii.edu/handle/10125/42021>
  - UBC ~ UVic ~ W̱SÁNEĆ collaboration – UBC Communications:  
<https://www.ubc.ca/stories/2016-fall/enunciate.html>

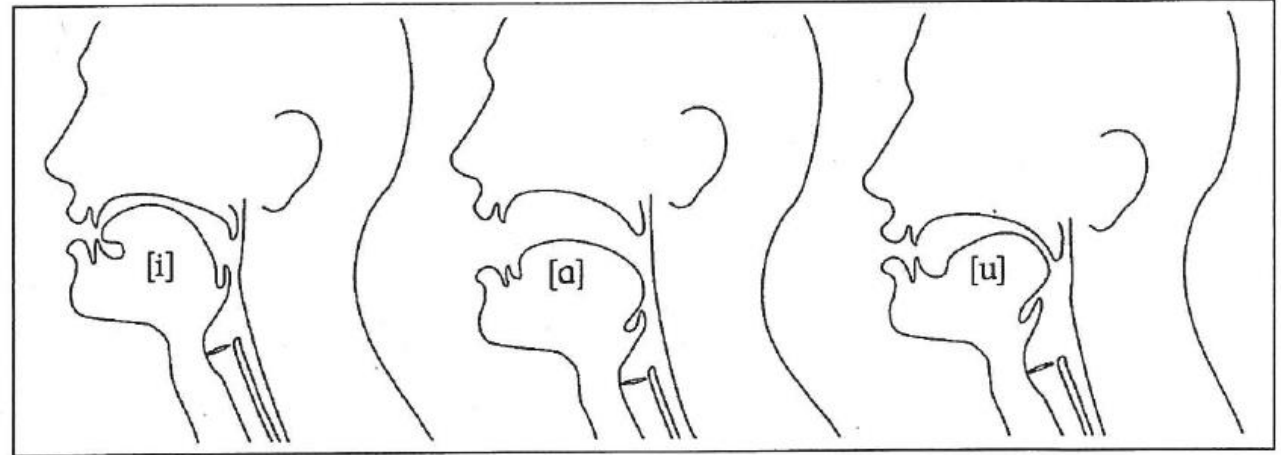
# Vowels

- Vowels
  - Tongue configurations - ultrasound
  - Variation by consonant environment
  - Timing of labialization (and glottalization – already discussed)
- Syllables
  - Hul'q'umi'num' syllables types (clusters)
  - Vowel insertion between consonants (learners)

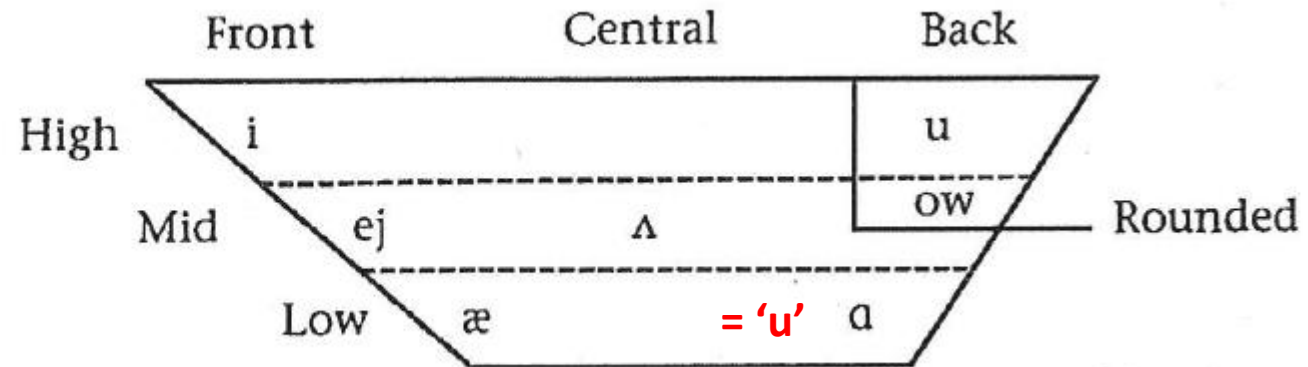
# Vowels

## Articulation

**FIGURE 2.9**  
Tongue position and  
transcription for three  
English vowels



**FIGURE 2.10**  
Basic tongue positions  
for English vowels



# Vowels

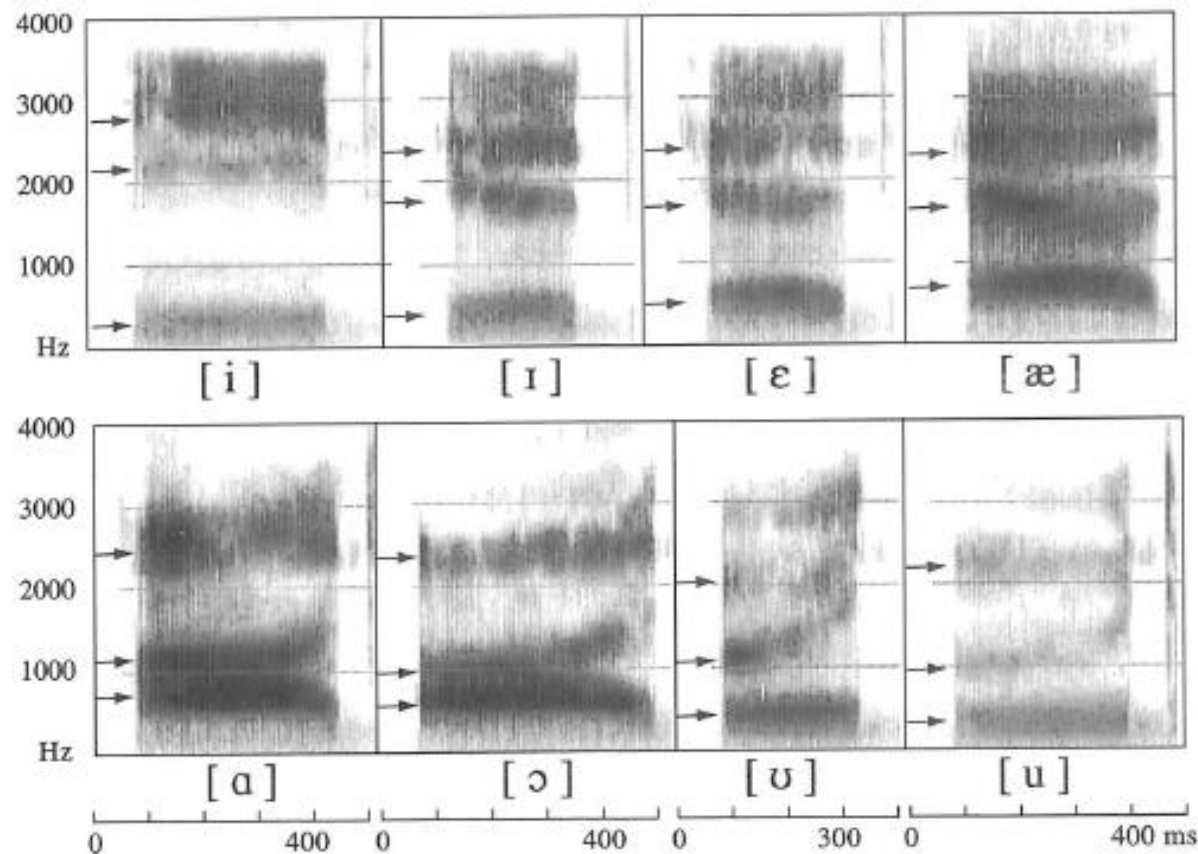
## Acoustics

- Formants

- Dark bands in the spectrogram
- Amplified frequencies in the sound signal
- A function of tongue and mouth configuration
  - F1 (first dark band from the bottom): tongue height
    - High vowels have low F1
  - F2 (second dark bands from the bottom): tongue backness
    - Front vowels have high F2

FIGURE 8.7

A spectrogram of the words “heed, hid, head, had, hod, hawed, hood, who’d” as spoken by a male speaker of American English. The locations of the first three formants are shown by arrows.



# Vowel variation by consonant

- Lekwungen: key consonantal environments
  - Tess Nolan's 2017 MA thesis: <https://dspace.library.uvic.ca/handle/1828/8062>
  - Uvulars draw vowels back
  - Coronals draw vowels forward

# Vowels and timing of labialization

- SENĆOŦEN: ŚELOQ ‘round’

