

## Before we start

- What is phonetics?

## Phonetics: The vocal tract

Basic framework for describing  
speech sounds

## Before we start

- Acknowledgment: Geoff Morrison
  - Provided many of the web links and clip art

## Rogers' definition ( p 1)

- Phonetics [is the area of study that] is concerned with:
- The sounds we make in speech
  - How we produce them
  - How they're transferred from speaker to hearer
  - How we hear and perceive them

## Our focus: how they're produced

- Traditional articulatory phonetics
- How sounds are made (roughly)
  - Little changed since the mid 19th century
    - (Aside: Who was Henry Higgens?)
      - <http://www.answers.com/topic/henry-sweet>
  - Descriptive system based on:
    - Visual observation
    - Tactile and proprioceptive sense
      - informed introspection

## I.P.A. consonant chart

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Appendix E Rogers p 337

## New, more scientific studies

- X-rays, MRI, CT scans
  - Show things are more complex
- But... traditional descriptions are roughly correct at a coarse level of description
- Anyway it's indispensable
  - Can't get by without the terminology
  - Universally accepted way to talk about speech sounds
- We'll mainly pretend it's correct
  - May peek behind the curtain now and then

## Roughing out the vocal organs (Fig 1.1 , 1.2 p 5, 6)

- Are there 'vocal organs'
  - Yes, but speech is only a secondary function of each
- Ordinary language: *technical term*
  - Nose (and some sinuses): *Nasal cavity*
  - Throat: Pharynx ( naso-, oro-, laryngeal)
  - Voice box: Larynx
  - Windpipe: Trachea
    - Also bronchi and lungs
- Things below the larynx are serve mainly as 'air supply' to power speech
- Mostly concerned with larynx and above

## Sagittal section (slicing)

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(slice through middle of the head between ears)

## Sagittal section... line drawing

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See also Rogers p. 5 Figure 1.2

## Sagittal section for real

<http://www.umanitoba.ca/faculties/arts/linguistics/russell/138/sec1/anatomy.htm>

[graphic from above web site removed]

## Upper and lower articulators

- Lower articulators
  - Lower lip (lip = L. *labium*, pl. *labia*)
  - Tongue (= L. *lingua*)
  - (Jaw? Epiglottis?)
- Upper articulators
  - (Upper) lip
  - (Upper front) teeth (= L. *dens*, pl. *dentes*)
  - Alveolar ridge
    - (L. *alveolus*, 'small hollow', 'tooth socket')
  - (Hard) palate
  - Velum (= soft palate)

## Tongue

- See Figure 1.12 Rogers p 9.

Rogers (2000) p. 9

## Places of articulation (refined)

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Rogers (2000) Table 1.1 p 11

## Places of articulation (roughly)

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(shows labels for major places of articulation on a  
mid-sagittal line drawing)

Also: '3.3' post alveolar