

fəneɪtiks

LING 200: mɪtrədækʃən tu ðə stədi əv læŋgwədʒ

hə'das 'kɒtɪk



dʒænjʊəri 2016

Announcements

- **Assignment 1 is available** (due Monday, 11:59pm).
 - Download assignment from MyCourses.
 - Write your answers in a document.
 - To download and use IPA fonts: see 'how to write IPA symbols' guide on MyCourses (course slides/phonetics)
 - Or: print and handwrite the answers, then scan the solution.
 - Save as a PDF.
 - Upload to MyCourses.
- **Conferences now open for registration**
 - Register for the section you want the same way you register for a course.

Outline

- 1 Consonants
- 2 Introducing the IPA
- 3 Stress
 - Lexical stress
 - Primary and secondary stress

Slides credit: Rebecca Starr

Consonants

Review: Three key features capture consonants

- **Voicing** (voiced vs. voiceless)
- **Place of articulation**
Where is the air flow obstructed?
- **Manner of articulation**
How is the air flow obstructed?
Includes nasality (oral vs. nasal)

Voicing

Review

- Whether or not the vocal folds vibrate as a sound is produced.
- Many (but not all) consonants come in voiced-voiceless pairs.
- Put your hand over your larynx and see if you can feel any difference between “zzzz” and “ssss.”

Review: Place of articulation

Review

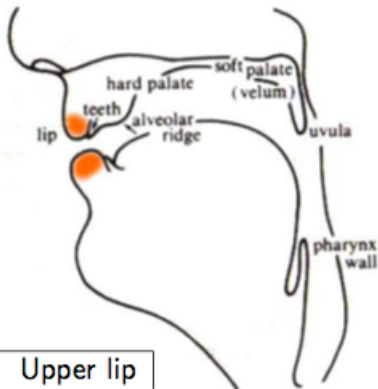
- Consonants are articulated by obstructing the airflow through the oral cavity in some way.
- **Place of articulation:** *Where* the airflow is obstructed.

Place of articulation: articulators

- We can usually identify an active articular and a passive articulator.
- For example, the tongue often moves up to contact part of the roof of the mouth.

Place of articulation: Active and passive articulators

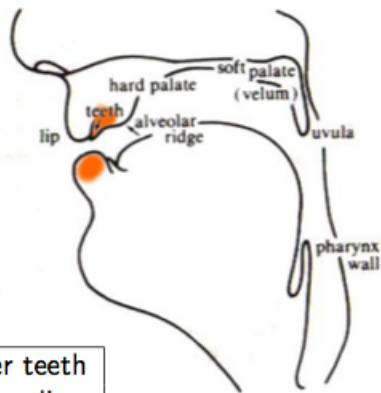
| place | example |
|--------------|---------|
| bilabial | b |
| labiodental | v |
| dental | θ |
| alveolar | d |
| postalveolar | dʒ |
| palatal | j |
| velar | g |
| glottal | ʔ |



| | |
|----------------|-----------|
| Passive | Upper lip |
| Active | Lower lip |

Place of articulation: Active and passive articulators

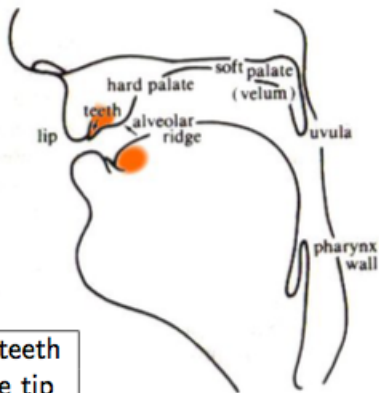
| place | example |
|--------------|---------|
| bilabial | b |
| labiodental | v |
| dental | θ |
| alveolar | d |
| postalveolar | dʒ |
| palatal | j |
| velar | g |
| glottal | ʔ |



| | |
|----------------|-------------|
| Passive | Upper teeth |
| Active | Lower lip |

Place of articulation: Active and passive articulators

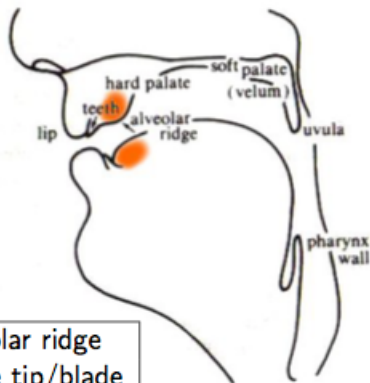
| place | example |
|--------------|---------|
| bilabial | b |
| labiodental | v |
| dental | θ |
| alveolar | d |
| postalveolar | dʒ |
| palatal | j |
| velar | g |
| glottal | ʔ |



| | |
|----------------|-------------|
| Passive | Upper teeth |
| Active | Tongue tip |

Place of articulation: Active and passive articulators

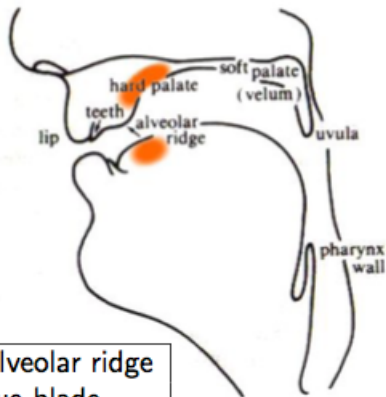
| place | example |
|--------------|---------|
| bilabial | b |
| labiodental | v |
| dental | θ |
| alveolar | d |
| postalveolar | ɖʒ |
| palatal | j |
| velar | q |
| glottal | ʔ |



| | |
|----------------|------------------|
| Passive | Alveolar ridge |
| Active | Tongue tip/blade |

Place of articulation: Active and passive articulators

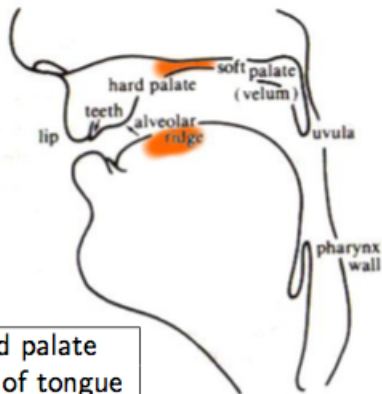
| place | example |
|--------------|---------|
| bilabial | b |
| labiodental | v |
| dental | θ |
| alveolar | d |
| postalveolar | ʤ |
| palatal | j |
| velar | g |
| glottal | ʔ |



| | |
|----------------|------------------------|
| Passive | Back of alveolar ridge |
| Active | Tongue blade |

Place of articulation: Active and passive articulators

| place | example |
|--------------|---------|
| bilabial | b |
| labiodental | v |
| dental | θ |
| alveolar | d |
| postalveolar | ʒ |
| palatal | j |
| velar | g |
| glottal | ʔ |



Passive

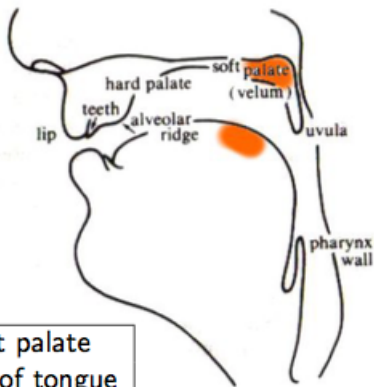
Hard palate

Active

Front of tongue

Place of articulation: Active and passive articulators

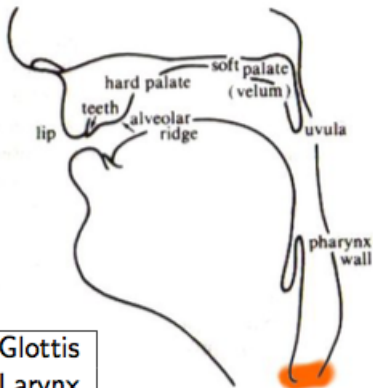
| place | example |
|--------------|---------|
| bilabial | b |
| labiodental | v |
| dental | θ |
| alveolar | d |
| postalveolar | ʒ |
| palatal | j |
| velar | g |
| glottal | ʔ |



| | |
|----------------|----------------|
| Passive | Soft palate |
| Active | Back of tongue |

Place of articulation: Active and passive articulators

| place | example |
|--------------|---------|
| bilabial | b |
| labiodental | v |
| dental | θ |
| alveolar | d |
| postalveolar | (dʒ) |
| palatal | j |
| velar | g |
| glottal | ʔ |



| | |
|----------------|---------|
| Passive | Glottis |
| Active | Larynx |

Manner of articulation

Summary: manners of articulation

Manner of articulation: *How* the airflow is obstructed.

- **Stops:** [p], [b], [t], [d], [k], [g], [ʔ]
- **Fricatives:** [f], [v], [θ], [ð], [s], [z], [ʃ], [ʒ], [h]
- **Affricates:** [tʃ], [dʒ]

▶ Obstruents

- **Nasals:** [m], [n], [ŋ]
- **Liquids:** [l], [r]
- **Glides:** [j], [w]

▶ Sonorants

Consonants

Review: Three key features capture consonants

- ➡ These three features—voicing, place of articulation, and manner of articulation—uniquely identify each sound of the English language (and of other languages).

Consonants

Practice: identify the place of articulation!

- [h] glottal
- [dʒ] post-alveolar
- [r] alveolar

Practice: identify the manner of articulation!

- [j] glide (approximant)
- [ŋ] nasal
- [ʔ] stop

Consonants

Practice: A voiced post-alveolar fricative is...

- (1) a. [tʃ]
- b. [ʒ]
- c. [ʃ]
- d. [dʒ]

Practice: A palatal glide is...

- (2) a. [r]
- b. [w]
- c. [l]
- d. [j]

Consonants and English spelling

Review

- We've been using symbols that resemble the English alphabet, but are different from it in some ways.
- For example, we saw that the letters “th” are used to indicate two different sounds:
 - θin : thin
 - ðis : this
- Some sounds of English don't have a dedicated letter at all:
 - ʃinch : inch
 - meaʒure : measure

Consonants and English spelling

Review

- In general, the alphabet is not great for phonetics. For one thing, different languages use it differently:
 - **English:** **ch**air (also: **ach**ing, **Ch**eryl)
 - **French:** **ch**aise
 - **German:** **ba**ch
- English in particular has very inconsistent spelling:

| | |
|----------------|------|
| tough | [ʌf] |
| though | [oʊ] |
| through | [u] |
| thought | [ɔ] |
| bough | [aʊ] |

 - Side note: in this class we won't study the features and IPA symbols for vowels, but we will still see them occasionally.

What is the IPA?

The International Phonetic Alphabet (IPA)

- A special set of alphabetic characters representing speech sounds.
- Designed to represent all speech sounds in every language consistently.
- Consists of letters and diacritics (little symbols that indicate minor variations).

Consonant section of the full IPA chart

THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

CONSONANTS (PULMONIC)

© 2005 IPA

| | Bilabial | Labiodental | Dental | Alveolar | Postalveolar | Retroflex | Palatal | Velar | Uvular | Pharyngeal | Glottal |
|---------------------|----------|-------------|--------|----------|--------------|-----------|---------|-------|--------|------------|---------|
| Plosive | p b | | | t d | | ʈ ɖ | c ɟ | k ɡ | q ɢ | | ʔ |
| Nasal | m | ɱ | | n | | ɳ | ɲ | ŋ | ɴ | | |
| Trill | ʙ | | | r | | | | | ʀ | | |
| Tap or Flap | | ⱱ | | ɾ | | ɽ | | | | | |
| Fricative | ɸ β | f v | θ ð | s z | ʃ ʒ | ʂ ʐ | ç ʝ | x ɣ | χ ʁ | ħ ʕ | h ɦ |
| Lateral fricative | | | | ɬ ɮ | | | | | | | |
| Approximant | | ʋ | | ɹ | | ɻ | j | ɰ | | | |
| Lateral approximant | | | | l | | ɭ | ʎ | ʟ | | | |

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

English consonants in the IPA chart

THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

CONSONANTS (PULMONIC)

© 2005 IPA

| | Bilabial | Labiodental | Dental | Alveolar | Postalveolar | Retroflex | Palatal | Velar | Uvular | Pharyngeal | Glottal |
|---------------------|----------|-------------|--------|----------|--------------|-----------|---------|-------|--------|------------|---------|
| Plosive | p b | | | t d | | ʈ ɖ | c ɟ | k ɡ | q ɢ | | ʔ |
| Nasal | m | ɱ | | n | | ɳ | ɲ | ŋ | ɴ | | |
| Trill | ʙ | | | ʀ | | | | | ʀ | | |
| Tap or Flap | | ⱱ | | ɾ | | ɽ | | | | | |
| Fricative | ɸ β | f v | θ ð | s z | ʃ ʒ | ʂ ʐ | ç ʝ | x ɣ | χ ʁ | ħ ʕ | h ɦ |
| Lateral fricative | | | | ɬ ɮ | | | | | | | |
| Approximant | | ʋ | | ɹ | | ɻ | j | ɰ | | | |
| Lateral approximant | | | | l | | ɭ | ʎ | ʟ | | | |

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

English consonants

➡ The consonants that you need to know for this course:

| | Bilabial | Labio-dental | Inter-dental | Alve-olar | Post-al-veolar | Palatal | Velar | Glottal |
|---------------------|----------|--------------|--------------|-----------|----------------|---------|-------|---------|
| Stop | p b | | | t d | | | k g | ʔ |
| Nasal | m | | | n | | | ŋ | |
| Fricative | | f v | θ ð | s z | ʃ ʒ | | | h |
| Affricate | | | | | tʃ dʒ | | | |
| Liquid (central) | | | | r | | | | |
| Liquid (lateral) | | | | l | | | | |
| Glide | w | | | | | j | | |

The International Phonetic Alphabet (IPA)

How do we transcribe using IPA?

- We write IPA within square brackets to indicate a **phonetic transcription**.
- The IPA represents pronunciation. If a word is pronounced differently, it is transcribed differently.
 - American English: [ɪfʊː]
 - British English: [ɪsjuː]
- Thus, there is no single correct IPA for English.

The International Phonetic Alphabet (IPA)

Are we learning the real IPA?

- In this course we are using a few common simplifications often used in the transcription of English.
- Most notably, in official IPA, [r] represents an alveolar trill (as in Arabic and Spanish), while [ɹ] represents the English r sound.
- No one wants to get stuck writing an upside-down r for no reason.

The International Phonetic Alphabet (IPA)

Are you lying to us about anything else??

- If you look on the full IPA chart, you may be distressed to discover that [w] is missing from the main consonant chart.
- That's because, technically, [w] has a “labio-velar” place of articulation. You can find [w] in the “other symbols” section of the official IPA chart.
- For the purposes of this class, treat [w] as bilabial.
- English also has a voiceless [w̥], used in some dialects for words like “whine” (where “whine” is pronounced differently than “wine”).

The International Phonetic Alphabet (IPA)

English vowels

- We will not study the characteristics of vowels in this class.
- However, here is a quick rundown of the inventory of English, just so you get a feel for it:

| Vowel | IPA symbol | Diphthongs | IPA symbol |
|--------------------|-------------------|-------------------|-------------------|
| beet, peak | i | bait, May | eɪ |
| bit, pick | ɪ | bite, my | aɪ |
| bet, peck | ɛ | boy, moist | ɔɪ |
| bat, pack | æ | boat, mow | oʊ |
| hot, pot | ɑ | bough, now | aʊ |
| law, cought | ɔ | | |
| boot, due | u | | |
| book, hood | ʊ | | |
| but, puck | ʌ | | |
| <u>a</u> bout, the | ə | | |

The International Phonetic Alphabet (IPA)

Practice

- Try to guess these words with your neighbor:

- (3)
- | | | |
|----|------------|-----------|
| a. | [dʒələj] | July |
| b. | [θɪŋk] | think |
| c. | [mɛʒər] | measure |
| d. | [mɛnʃən] | mention |
| e. | [fənetiks] | phonetics |

- ➡ The ə symbol represents the special vowel “schwa.” It is pronounced like the word “uh.” A schwa sound can be represented by any vowel in the English orthography.
- For this course, you will only be asked to do IPA-to-English translations, but not the other way around.

Lexical stress

Lexical stress

- **Stress:** emphasis placed on a particular linguistic unit.
 - You want me to do *what*?
- **Lexical stress:** emphasis placed on a particular syllable within a word.
 - Next week, more about syllables.
- In English, stress is very important in distinguishing between certain words.
 - E.g., *insight* vs. *incite*

Lexical stress

How is lexical stress realized?

- Stressed syllables are higher pitch, louder, and longer than unstressed syllables.
- The vowels of unstressed syllables are likely to be reduced (produced as schwa [ə]).
- Examples:
 - accountable [ə'kaʊntəbəl]
 - recent ['ri:ənt]

Types of stress

Primary stress

- All words have one syllable that receives primary stress.
- We mark primary stress in IPA with a straight apostrophe (') before the syllable.
 - collect [kə'lɛkt]
 - linguist ['lɪŋgwɪst]
- Marking stress is optional in IPA

Types of stress

Secondary stress

- Longer words sometimes have syllables receiving secondary stress, an intermediate level of stress.
- Secondary stress is marked with a low apostrophe (,)
 - organization [ˌɔrənɪˈzeɪʃən]

Types of stress

Stress patterns in English

- English has many word pairs like the following.

Can you see a pattern?

- record ['rɛkɔrd], [rə'kɔrd],
- address ['ædrɛs], [ə'drɛs],
- import ['ɪmpɔrt], [ɪm'pɔrt],

➡ The version with **initial stress** is a *noun*, while the *verb* has **final stress**.

Types of stress

Practice

- Where is the primary stress in these words?
(Useful trick: try saying the words with emphasis on different syllables.
Which version sounds the most natural?)
 - sur**r**oundings
 - **t**axidermy
 - **l**inguist
 - **l**inguistics
 - ph**o**nology
 - ph**o**n**o**logical
 - **a**ntiquated

Summary: Phonetics

Key concepts for Phonetics

- The vocal tract (learn to identify its parts)
- Consonants (learn the IPA symbols of English consonants)
 - Voicing
 - Place of articulation
 - Manner of articulation
- Stress
 - Primary stress
 - Secondary stress

For next time...

- **The assignment is due Monday at 23:59.** Submit on *MyCourses*.
- **My office hours:**
Mondays, 15:00-16:30, 1085 Dr. Penfield Ave, room 101.
- **TA office hours:**
Mondays, 16:30-17:30, 1085 Dr. Penfield Ave, room 204.
- ➡ **Read:** Mihalicek & Wilson “Language Files”, chapter 3.1-3.3 (pages 101-123), in course pack.