

Phonetics

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LING 101 Summer Session II

Overview

- Brief review from last time
- What is Phonetics?
- The need for the International Phonetic Alphabet (IPA)
- What we are trying to describe
 - Factors that go into pronouncing consonants:
 - Place of Articulation
 - Voicing

Last Time

- Class Policies and Information
- Different Approaches to Grammar
 - Prescriptive vs. Descriptive
 - Mental Grammar

Brainstorm

- How should we describe sounds?
 - Spanish sound “halfway between a *b* sound and a *v* sound”
 - French sound “halfway between an *ee* sound and an *oo* sound”
 - Others?
- How should we compare sounds across languages?

Phonetics

- Phonetics specifically focuses on the **sounds that are used in languages.**
- In order to study these sounds, we need a way to describe them and represent the different sounds in language.
- We cannot use traditional spelling systems to describe these sounds.

The need for the IPA

- Why can't we use our normal alphabet?
 1. The symbols can represent a variety of sounds
 - For example, consider the English words *rough*, *through*, *bough*, *though*, *ought*, and *tough*. (CL Section 1, Language Matters: Sound and Spelling)
 - The same sequence of symbols *ough* in these words represent a wide variety of sounds.
 - There's also the famous example from George Bernard Shaw:



The need for the IPA

- Why can't we use a 'normal' alphabet?
 1. The symbols can represent a variety of sounds
 2. The symbols do not accurately represent how many speech sounds there are in a word (i.e. there's no one-to-one correspondence between the speech sound and the symbols)
 - How many speech sounds (not letters!) are in the following words?
 - Eight
 - Ocean
 - She
 - Box
 - Ought
 - Knife
 - Be sure to rely on what you **hear**, not on the number of letters you see in the spelling

The need for the IPA

- Why can't we use a 'normal' alphabet?
 1. The symbols can represent a variety of sounds
 2. The symbols do not accurately represent how many speech sounds there are in a word (i.e. there's no one-to-one correspondence between the speech sound and the symbols)
 3. The symbols can capture features not otherwise distinguished in normal spelling.
 - Consider the following words; Do the letters in **bold** represent the same sound in both contexts?:
 - **Th**igh
 - **Th**y
 - **S**ewer
 - **U**ser

The need for the IPA

- The International Phonetic Association has worked to create an alphabet which would use characters to represent different speech sounds. This resulted in the International Phonetic Alphabet (IPA).
- The IPA has one symbol for each speech sound, which we will now refer to as **segments**.
- We write our phonetic symbols in square brackets [] to distinguish them from letters.
 - So 'k' represents the letter **k** while [k] represents a particular speech sound.

A Warning about the IPA

- The IPA does contain a number of symbols that you will recognize from English orthography (i.e. the English spelling system). Some of these symbols may correspond to the sound you're used to that English letter representing. However, **there are some IPA symbols which look like English letters that will not correspond to a sound that you will expect.**
- For example,
 - [g] ≠ sign, sing
 - [j] ≠ judge
 - [x] ≠ examine or x-ray

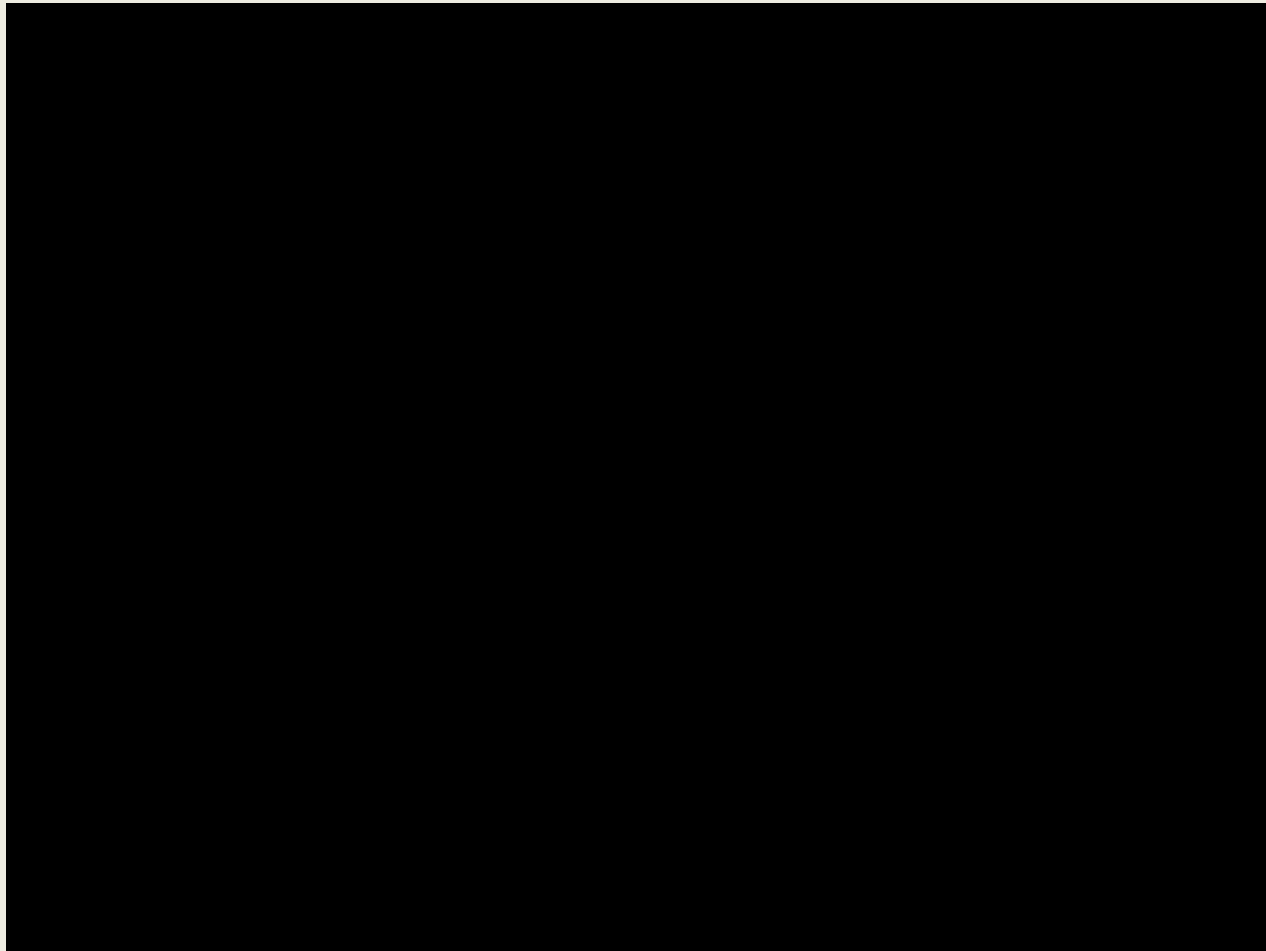
A Warning about the IPA

- Some of the more difficult symbols you'll need to recognize:
 - [ʃ] [ʒ] [tʃ] [dʒ]
 - [ŋ]
 - [θ] [ð]
 - [ʔ]
 - [ɹ] [r]
 - [ʌ]

What you are expected to know

- Page 52, Tables 2.28 and 2.29
 - You should be able to identify the segments that are shaded in these tables
 - For other segments, you don't have to memorize the symbols. If you encounter these symbols in datasets, I will provide you with the relevant information. However, it is still important that you know all of the places of articulation

What we are trying to describe



What we are trying to describe

- There are several different factors that go into the production of each segment.
- Similar to the alphabet, we will be distinguishing between **vowels** and **consonants**.
 - Consonants make tighter constrictions and behave differently than vowels do.

What we are trying to describe

- As we can see from the previous video, there are several different factors that go into the production of each segment.
- Today we are going to focus particularly on factors that go into describing **consonants**.
- The IPA provides separate symbols for each combination of the following factors:
 - Voicing
 - Place of articulation
 - Manner of articulation
- These have been used particularly because they are common factors that languages tend to use to distinguish between different segments.

Place of Articulation

- Many consonant segments in languages differ based on what portion of the vocal tract is changed to create that segment.
- Consonants in particular are created through various **constrictions** in the vocal tract.
- Place of articulation describes where these constrictions are placed in the vocal tract.
- Place of Articulation is indicated on the IPA chart along the x-axis

Place of Articulation

- In producing segments, there are four active articulators:
 - **The lips**
 - **The tongue**
 - The velum
 - The vocal folds
- Of these, the lips and tongue are the two articulators that we are specifically concerned with in determining place of articulation.

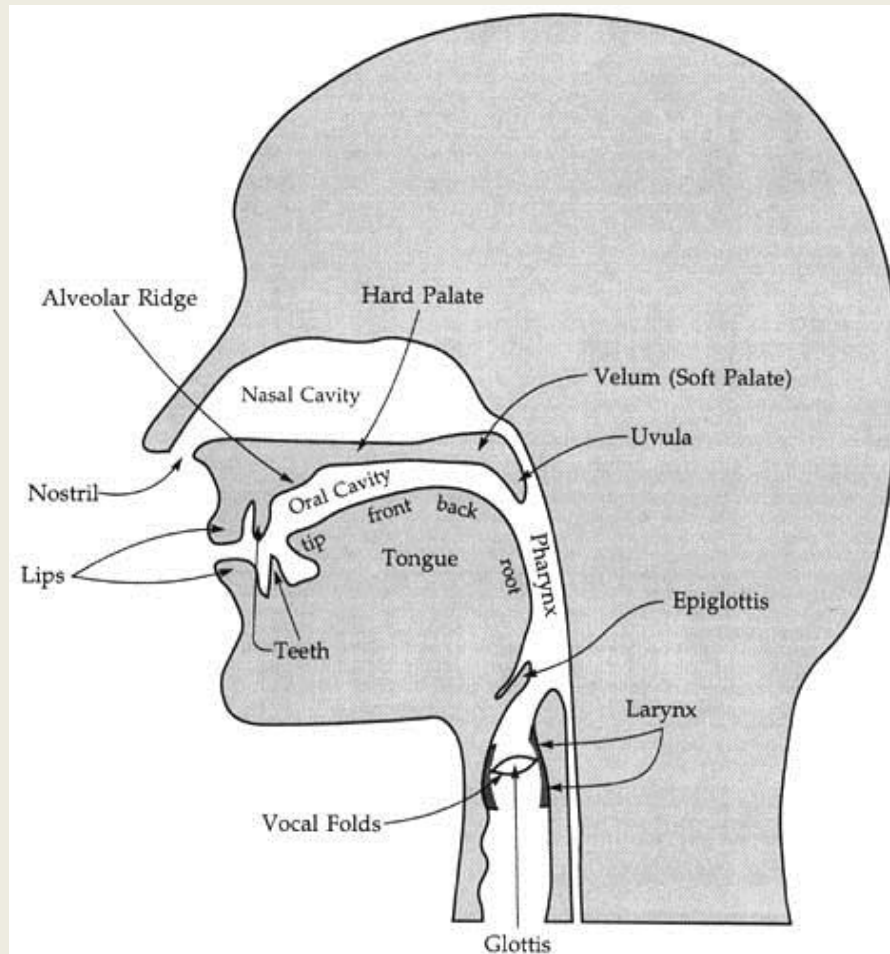
Place of Articulation

- The places of articulation, heading from the front of the vocal tract to the back, are:

- | | |
|-----------------------|-------------------|
| 1. Bilabial | 7. <i>Palatal</i> |
| 2. Labiodental | 8. Velar |
| 3. Dental | 9. <i>Uvular</i> |
| 4. Alveolar | 10. Pharyngeal |
| 5. Post-Alveolar | 11. Glottal |
| 6. <i>Retroflex</i> | |

- Those highlighted in **bold** are places of articulation involving the lips. All others involve just the tongue.
- Those *italicized* are places of articulation that are not utilized in 'standard' American English

Place of Articulation



Place of Articulation

- There are several methods that you can use to attempt to determine the relative place of articulation of the segments you are producing.
 1. Articulate the sound, then hold that position and breathe in through your mouth. You will feel cold air at the point of articulation.
 2. If you are producing a sound where the entire vocal tract is obstructed (as in producing a [t]), then hold the articulation, and then suck in air as you release it to make a 'click'
- However, all of this being said, it is sometimes most useful to simply be able to match the sounds produced. There's a useful [website](#) from Peter Ladefoged's *A Course in Phonetics* where you can click on the symbol to hear the corresponding sound.

Place of Articulation practice

Identify the place of articulation of the following segments:

- [d]
- [v]
- [ŋ]
- [g]
- [ɹ]

Voicing

- Voicing is a common factor which is used to distinguish different segments.
- Voicing is determined by the state of the **vocal folds**
 - **Voiced** – vibrating vocal folds
 - **Unvoiced** – non-vibrating vocal folds.

Voicing

- To determine voicing of a segment, you can:
 - Listen very carefully
 - Touch two fingers to your throat – do you feel vibrations or not?
 - Test the words, deliberately changing the voicing of the segment – which sounds correct to you?
- Do not rely on the spelling of a word to determine voicing.



Voicing Practice

- Identify the voicing of the following segments (voiced or unvoiced):
 - [z]
 - [p]
 - [m]
 - [ŋ]
 - [tʃ]
 - [l]

Voicing and Place of Articulation

- Identify the voicing and place of articulation for the segments you produce for the portions of the words in **bold**:
- **P**terrodactyl
- **P**artial
- **P**irate
- **P**erfection
- **B**arbeque
- **P**eruse

Review

- The need for the IPA
 - Traditional spelling doesn't work out well enough.
- Consonant Factors
 - Place of Articulation
 - Voicing

Homework

- Plagiarism Tutorial and Quiz (due Mon.)
- Writing Assignment 1 (Prescriptivism Disc.)
 - Due Tuesday the 26th
- Writing Assignment 2 (Phonetics)
 - Due Tuesday the 26th
- Homework Assignment (Due Tuesday the 26th)
 - Exercises 2, 3 (a) - (h), 5 (a) – (e)

Have a good day!

