

Phonetics & Phonology

Chapter 3: The sounds of Language

Chapter 4: The sound Patterns of Language

International Phonetic Alphabet (IPA)

- Contains symbols to represent all sounds from all languages
- 1-to-1 correspondence between sounds and symbols
- Includes diacritics to indicate tone, stress, etc.
- Many symbols from or based on Latin and Greek alphabets
- Not the only phonetic alphabet in use



Phonetics

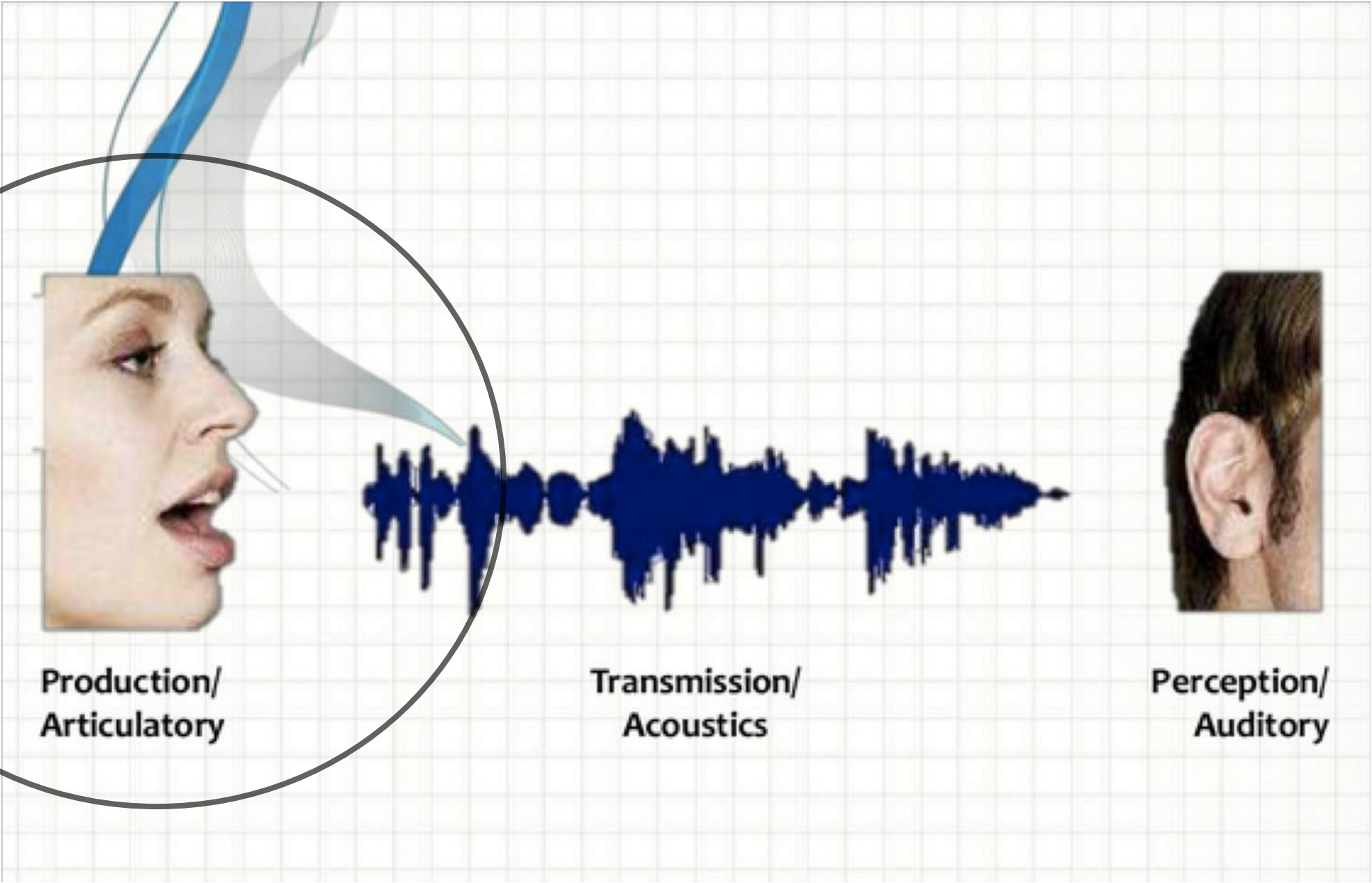
The general study of the characteristics of speech sounds.

a-) Articulatory Phonetics: The study of how speech sounds are made, or articulated.

b-) Acoustic Phonetics: It deals with the physical properties of speech as sound waves in the air.

c-) Auditory Phonetics: It deals with the reception, via the ear, of speech sounds.





1. Voicing: Vocal Cords (Vibration)

- **Voiceless:** When the vocal cords are spread apart, the air from the lungs passes between them unimpeded. Sounds produced in this way are described as voiceless. (No vibration)
- **Voiced:** When the vocal cords are drawn together, the air from the lungs repeatedly pushes them apart as it passes through, creating a vibration effect.

2. Place of Articulation: It is the location, inside the mouth, at which the constriction takes place. We use the symbols of the phonetic alphabet - these symbols are enclosed within square brackets [].

3. Manner of Articulation: How the sounds articulated.



2. Place of Articulation

Bilabials: using both upper and lower lips.

Labiodentals: the upper teeth and the lower lip.

Dentals: with the tongue tip behind the upper front teeth.

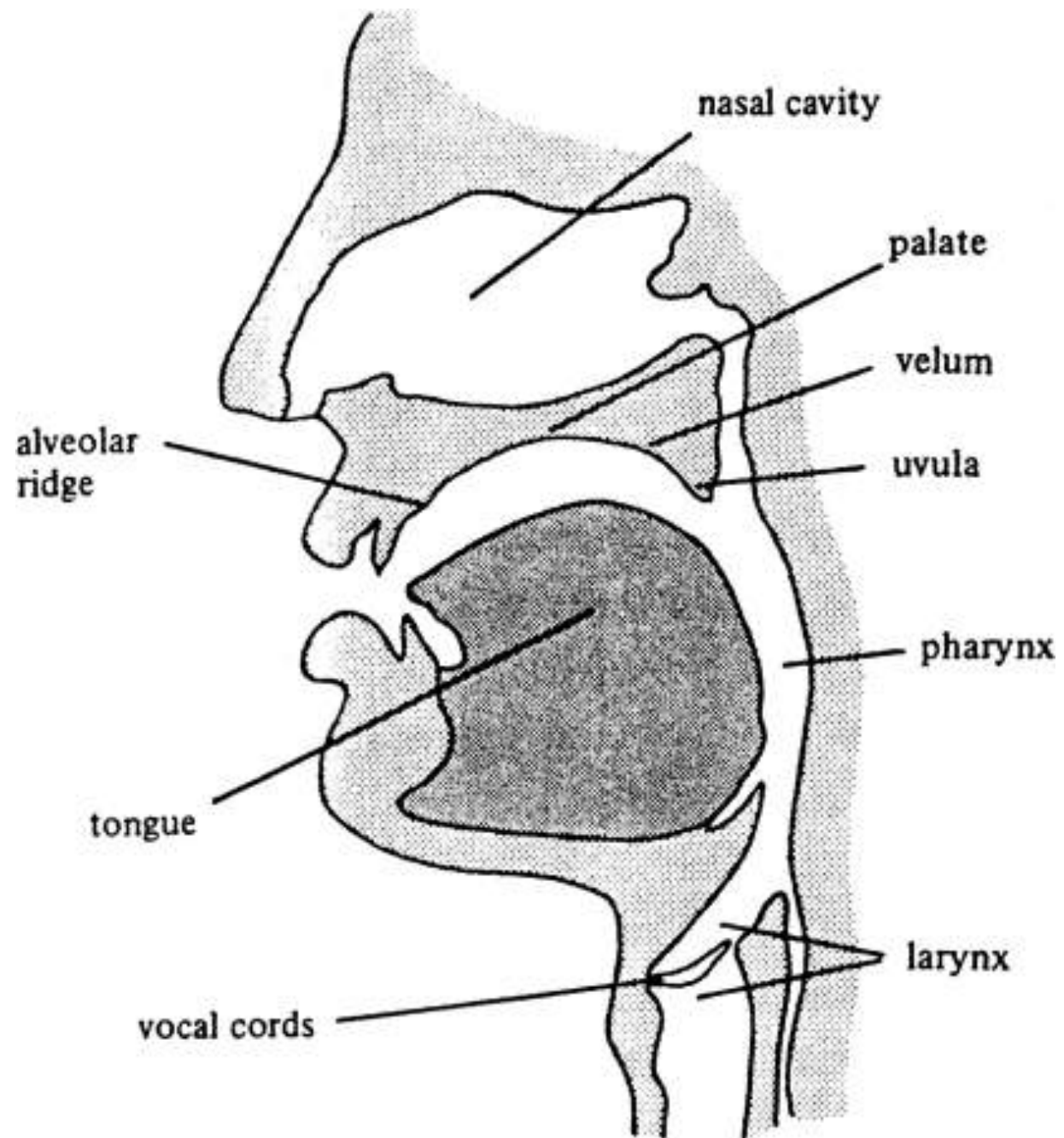
Alveolars: with the front part of the tongue on the alveolar ridge.

Alveo-palatals: with the tongue at the very front of the palate, near the alveolar ridge.

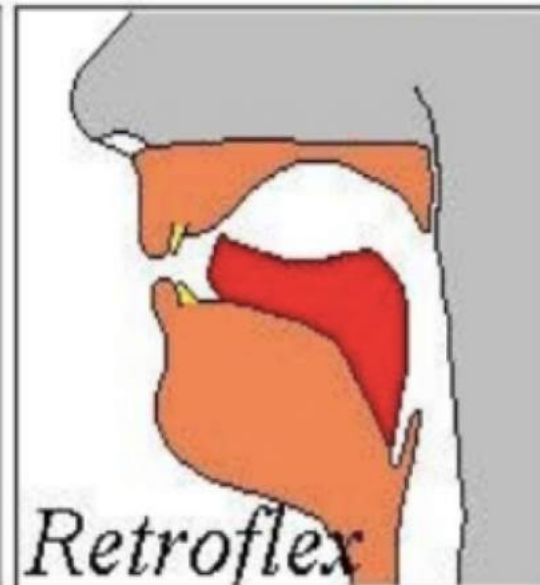
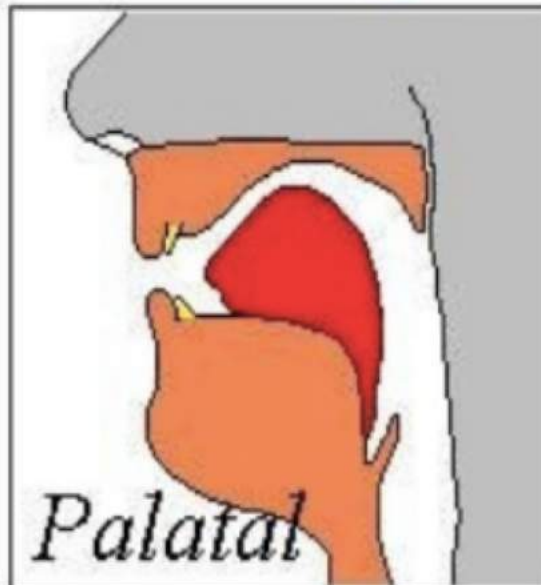
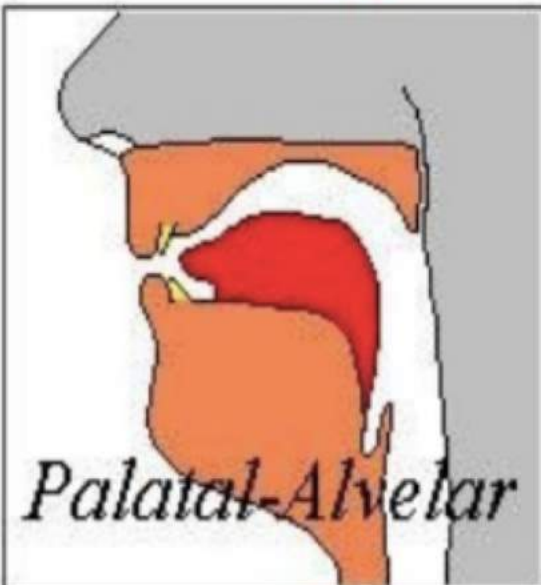
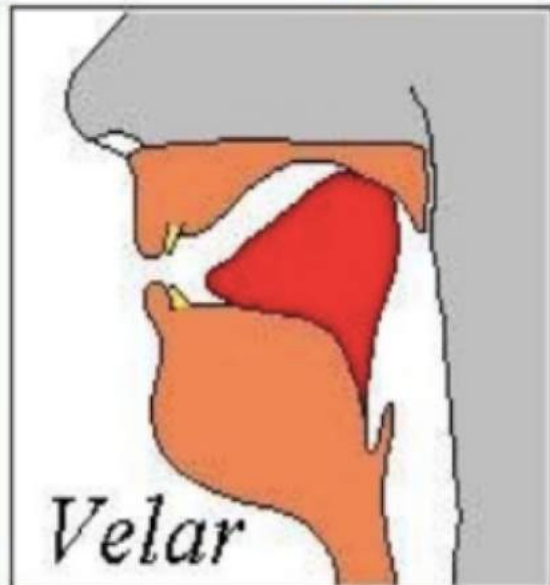
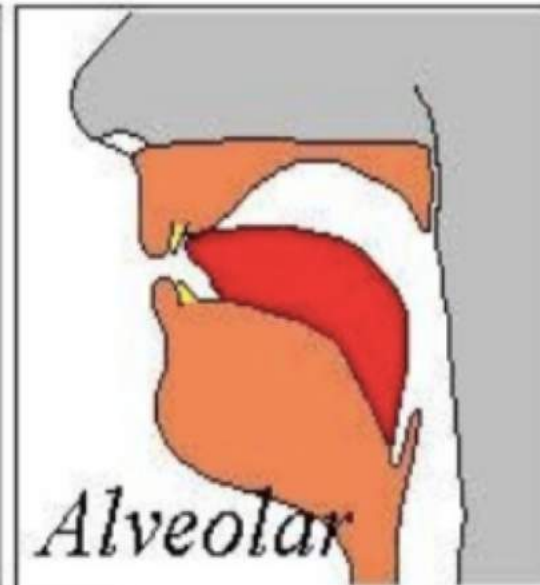
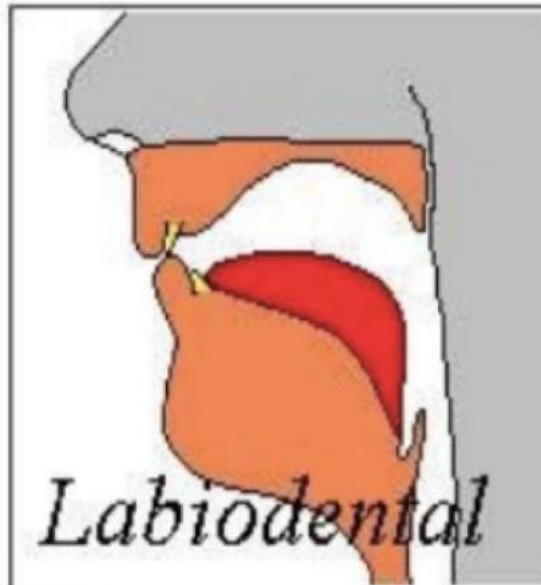
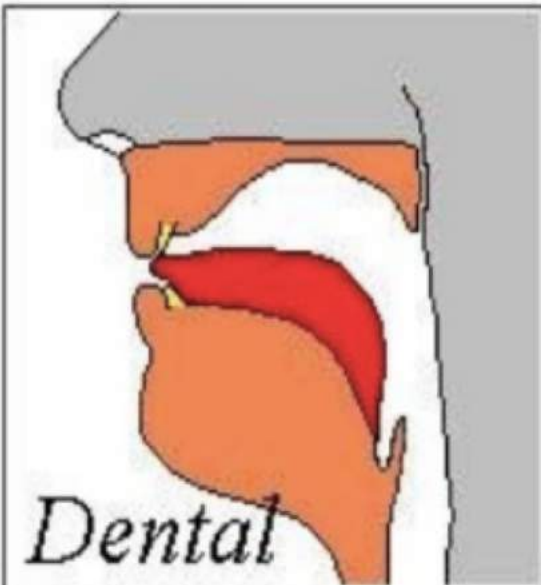
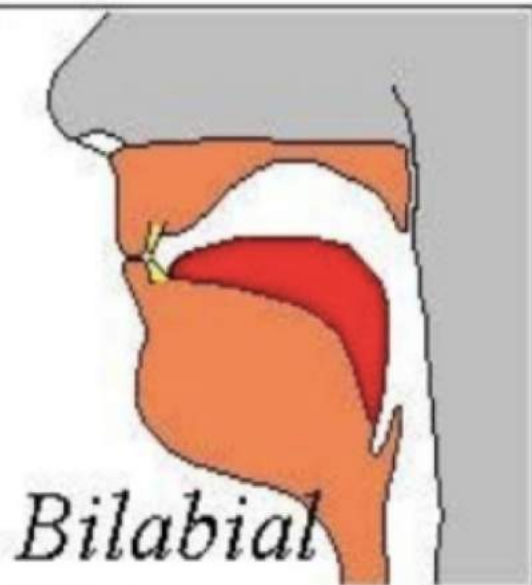
Velars: with the back of the tongue, against the velum.

Glottal: sounds produced without the active use of the tongue and other parts of the mouth.





Points of articulation



3. Manner of articulation

Stops: complete “stopping” of the airstream & then letting it go abruptly.

Fricative: blocking the airstream, and having the air push through the narrow opening. As the air pushed through, a type of friction is produced.

Affricates: combining brief stopping of the airstream with an obstructed release which causes some friction.

Nasal: by lowering the velum and the airstream is allowed to flow out through the nose.

Approximants: Articulation of these sounds are strongly influenced by the following vowel sound.

a-) Glides: The sounds produced with the tongue moving to or from the position of a nearby vowel.

b-) Liquids: The sounds formed by letting the airstream flow around the sides of the tongue as it makes contact with the alveolar ridge.



Consonants

	Bilabial		Labiodental		Dental		Alveolar		Palatal		Velar		Glottal	
	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V
Stops	p	b					t	d			k	g		
Fricatives			f	v	θ	ð	s	z	ʃ	ʒ				
Affricates									tʃ	dʒ				
Nasals		m						n			ŋ			
Liquids								l,r						
Glides		w								j				h



Consonant sound	IPA	Voicing	Place of Articulation	Manner of articulation
s				
sh				
th				
ch				
ng				
y				
t				



Consonant sound	IPA	Voicing	Place of Articulation	Manner of articulation
s	[s]	Voiceless	alveolar	fricative
sh	[ʃ]	Voiceless	palatal	fricative
th	[θ] [ð]	Voiceless Voiced	Dental dental	Fricative Fricative
ch	[tʃ]	Voiceless	palatal	affricative
ng	[ŋ]	Voiced	velar	nasal
y	[j]	Voiced	palatal	glide
t	[t]	Voiceless	alveolar	stop



Flap

The sounds produced by the tongue tip being thrown against the alveolar ridge for an instant.

Vowels

They are produced with a relatively free flow of air. They are all typically voiced. Front versus a back and a high versus a low area.

Diphthongs

Combined vowel sounds which contain two different sounds are called diaphanous. They begin with a vowel sound and with a glide.



Vowels

	Front	Central	Back
High	i		u
Mid	ɪ e	ə	ʊ o
Low	æ	ʌ	ɔ ɑ

[i] *eat, key, see*

[ɪ] *hit, myth, women*

[e] *great, tail, weight*

[æ] *ban, laugh, sat*

[ə] *above, sofa, support*

[ʌ] *blood, putt, tough*

[u] *move, two, too*

[ʊ] *could, foot, put*

[o] *no, road, toe*

[ɔ] *ball, caught, raw*

[ɑ] *bomb, cot, swan*

[aɪ] *buy, eye, my*

[aʊ] *cow, doubt, loud*

[ɔɪ] *boy, noise, void*

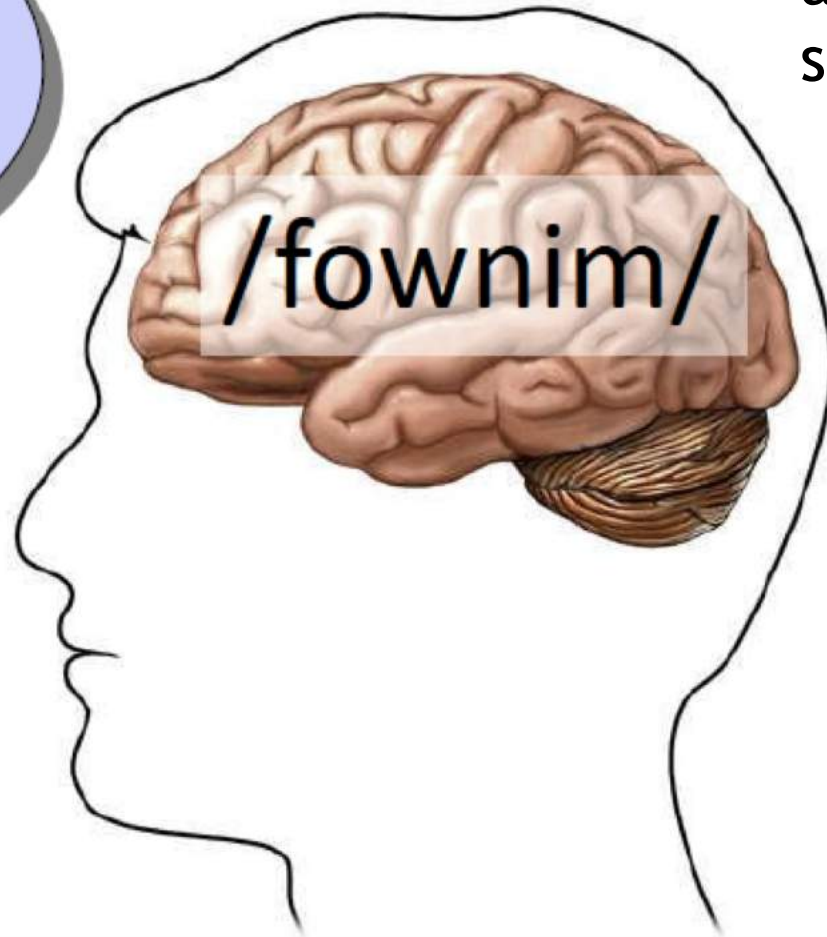


Phonetics vs Phonology

- Phonetics: the study of sounds as physical entities
 - How they are produced in the vocal tract
 - What their articulatory and acoustic properties are
 - How they are interpreted
- Phonology: the study of how sounds are organized within a language and how they interact with each other
 - What is the organization of sounds on a given language?
 - Which sounds are used in a language to distinguish between words?
 - Within a language, are there particular sounds whose distribution with regard to other sounds is predictable in some way?



Allophone and Phonemes



Phonology is concerned with an abstract or mental aspect of the sounds in a language rather than the physical articulation of the speech sound (Phonetics)

The abstract representation of sounds enables us to recognize and interpret the meaning of words on basis of the actual physical sound



Phoneme vs Allophone

- Phonemes are the underlying mental representations of the sound we make (think “*the phone in me*”). Allophones are the actual utterances (think of saying “*Allo, phone!*”).
- Every allophone belongs to a phoneme (Each meaning-distinguishing sound in a language).
- Substituting one phoneme for another will result in a word with a different meaning, but substituting allophones only result in a different pronunciation of the same word.



Minimal pair

- When two words such as “pat” and “bat” are identical in form except for a contrast in one phoneme, occurring in the same position, the two words are described as a minimal pair.
- Phoneme functions contrastively. This contrastive property is the basic operational test for determining the phonemes which exist in a language. If we substitute one sound for another in a word and there is a change of meaning, then two sounds represent different phonemes.



Discussion

- As you have read, there are multiple pronunciations for the same word, for example “poor:” [pʊr] (American variety) and [pʊə(r)] (British variety). However, as we have discussed in class, we can find variation within the United States. For example, the word “ask;” some people pronounce [æsk] and other people pronounce [æks]. In your opinion, is there a *better* pronunciation? Why?

