

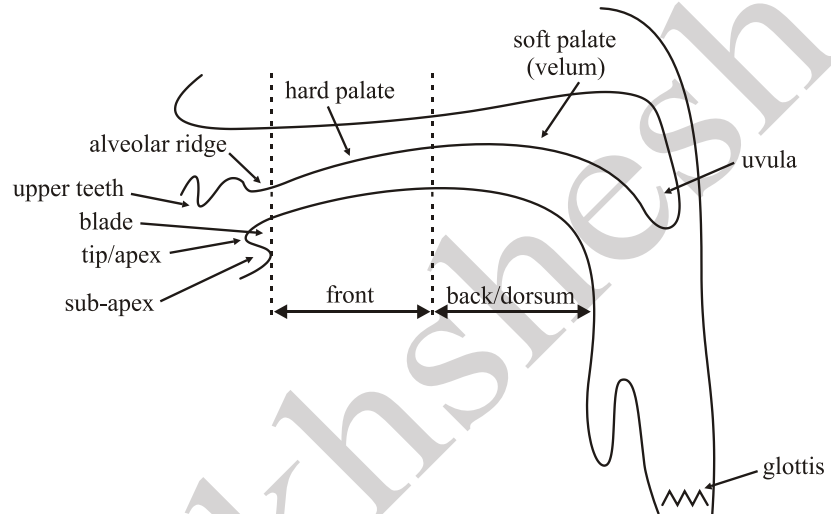
Chapter Five: Phonetics

Phonetics has the following categories:

articulatory phonetics → how sounds are produced

acoustic phonetics → investigates sound waves

auditory phonetics → how listeners perceive sounds



1. TRADITIONAL PHONETICS

CONSONANTS

C.1. Place of articulation

Bilabials: [p], [b], [m], [w]

Labiodentals: [f], [v]

(Inter)dentals: [θ], [ð]

Alveolars: [d], [s], [t], [z], [n], [l], [r]

⇒ **Note:** post-alveolar [r]

⇒ **Note:** a retroflex sound

Palatals (or palato-alveolars; alveo-palatals): [ʃ], [tʃ], [ʒ], [dʒ], [j]

⇒ **Note:** [j] is palatal ; [ʃ], [tʃ], [ʒ], [dʒ] are palato-alveolar/ alveo-palatal

Velars: [x] (*Persian خ*), [k], [g], [ŋ]

Uvulars: [ʀ] (*French sound*), [ʁ] (*Persian ر*)

Pharyngeals: [ʕ], [ħ]

Glottals: [h], [ʔ]

Labio-velar: [w]

C.2. Manner of articulation

Stops: [p], [b], [t], [d], [k], [g], [ʔ], [m], [n], [ŋ]

- **Oral stops:** [p], [b], [t], [d], [k], [g], [ʔ]
- **Nasal stops:** [m], [n], [ŋ]

Fricatives: [f], [v], [ð], [θ], [s], [z], [ʃ], [ʒ], [h], [x] (*Persian خ*)

Affricates: [tʃ], [dʒ]

Approximants: [r], [l], [w], [j]

- **Liquids:** [r], [l]
- **Glides:** [w], [j]

Tap: [ɾ] / [ɽ]

Flap: [ɾ]

Trill: [ʀ]

C.3. Voiced vs. voiceless

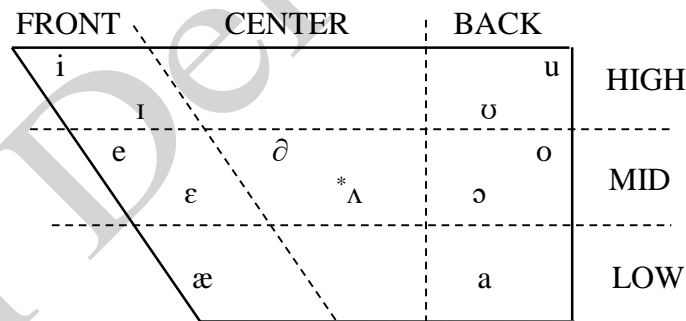
Voiceless (or **fortis**) → vocal cords are spread apart, the air from the lungs passes between them unimpeded

Voiced (or **lenis**) → vocal cords are drawn together, the air from the lungs repeatedly pushes them apart as it passes through, creating a vibration effect

VOWELS

V.1. High vs. low

V.2. Front vs. back



V.3. Tense vs. lax

<i>Tense</i>	<i>Lax</i>
[i]	[ɪ]
[e]	[ɛ]
[u]	[ʊ]
[o]	[ɔ]

V.4. Lip position

whether the lips are rounded, spread or neutral

In English, there are three **diphthongs**: [aɪ]/[aɪ] as in *bright*, [aʊ]/[aʊ] as in *about*, and [ɔɪ]/[ɔɪ] as in *noise*.

2. SYSTEMATIC PHONETICS

CONSONANTS AND VOWELS

a) **Anterior** sounds → [labials], [dentals], [alveolars]

b) **Coronal** sounds → [dentals], [alveolars], [palatals]

c, d, e) [high], [low], [back]

<i>Phonetic Features</i>	<i>Sound Segments</i>
{+high}	[k], [g], [ŋ], [ʃ], [ʒ], [tʃ], [dʒ], [j], [w]
{+low}	[h]
{+back}	[k], [g], [ŋ], [w]

3. MAJOR PHONETIC CLASSES

3.1. Vocalic vs. consonantal

Vocalic sounds → [vowels] and [liquids]

Consonantal sounds → [liquids], [oral stops], [nasal stops], [fricatives], [affricates]

3.2. Continuant vs. non-continuant

Continuant sounds → [fricatives], [glides], [liquids] and [vowels]

Non-continuant sounds → [oral stops], [nasal stops] and [affricates]

3.3. Sonorant vs. obstruent

Sonorant sounds → [vowels], [glides], [liquids] and [nasals]

Obstruent sounds → [oral stops], [fricatives] and [affricates]

3.4. Sibilant

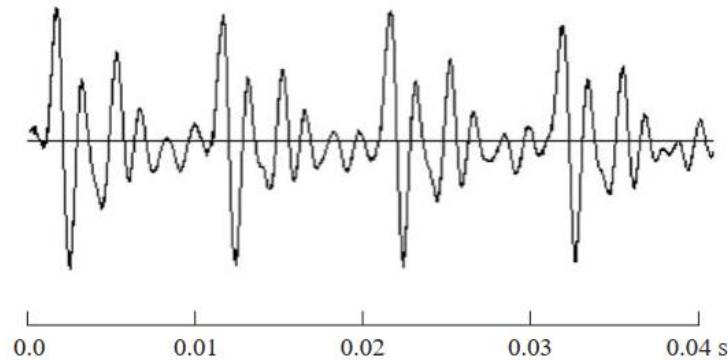
[s], [z], [ʃ], [ʒ], [tʃ], [dʒ]

3.5. Strident

[s], [z], [ʃ], [ʒ], [tʃ], [dʒ], [f], [v]

4. PROSODIC FEATURES

Elements of language that may not be encoded by grammar or by choice of vocabulary

Fundamental frequency vs. pitch →

–an acoustic property of a sound– physical property of rate of vocal fold vibration / hertz (Hz)
 # listeners' perception of the sound on a scale of low to high

Intonation → the regular patterns of frequencies over a phrase or sentence

Tone → use the pitch of individual vowels or syllables to *contrast meanings of words*

level tone → the tone remains level throughout a syllable

contour tone → pitch changes can occur during a syllable

Stress → certain syllables in a word are louder, slightly higher in pitch, and somewhat longer in duration

Bisyllabic content words:

trochaic, stress is on the first syllable, as in *dóctor*

iambic, stress is on the second syllable, as in *devíce*

Length → the duration, or quantity, of a sound

Juncture → a pause