

Class 3

The International Phonetic Alphabet (IPA) and phonetic features

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1 The International Phonetic Alphabet (IPA)

- The IPA is a transcription system that allows for a one-to-one mapping between all of the sounds of the world's languages and a unique symbol (or symbol + diacritics).
 - ↪ Lets us indicate sounds unambiguously.
 - Much better at this than typical orthographies
 - Many languages/language families have idiosyncratic traditional linguistic transcription systems.
 - The IPA helps eliminate these idiosyncrasies
 - The IPA chart is divided up into:
 - *Pulmonic consonants*: “basic” consonants that are made by expelling a continuous airstream out from the lungs
 - *Non-pulmonic consonants*: consonants made using different airstream mechanisms
 - ↪ Namely: clicks, implosives, ejectives
 - *Vowels*
 - “*Other symbols*”: consonants that don't fit neatly into the consonant chart
 - *Diacritics*: small symbols that can be added to the main consonant/vowel symbols to indicate a small modification of the basic sound
 - *Suprasegmentals, tones, and accents*: diacritics relating to modifications of length, pitch, tone, etc.
 - An interactive version of the IPA chart can be found here: <http://www.ipachart.com/>. Others available online too.

2 Consonants

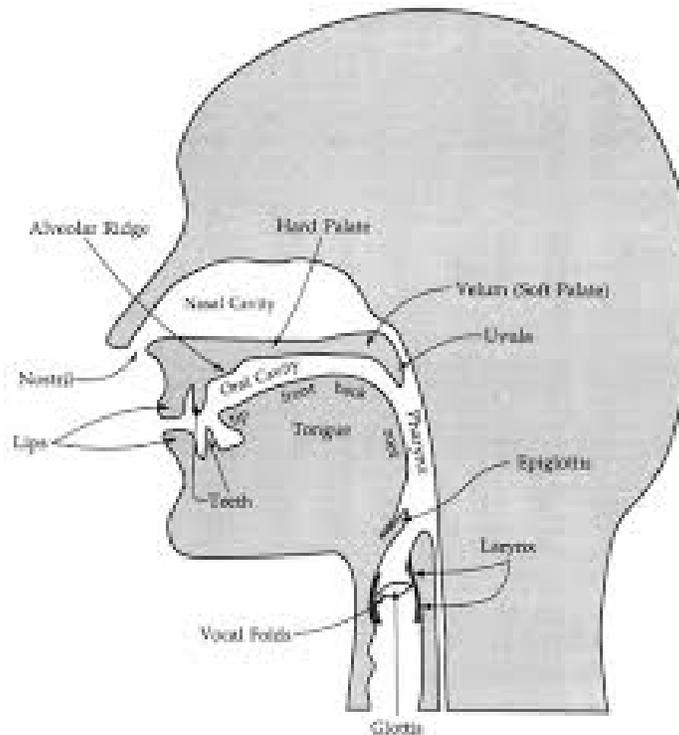
- Linguists describe consonants with three primary features:
 - (1) Primary consonant features
 - (i) **Voicing**
 - (ii) **Place** of articulation
 - (iii) **Manner** of articulation

2.1 Voicing

- Voicing refers to whether or not the vocal folds vibrate while you produce the consonant
 - “**Voiced**” [+voice] = vibrating
 - “**Voiceless**” [-voice] = not vibrating
- In each cell of the consonant chart, the one on the left is voiceless (e.g. [s]), the one on the right is voiced (e.g. [z]).

2.2 Place

- Place of articulation refers to the position in the oral cavity where you make a constriction.
- From left-to-right, the IPA chart goes from places at the front of the mouth to places at the back of the mouth.



- Interactive midsagittal diagram here: <http://smu-facweb.smu.ca/~s0949176/sammy/>

- Major places of articulation: *labial, coronal, dorsal, (glottal)*

Consonants of English

- **Labial** = lips

- *Bilabial*: bringing the two lips together [p,b,m,w]
- *Labiodental*: bringing the lower lip to the upper teeth [f,v]

- **Coronal** = tip/front of the tongue

- *(Inter)dental*: putting the tip of the tongue between the teeth (“th” sounds) [θ,ð]
- *Alveolar*: putting the tip of the tongue right behind the teeth (on the “alveolar ridge”) [t,d,s,z,n,l]
- *Postalveolar*: putting the tip of the tongue right behind the alveolar ridge (“sh” sounds) [ʃ,ʒ,tʃ,dʒ]
- *Palatal*: putting the front/middle of the tongue up to the hard palate (consonantal “y”) [j]

- **Dorsal** = middle/back of the tongue

- *Velar*: raising the middle/back of the tongue up to the soft palate [k,g,ŋ]

- ★ *Glottal* (≈ the absence of oral place): constriction of the vocal folds [h,ʔ]

2.3 Manner

- Manner of articulation refers primarily to the **degree of constriction** used to produce a consonant.
 - how closed is the vocal tract; for everything except labials, how close is the tongue to the top/back of the mouth
- The IPA chart is arranged from most constricted on the top to least constricted on the bottom

- Manners of articulation (≈ from most constricted to least constricted)

	Consonants of English
○ Stops (“oral stops”): complete closure of the oral cavity	[p,b,t,d,k,g,ʔ]
○ Fricatives : nearly complete closure of the oral cavity	[f,v,θ,ð,s,z,ʃ,ʒ,h]
★ Affricates : begin with complete closure (~stop) but end with partial closure (~fricative)	[tʃ,dʒ]
↔ <i>Basic IPA consonant chart does not include affricates because they are complex articulations, built up of two primary symbols.</i>	
○ Nasals (“nasal stops”): complete closure of the oral cavity but opening of the nasal cavity	[m,n,ŋ]
○ Taps/flaps : a very brief complete constriction	[ɾ]
○ Liquids : medium constrictions	[ɹ,l]
○ Glides (a.k.a approximants): minimal constriction, almost like vowels	[w,j]

2.4 Some more (non-English) consonants

- Places
 - *Retroflex*: curl the tongue tip up and back toward the hard palate
 - *Uvular*: raise the back of the tongue up to the soft palate
 - *Pharyngeal*: push the tongue root back towards the back of the throat
- Manners
 - *Trills*: multiple, very brief complete constrictions
 - *Lateral fricatives*: nearly complete closure with one side of the tongue lowered
- Secondary articulations

○ <i>Palatalization</i> : released with minor constriction at the hard palate	[C ^j]
○ <i>Labialization</i> : released with extra lip rounding	[C ^w]
○ <i>Aspiration</i> : released with extra puff of air from the glottis	[C ^h]
○ <i>Nasalization</i> : articulated with the nasal passages open	[C̃]