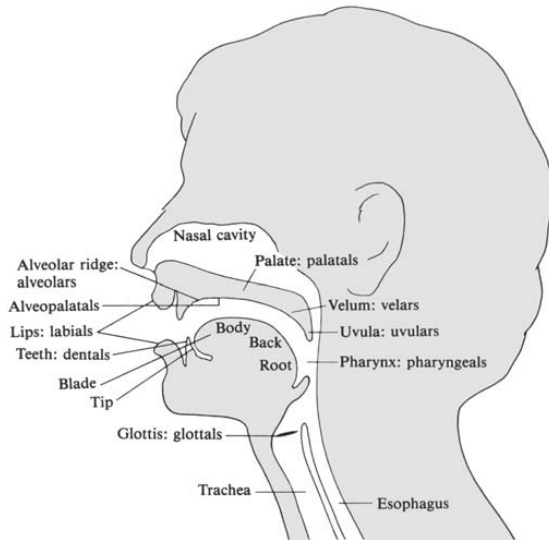


Ling 105
Sounds of Language

Tuesday, September 10, 2024

Kevin Ryan

	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			



D. Houkema (2001)

Bilabial

- [p, b, m], as in English
- Voiced trill [ʙ]
 - Kele [ᵐbʊlim] “face” 🎵
 - Titan [ᵐbulei] “rat” 🎵
- Voiceless trill [ɸ], as in Mangbetu (**minimal pair**)
 - [nóɸù] “to fan”
 - [nóᵐù] “to bring out from within”

Bilabial

- Fricatives [ɸ] and [β], as in Ewe
 - [éɸá] “he polished” 🎵
 - [éɸá] “he was cold” 🎵
 - [èβè] “Ewe (language)” 🎵
 - [èβè] “two” 🎵

Labiodental

- [f, v], as in English
- English marginally has [ɱ] (due to **assimilation**)
- Labiodental flap [ɸ], as in Banda
 - [vátò] “how” 🎵
 - [àv] “breath” 🎵
- Approximant [ɹ], as in Isoko
 - [évé] ‘how’ 🎵
 - [éúé] ‘breath’ 🎵
 - [éwé] ‘hoe’ 🎵

◀ ◻ ▶ ◀ ◻ ▶ ◀ ≡ ▶ ◀ ≡ ▶ ≡

- 6

o	Voiceless	$\text{ᵰ} \text{ᵻ}$..	Breathy voiced	$\text{ᵇ} \text{ᵃ}$	₃	Dental	$\text{ᵀ} \text{ᵀ}^{\text{d}}$
ᵝ	Voiced	$\text{ᵑ} \text{ᵀ}$	~	Creaky voiced	$\text{ᵇ} \text{ᵃ}$	₄	Apical	$\text{ᵀ} \text{ᵀ}^{\text{d}}$
h	Aspirated	$\text{ᵀ}^{\text{h}} \text{ᵀ}^{\text{h}}$	~	Linguolabial	$\text{ᵀ} \text{ᵀ}^{\text{d}}$	₅	Laminal	$\text{ᵀ} \text{ᵀ}^{\text{d}}$
ɔ	More rounded	ᵑ	ᵂ	Labialized	$\text{ᵀ}^{\text{w}} \text{ᵀ}^{\text{w}}$	~	Nasalized	ẽ
ɛ	Less rounded	ᵑ	j	Palatalized	$\text{ᵀ}^{\text{j}} \text{ᵀ}^{\text{j}}$	n	Nasal release	ᵀ^{n}
+	Advanced	ᵑ	ʏ	Velarized	$\text{ᵀ}^{\text{ʏ}} \text{ᵀ}^{\text{ʏ}}$	l	Lateral release	ᵀ^{l}
-	Retracted	ᵑ	ʕ	Pharyngealized	$\text{ᵀ}^{\text{ʕ}} \text{ᵀ}^{\text{ʕ}}$	ᵀ	No audible release	$\text{ᵀ}^{\text{ᵀ}}$
..	Centralized	ᵑ	~	Velarized or pharyngealized	ᵀ			
×	Mid-centralized	ᵑ	ᵀ	Raised	ᵑ (ᵀ = voiced alveolar fricative)			
ı	Syllabic	ᵑ	ᵀ	Lowered	ᵑ (ᵀ = voiced bilabial approximant)			
ᵀ	Non-syllabic	ᵑ	ᵀ	Advanced Tongue Root	ᵑ			
~	Rhoticity	$\text{ᵑ} \text{ᵑ}$	ᵀ	Retracted Tongue Root	ᵑ			

Dental, alveolar, & palato-alveolar

- English has almost all: [t, d, n, ɾ, θ, ð, s, z, ʃ, ʒ, ɹ, l]
- In many languages, *t*, *d*, etc., are dental, not alveolar; to make explicit: [t̪, d̪]
- Coronal trill [r]

Dental/alveolar contrasts

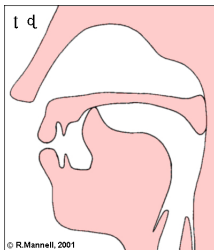
- Dental vs. alveolar near-minimal pairs
 - Wubuy [t̪arag] “whiskers” 🎵
 - Wubuy [tarawa] “prawn” 🎵
 - Kaititj [aḷuŋ] “burrow” 🎵
 - Kaititj [aḷuŋk] “chase” 🎵

Lateral fricative

- [ɬ] (not the same as [ɭ])
- In Europe?
- [ɮ]

Retroflex

- Symbols
- Tongue shapes, e.g. **apical** in Hindi vs. **sub-apical** in Tamil



Retroflex

- Hindi
 - [ɖal] “lentil” 🎵
 - [ɗal] “branch” 🎵
 - [ʈal] “beat” 🎵
 - [ʡal] “postpone” 🎵
- Toda has a three-way contrast between /ɖ, t, ʈ/

Palatal

- Palatal plosives in Hungarian
 - [cu:k] “hen” ♪
 - [ɲuit] “he ignites” ♪
- Palatal fricatives [ç, ʝ]
 - German [ɪç] “I” ♪
 - Greek [çɛri] “hand” ♪
 - Greek [jɛri] “I” ♪

- English [j]
- Nasal [ɲ], lateral [ʎ] in Italian
 - [ɲo:mi] “gnomes” 🎵
 - [ʎi] “to him” 🎵 vs. [li] “there” 🎵
 - [foʎ:a] “leaf” 🎵 vs. [fol:a] “crowd” 🎵

Velar

- English [k, g, ŋ]
- Fricatives, as in Greek
 - [xɔma] “soil” 🎵
 - [ɣɔma] “eraser” 🎵
- Spanish *jugar* [xuɣar] “to play” 🎵

Velar

- Velar lateral approximant, as in Wahgi
 - [aLaLe] “dizzy” 🎵
- Voiced velar approximant [ɰ] 🎵

Uvular

- Plosives [q, ɢ]
 - Aleut [ka qa ki qi] ♪
- Nasal [ŋ]
- Voiceless fricative [χ], as in Hebrew
 - [laχ] “for you (fem.)” ♪

Uvular rhotic

- [ʁ]: voiced uvular fricative (also considered rhotic)
- French *r* (P^{raat})
 - [ʁOZ] “rose” 🎵
 - [lɛtʁ] “letter” 🎵

Pharyngeal fricative

- Hebrew
 - [ħor] “hole” 🎵
 - [ʕor] “skin” 🎵

Epiglottal

- Voiceless plosive [ʔ]; fricatives [ħ] & [ʕ], as in Agul
 - [sɛʔɛr] “measures” 🎵
 - [mɛħɛr] “wheys” 🎵

CONSONANTS (NON-PULMONIC)

Clicks	Voiced implosives	Ejectives
⦿ Bilabial	ɓ Bilabial	ʼ Examples:
ǀ Dental	ɗ Dental/alveolar	pʼ Bilabial
ǃ (Post)alveolar	ɟ Palatal	tʼ Dental/alveolar
ǂ Palatoalveolar	ɡ Velar	kʼ Velar
ǁ Alveolar lateral	ŋ Uvular	sʼ Alveolar fricative

OTHER SYMBOLS

ɱ Voiceless labial-velar fricative	ɕ ʑ Alveolo-palatal fricatives
ɯ Voiced labial-velar approximant	ɺ Voiced alveolar lateral flap
ɥ Voiced labial-palatal approximant	ɶ Simultaneous ɶ and ɶ
ħ Voiceless epiglottal fricative	
ʕ Voiced epiglottal fricative	Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary.
ʔ Epiglottal plosive	

Laryngeal/glottal

- English [h, ʔ]
- Voiced fricative [ɦ] (e.g. English *behind*)