



Phonetics II

Merlin Balkhash
Department of Linguistics, Rutgers University
2025/11/14 (updated: 2025-11-20)

Previously on 201

vowels vs. consonants vs. glides

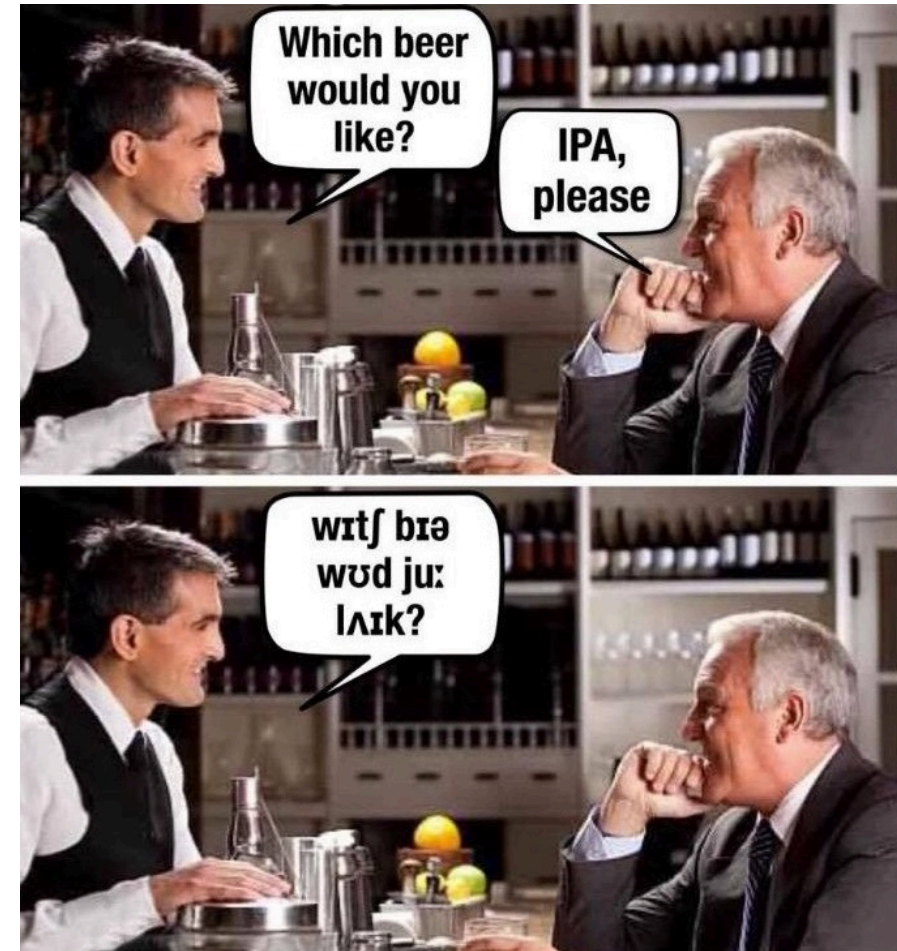
- **vowels** - no obstruction
- **consonants** - with complete obstruction
- **glides** - with partial obstruction

vowel articulation

- tongue **height** (high, mid, low)
- tongue **backness** (front, central, back)
- lip **roundness** (rounded, unrounded)

other vowel features

- **nasalisation**
- **vowel length**
- **pitch** (tone, etc)



Previously on 201

CONSONANTS (PULMONIC)

© 2020 IPA

	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			

Symbols to the right in a cell are voiced, to the left are voiceless. Shaded areas denote articulations judged impossible.

When you meet someone but suddenly they produce a voiceless velar trill



vowels vs. consonants vs. glides

- **vowels** - no obstruction
- **consonants** - with complete obstruction
- **glides** - with partial obstruction

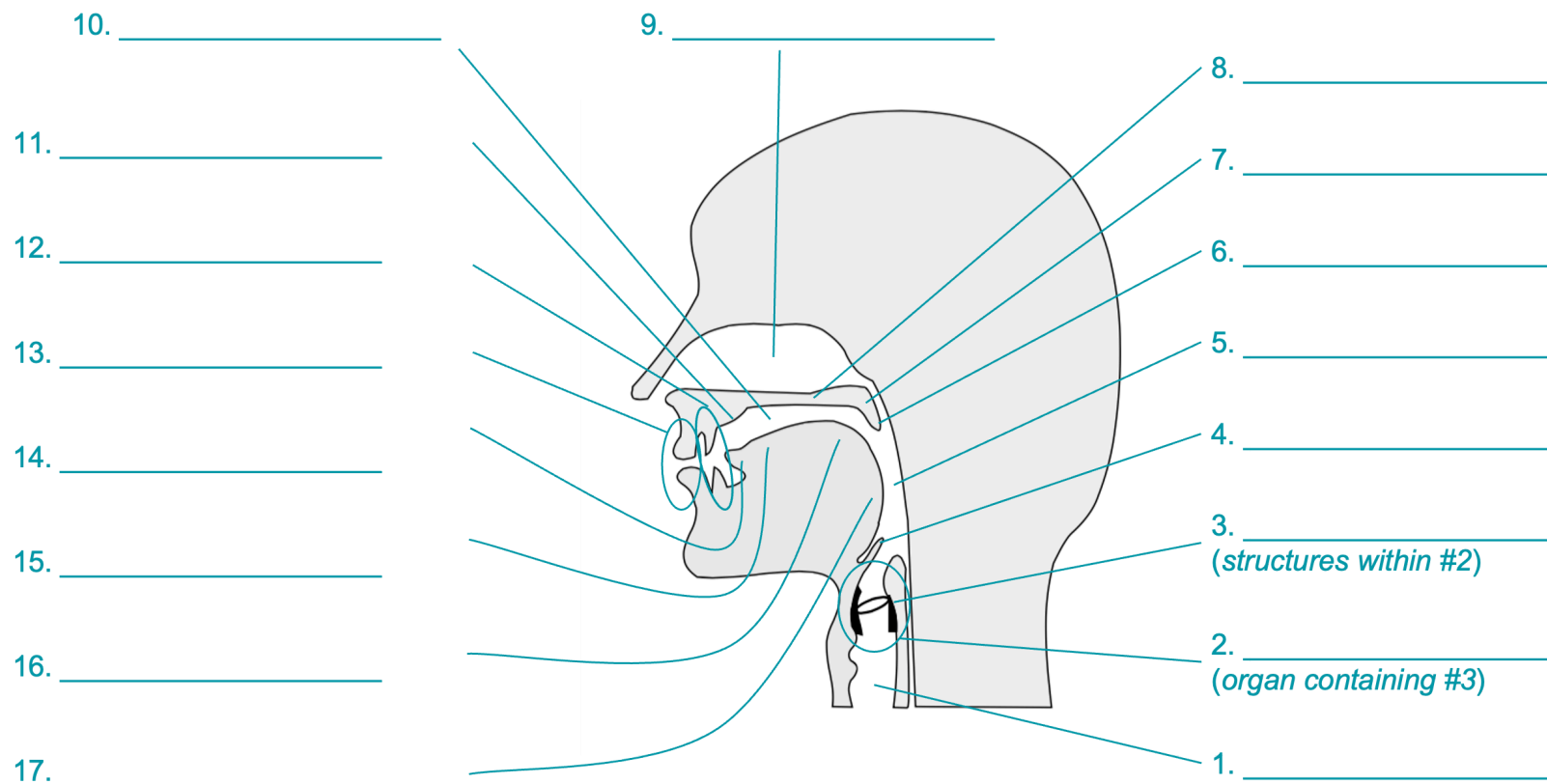
categories to differentiate consonants

- **voicing**
 - **whether** the vocal cords vibrate or not
- **place**
 - **where** the obstruction of airflow in the vocal tract is
- **manner**
 - **what type** of obstruction of airflow occurs
- there is some sort of obstruction of airflow (complete or partial), for sure

Vocal Tract Anatomy

alveolar ridge	nasal cavity	teeth	trachea
epiglottis	oral cavity	tongue back	uvula
glottis & vocal folds	(hard) palate	tongue blade	velum (soft palate)
larynx	pharynx	tongue root	
lips			

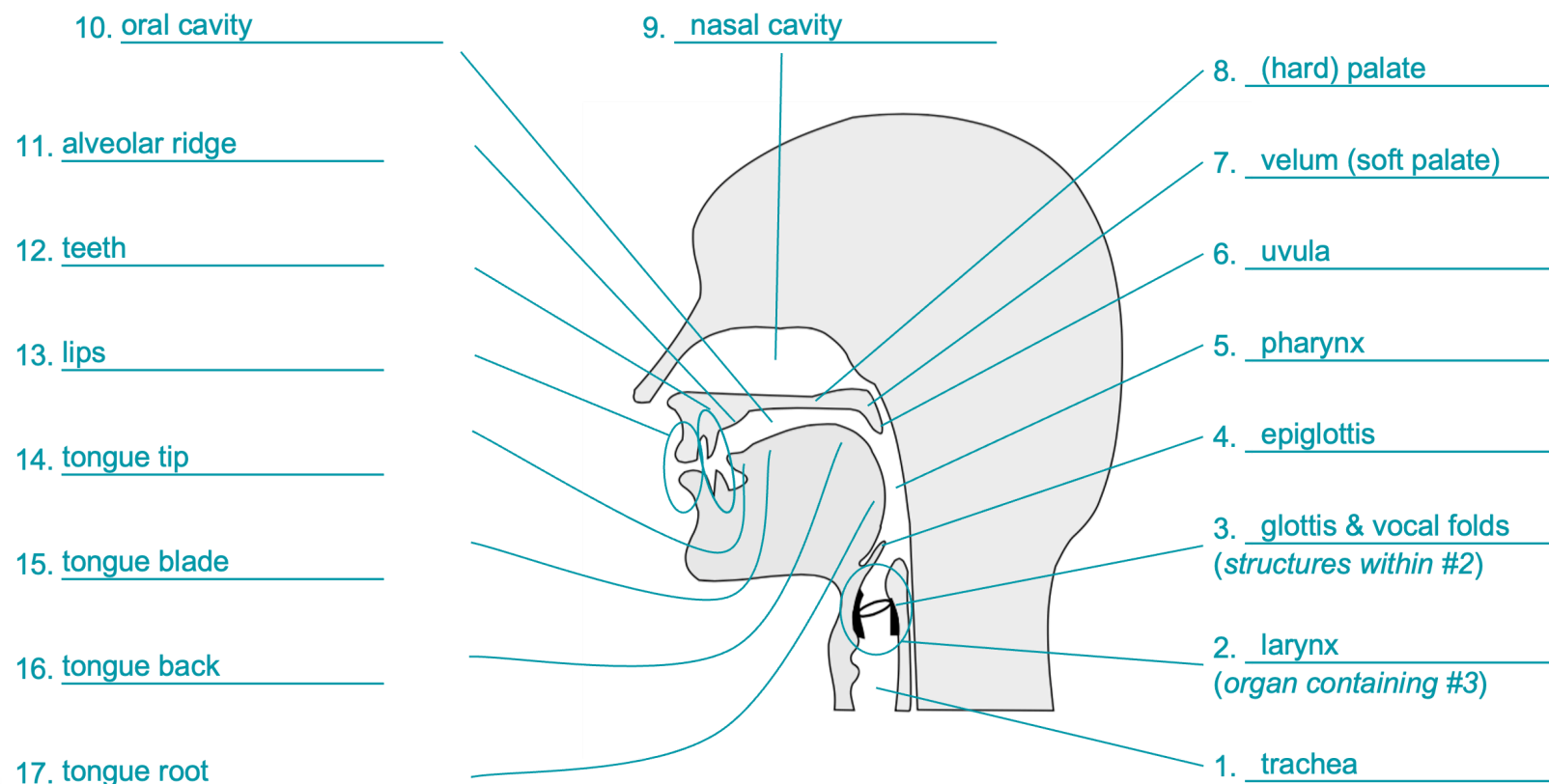
Fill in the blanks with the appropriate **anatomical term** for each **articulator** from the box. #5, 9, 10 refer to **cavities** (open spaces), not structures. (You may consult the reading, page 22)



Vocal Tract Anatomy

alveolar ridge	nasal cavity	teeth	trachea
epiglottis	oral cavity	tongue back	uvula
glottis & vocal folds	(hard) palate	tongue blade	velum (soft palate)
larynx	pharynx	tongue root	
lips			

Fill in the blanks with the appropriate **anatomical term** for each **articulator** from the box. #5,9,10 refer to **cavities** (open spaces), not structures. (You may consult the reading, page 22)



Categories to Differentiate Consonants

CONSONANTS (PULMONIC)

© 2020 IPA

	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			

Symbols to the right in a cell are voiced, to the left are voiceless. Shaded areas denote articulations judged impossible.

columns - **PLACE** - where the obstruction of airflow in the vocal tract is

row - **MANNER** - what type of obstruction of airflow occurs

in a **single cell** - **VOICING** - whether the vocal cords vibrate or not (the right is *voiced*)

[IPA clickable chart](#)

Place of Articulation

(where the obstruction is in the vocal tract)

- **labials**: lips
 - **bilabials**: both lips [b, p]
 - **labio-dentals**: the lower lip and upper teeth [f, v]
- **coronals**: between the tongue tip/blade and the front part of the mouth
 - **dentals**: tongue and teeth [θ, ð]
 - **alveolars**: tongue and alveolar ridge [t, d]
 - **post-alveolars**: tongue and the space right behind alveolar ridge [ʃ, ʒ]
- **retroflexes**: the tongue tip is arched backward [ɭ, ɻ]



Place of Articulation

(where the obstruction is in the vocal tract)



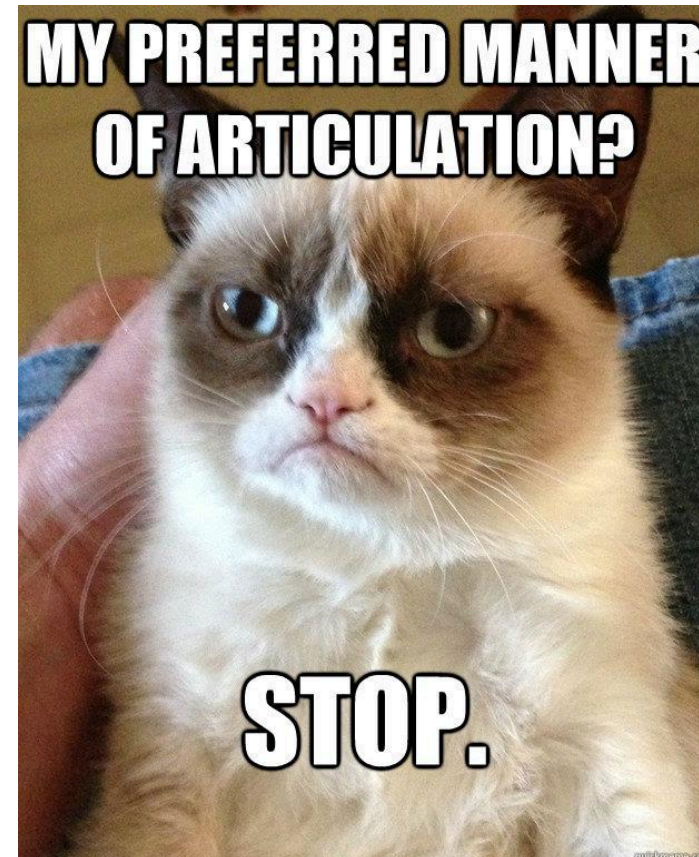
- **palatals**: tongue body raised against the **hard palate** [j]
- **velars**: tongue back against the **soft palate** (velum) [k, g]
- **guttrals**: pronounced in the very back of the mouth (around the **throat** area)
 - **uvulars**: tongue back against the **uvula** [q, ʁ]
 - **pharyngeals**: root of tongue obstructing the **pharynx** [ħ, ʕ]
 - **glottals**: **vocal folds** close the **glottis** [ʔ]

Manner of Articulation

(what type of obstruction of airflow occurs)

complete blockage of airflow

- stops/plosives [p/b, t/d, k/g]
 - stops can be **aspirated** (with a [h] sound after the obstruction is released)
 - [p^h, p] ([p^hejs], [spejs])
- trills, taps/flaps [r, R, ɾ]
 - obstruction doesn't last long enough to cause a **release of pressure** at the end



Manner of Articulation

(what type of obstruction of airflow occurs)

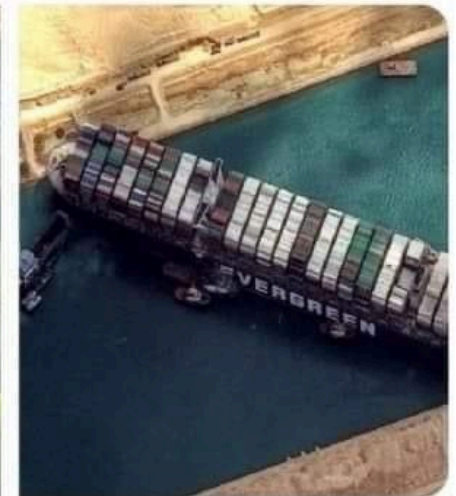
partial blockage of airflow

- fricatives [f, ʒ]
- approximants [ɹ]
 - less obstruction than **fricatives**
- laterals [l]
 - obstruction in the center, but air flows past the tongue on the side(s)

FRICATIVES



STOPS



Manner of Articulation

(what type of obstruction of airflow occurs)

airflow blocked in **one part** of the vocal tract but flow through **a different part**

- **affricates** [tʃ, dʒ] ???[dʒ]
- a combination between stops and fricatives
- **nasals** [m, n, ŋ]
- complete obstruction through the oral cavity but air is **redirected** to flow through the nasal cavity

EMPTY

EMPT

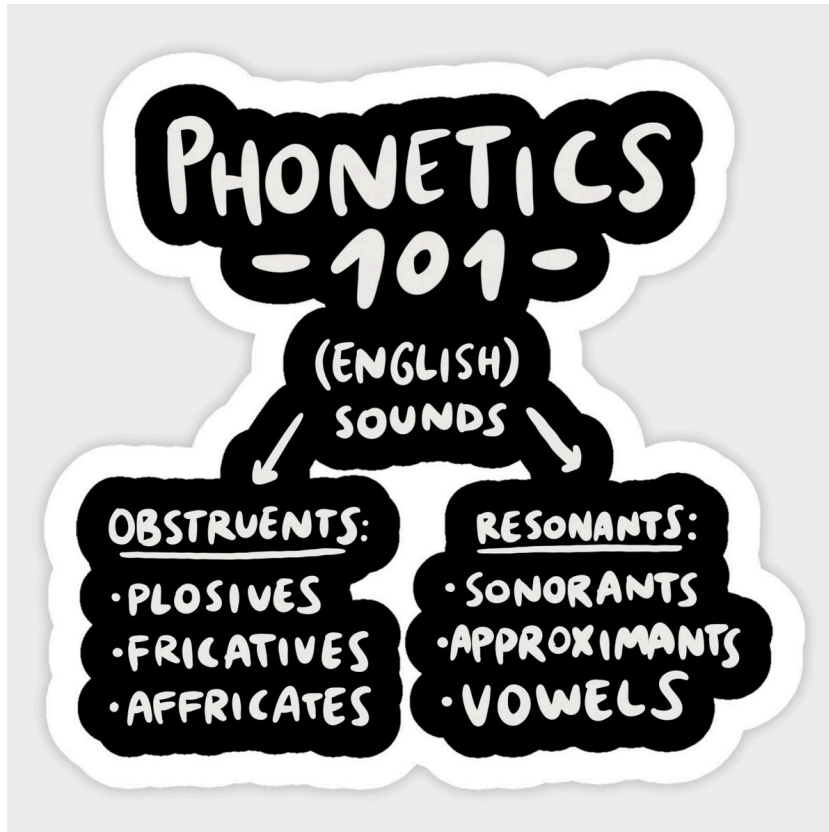
MPTY

MT



Manner of Articulation

(what type of obstruction of airflow occurs)



further grouping into **sound class**

- **rhotics**: **r**-like sounds [ɹ, ɻ, r, R, ɾ, ʀ, ʁ...]
- **liquids**: **rhotics** and **laterals**
- **obstruents**
 - consonants with **more** obstruction
 - **stops**, **fricatives**, **affricates**
- **sonorants**
 - consonants with **less** obstruction
 - **nasals**, **liquids**, **approximants**

Voicing

(whether vocal cords vibrate or not)



Practice: Identifying Consonants

Give a full description for **voicing**, **place**, and **manner** of **each consonant** in the following words and give the corresponding **IPA** symbol:

move

hide

cloth

stove

gosh

bank

CONSONANTS (PULMONIC)

© 2020 IPA

	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			

Symbols to the right in a cell are voiced, to the left are voiceless. Shaded areas denote articulations judged impossible.

Practice: Identifying Consonants

Give a full description for **voicing**, **place**, and **manner** of **each consonant** in the following words and give the corresponding **IPA** symbol:

move [m]: **voiced bilabial nasal**
 [v]: **voiced labio-dental fricative**

cloth [k]: **voiceless velar stop**
 [l]: **voiced alveolar lateral approximant**
 [θ]: **voiceless dental fricative**

gosh [g]: **voiced velar stop**
 [ʃ]: **voiceless post-alveolar fricative**

hide [h]: **voiceless glottal fricative**
 [d]: **voiced bilabial stop**

stove [s]: **voiceless alveolar fricative**
 [t]: **voiceless alveolar stop**
 [v]: **voiced labio-dental fricative**

bank [b]: **voiced bilabial stop**
 [ŋ]: **voiced velar nasal**
 [k]: **voiceless velar stop**

Practice: Identifying Consonants

Give a full description for **voicing**, **place**, and **manner** of **each consonant** in the following words and give the corresponding **IPA** symbol:

CONSONANTS (PULMONIC) © 2020 IPA

	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			

Symbols to the right in a cell are voiced, to the left are voiceless. Shaded areas denote articulations judged impossible.

CHALLENGE: Write a phonetic transcription of your name. How would you describe each vowel and consonant?

Practice: Reading IPA

What **English words** do these **phonetic transcriptions** correspond to?

1. ['el.bow]
2. [vaj.ə'lin]
3. ['aɪ.lənd]
4. ['pi.pl]
5. [jɪ.ər]
6. ['deɪn.dʒə.rəs]
7. [jʌŋ]



'phonetically speaking, ...'

Practice: Reading IPA

What **English words** do these **phonetic transcriptions** correspond to?

1. ['el.bow] **elbow**
2. [vaj.ə'lin] **violin**
3. ['aɪ.lənd] **island**
4. ['pi:pl] **people**
5. [ji.ər] **year**
6. ['deɪn.dʒə.rəs] **year**
7. [jʌŋ] **young**



'cat and linguistics lover'

Practice: Reading IPA



What **English words** do these **phonetic transcriptions** correspond to?

1. ['bʌ.tər.flaj]

2. ['ʌŋ.kl]

3. ['rʌ.bər]

4. [rajt]

5. ['eə.pɔːt]

6. ['ɔː.gəst]

7. [gə.'rɪ.lə]

8. [məs.'ki.təw]

Practice: Reading IPA



'I survived phonetics class'

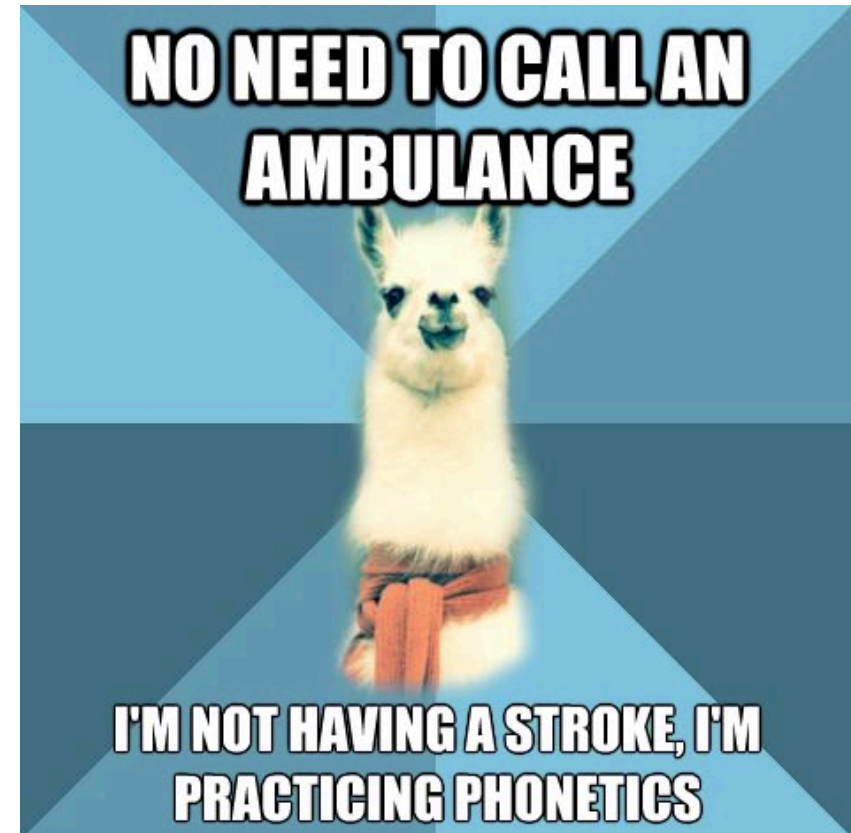
What **English words** do these **phonetic transcriptions** correspond to?

1. ['bʌ.tər.flaj] **butterfly**
2. ['ʌŋ.kl] **uncle**
3. ['rʌ.bər] **rubber**
4. [raɪt] **right**
5. ['eə.pɔ:t] **airport**
6. ['ɔ:.gəst] **August**
7. [gə.'rɪ.lə] **gorilla**
8. [məs.'ki.təʊ] **mosquito**

Practice: Writing with IPA

Represent the following **English words** each with a **phonetic transcription**.

1. camera
2. cotton
3. decision
4. length
5. weather
6. judge
7. visionary



Practice: Writing with IPA

Represent the following **English words** each with a **phonetic transcription**.

1. camera [ˈkæ.m(ə).ə/]

2. cotton [ˈkɑ.ʔŋ]

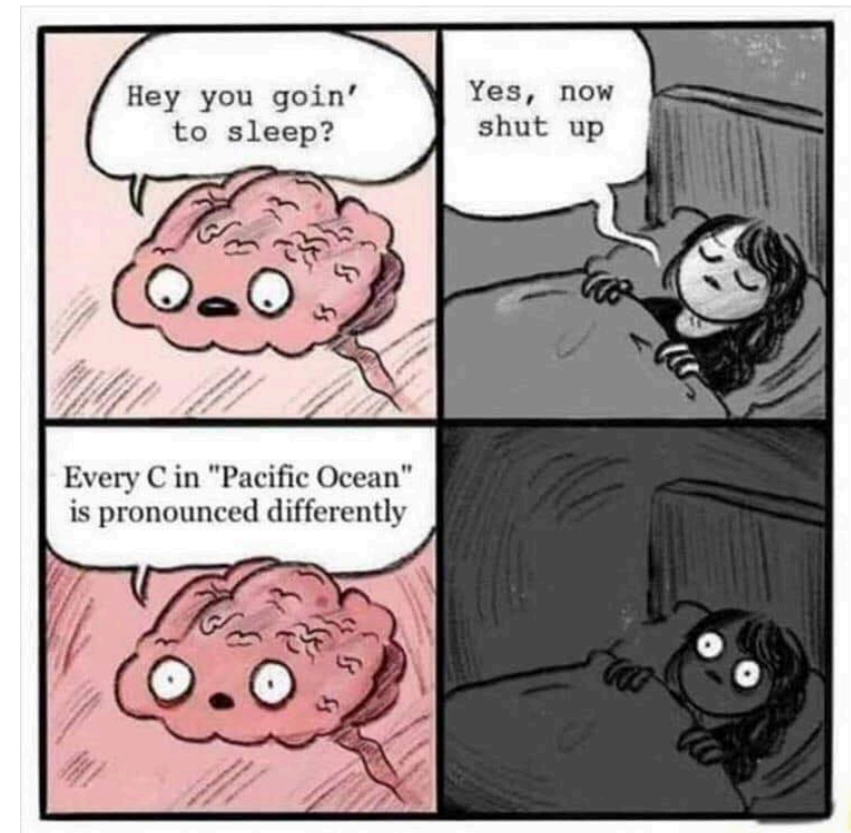
3. decision [dɪ.ˈsɪ.ʒən]

4. length [lɛŋθ]

5. weather [ˈwɛ.ðər]

6. judge [dʒʌdʒ]

7. visionary [ˈvɪ.ʒə.nɛ.ɹi]



Homework VII will be posted this Sunday and it is due next Sunday (**Nov 23rd**)

reading materials:

Phonology: The Function and Patterning of Sounds

in O'Grady et al.'s *Contemporary Linguistics: An Introduction*

This is Schwa.

Schwa is not stressed.

Schwa is cool.

Be like Schwa.



Slides created via the R package **xaringan**.