



Phonetics II

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

Previously on 201

vowels vs. consonants vs. glides

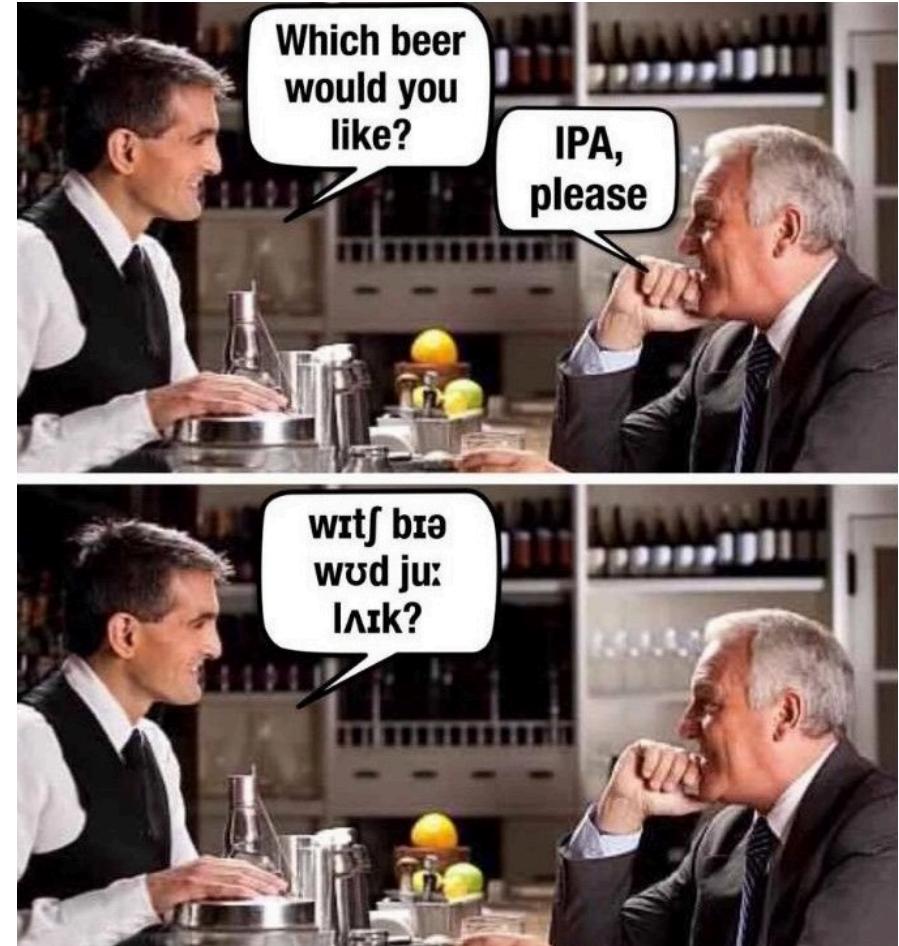
- **vowels** - no obstruction
- **consonants** - with complete obstruction
- **glides** - with partial obstruction

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		t̪ d̪	c j	k g	q G			?	
Nasal	m	nj		n		n̪	n̪	n̪	n̪	N			
Trill	B			r						R			
Tap or Flap		v̪		r̪		t̪							
Fricative	f̪ β	f v	θ ð	s z	ʃ ʒ	s̪ z̪	ç j	x y	χ ʁ	h f̪	h f̪		
Lateral Fricative			ɬ	ɬ									
Approximant		v̪		ɹ̪		ɺ̪	j̪	w̪					
Lateral approximant			l̪		ɺ̪	ɻ̪	L̪						

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



vowels vs. consonants vs. glides

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

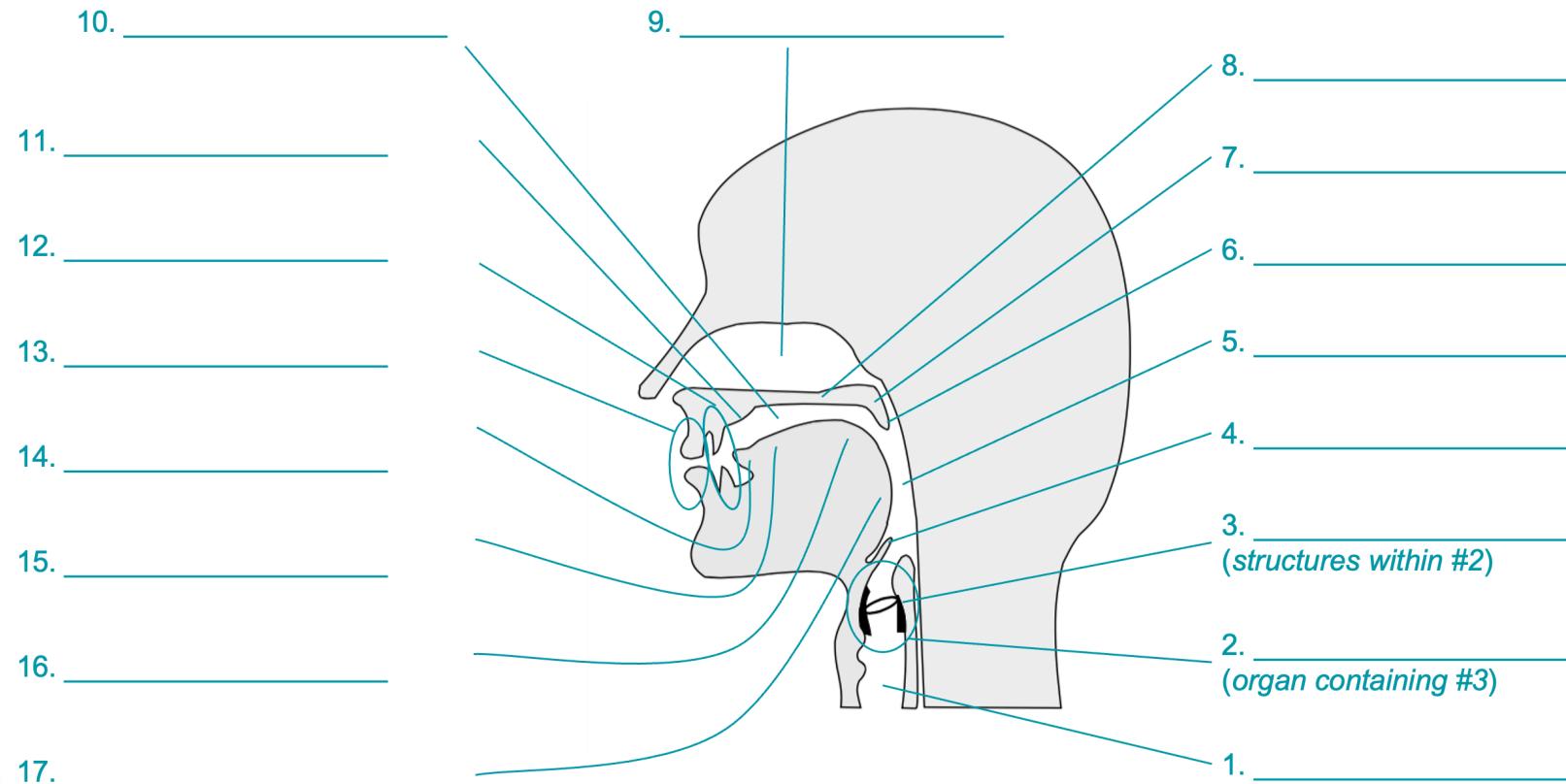
consonantal features

- **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
epiglottis	oral cavity	tongue back
glottis & vocal folds	(hard) palate	trachea
larynx	pharynx	uvula
lips		velum (soft palate)

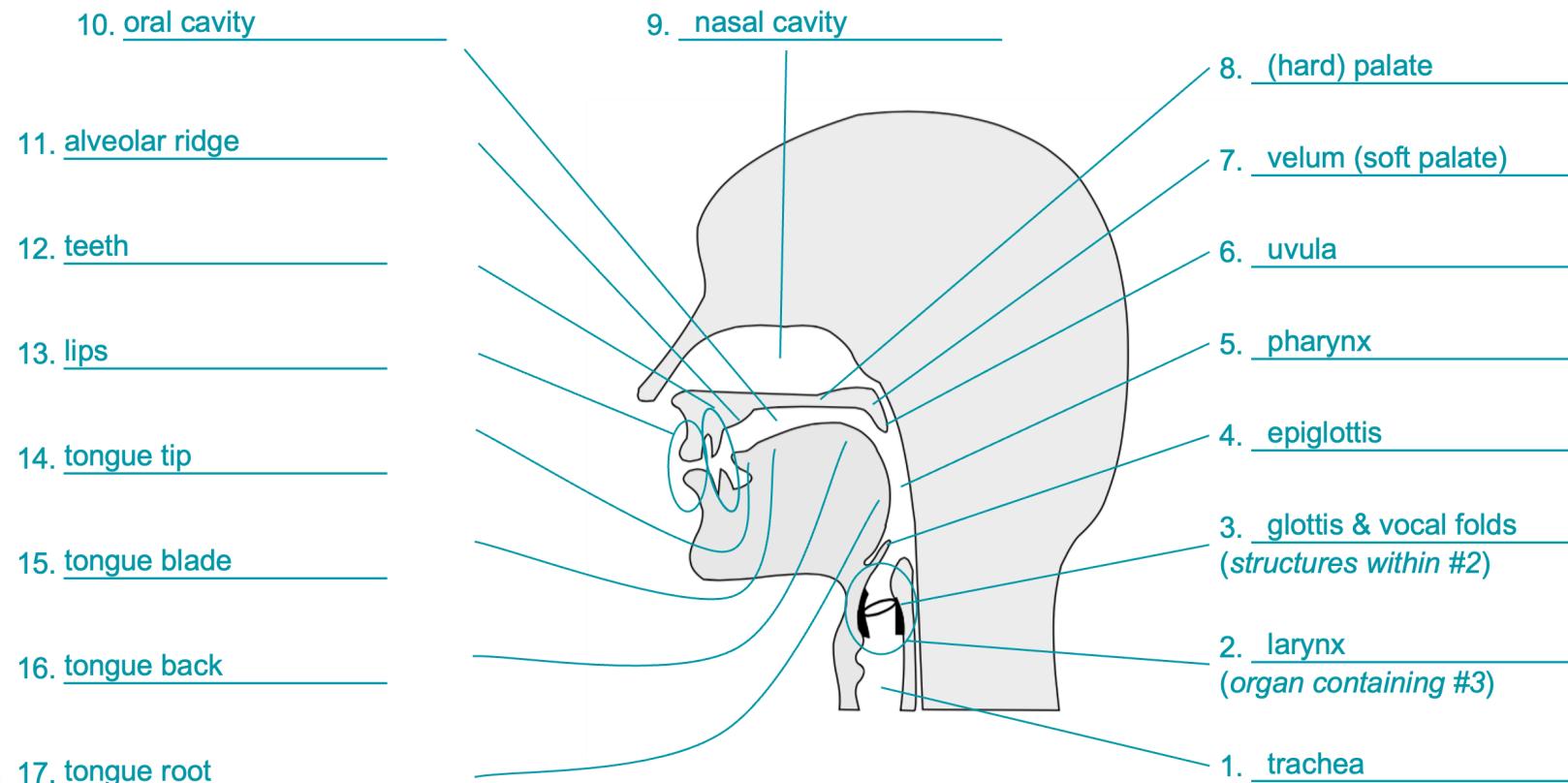
Fill in the blanks with the appropriate **anatomical term** for each **articulator** from the box. #5, 9, 10 refer to **cavities** (open spaces), not structures. (You may consult the reading, page 22)



Vocal Tract Anatomy

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

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)



Consonant Features

CONSONANTS (PULMONIC)

© 2020 IPA

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		t d	c j	k g	q g		?
Nasal	m	m̪		n		n̪	j̪	ŋ̪	N		
Trill	B			r					R		
Tap or Flap		v̪		f̪		t̪					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	s z̪	ç j	xɣ	χ w	ħ ŋ	h f̪
Lateral fricative				ɬ ɭ							
Approximant		v̪		ɹ̪		ɻ̪	j̪	w̪			
Lateral approximant				l̪		ɺ̪	ʎ̪	L̪			

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

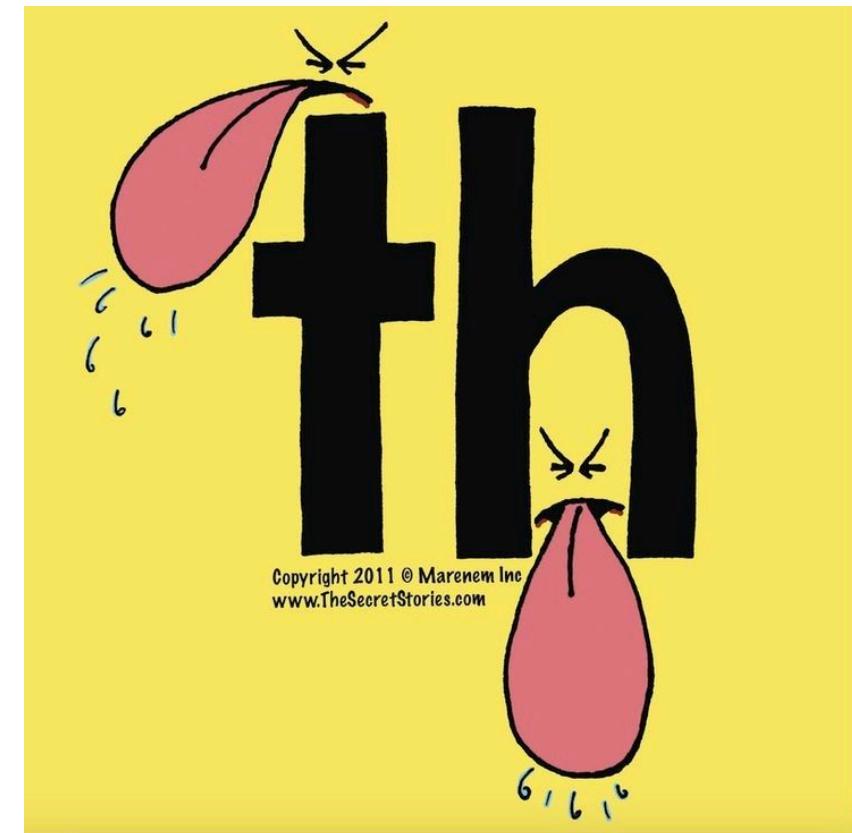
in a **single cell** - **VOICING** - whether the vocal cords vibrate or not (the right is *voiced*)

[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 [t, d]



Place of Articulation

(where the obstruction is in the vocal tract)



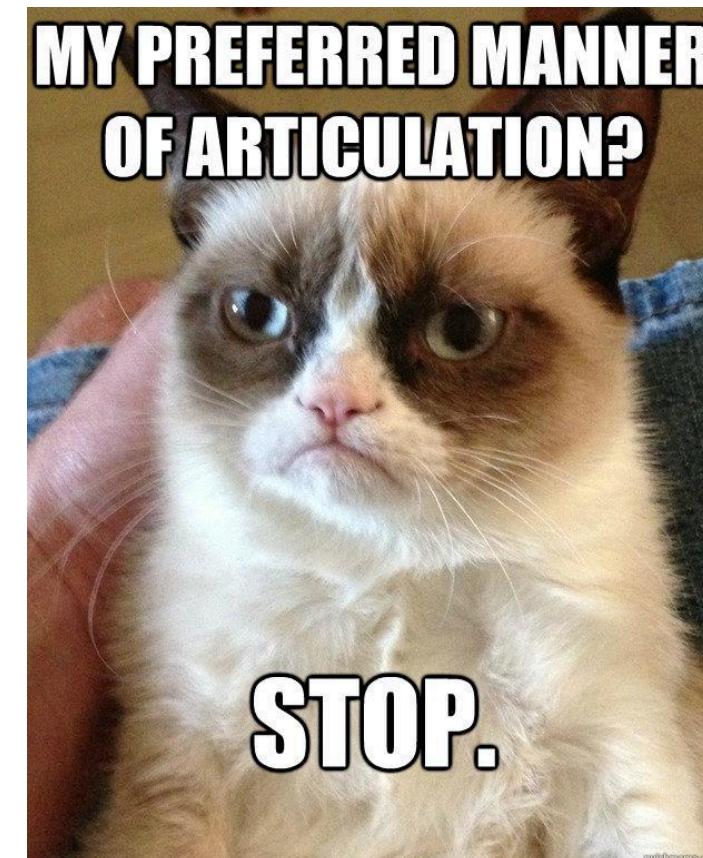
- **palatals**: tongue body raised against the hard palate [j]
- **velars**: tongue back against the soft palate (velum) [k, g]
- **gutturals**: pronounced in the very back of the mouth (around the throat area)
 - **uvulars**: tongue back against the uvula [q, ρ]
 - **pharyngeals**: root of tongue obstructing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

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



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, ɳ]
 - complete obstruction through the oral cavity but air is **redirected** to flow through the nasal cavity

EMPTY

EMPT

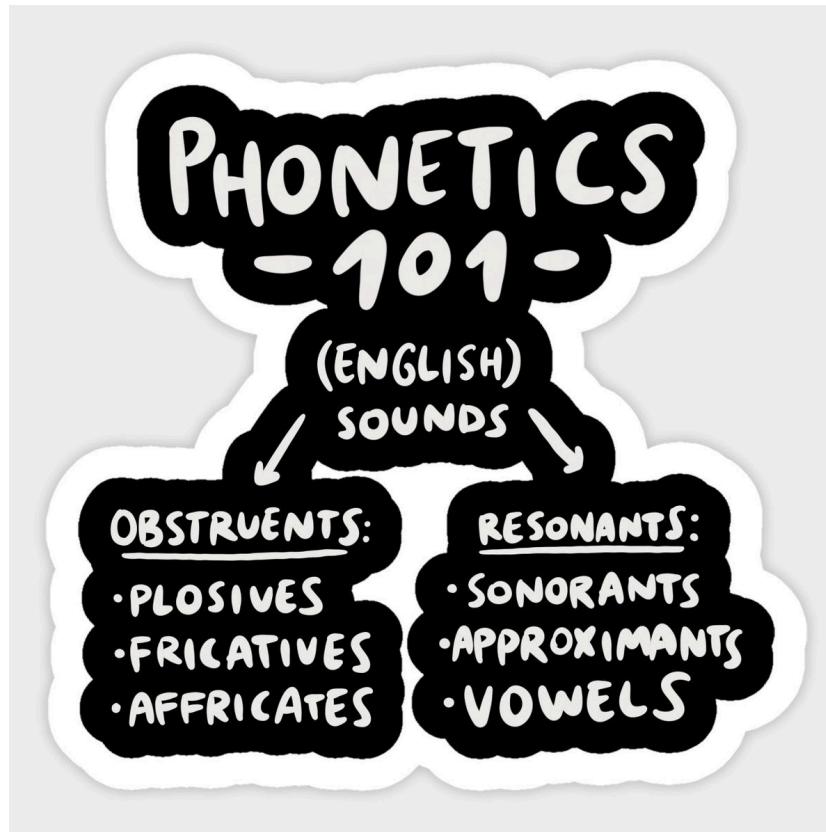
MPTY

MT



Manner of Articulation

(what type of obstruction of airflow occurs)



further grouping into **sound class**

- **rhotics**: *r*-like sounds
- **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		t̪ d̪	c ɟ	k ɡ	q ɢ		?
Nasal	m	n̪j		n		n̪	n̪l	n̪ŋ	N		
Trill	B			r						R	
Tap or Flap		v̪		f̪		t̪					
Fricative	ɸ β	f v̪	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ɟ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative			ɬ ɭ								
Approximant		v̪		ɹ		ɻ	j	w̪			
Lateral approximant				l̪		ɺ	ɻ	L			

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	hide	[h]: voiceless glottal fricative [d]: voiced bilabial stop
cloth	[k]: voiceless velar stop [l]: voiced alveolar lateral approximant [θ]: voiceless dental fricative	stove	[s]: voiceless alveolar fricative [t]: voiceless alveolar stop [v]: voiced labio-dental fricative
gosh	[g]: voiced velar stop [ʃ]: voiceless post-alveolar 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		t̪ d̪	c j	k g	q ɣ		?	
Nasal	m	m̪		n		n̪	n̥	ŋ	N			
Trill	B			r						R		
Tap or Flap		v̪		f		t̪						
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç j	xɣ	χ ʁ	ħ ʕ	h f	
Lateral fricative				ɬ ɺ								
Approximant		v̪		ɹ̪		ɻ̪	j	w̪				
Lateral approximant				l̪		ɻ̪	ɻ̥	L̪				

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

CHANLLANGE: 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'lɪn]
3. ['aɪ.lənd]
4. ['pi.pl]
5. [jɪ.ər]
6. ['dejn.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'lɪn] **violin**

3. ['aɪ.lənd] **island**

4. ['pi.pl] **people**

5. [jɪ.ər] **year**

6. ['dejn.dʒə.rəs] **year**

7. [jʌŋ] **young**

8. [grɛps] **grapes**



'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. [raɪt]
5. ['eə.pɔ:t]
6. ['o:gəst]
7. [gə.'rɪ.lə]
8. [məs.'ki.tow]

Practice: Reading IPA



'I survived phonetics class'

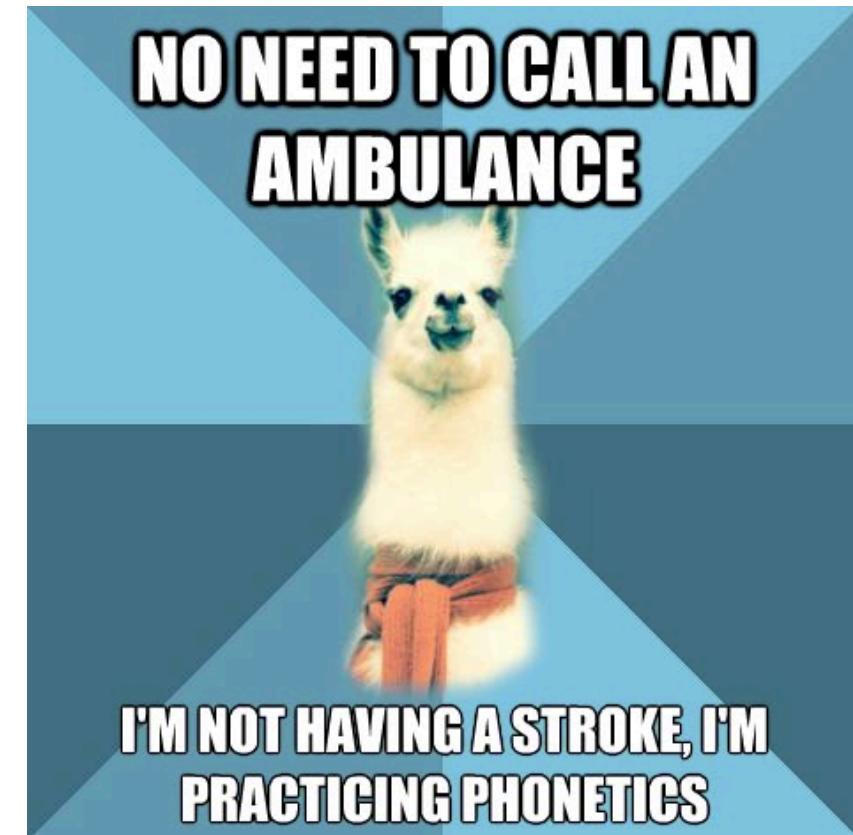
What **English words** do these **phonetic transcriptions** correspond to?

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

2. cotton [ˈkɔ.tən]

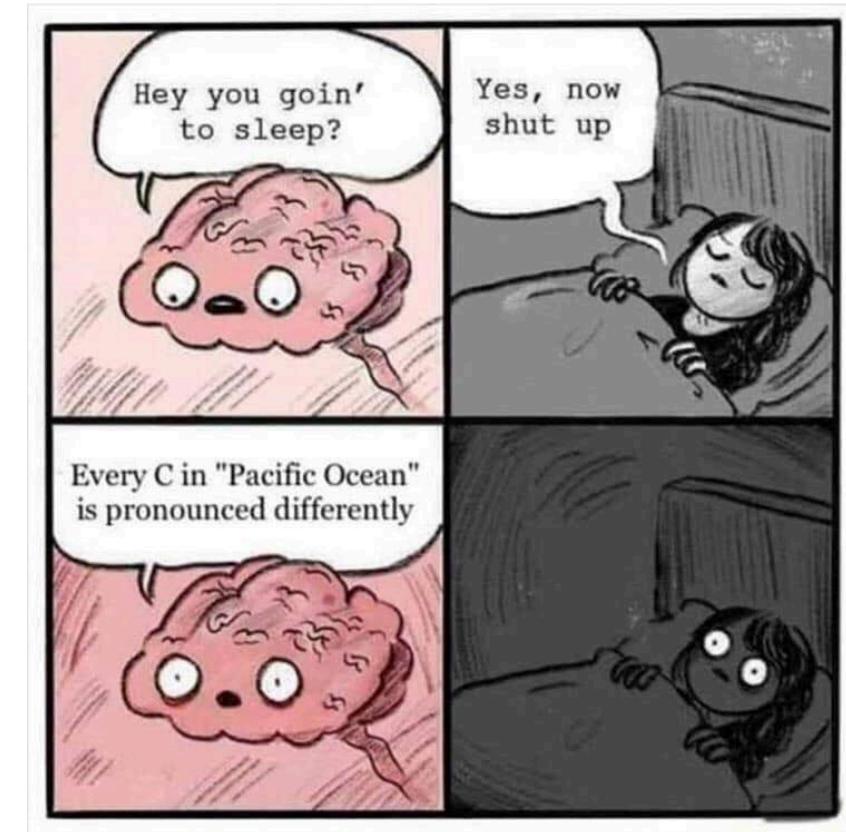
3. decision [dɪ.ˈsɪ.zən̩]

4. length [lɛŋθ̩]

5. weather [ˈwɛðər̩]

6. judge [dʒudʒ̩]

7. visionary [vi.ʒə.nəri]



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**.