

'The thing was that Earth was the only place in the whole known Universe where language was used. It was a unique Earthling invention. Everybody used mental telepathy, so Earthlings could get pretty good jobs as language teachers just about anywhere they went.

The reason creatures wanted to use language instead of mental telepathy was that they found out they could get so much more done with language. Language made them so much more active. Mental telepathy, with everybody constantly telling everybody everything, produced a sort of generalized indifference to all information. But language, with its slow, narrow meanings, made it possible to think about one thing at a time - to start thinking in terms of projects.'

from God Bless You, Mr. Rosewater by Kurt Vonnegut

PHONETICS¹



Drawing by Leo Cullum, copyright © 1988 The New Yorker Collection. All rights reserved.

Here is a list of websites on phonetics and articulation:

- Very useful website:
<https://www.ipachart.com/>
- You might enjoy this one:
<https://www.seeingspeech.ac.uk/ipa-charts/2>
- Another amazing website:
<http://smu-facweb.smu.ca/~s0949176/sammy/>
- You can be creative:
<https://dood.al/pinktrombone/>
- For fun:
<https://www.instagram.com/phoneticsspeak/#>

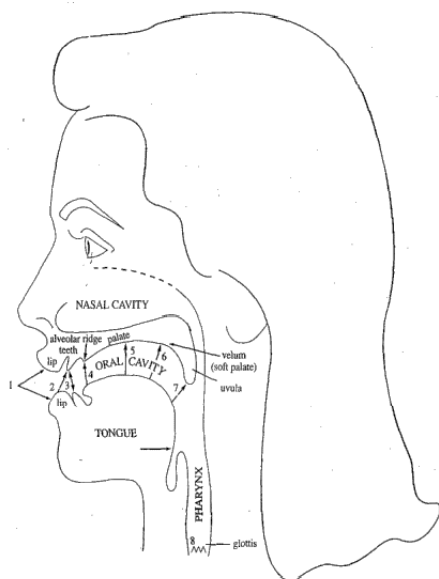


What do you know about i) *articulatory phonetics*, ii) *acoustic phonetics*, iii) *auditory phonetics*?

¹ The data in this handout is heavily driven from *An Introduction to Language* by Fromkin et al (2007).

² The videos work only when opened with Internet Explorer 🤖

Consonants



Places of articulation: 1. bilabial; 2. labiodental; 3. interdental; 4. alveolar; 5. (alveo)palatal; 6. velar; 7. uvular; 8. glottal.

Example words

p	pat	[pæt]	θ	thick	[θɪk]	dʒ	judge	[dʒədʒ]
g	get	[gæt]	b	bat	[bæt]	ð	the	[ðə]
m	mat	[mæt]	ʒ	garage	[gəʒɑːʒ]	t	pat	[pæt]
s	sat	[sæt]	n	gnat	[næt]	ɪ	rat	[ɪæt]
d	pad	[pæd]	z	zip	[zɪp]	ŋ	sing	[sɪŋ]
f	fat	[fæt]	k	cat	[kæt]	ʃ	wash	[wəʃ]
l	last	[læst]	h	hat	[hæt]	w	what	[wət]
v	vat	[væt]	ʧ	match	[mætʃ]	j	yet	[jæt]

(also ʔ, as in 'uh-oh' [ʔəʔo]; the symbol is called a 'glottal stop')

IPA symbols for English consonants³

	Bilabial		Labio-dental		(Inter-) dental		Alveolar		Palato-alveolar		Velar		Glottal	
Stop (oral)	p	b					t	d			k	g		
Stop (nasal)		m						n				ŋ		
Fricative			f	v	θ	ð	s	z	ʃ	ʒ			h	
Affricate									tʃ	dʒ				
Lateral								l						
Approximant		w						ɹ		j				

Shaded = voiced

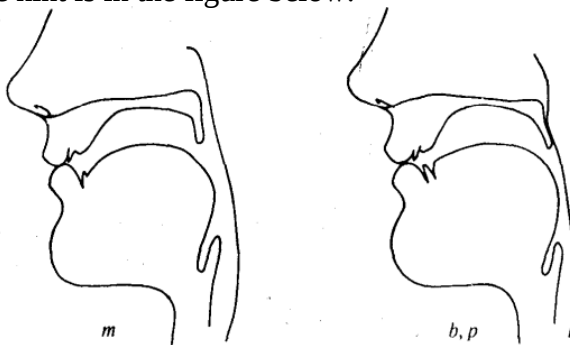
Unshaded = voiceless

If you are interested in voicing: <https://www.youtube.com/watch?v=y2okeYVclQo>

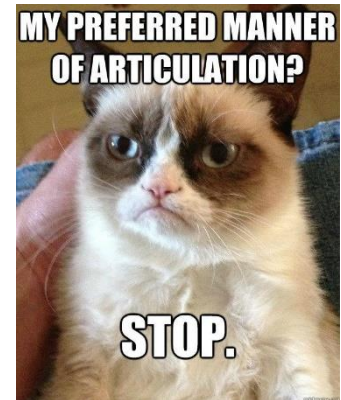
A fun part for us but not a part of the class at the moment: Let's complicate things a bit. Is the articulation only key for us to distinguish sounds? Are you familiar with the phenomenon McGurk Effect? <https://www.youtube.com/watch?v=PWGeUztTkRA>

³ Accessible from <https://web.stanford.edu> > F10_L1_English-IPA

Your turn: Can you explain the difference between oral and nasal stops?
The hint is in the figure below:



Fromkin et al, 2007; p. 246



Quick note : Nasal sounds in English are inherently voiced.
Is it possible to have voiceless nasal sounds?

when you see a
mildly funny joke

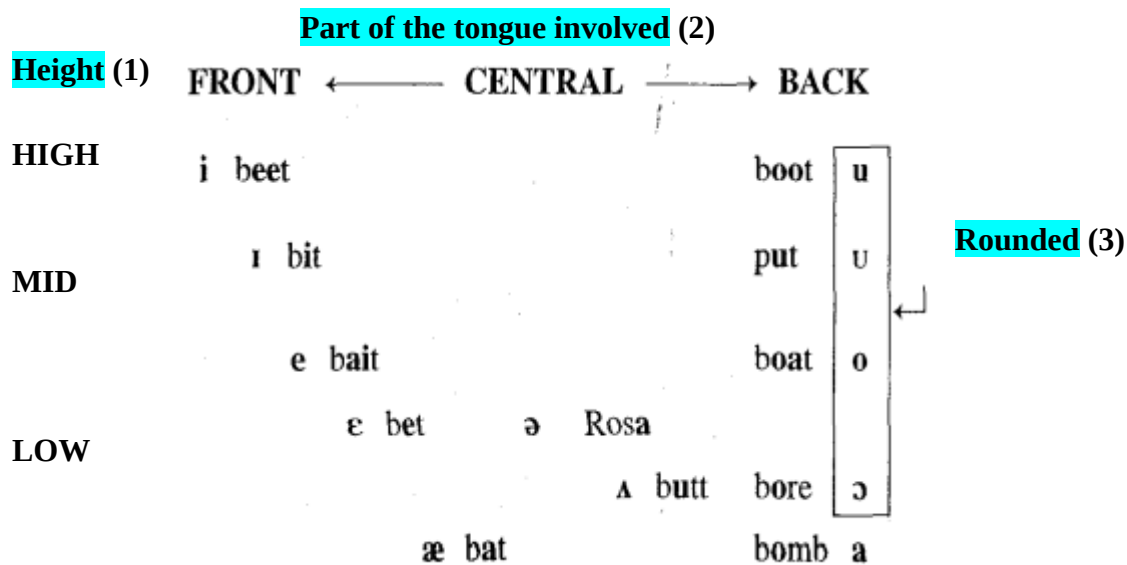
m^h

Source: Reddit

Vowels of English

What is striking about the boldface segments in the following sentence:
'Did **he** **bel**ieve that **Ca**esar could **see** the **pe**ople **se**ize the **se**as?'⁴

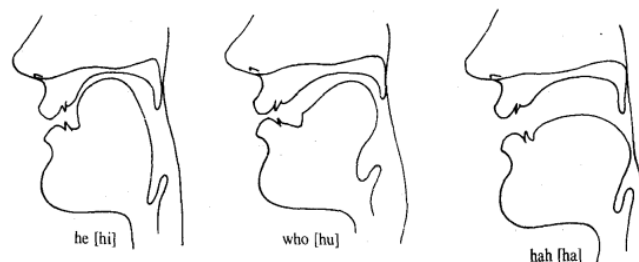
How to define a vowel:



⁴ Adapted from Fromkin et al.

Now we can name the vowels in English using these properties:

[i] → high front unrounded vowel
 [u] →
 [a] →



(Fromkin et al, 2007; p. 253)

IPA symbols for English vowels⁵

	Front	Mid	Back
High	i <u>be</u> et [bit]		u <u>bo</u> ot [but]
Mid-high	ɪ <u>b</u> it [bɪt]		ʊ <u>bo</u> ok [bʊk]
Mid	e <u>ba</u> it [bet]	ə <u>bu</u> t [bət]	o <u>bo</u> at [bot]
Mid-low	ɛ <u>b</u> et [bet]		ɔ <u>bo</u> ught [bɔt]
Low	æ <u>ba</u> t [bæt]		a <u>fa</u> ther [fɑðə]

Shaded = rounded Unshaded = unrounded

Diphthongs

eɪ pay [peɪ]
 aɪ pie [paɪ]
 ɔɪ point [pɔɪnt]
 ou Po [pou]
 aʊ pow [paʊ]

Exercise time

1. What are the initial phonemes of the following words? Be careful: We are not interested in orthography!

a. phone	[]	b. easy	[]
c. ooze	[]	d. contact	[]
e. judge	[]	f. psycho	[]
g. usual	[]	h. knight	[]
i. xerox	[]	j. pneumonia	[]
k. though	[]	l. thought	[]

2. What are the final phonemes of the following words? Again, be careful: We are not interested in orthography!

a. sing	[]	b. health	[]
c. fleece	[]	d. beloved	[]
e. church	[]	f. rags	[]
g. cow	[]	h. knight	[]
i. xerox	[]	j. cheese	[]
k. neigh	[]	l. long	[]

⁵ Accessible from https://web.stanford.edu/~F10_L1_English-IPA

3. Let's find the corresponding IPA symbols for each of the following phonetic descriptions and provide, and English word that contains this sound.

- | | | |
|------------------------------------|-----|-------|
| a. voiceless affricate | [ ] | ..... |
| b. voiced alveolar stop | [ ] | ..... |
| c. low back vowel | [ ] | ..... |
| d. velar nasal | [ ] | ..... |
| e. lateral liquid | [ ] | ..... |
| f. voiceless bilabial stop | [ ] | ..... |
| g. voiceless interdental fricative | [ ] | ..... |
| h. mid front lax vowel | [ ] | ..... |
| i. high back tense vowel | [ ] | ..... |

4. What are the phonetic feature(s) each set of phonemes share?

Features

- | | |
|---|-------|
| a. [p] [b] [m] | _____ |
| b. [o] [ɔ] [u] [ʊ] | _____ |
| c. [i] [ɪ] [ε] [e] [æ] | _____ |
| d. [t] [g] [b] [p] [d] [t] | _____ |
| e. [p] [k] [t] [h] [θ] [s] [f] [ʃ] [tʃ] | _____ |
| f. [w] [r] [l] [j] | _____ |
| g. [ɪ] [n] [s] [z] [d] [t] [l] | _____ |
| h. [i] [ɪ] [u] [ʊ] | _____ |

5. Can you find the word that has a different phoneme?

- | | | | | |
|----------|------------|---------|----------|-------|
| a. heart | nothing | love | come | _____ |
| b. bird | word | bed | earth | _____ |
| c. dog | fox | cough | caught | _____ |
| d. idea | volunteers | where | near | _____ |
| e. enjoy | boy | point | brown | _____ |
| f. goes | introduces | loses | dressess | _____ |
| g. hear | beer | chair | year | _____ |
| h. asked | looked | worried | hooked | _____ |
| i. now | voice | out | cow | _____ |
| j. look | pool | full | foot | _____ |

6. Could you find the English words that are written in phonetic transcription?

- | | | | | | |
|--------------|-------|------------|-------|------------|-------|
| a. [hit] | _____ | b. [stɪok] | _____ | c. [fez] | _____ |
| d. [ton] | _____ | e. [boni] | _____ | f. [skɪim] | _____ |
| g. [prɪtʃəɪ] | _____ | h. [kɪak] | _____ | | |

7. What phonetic property is different between the right and left columns?

- | | |
|----------------------------|-------------------------|
| a. [i] [ɪ] | [u] [ʊ] |
| b. [p] [t] [k] [s] [f] | [b] [d] [g] [z] [v] |
| c. [p] [b] [m] | [t] [d] [n] [k] [g] [ŋ] |
| d. [i] [ɪ] [u] [ʊ] | [ɛ] [e] [æ] [a] [o] [ɔ] |
| e. [f] [v] [s] [z] [ʃ] [ʒ] | [tʃ] [dʒ] |
| f. [i] [ɪ] [ɛ] [e] [æ] [ə] | [u] [ʊ] [a] [o] [ɔ] |

8. Which of the following sound pairs have the same manner of articulation?

- | | | |
|------------|------------|------------|
| a. [h] [ʔ] | b. [f] [ʃ] | c. [m] [ŋ] |
| d. [ɹ] [w] | e. [k] [θ] | f. [s] [g] |
| g. [j] [w] | h. [ɹ] [t] | i. [v] [ð] |

9. Lovely diphthongs! Identify the diphthongs in each word. Here is a list of diphthongs in English:

/aʊ/ /aɪ/ /eə/ /əʊ/ /ɔɪ/ /ʊə/ /eɪ/ /ɪə/

- | | | | | | |
|------------|-------|-------------|-------|-------------|-------|
| a. theatre | ..... | b. lake | ..... | c. choice | ..... |
| d. care | ..... | e. height | ..... | f. mountain | ..... |
| g. nose | ..... | h. security | ..... |  |  |

10. The following pairs differ by one or more phonetic features. Please provide the IPA symbols for the italicized sounds; state the difference between these sounds, and state what properties they have in common.

	IPA symbols	Difference	Similarity
a. phone – <i>phonic</i>	–.....		
b. <i>bath</i> – <i>bathe</i>	–.....		
c. <i>reduce</i> – reduction	–.....		
d. <i>cool</i> – cold	–.....		
e. <i>cats</i> – dogs	–.....		
f. <i>impolite</i> – <i>indecent</i>	–.....		