

Unit 3

Consonants (1)

Approaching consonants via anatomy and articulatory phonetics

Slides for the session of

Phonetics with Listening Practice (British)

held on

le nonidi 19 floréal de l'année CCXXXI du calendrier républicain

(9 May 2023)

Consonants (1)

Looking ahead

Some words of warning

How we make sounds

(Pulmonic) Consonants:
dimensions of
articulation

You can make any
consonant you want

Which English
consonants do *you* find
difficult?

'Light' (or 'clear') vs.
'dark' / l / — one sound
or two?

We are mammals and
have mammalian reflexes

Robert Spence
English Department
Saarland University

English Phonetics: Unit 3:

['ɪŋ.gəlɪf fə.'net.ɪks 'ju:n.ɪt̪ 'θri:]

Consonants (1)

['kʰɒn.t̪s.(ə)n(.)ən(t)s 'wʌn]

Approaching consonants via anatomy and articulatory phonetics

[ə.'pɹəʊtʃ.ɪŋ 'kʰɒn.t̪s.(ə)n(.)ən(t)s ,vɑ(ɪ)(.)əɪ ə.'næt.əm.i ɪ ɪ
ɑ:.'tʰɪk.jʊl.ət̪.i fə.'net.ɪks]

Robert Spence

['ɹɒb.ət 'spens]

based on material by William Barry and Ingmar Steiner

['beɪst ɒn mə.'tʰɪɹ̩.i(.).ət̪ bɑɪ 'wɪl.jəm 'bæɪ.i ən 'ɪŋ.mɑ:ɪ 'stɑɪn.ɜ:]

le nonidi 19 floréal de l'année CCXXXI du calendrier républicain

[lə nɒ.ni.di dis.nœf flɔ̃.re.al də l a.ne dɔ̃.sã.tʁã.te.œ dy ka.lã.dʁi.je

ʁe.py.bli.kɛ]

(Tuesday 9 May 2023)

['tju:z.deɪ ðə 'naɪnθ əv 'meɪ 'tʊwent.i.'tʊwent.i.'θri:]

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- Over this five-week block we shall be looking at consonants and vowels in more detail.

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- The week after that will be devoted to further practice on ,“difficult” vowels.
- We shall then proceed to look at vowels in more detail, taking a constrastive view of the vowel systems of English and German.

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- The week after, we shall switch our attention temporarily to **vowels**, approaching them via *physics* and **acoustic phonetics**; once again, we will be concentrating on English vowels or diphthongs which are ‘difficult’ for non-native English speakers in general.
- The week after that will be devoted to further practice on ,“difficult” vowels.
- We shall then proceed to look at vowels in more detail, taking a contrastive view of the vowel systems of English and German.
- Finally, we shall return to consonants, doing a contrastive study of the consonant systems of English and German.



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- Remember that phonetics is the only part of language that actually interfaces with physical reality...
- Even a cursory glance at the human vocal tract is enough to confirm that it is not the result of conscious design; it is pure 'Bastelarbeit' – lungs were originally buoyancy tanks.
- Are you afraid of the IPA?
- On the one hand: only learn as many symbols as you need.
- On the other hand: you probably already produce way more sounds than you're aware of.
- Negative stereotypes that involve (perceived) ethnicity usually also involve (unexamined, un-understood) sounds: (Chinese; Arabic)
- Wrong consonants are more associated with foreignness
- Wrong vowels are more associated with social inferiority/superiority (class) and non-standardness/standardness (region).
- Keep your copy of the IPA chart handy!

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The human vocal tract (after Catford)

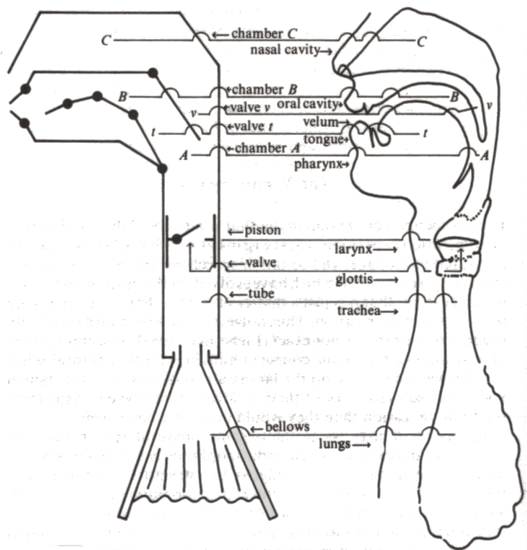


Figure: The vocal tract as a machine

(J.C. Catford, *Fundamental Problems of Phonetics*, Bloomington: Indiana University Press, 1977)

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- Consonants (dt. Mitlaute) can be looked at in terms of their articulation, their acoustics, or their auditory perception

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 - more delicately: **apico-**/**apical-**alveolar, **lamino-**/**laminal-**alveolar, (**antero**)**dorsal**-palatal, (**postero**)**dorsal**-velar, etc.

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 - MANNER of articulation (the “vertical”) dimension
 - plosive, nasal, trill, tap or flap, fricative, lateral fricative, approximant, lateral approximant (make sure you understand what each of these terms means; note Eckert and Barry’s way of classifying these into “obstruents” and “sonorants” [E&B: 36–39]; and don’t forget to add affricate = plosive+fricative)

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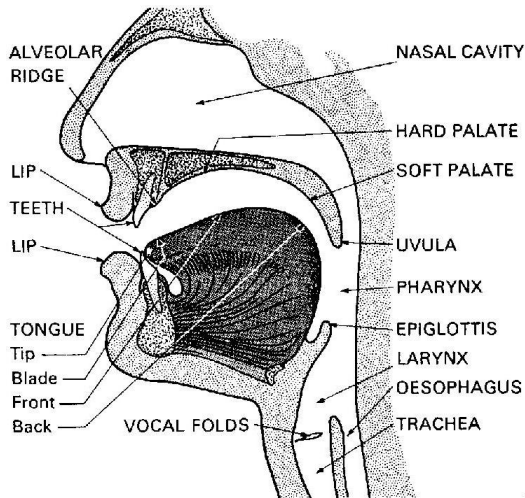
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THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

CONSONANTS (PULMONIC)

© 2005 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			ʀ					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			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

You can make any consonant you want

- Can you make the following sounds?

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 - a voiceless velar fricative
 - a voiceless uvular fricative

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 - a voiceless uvular fricative
 - a voiceless uvular plosive

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 - a voiceless uvular plosive
 - a voiced velar nasal

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 - a voiced bilabial fricative
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 - a voiced bilabial fricative
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 - a voiced labiodental approximant

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dimensions of
articulation

You can make any
consonant you want

Which English
consonants do *you* find
difficult?

'Light' (or 'clear') vs.
'dark' / l / — one sound
or two?

We are mammals and
have mammalian reflexes

You can make any consonant you want

- Use voicing as well as place and manner of articulation to describe the consonant sounds indicated by the framed graphemes or by the framed IPA symbols:

φων

Consonants (1)

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- Use voicing as well as place and manner of articulation to describe the consonant sounds indicated by the framed graphemes or by the framed IPA symbols:

- < th is na ti on has enou gh f i sh to feed itself >

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- Use voicing as well as place and manner of articulation to describe the consonant sounds indicated by the framed graphemes or by the framed IPA symbols:

- < this nation has enough fish to feed itself >

- [In meməɪ əv ɔ:l wɪmɪn ɹeɪpt In ɔ:l wɔ:z]

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- Use voicing as well as place and manner of articulation to describe the consonant sounds indicated by the framed graphemes or by the framed IPA symbols:
 - < th is na ti on has enou gh f i sh to feed itself >
 - [ɪn m eməi ə v ɔ:l wɪmɪn ɹeɪ p t ɪn ɔ:l w ɔ:z]
- Read Eckert and Barry pp 36–39 on manner of articulation and on the voiceless/voiced opposition

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- < **th**is na**ti**on has enou**gh** **f**i**sh** to feed itself >

- [In **m**eməi ə**v**ɔ:l wɪmɪn ɹeɪ**p**t In ɔ:l **w**ɔ:z]

- Read Eckert and Barry pp 36–39 on manner of articulation and on the voiceless/voiced opposition
- We'll follow Eckert and Barry in talking about **fortis** consonants (stronger, like **[p]**) and **lenis** consonants (weaker, like **[b]**)

Which English consonants do *you* find difficult?

p		t		k	
b		d		g	
			tʃ		
			dʒ		
	f	θ	s	ʃ	h
	v	ð	z	ʒ	
m		n		ŋ	
		l		r	
w				j	

pit		to		cod	
bit		do		god	
			chin		
			gin		
	fin	thin	sin	shin	hit
	van	the	zoo	vision	
man		not		sing	
		lay		ray	
wet				yet	

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'Light' (or 'clear') vs. 'dark' / l / — one sound or two?

Language	Initial	(e.g.)	Final	(e.g.)	What happens if you get it wrong?
Dutch	dark	lekker	dark	wel	you sound foreign
German	light	liegen	light	Milch	you sound foreign
English	light	leaf	dark	milk	you sound foreign
Russian	dark	лук (‘Zwiebel’)	dark	угол (‘Ecke’)	you risk being totally and
	<i>or</i> light	люк (‘Luk(e)’)	<i>or</i> light	уголь (‘Kohle’)	utterly misunderstood

N.B.: The Russian ‘light’ / l / is in fact ‘palatalized’. (Wikipedia is your friend.)

What is this baby hominid doing?



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- One of the first things a mammal does ...

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- One of the first things a mammal does ...
- ... after trying out its lungs ...

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- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...

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- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...
- ... to suck!

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- ... to suck!
- (If it doesn't, it dies.)

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- ... is ...
- ... to suck!
- (If it doesn't, it dies.)
- What does your mouth do when you suck?

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- ... is ...
- ... to suck!
- (If it doesn't, it dies.)
- What does your mouth do when you suck?
- There are two basic 'postures' — / u / and / i /
- For / u / the oral cavity is long and thin, the lips are rounded, the back of the tongue is up, and the front of the tongue is down

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- (If it doesn't, it dies.)
- What does your mouth do when you suck?
- There are two basic 'postures' — / u / and / i /
- For / u / the oral cavity is long and thin, the lips are rounded, the back of the tongue is up, and the front of the tongue is down
- For / i / the oral cavity is short and wide, the lips are spread, the front of the tongue is up, and the back of the tongue is down

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- ... is ...
- ... to suck!
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- What does your mouth do when you suck?
- There are two basic 'postures' — / u / and / i /
- For / u / the oral cavity is long and thin, the lips are rounded, the back of the tongue is up, and the front of the tongue is down
- For / i / the oral cavity is short and wide, the lips are spread, the front of the tongue is up, and the back of the tongue is down
- 'Neither / u / nor / i /' is / ə /.

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- For / i / the oral cavity is short and wide, the lips are spread, the front of the tongue is up, and the back of the tongue is down
- 'Neither / u / nor / i /' is / ə /.
- What is 'both / u / and / i /'?