

Unit 3

Consonants (1)

Approaching consonants via anatomy and articulatory phonetics

Slides for the session of

Phonetics with Listening Practice (British)

held on

13 / 15 brumaire, an CCXXVIII de la République

(04 / 06 November 2019)

Consonants (1)

Looking ahead

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
LangSciTech
Saarland University

English Phonetics: Unit 3:

[ˈɪŋ.ɡlɪʃ fə.ˈnet.ɪks ˈjuː.n.ɪtʰ ˈθri:]

Consonants (1)

[ˈkʰɒn.t̪s.(ə)n(ə)n(t)s ˈwʌn]

Approaching consonants via anatomy and articulatory phonetics

[ə.ˈpɹəʊtʃ.ɪŋ ˈkʰɒn.t̪s.(ə)n(ə)n(t)s ˌvɑ(ɹ)(.)əɪ ə.ˈnæt.əm.i ɹ̩]

ɑː.ˈtʰɪk.jʊl.ət̪.i fə.ˈnet.ɪks]

Robert Spence

[ˈrɒb.ət ˈspens]

based on material by William Barry and Ingmar Steiner

[ˈbeɪst ɒn mə.ˈtʰɪɹ̩.i(ə)l baɪ ˈwɪl.jəm ˈbæɪ.ɪ ən ˈɪŋ.mɑːɪ ˈstɑɪn.ɜː]

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[tʁɛz / kɛz bʁy.mɛːʁ | ã dɔ.sã.vɛt.ɥi(t) də la ʁe.py.blik]

[ˈfɔːθ əv / ˈsɪksθ əv nə(v).ˈvɛm.bə ˈtwɛnt.i ˌnaɪn.ˈtʰiːn]

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Our topic for the next four-plus meetings:

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

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- We shall then proceed to look at vowels in more detail, taking a contrastive view of the vowel systems of English and German (Arabic/French/Italian/Spanish/Ukrainian/...).

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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.
- We shall then proceed to look at vowels in more detail, taking a contrastive view of the vowel systems of English and German (Arabic/French/Italian/Spanish/Ukrainian/...).
- Finally, we shall return to consonants, doing a contrastive study of the consonant systems of English and German (Arabic/French/Italian/Spanish/Ukrainian/...).

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The human vocal tract (after Catford)

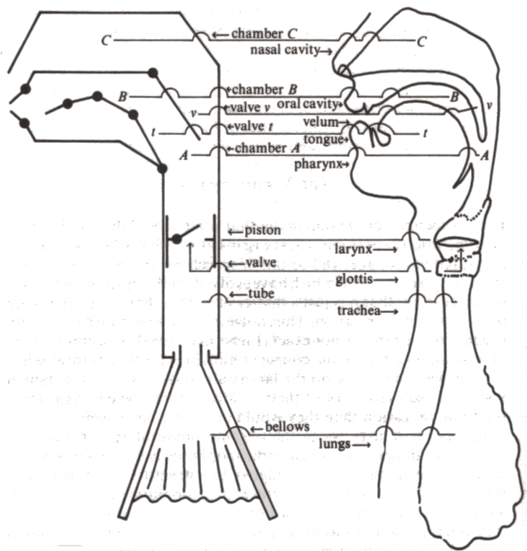


Figure: The vocal tract as a machine

(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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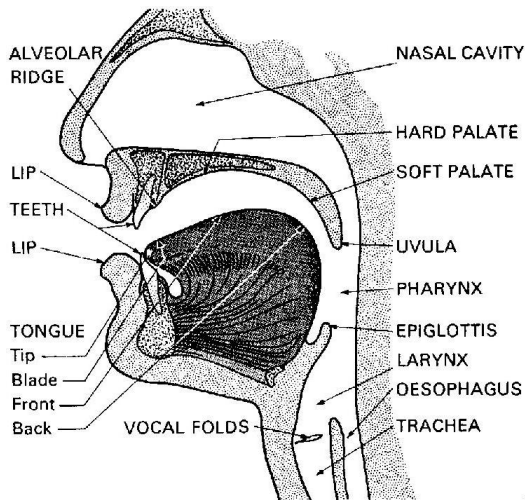
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THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

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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- Can you make the following sounds?
 - a voiceless velar fricative

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- Can you make the following sounds?
 - a voiceless velar fricative
 - a voiceless uvular fricative

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- Can you make the following sounds?
 - a voiceless velar fricative
 - a voiceless uvular fricative
 - a voiceless uvular plosive

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 - a voiceless velar fricative
 - a voiceless uvular fricative
 - a voiceless uvular plosive
 - a voiced velar nasal

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 - a voiceless uvular plosive
 - a voiced velar nasal
 - a voiced bilabial fricative

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 - a voiceless uvular plosive
 - a voiced velar nasal
 - a voiced bilabial fricative
 - a voiced palatal approximant

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 - a voiced velar nasal
 - a voiced bilabial fricative
 - a voiced palatal approximant
 - a voiced labiodental approximant

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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:

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

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- [ɪn m eməɪ ə v ɔ:l wɪmɪn ɹeɪ p t ɪn ɔ:l w ɔ:z]

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 - [ɪn m eməɪ 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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- 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		
	f	θ	s	ʃ	h
	v	ð	z	ʒ	
m		n		r	ŋ
		l			
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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Consonants (1)

Looking ahead

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

'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 ‘palatized’. (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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- (If it doesn't, it dies.)

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

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- 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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- 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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- 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 /'?

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