



Unit 3

Consonants (1)

Approaching consonants via anatomy and articulatory phonetics

Print version of the
Phonetics with Listening Practice (British)
presentation given on
13 / 15 brumaire, an CCXXVIII de la République
(04 / 06 November 2019)

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3.1

English Phonetics: Unit 3:
[ˈɪŋ.ɡlɪʃ fə.ˈnet.ɪks ˈjuː.nɪt ˈθriː]

Consonants (1)
[ˈkɒn.s(ə)n(ə)n(t)s ˈwʌn]

Approaching consonants via anatomy and articulatory phonetics
[ə.ˈpɹəʊtʃ.ɪŋ ˈkɒn.s(ə)n(ə)n(t)s ,vɑ(ɪ)(.)ə ə.ˈnæt.əm.i ˌŋ ɑː.ˈtɪk.jʊl.ətʃ.i fə.ˈnet.ɪks]

Robert Spence
[ˈrɒb.ət ˈspens]
based on material by William Barry and Ingmar Steiner
[ˈbeɪst ɒn mə.ˈtɪrɪ.i(.)ət bɑː ˈwɪl.jəm ˈbæɪ.i ən ˌɪŋ.mɑːɪ ˈstɑɪn.ɜː]

13 / 15 brumaire, an CCXXVIII de la République
(04 / 06 November 2019)
[tɛz / kɛz bɹy.mɛːɪ | ã dø.sã.vɛt.ɥi(t) də la ʁe.py.blik]
[ˈfɔːθ əv / ˈsɪksθ əv nə(ə).ˈvem.bə ˈtʃwɛnt.i ˌnaɪn.ˈtɪːn]

3.2

1 Looking ahead

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.
- We shall begin with **consonants**, approaching them (this week) via *anatomy* and *articulatory phonetics*, and concentrating on English consonants that foreign learners often find ‘difficult’.
- 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/...).

3.3

2 How we make sounds

The human vocal tract (after Catford)

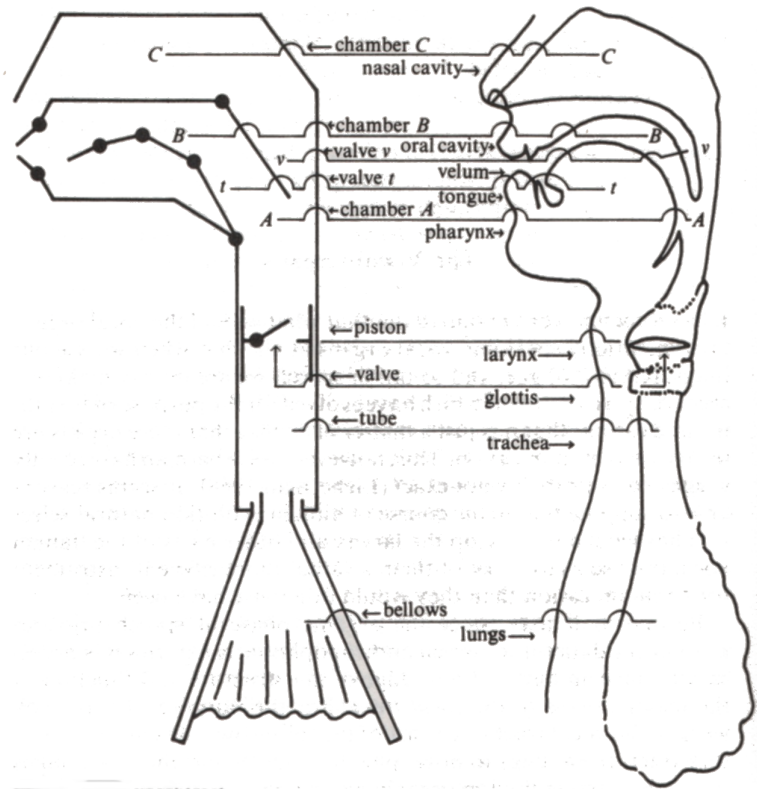


Figure 1: The vocal tract as a machine (J.C. Catford, *Fundamental Problems of Phonetics*, Bloomington: Indiana University Press, 1977)

3.4

3 (Pulmonic) Consonants: dimensions of articulation

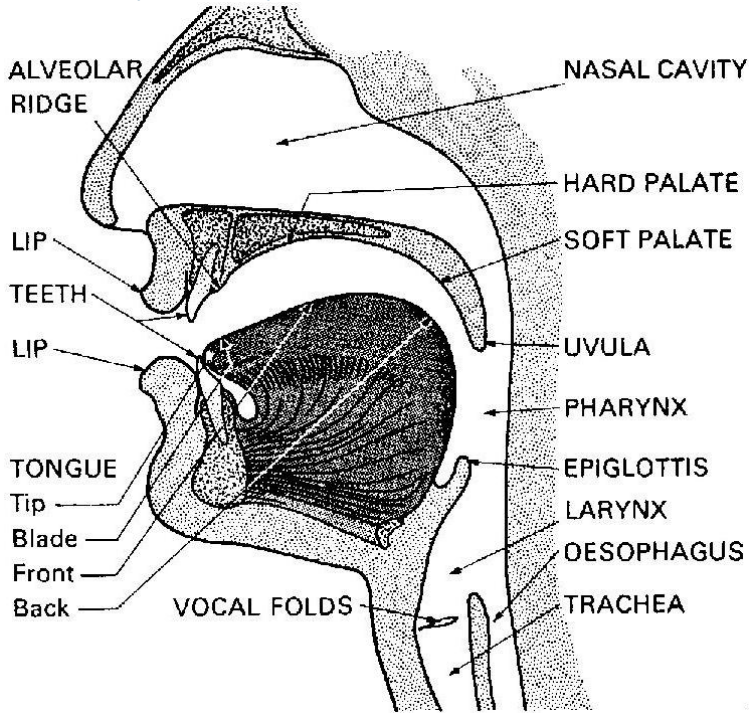
(Pulmonic) Consonants: dimensions of articulation

- Consonants (dt. Mitlaute) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
 - AIRFLOW (for the moment, we assume ‘pulmonic’)
 - VOICING
 - * voiceless [stimmlos] or voiced [stimmhaft]
 - PLACE of articulation (the “horizontal” dimension) specifying upper (passive) and (if necessary, also) **lower (active) articulators**
 - * bilabial, **labiodental**, dental, alveolar, postalveolar, **retroflex**, palatal, velar, uvular, pharyngeal, glottal
 - * more delicately: **apico-/apical-alveolar**, **lamino-/laminal-alveolar**, (**antero**)**dorsal-palatal**, (**postero**)**dorsal-velar**, etc.
 - 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)

3.5

4 You can make any consonant you want

You can make any consonant you want



3.6

You can make any consonant you want

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				ʀ					ʁ		
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.

3.7

You can make any consonant you want

- Can you make the following sounds?
 - a voiceless velar fricative
 - a voiceless uvular fricative
 - a voiceless uvular plosive
 - a voiced velar nasal
 - a voiced bilabial fricative
 - a voiced palatal approximant
 - a voiced labiodental approximant

3.8

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:

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

- [m **m**eməɪ ə **v**ɔ:l wɪmm ɪer **p**t m 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])

3.9

5 Which English consonants do you find difficult?

Which English consonants do you find difficult?

p	t	k	pit	to	cod
b	d	g	bit	do	god
		tʃ		chin	
		dʒ		gin	
f	θ	s	fin	thin	sin
v	ð	z	van	the	zoo
m	n	ʃ	man	not	shin
w	l	ʒ	wet	lay	vision
		ŋ			hit
		r			sing
		j			ray
					yet

3.10

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

'Light' 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	dark	угол	you risk being
		('Zwiebel')		('Ecke')	totally
	or		or		and
	light	люк	light	уголь	utterly
		('Luk(e)')		('Kohle')	misunderstood

N.B.: The Russian 'light' / l / is in fact 'palatized'. (Wikipedia is your friend.)

3.11

7 We are mammals and have mammalian reflexes

What is this baby hominid doing?



3.12

We are mammals and have mammalian reflexes

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

3.13