# Unit 3



## Consonants (1)

## Approaching consonants via anatomy and articulatory phonetics

Print version of the Phonetics with Listening Practice (British) presentation given on le nonidi 19 floréal de l'année CCXXXI du calendrier républicain (9 May 2023)

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English Phonetics: Unit 3: ['ɪŋ.glɪʃ fə.ˈnet.ɪks ˈjuːn.ɪt̪་ ˈθɾiː]

Consonants (1)
['kʰɒnt̄s.(ə)n(.)ən(t)s 'wʌn]

Approaching consonants via anatomy and articulatory phonetics [ə.ˈpɹəʊtʃ.ɪŋ ˈkʰɒnts.(ə)n(.)ən(t)s ˌva(ɪ)(.)əɹ ə.ˈnæt.əm.i n a:.ˈtʰɪk.jʊl.ətɹ.i fə.ˈnet.ɪks]

Robert Spence ['unb.ət 'spens] based on material by William Barry and Ingmar Steiner ['beist on mə.'thiə.i.(.)əł bai 'wil.jəm 'bæ.i ən 'ıŋ.mɑ:ə'stain.ɔ:]

le nonidi 19 floréal de l'année CCXXXI du calendrier républicain [lə nɔ.ni.di dis.nœf flə.re.al də l a.ne dø.sã.tʁã.te.æ dy ka.lã.dʁi.je ʁe.py,bli.kɛ̃]

(Tuesday 9 May 2023) [ˈtjuːz.deɪ̯ ðə ˈnaɪ̯nθ əv ˈmeɪ̯ ˈtwent.i.ˈtwent.i.ˈθɾiː]

### Looking ahead

Our topic for the next five meetings:

- · Over this five-week 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.
- · 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.
- · Finally, we shall return to consonants, doing a contrastive study of the consonant systems of English and German.

3.1

3.3

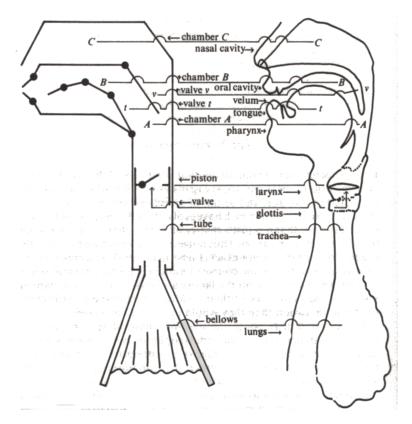
## 2 Some words of warning

#### Some words of warning

- · 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.
- $\cdot\,$  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!

#### B How we make sounds

The human vocal tract (after Catford)



 $Figure 1: The \ vocal \ tract \ as \ a \ machine \hbox{\scriptsize (J.C. Catford, Fundamental Problems of Phonetics, Bloomington: Indiana University Press, 1977)}$ 

### 4 (Pulmonic) Consonants: dimensions of articulation

(Pulmonic) Consonants: dimensions of articulation

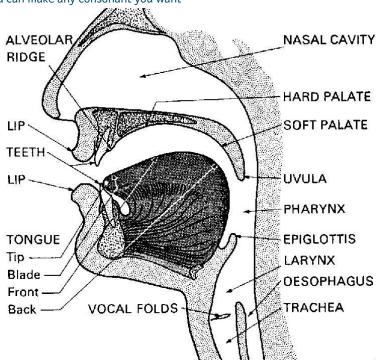
3.4

- · 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)

Check out: Glossika Phonics https://www.youtube.com/channel/UCFuOFZOwFoHK2deKFldaLGA (for the diagrams; some of the pronunciations are a bit strange...)

## 5 You can make any consonant you want

You can make any consonant you want



You can make any consonant you want

#### THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

CONSONANTS (PULMONIC)

© 2005 IPA

	Bila	abial	Labio	dental	Den	tal	Alve	olar	Postal	lveolar	Retr	oflex	Pala	ata1	Ve	lar	Uvi	ılar	Phary	ngeal	G10	ottal
Plosive	p	b					t	d			t	d	С	Ŧ	k	g	q	G			?	
Nasal		m		nj				n				η		ŋı		1)		N				
Trill		В						r										R				
Tap or Flap				V				ſ				r										
Fricative	ф	β	f	V	θ	ð	S	Z	ſ	3	ş	Z <sub>L</sub>	ç	j	X	γ	χ	R	ħ	ſ	h	ſì
Lateral fricative							ł	ß	•													
Approximant				υ				J				ŀ		j		щ						
Lateral approximant								1				l		λ		L						

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

3.8

#### 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

3.9

#### 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:
  - -
  - [ m memən l:c m tm q nət mımı l:c v e item m mı]
- · 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])

3.10

## 6 Which English consonants do *you* find difficult?

Which English consonants do you find difficult?

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	р			t				k		pit			to				$\mathbf{c}$ od	
	b			d				g		bit			do				$\mathbf{g}$ od	
						tſ									chin			
						ďz									gin			
		f	θ		S		ſ		h		fin	thin		sin		shin		hit
		$\mathbf{v}$	ð		$\mathbf{z}$		3				van	the		<b>Z</b> 00		vision		
1	n			n				ŋ		man			not				sing	
				l			r						lay			ray		
1	W							j		wet			-			-	yet	

## 7 'Light' (or 'clear') vs. 'dark' / I / — one sound or two?

nt' vs. 'dark' Language				(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	<b>угол</b> ('Ecke')	you risk being totally
	<i>or</i> light	люк	<i>or</i> light	уголь	and utterly
N.B.: The Rus		('Luk(e)') it' / l / is in		('Kohle') alatized'. (`	misunderstood Wikipedia is your friend.

## 8 We are mammals and have mammalian reflexes

#### What is this baby hominid doing?



#### We are mammals and have mammalian reflexes

- $\cdot\,$  One of the first things a mammal does ...
- $\cdot$  ... 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 /
- $\cdot$  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
- $\cdot$  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 /  $\theta$  /.
- What is 'both / u / and / i /'?

3.13