# ENGLISH PHONETICS AND PHONOLOGY

# Phonetics and Phonology

#### **Phonetics:** - describing the sounds that we use in speaking

#### **Phonology:** - abstract side of the sounds of language

- how phonemes function in language
- the relationships among the different phonemes

### PHONETICS

The science which studies the characteristics of human sound making, especially those used in speech.

Major activities:

- Description of the way speech sounds are made, transmitted and perceived
- Classification
- Transcription of speech sounds by means of special symbols

## Main branches of Phonetics

- Articulatory phonetics (studies the way speech sounds are made articulated
- Acoustic phonetics (studies physical properties of speech sounds as transmitted between mouth and ear)
- Auditory phonetics (studies the perceptual response to speech sounds)

### Another classification of Phonetics

- General phonetics
- Instrumental phonetics
- Experimental phonetics

### PHONOLOGY

A branch of linguistics which studies the sound systems of languages sounds which have distinctive features. The sounds are organized into a system of contrasts which are analysed in terms of phonemes.

Two branches of phonology:

- Segmental phonology (analyses discrete segments phonemes)
- Suprasegmental phonology (analyses those features which extend over more than one segment – rhythm, stress placement, intonation contours)

## Another classification of Phonology

- Diachronic phonology (from the historical perspective)
- Synchronic phonology (current usage)

### PHONEME

- A minimal unit in the system of a language. (Crystal)
- A family of related sounds. (Jones)
- A bundle of abstract distinctive features or oppositions between sounds (such as voicing or nasality). (Prague circle) bid x bad x bed x bud
- Phoneme variants = ALLOPHONES
  - sets of phonetically similar phones of the same underlying unit
- e.g. Czech: *banda x banka, tramvaj x hanba/hamba* **allophones** English: sin x sing (n x ŋ) **phonemes**

#### TRANSCRIPTION

- a method of direct reference to spoken language by means of special symbols – International phonetic alphabet
- Phonemic only phonemes are given in particular symbols (44 phonemes for RP) oblique lines / /
- Phonetic different degrees of allophonic details are introduced square brackets [] (devoiced, dental, syllabic, ... other variants)

#### INTERNATIONAL PHONETIC ALPHABET

- The IPA is a system of phonetic notation based primarily on the Latin alphabet. It was devised by the International Phonetic Association as a standardized representation of the sounds of oral language. The IPA is used by foreign language students and teachers, linguists, speechlanguage pathologists and lexicographers.
- The IPA is designed to represent distinctive qualities of speech: phonemes, intonation and the separation of words and syllables.

#### **RECEIVED PRONUNCIATION**

- The RP was established well over 400 years ago as the accent of the court and upper classes.
- During centuries RP came to symbolize a person's high position in society. In 19th century, it became the accent of the public schools, e.g. Eton and Harrow, and was a proof that a speaker had received a good education.
- It spread throughout the Civil Service of the British Empire and the armed forces, and became the voice of authority and power. Because it was a regionally `neutral' accent, it came to be adopted by the BBC when radio broadcasting began in the 1920s.

## Received Pronunciation today

- Today, with the breakdown of rigid divisions between social classes and the development of the mass media, RP is no longer the preserve of a social elite. It is best described as an educated accent. The most widely used is that generally heard on the BBC; but there are also conservative and trend-setting forms. The former is found in many older establishment speakers. The later are usually associated with certain social and professional groups – the voice of the London area.
- In recent decades Received Pronunciation has also undergone frequent change, the BBC accent from the 1950s is different to that spoken today on the BBC.
- Some linguists claim that today RP has been substituted by the so-called Estuary English.

#### THE ARTICULATORS





#### **VOWELS - PHONATION**

- By definition vowels are pure tones.
- When we phonate, our vocal folds produce a complex sound spectrum, made up of a wide range of frequencies and overtones. The spectrum travels through the various differently-sized areas in the vocal tract. Their resonation depends on the sizes of the resonant areas in the tract. Larger spaces in the vocal tract are the throat and mouth. They produce the two lowest resonant frequencies, of formants. These formants are designated as F<sub>1</sub> (the pharyngeal cavity) and F<sub>2</sub> (the oral cavity).

#### CLASSIFICATION OF VOWELS

#### QUALITATIVE ASPECT

- Horizontal position of the tongue: front vs back or central
- Vertical position of the tongue: open vs closed or mid
- Lip rounding: rounded vs unrounded

QUANTITATIVE ASPECT (relative)

- Long
- Short

#### PRIMARY CARDINAL VOWELS

Johns' trapezoid (representing oral cavity and position of tongue)



#### ENGLISH SHORT VOWELS





#### ENGLISH LONG VOWELS



#### VOWELS - QUADRILATERAL

#### **VOWELS**



#### DIPHTHONGS

combinations of two vowels in the same syllable



## CENTRING DIPHTHONGS เอ, eอ, ซอ



• BEARD, WEIRD, FIERCE

• SCARCE, AIRED

• TOUR, LURE

#### CLOSING DIPHTHONGS: eI, aI, JI



- PAIN, FACE, PAID
- TIDE, TIME, NICE
- VOICE
- Because of the gradual movement of the tongue from one position to another they are also called **glides**.

#### CLOSING DIPHTHONGS av, av



• au LOAD, HOME, MOST

• ao LAOUD, GOWN, HOUSE

#### TRIPHTHONGS

a compound vowel sound within the same syllable resulting from a succession of three connected vowels.

$$e_1 + a_2 = e_1a_2$$
 $a_0 + a_2 = a_0a_2$  $a_1 + a_2 = a_1a_2$  $a_0 + a_2 = a_0a_2$  $a_1 + a_2 = a_1a_2$  $a_0 + a_2 = a_0a_2$  $a_1 + a_2 = a_1a_2$  $a_0 + a_2 = a_0a_2$ 

- eiə LAYER, PLAYER əʊə LOWER, MOWER
- arə LIAR, FIRE arə POWER, HOUR
- **JIƏ LOYAL**, ROYAL

## DIPHTHONGS AND TRIPHTHONGS: TENDENCIES IN PRONUNCIATION

- There is a general tendency to the diphthongization and monophthongization of English diphthongs and tiphthongs.
- Diphthong /ʊə/ is pronounced as a long monophthong /ɔ:/, e.g. poor, tour, you're, ...
- Triphthongs are pronounced as diphthongs or even long monophthongs, e.e. smoothing (the contour of tongue movement is smoother):

$$ai \rightarrow a \rightarrow a:$$
fire $a \ensuremath{\mho} a \ensuremath{\to} a \e$ 

## ENGLISH CONSONANTS

Consonants unlike vowels are noises (there is some obstacle in the air flow). The noise is produced by the air.

Classification of consonants:

- Manner of articulation (plosives, fricatives, affricates, nasals, approximants)
- Place of articulation (labials, labiodentals, dentals, alveolars, pst-alveolars, palatals, velars, glottals)

#### Classification in terms of voicing:

- VOICED consonants
- VOICELESS consonants

Classification in terms of tensing:

- FORTIS consonants
- LENIS consonants

### ENGLISH CONSONANT PHONEMES

	Bilabial	Labiodental	Dental	Alveolar	Palato-alveolar (Post-alveolar)	Palatal	Velar	Glottal
Plosive	рь			t d			kg	2
Fricative		fv	0 ð	s z	\$ 3			h
Affricate					tʃ dʒ			
Nasal	m			n			ŋ	
Lateral				1				
Approximant	w				r	j		

Manner of articulation

#### PARTIAL REPRODUCTION OF THE IPA





# The larynx



#### "BOX"

- made of two cartilages
- the vocal folds (vocal cords)
- Adam's Apple

# The inside of the larynx



- at the front fixed to the thyroid cartilage
- at the back attached to the arytenoid cartilages (hlasivkové chrupavky when they move, the vocal folds will move too)
- air below the v. f. (subglottal pressure must be under enough pressure to be forced through the glottis

# Closing and opening of the glottis

#### GLOTTIS

hlasivky



- opening between the vocal folds
- G. closed: v. f. pressed together
- G. open: v. f. apart

### Four different states of the vocal folds/glottis

#### 1 WIDE APART

for normal breathing, during voiceless consonants, e.g. /p/, /f/, /s/

#### 2 NARROW GLOTTIS

air is passed through the narrowed glottis – result: a fricative sound /h/, a voiceless glottal fricative, e.g. saying ahahahahahahaha (alternating between 2 and 3)

#### **3 POSITION FOR V. F. VIBRATION**

- the edges of the v. f. touching each other (nearly touching)
- air passing through the G. Causes vibration; pressed up from the lungs, air pushes the v.f. apart → a little air escapes; v. f. brought together again
- Opening and closing happens very rapidly, repeated regularly (200 300 per sec)

#### **4 VOCAL FOLDS TIGHTLY CLOSED**

- v.f. firmly pressed together air cannot pass between them
- in speech: glottal stop/glottal plosive ? (coughing gently, ?a ?a



# The lungs and the rib cage (1)

- Speech sounds made with some movement of air
- **Rib cage** lifted upwards/outwards, returned back to its rest position (air is expelled used for producing speech sounds)
- Lungs expand take in more air

(Rib cage pressed down on the lungs – more air is expelled – egressive pulmonic airstream)

- EGRESSIVE PULMONIC AIRSTREAM
- air is made to move out of the lungs
- OBSTRUCTIONS/STRICTURES in the vocal tract (we obstruct the airflow to make speech sounds)
- in the larynx (bringing the v. f. close to each other)

# - Voicing/phonation – vibration of v. f.



## The lungs and the rib cage (2)

#### VARIATIONS OF SUBGLOTTAL PRESSURE

1 <u>INTENSITY</u> – voicing with:

high i. – shouting

**low** i. – speaking quietly

2 <u>FREQUENCY</u> – v. f. vibrate:

high f. - v. f. vibrate rapidly

**lower** f. – there are fewer vibrations per sec

3 <u>QUALITY</u> – produce different-sounding voice qualities e.g. harsh, breathy, murmured, creaky





- One articulator is moved against another / two articulators are moved against each other → form a stricture (allows no air to escape from the vocal tract).
- Stricture has been formed, air has been compressed behind it, air is released (allowed to escape).
- The air behind the stricture is still under pressure → the escape of air will produce noise loud enough to be heard = **plosion**.
- presence/absence of **voicing** during part or all of the plosive articulation
## VOICING AND ASPIRATION OF PLOSIVES

Czech plosives can be classified as voiced and voiceless. This criterion does not apply to English. English plosives have the following features:

- Initial fortis plosives (p, t, k) are aspirated.
- Initial lenis plosives (b, d, g) have little voicing.
- Final fortis plosives shorten the previous vowel **CLIPPING**.
- Final lenis plosives take the quality of the previous vowel they are not voiced.
- Initial sp, st, sk have no aspiration.

## Four Phases of the Plosives Production

#### 1 CLOSURE PHASE

the articulator/articulators move to form the stricture for the plosive Full closure of air channel is made.

2 HOLD PHASE the compressed air is stopped from escaping Air accumulates behind the closure.

3 RELEASE PHASE

the articulators used to form the stricture are moved so as to allow air to escape Sudden release and outburst.

4 POST-RELEASE PHASE happens immediately after phase 3

#### PLOSIVES Bilabial, Alveolar & Velar Articulation

#### BILABIAL: p and b

lips pressed together

#### ALVEOLAR: t and d

 tongue blade pressed against the alveolar ridge



#### $\textbf{VELAR:} \ k \ \text{and} \ g$

 back of the tongue against the area where the hard palate ends, soft palate begins





## PLOSIVES

Bilabial, Alveolar & Velar Articulation



#### **INITIAL** position (at the beginning of a word): preceding vowels CV

- closure phase silently for p, t, k, b, d and g
- hold phase no voicing in p, t, k little voicing in b, d, g (in careful pron. fully voiced, in rapid speech no voicing at all)
- the release of : p, t, k = audible plosion (burst of noise)
- > <u>post-release phase</u> air escaping through the v. f. makes a sound like h= **aspiration**
- the release of: b, d, g = followed by weak plosion
- The difference between initial p, t, k and b, d, g is the <u>ASPIRATION</u> of the voiceless plosives p, t, k .

**ASPIRATION**, not voicing distinguishes initial p, t, k from b, d, g.

 $b,\,d,\,g$  cannot be preceded by any consonant in initial position

p, t, k may be preceded by s in initial position (always unaspirated in initial combinations sp, st, sk)



## PLOSIVES

Bilabial, Alveolar & Velar Articulation



#### MEDIAL position (plosive between vowels): VCV

- pronunciation of p, t, k and b, d, g depends on whether the syllables preceding and following the plosive are stressed
- a medial plosive may have characteristics either of final or of initial plosives

#### **<u>FINAL</u>** position (at the end of a word): following vowels VC

- final b, d, g normally have little voicing (or at the beginning of the hold phase)
- final p, t, k are voiceless
- the plosion following the release of p, t, k and b, d, g is very weak, often not audible

The difference between p, t, k and b, d, g in <u>final position</u> is primarily the fact that **vowels preceding** p, t, k are much **SHORTER**.

## Plosives – place of articulation

and the second se	PLACE OF ARTICULATION		
	Bilabial	Alveolar	Velar
Fortis ("voiceless")	p	t	k
Lenis ("voiced")	b	d	g

	Bilabial	Labiodental	Dental	Alveolar	Palato-alveolar (Post-alveolar)	Palatal	Velar	Glottal
Plosive	рb			t d			kg	2
Fricative		fv	θð	s z	\$ 3			h
Affricate					tj dz			
Nasal	m			n			ŋ	
Lateral				1				
Approximant	w				r	j		

Place of articulation

## English plosives and Czech speakers

Czech speakers have to pay attention to the following aspects:

- English initial fortis plosives are aspirated unlike Czech
- Lenis plosives have little voicing unlike Czech (bus, door, gate)
- Initial sp, st, sk have no aspiration (tendency to over pronunciation)
- t, d have a dental feature in Czech while in English they have alveolar place of articulation

Glottal stop is common in current usage, namely in a trendy RP form of Estuary English.

## THE PHONEME

#### SEGMENTS:

- In speech a continuous stream of sounds
  - divided into small pieces, e.g. 'man' /mæn/ 3 seg.,

'mine' /maɪn/ ? Seg.

- Set of vowels pronounced in many slightly different ways infinite range of sounds
- If we put one of the twenty vowels in the place of one of the others  $\rightarrow$  we change the meaning of a word (bed X bad) /e X æ/

### The phoneme

and the alphabet (abstract X real/concrete)

- 26 letters BUT infinite number of different shapes and sizes (an abstract alphabet as the basis of our writing)
- The letter of the alphabet used in writing = a unit which corresponds to the unit of speech, i.e. SEGMENT
- Five letters VOWELS: 'a', 'e', 'i', 'o', 'u'
- Substituting one letter for another changes meaning (a letter 'p' and 't')

pít - pet - pat - putt - pot - put

- Characters A a  $\alpha$  = represent the same letter (u a different letter)
  - occur in printed/typed writing, handwriting;

(depends on the context in which they can occur, e.g. names, beginning of a sentence, ...)

- no difference in meaning if we substitute one for the other

#### THE PHONEME PRINCIPLES OF THE SOUNDS OF SPEECH

- Speech can be divided into SEGMENTS (great variety in the way they are made)
   PHONEMES = an abstract (and complete) set of speech units →
   → PHONEMIC SYSTEM of the language
- Many slightly different ways in which we make the sounds that represent phonemes, just as there are many ways in which we may make a mark on a piece of paper to represent a particular (abstract) letter of the alphabet.

#### **FREE VARIATIONS**

#### - two different **realisations** of one phoneme, e.g. /b/ in 'bad':

there is little difference in pronouncing the sound /b/ (practically no voicing – usually pronounced X full voicing – speaking very emphatically) → the sound is still identified as the phoneme /b/

## THE PHONEME

one can only occur where the other cannot, e.g. /t/

the aspirated and unaspirated realisations are both recognised as /t/ by English speakers despite their differences.

**<u>ALLOPHONES</u>**: different realisations of phnenemes COMPLEMENTARY DISTRIBUTION = strict separation of places

the aspirated realisation will never be found in the place where the unaspirated realisation is appropriate and vice versa e.g. aspirated and unaspirated allophones of the phoneme /t/:

> TEA /t<sup>h</sup>i:/

voiceless plosive

aspirated

before stressed vowels at the beginning of a syllable



occur at the end of a syllable and is not followed by a vowel

### SYMBOLS AND TRANSCRIPTION (RP)

- **PHONEMIC/PHONEME SYMBOLS** symbols for phonemes
  - do not have to indicate precise phonetic quality
  - phonemic transcription, e.g. 'peat' /pi:t/

- PHONETIC SYMBOLS
- all the symbols and diacritics, e.g. [ä]
  much more accurate in phonetic detail
- phonetic transcription, e.g. 'peat' [phi't]
- here for precise phonetic values in square brackets
- used occasionally when it is necessary to give an accurate label to an allophone of some English phoneme
- <u>Broad phonetic transcription</u>, i.e. containing only a little more information than a phonemic transcription
- <u>Narrow phonetic transcription</u>, i.e. containing a lot of information about the exact quality of the sounds
- **RP** received pronunciation

## PHONOLOGY

to acquire a full understanding of the use of sounds in English speech, we must study both, PHONETICS and PHONOLOGY

#### PHONETICS

PHONOLOGY

- describing the sounds that we use in speaking
- how phonemes function in language, and the relationships among the different phonemes

- the abstract side of the sounds of language

#### THE PHONEMIC SYSTEM

#### "<u>A Set of Pieces</u>" in a game of chess

- The exact shape and colour of the pieces are not important to the game as long as they can be reliably distinguished.
- Number of pieces, the moves they can make and their relationships to all the other pieces are important.
- If any of these were to be changed, the game would no longer be what we call chess.

#### "<u>A Set of Cards</u>" in a card game

- Playing-cards can be printed in many different styles and sizes changing it does not affect the game played with them.
- If we were to remove one card from the pack or add one card to it before the start of a game, nobody would accept that we were playing the game correctly.

#### "<u>A set of phonemes</u>" in a game of speaking English

- We have a more or less fixed set of "pieces" (phonemes) with which to play the game of speaking English.
- There may be slightly different realisations of the various phonemes, but the most important thing for communication is that we should be able to make use of the full set of phonemes.

## PHONEME SEQUENCES AND SYLLABLE STRUCTURE

#### • PHONOLOGY

- restrictions and regularities on the sequences of phonemes that are used in a particular language

- syllables of the language, e.g. in English no /zbf/ at the beginnings

## SUPRASEGMENTAL PHONOLOGY

SOUND CONTRAST

extend over several segments (phonemes) → suprasegmental contrasts

- stress, e.g. 'import' different word class (noun X verb)
- intonation, e.g. 'right'
- the pitch of the word rising → likely to be heard as a question or an invitation to a speaker to continue

- **falling** pitch  $\rightarrow$  likely to be heard as confirmation or agreement

#### FRICATIVES AND AFFRICATES

#### • Fricatives

- air escapes through a small passage and makes a hissing sound
- **continuant consonants** = you can continue making them without interruption as long as you have enough eir in your lungs

#### • Affricates

- complex consonants, simple, independent phonemes of English, i.e.

/t/ = one phoneme, /ʃ/ = one phoneme, /tʃ/ = one phoneme

- begin as plosives and end as fricatives
- composed of a plosive plus a fricative, e.g. 'church' /tʃ3:tʃ/ (a three phoneme word)
- not all sequences of plosive plus fricative make an affricate, e.g.

'breakfast'  $\rightarrow$  /kf/ is not a consonantal unit in the way that /tʃ/ seems to

- must be **homorganic**, i.e. made with the same articulators – made with the tongue blade against the alveolar ridge.

## THE FRICATIVES OF ENGLISH

- Two articulators get closely together making a narrow gap between them. The air flow escapes through the gap producing a characteristic hissing sound.
- complex system of fricative phonemes

	PLACE OF ARTICULATION				
The second second second	Labiodental	Dental	Alveolar	Post-alveolar	Glotta
Fortis ("voiceless")	f	θ	S	ſ	i i i h
Lenis ("voiced")	v	ð	Z	3	

- each place of articulation a pair of phonemes
- one exception glottis

## ENGLISH FRICATIVES

- FORTIS: greater force

   friction noise is louder
   the effect of shortening a preceding vowel, e.g.
   'ice' 'eyes'
   /aɪs/ /aɪz/
- LENIS: very little or no voicing in initial and final positions may be voiced when occurring between voiced sounds

## LABIODENTAL FRICATIVES f, v

- fan, van; safer, saver; half, halve
- lower lip, upper teeth
- fricative noise never strong
- fricative noise scarcely audible in /v/



## DENTAL FRICATIVES $\theta, \delta$

- thumb, thus; ether, father; breath, breathe
- the <u>tip of the tongue</u> touching the inside of the lower front teeth and <u>the blade of the</u> <u>tongue</u> touching the inside of the upper teeth
- the air escapes through the gaps between the tongue and the teeth
- fricative noise is weak

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Fig. 19 Dent		(	1	1

## Pronunciation of $\theta$ , $\delta$

Dental fricatives are often described as if the tongue was placed between the teeth, It is, however, normaly placed inside the teeth, with the tip touching the inside of the lower front teeth and the blade touching the inside of the upper teeth. The air escapes through the gaps between the tongue and the teeth. The tongue has a convex shape. Czech speakers have a tendency to raise the tip of the tongue (concave shape).

## ALVEOLAR FRICATIVES S, Z

- sip, zip; facing, phasing; rice, rise
- the air escapes through a narrow passage along the centre of the tongue
- the sound produced is comparatively intense



## PALATO-ALVEOLAR FRICATIVES $\int, 3$

- ship, (initial 3 is very rare in English); Russia, measure; Irish, garage
- partly palatal, partly alveolar
- the tongue in contact with an area slightly further back than that for s, z
- make s, then ∫ → feel the tongue move backwards
- the air escapes through a little wider passage (than s, z) along the centre of the tongue
- lips are rounded for  $\int$ , 3



## GLOTTAL h

- head, ahead, playhouse
- place of articulation is glottal
- the narrowing that produces the friction noise is between the vocal folds
- breathe out silently: production of h
- your vocal folds is moving from wide apart to close together (this is not producing speech)
- it always has the quality of the vowel it precedes: hit, hat, hot, hut, ...
- <u>Phonetically</u>: /h/ is a voiceless vowel with the quality of the voiced vowel that follows it
- <u>Phonologically:</u> /h/ is a consonant, usually found before vowels
- when h occurs between voice sounds (voiced only between vowels, e.g. ahead, beehive, behave, ..., greenhouse) → pronounced with breathy voice (a weak, slightly fricative sound)
- <u>Sub-standard pronunciation</u>: omission of the h in unstressed pronunciations, e.g. her, he, him, his, have, has, had

# GLOTTAL h and two uncommon sounds

- words beginning orthographically with 'wh'
- which, why, whip, whale
- most RP speakers pronounce it as w

'witch' wit 'wail' weil 'Wye' wai 'wear' weə 'which' MIT 'whale' MeIl 'why' Mai 'where' Meə

 some speakers, when speaking clearly or emphatically (American and Scottish speakers), pronounce a voiceless fricative with the same lip, tongue and jaw position as M

#### THE AFFRICATES t∫, dʒ

- the only two affricate phonemes in English: tſ, dʒ
- FORTIS/LENIS pair
- tf slightly aspirated
  - palato-alveolar place of articulation (the same as for J, 3)
  - when t∫ is final in the syllable it has the effect of shortening a preceding vowel
- tſ, dʒ often have rounded lips

## ENGLISH SONORANTS m, n, ŋ, l, ł, r, j, w



#### ENGLISH SONORANTS m, n, ŋ, l, ł, r, j, w



## NASALS / APPROXIMANTS / SEMIVOWELS

(a term used for consonants only)

- Nasal consonants m, n, ŋ
- Approximants/Liquids I, ł, r
- Approximants/Semivowels j, w

#### NASALS

- the air escapes through the nose
- the soft palate is lowered
- complete closure in the mouth (corresponds to the three places of articulation for the pairs of plosives pb, td, kg)
  - Bilabial (lips) m
  - Alveolar (tongue blade against alveolar ridge) n
  - Velar (back of tongue against the palate) n phonetically simple (easy to produce) but phonologically complex (not easy to describe the contexts in which it occurs)

## VELAR NASAL ŋ (1)

1 Initial position
 2 Medial position

#### Ø

- -nk- will always be pronounced
- -ng- a) ng in the middle of a morphemeb) n (without g) at the end of a morpheme

#### **MORPHEME-BASED RULE**

Morphology:	<u>A (one morpheme)</u>	B (two morphemes)	
	finger	singer	
	/fɪŋgə/	/sɪŋə/	
	anger	hanger	
	/æŋgə/	/hæŋə/	

## VELAR NASAL ŋ (2)

#### 3 Final position always pronounced with n -ng (no g after n at the end of a morpheme) bang sing hang long song /sɪŋ/ /hæŋ// sɒŋ/ /bæŋ/ /lɒŋ/ long + morpheme ('-ish') longish long /lɒŋ/ /lpŋɪʃ/

EXCEPTION: the comparative '-er' & superlative '-est' suffixes - treated as <u>single-morpheme words</u> longer longest /lɒŋgə/ /lɒŋgəst/ following short vowels, e.g. pink

/pɪŋk/
rarely occurs after diphthongs or long vowels

4 ŋ



- Lateral approximant | long hill
   /lɒŋ/ /hɪl/
- complete closure along the centre (between the centre of the tongue and the part of the roof of the mouth; the passage of air doesn't go along the centre of the tongue but along the sides of the tongue)
- dldldldl feel the movement of the sides of the tongue necessary for the production of the lateral l
- a loud whispered I feel the air rushing along the sides of your tongue

#### LATERAL APPROXIMANT 'I'

Initially, medially, finally allophones

DARK 1 (phonetic symbol)

/iːl/

eel

- quality rather similar to [u] vowel
- back of the tongue raised
- most American and lowland Scottish speakers use dark <sup>1</sup>/<sub>4</sub> in all positions



#### CLEAR |

lea /liː/

- resembles an [i] vowel
- front of the tongue raised
- never occurs before consonants, before a pause
- only occurs before vowels
- most Welsh and Irish speakers use clear I in all positions



### POST-ALVEOLAR APPROXIMANT 'r' (1)

• articulators approach each other but do not get sufficiently close to each other to produce a 'complete' consonant sound (e.g. plosive,...)

any vowel articulation could also be classed as an approximant, but the term is usually used only for consonants

- very slightly rounded
- the tip of the tongue approaches the alveolar area in approximately the way it would for a 't' or 'd' but never makes contact with any part of the roof of the mouth (Czech: tongue-palate contact is made, alveolar trill)
- **RETROFLEX** CONSONANT r: the tongue is slightly curled backwards with the tip raised (sequence of drdrdrdrdr) r is post-alveolar

-the tip tongue is not raised nor curled back

- VOICELESS & FRICATIVE r:
- at the beginning of a syllable, preceded by p, t, k

- e.g. press, tress, cress
# POST-ALVEOLAR APPROXIMANT 'r' (2)

• Pronounced only before vowels:

red	arrive	hearing
/red/	/əˈraɪv/	/ˈhɪərɪŋ/

• no 'r' in the pronunciation:

a)	car	ever	here
	/kaː(r)/	/ˈevə(r)/	/hɪə(r)/
b)	hard	verse	cares
	/haːd/	/v3ːs/	/keə(r)z/

- **RHOTIC ACCENTS**: (e.g. American, Scots, West of England) have 'r' in final position (before a pause) and before a consonant
- NON-RHOTIC ACCENTS: (e.g. BBC) 'r' only occurs before vowels

# SEMIVOWELS 'j' &'w, (1)

- yet, wet
- phonetically: vowel-like character, i.e. phonetically like vowels, but only occur before vowel phonemes
  - 'j' close to [i] but very short
  - 'w' close to [u]
- <u>phonologically</u>: consonants
  - a year, a way
  - 'the' pronounced /ðə/
- mispronounced as fricatives or affricates by foreign learners

• Friction noise in w, j: ONLY when preceded by p, t, k at the beginning of a syllable

pure	tune	queue	Poirot	twin	quit
/pjʊə(r)/	/tjuːn/	/kjuː/	/pwa:rəʊ/	/twɪn/	/kwɪt/

# SEMIVOWELS 'j' &'w, (2)

- p, t, k followed by a vowel at the beginning of a syllable:
   aspirated
  - voiceless beginning of a vowel in this context
- p, t, k followed by

   I, r, j, w (voiced continuant consonants)
   lose their voicing and become fricative
- **Devoiced fricative** l, r, w, j: play quick tray (X dray) cue /pleɪ/ /treɪ/ /kwɪk/ /kjuː/ • **Voiced** l, r, w, j: wick lay ray you /reɪ/ /wɪk/ /ju/ /leɪ/

# TONGUE TWISTER FOR CZECH $\check{r}$ (miniscule)



Czech: "Třista třicet tři stříbrných stříkaček stříkalo přes třista třicet tři stříbrných střech." Phonetically: ['třísta 'třítsɛt 'tří 'stři:brni:x 'stři:katjɛk 'stři:kalo přɛs 'třísta 'třítsɛt 'tří 'stři:brni:x 'střɛx]. English: "333 silver fire hoses squirted over 333 silver roofs".

# THE SYLLABLE

1 Minimum syllablea single vowel in isolation<br/>preceded and followed by silence (are /a:/, or /ɔ:/, err /3:/;<br/>but also sound for: agreement /m/ Or when asking for silence /ʃ/)2 Onsetone or more consonants preceding the centre<br/>of the syllable (bar /ba:/, key /ki:/, more /m ɔ:/)

3 Coda no onset end with one ore more consonants (am/æm/, outht /ɔ:t/, ease /i:z/)

4 Onset and coda

ran /ræn/, sat /sæt/, fill /fɪl/

# CONSONANT CLUSTER (1)

Two-consonant clusters:

- a) PRE-INITIAL /s/ + INITIAL CONSONANT sting /stɪŋ/, sway /sweɪ/, smoke /sməʊk/
- b) INITIAL CONSONANT + POST-INITIAL /l/, /r/, /j/, /w/ play /pleɪ/, try /traɪ/, quick /kwɪk/, few /fju:/
- c) FINAL CONSONANT one consonant only (except /h/, /w/, /j/; final /r/ in rhotic accent only)
- d) TWO-CONSONANT FINAL CLUSTER:

pre-final /m/, /n/, /ŋ/, /l/, /s/, e.g. bump /bʌmp/, bank /bæŋk/
post-final /s/, /z/, /t/, /d/, /θ/, e.g. bets /bets/, beds /bedz/

#### CONSONANT CLUSTER (2)

- Three-consonant clusters:
- a) PRE FINAL + FINAL + POST FINAL helped /helpt/, twelfth /twelfθ/
- b) PRE-FINAL + FINAL + POST-FINAL 1 + POST-FINAL 2 fifths /fɪ-fθs/, next /ne-kst/
- Four-consonant clusters:
- c) PRE-FINAL + FINAL + POST-FINAL 1 + POST-FINAL 2 (/s/, /z/, /t/, /d/, /θ/) twelfths /twelfθs/, prompts, /prompts/

d) ZERO PRE-FINAL + FINAL + POST-FINAL 1 + POST FINAL 2 + POST-FINAL 3
 sixths /si-ksθs/, texts /te-ksts/

#### MAXIMUM PHONOLOGICAL STRUCTURE of the English syllable



#### **EXEPTION:**

• SYLLABIC CONSONANTS I, n, m, ŋ, r

e.g. students /stju:dnts/

- two syllables

 second syllable ending with the cluster /<u>n</u>ts/ = as though there was a vowel between /d/ and /n/; a vowel occurring in a very slow, careful pronunciation only

# RHYME

• the vowel and the coda = RHYME



- rhyming English verse: rhyming works by matching just that part of the last syllable of a line
- Rhyme
  - a) PEAK (normally the vowel)
  - b) CODA (optional, e.g. me no coda)
- Onset obligatory

## STRONG AND WEAK SYLLABLES

- Peaks in STRONG syllables never ə, i, u in its peak
  - I, e, æ, ∧, ɒ, ʊ + coda

- Peaks in WEAK syllables
  - the vowel a (schwa), e.g. better /beta/, open /aupan/
  - a close front unrounded vowel i, e.g. happy /hapi/
  - a close back rounded vowel u, e.g. thank you /θæŋk ju/

#### SCHWA /ə/

- 1 Spelled with 'a', strong /æ/ attend, character
- 2 Spelled with 'ar', strong /a:/ particular, molar
- 3 Adj. endings spelled 'ate', strong /eɪ/ intimate, accurate
- 4 Spelled with 'o', strong /p/, /əʊ/ tomorrow, carrot
- 5 Spelled with 'or', strong /ɔ:/ forget, opportunity

- 6 Spelled with 'e', strong /e/ postmen, violet
- 7 Spelled with 'er', strong /3:/ perhaps, stronger
- 8 Spelled with 'u', strong /ʌ/ autumn, support
- 9 Spelled with 'ough'; many pronunciations for -ough thorough, borough
- 10 Spelled with 'ou', strong /aʊ/ gracious, callous

#### SYLLABIC CONSONANTS

as a peak of the syllable (instead of the vowel) - in syllables in which no vowel is found

- a small vertical mark (,)beneath the symbol (I, r, nasals), e.g. cattle /kætl/
- Syllabic I a) with alveolar consonant preceding cattle, bottle, muddle
   b) with non-alveolar consonant preceding

coup<u>l</u>e, troub<u>l</u>e, knuck<u>l</u>e

- Syllabic n finally and medially, e.g. threatening /θret<u>n</u>ıŋ/, threaten /θret<u>n</u>/
  - after alveolar plosives and fricatives, e.g. eaten
- Syllabic m, ŋ e.g. happen /hæp<u>m</u>/, /hæp<u>n</u>/, /hæpn/
   between velar consonants: *broken key* /brəʊk<u>n</u> ki:/ (could be substituted with n, ən)
- Syllabic r in rhotic accents, e.g. particular /p<u>r</u>'tɪkjəl<u>r</u>/ X /pə'tɪkjələ/ hungry /ˈhʌŋɡri/ X Hungary /ˈhʌŋɡəri/, /ˈhʌŋ<u>g</u>ri/

# STRESS (ACCENT)

- NOT single phonemes, but SYLLABLES are STRESSED
- Intuitive identification
- Stressed syllables are PROMINENT
  - a) are LOUDER
  - b) are LONGER
  - c) have a HIGHTER PITH (perceived as the syllables with higher frequency)
  - d) differ in QUALITY from other syllables (babababiba)

## TYPES (LEVELS) OF STRESS

• PRIMARY STRESS /'/: photograph /'fəʊtəgraːf/

• SECONDARY STRESS / /: photographic / fəʊtəˈgræfɪk/

#### STRESS PLACEMENT

- In Czech on the 1st syllable 'Ostrava
- In French on the last syllable boule'vard
- In English on any syllable but rule governed:
- 1 the length of the word (short easy vs. long complex)
- 2 the morphological structure (stress carrying suffixes, stress moving suffixes, compound words)
- 3 part of speech (noun, adjective, verb)
- 4 linguistic characteristics of speech tone unit

#### COMPLEX WORDS – STRESS CARRYING SUFFIXES

- ain entertain / entəˈteɪn/, ascertain / æsəˈteɪn/
- ee employee /ɪmˈplɔɪiː/, refugee /ˌrefjuˈdʒiː/, evacuee /ɪˌvækjuˈiː/
- eer engineer / endʒi'niə(r)/, mountaineer / maöntə'niə(r)/
- ese Vietnamese / vjetna miːz/, Portuguese / pɔːtʃuˈgiːz/, journalese
- ette cigarette / sɪgəˈret/, launderette / lɔːndəˈret/, kitchenette
- esque picturesque / piktjə'resk/
- ique unique /juˈniːk/

#### COMPLEX WORDS – **STRESS MOVING SUFFIXES** stress is on the last syllable of the stem

- -eous advantageous / ædvan 'teɪdʒəs/, courageous /kə 'reɪdʒəs/
  -graphy photography /fə 'togrəfi/
  -ial proverbial /prə 'vɜ:biəl/
  -ic climatic /klaɪ 'mætɪk/
  -ion perfection /pə 'fekʃn/
  -ious injurious /ɪn 'dʒʊəriəs/
- -ity tranquillity /træŋˈkwɪləti/
- -ive reflexive /rɪˈfleksɪv/

# STRESS IN COMPOUND WORDS

- are lexemes composed of more than one root and functioning as single words
- always have only one primary stress
- possible rules for stress placement are not very reliable → advisable to learn them in usage, e.g. a black 'bird vs. a 'blackbird

#### Compounds functioning as

- NOUNS have the primary stress usually on the first element: dancing shoes, cooking apples, steering wheel, green house, ...
- ADJECTIVES with –ed at the end have the stress usually on the second element: bad-tempered, heavy-handed,...
- >ADVERBS usually have the stress on the second element: *north-east, east-bound, ...*
- VERBS with the first element adverbial usually have the main stress on the second element: undergo, ill-treat, download, ...
- with the first element represented by a NUMERAL usually have the stress on the second element: three-wheeler, second-class, four-footed, half-size, ...
- Frequent errors: yellowhammer /ˈjeləʊhæmə(r)/, blackboard /ˈblækbɔːd/, 'primary school teacher, 'English teacher, ...

## VARIATION OF STRESS – WORD CLASS

• Word stress in English can have a grammatical function which results in a change of the word class:

NOUN	VERB	ADJECTIVE	VERB	NOUN	ADJECTIVE
'abstract	ab'stract	'absent	ab'sent	'compact	com'pact
'conduct	con'duct	al'ternate	'alternate	'minute	mi'nute
'contract	con'tract	'frequent	fre'quent		
'desert	de'sert				
'export	ex'port				
'permit	per'mit				
'object	ob'ject				

• The placement of stress in connected speech can change, e.g. thir'teen X 'thirteen roses, Heath'row X 'Heathrow 'airport

# WEAK FORMS (1)

• FULL LEXICAL WORDS carry the primary stress

#### In some words it is only a potential quality:

- if pronounced in isolation = STRESSED; have a strong form
- if pronounced in connected speech = WEAK; are not stressed

# WEAK FORMS (2)

- function words
- monosyllabic
- carry little or no lexical meaning
- used in connected speech (characteristic feature of connected speech)
- when pronounced in isolation native speakers will use a strong form
- 'Chips are what I'm fond of' 'tſips a wpt aim 'fpnd pv

# WEAK FORMS (3)

Weak forms include:

- determiners (a, an, the)
- prepositions (at, for, from, to, ...)
- conjunctions (and, but, that)
- pronouns (we, you, he, she, his, her, your, him, her, us, relative that, some)
- auxiliary verbs (can, could, have, has, had, shall, should, must, do, does, am, was, were)
- some adverbs (there)

## CONNECTED SPEECH

Human speech is not performed by means of isolated words. Words are linked into a sort of continuing sound.

Connected speech is characterized by the following features:

- Linking
- Rhythm
- Assimilation
- Elision
- Intonation

# CONNECTED SPEECH – LINKING /r/, /j/, /w/

- When r occurs before a suffix, it s pronounced: stir /st3:/, stirring /st3:r1ŋ/ the insertion is obligatory.
- The insertion of r is optional, though generally present before a following word with initial vowel: stir it in /st3:r It In/ historically justified.
- When one word ends with /ə/ and the following begins with a vowel /r/ is generally inserted: idea of /aɪdɪər əv/, vanilla essence /vənɪlər əsens/ - historically unjustified, socalled INTRUSIVE /r/.
- Intrusive /r/ before a suffix is strongly stigmatized: gnawing /no:rin/.
- When one word ends with /ʊ/, /uː/, also in diphthongs, and the next begins with a vowel /w/ is inserted: blue eyes /blu:'waɪz/, no understanding /nəʊw ʌndəstændɪŋ/.
- When one word ends with /ı/, /i:/ and the next begins with a vowel /j/ is inserted: easy
  exercise /i:zi 'jeksəsaız/, the apple /ði 'jæpl/.

## CONNECTED SPEECH - RHYTHM

- English rhythmical language, i.e. its events happen at regular intervals of time. It is stressed timed. Czech i a syllable timed language.
   Walk 'down the 'path to the 'end of the ca'nal.
- English utterance + clasp our hands = pronunciation is rhythmical
- The principle of isochrony /aɪ'sɒkrəni/ (the time period from one stressed syllable to the next one is approximately the same irrespective of the number of syllables) is applied.
- Due to the existence of weak forms. If weak forms are not used properly the rhythm is broken.

# CONNECTED SPEECH – RHYTHM exercises

- I 'think he 'might
- I 'want to 'know
- To 'do it 'well
- A'nother 'time
- It's 'quite all 'right
- I 'think it 'is
- He 'tied it 'up

# CONNECTED SPEECH – ASSIMILATION (1)

- A type of coarticulation; one sound influences the articulation of another which then becomes more alike, or identical.
- Regressive assimilation <u>of place</u> (the final and the initial sounds are of the same manner of articulation, only the place is different which results in its unification):

that pen /ðæp 'pen/good girl /gʊg 'gɜ:l/ten men /tem 'men/good boy /gʊb 'bɔɪ/

 Regressive assimilation <u>of manner</u> (the final and the initial sounds are of a different manner of articulation which results in its unification: good night /gon 'naɪt/ that side /ðæs saɪd/

# CONNECTED SPEECH – ASSIMILATION (2)

- Assimilation of voice (only limited occurrence in English): I have to /aɪ hæf tu/
- Yod coalescence:

did you /dɪtʃu:/ get you /getʃu:/

 Assimilation of two plosives into a single release: grab both /græ'bəʊθ/, left turn, wind down, mashed potatoes

# CONNECTED SPEECH – ASSIMILATION (3)

• Be careful of the incorrect assimilation of voice in words like

*basic* /'beɪsɪk/, *basis* /'beɪsɪs/ (the reason why people take a particular action), *consonant* /'kɒnsənənt/, *insist* /ɪn'sɪst/, *also* /'ɔːlsəʊ/

• A strong foreign accent:

I like that black dog. /aɪ laɪg ðæd blæg dog/ back door /bæg do:r/

# CONNECTED SPEECH – ELISION (1)

- = is omission of sounds, which facilitates the pronunciation
- 1 Loss of weak vowel after p, t, k: tomato /t'mɑːtəʊ/, perhaps /p'hæps/, today /t'deɪ/, canary /k'neəri/
- 2 Weak vowel + n, l, or r becomes syllabic consonant (tonight, police, correct)
- 3 Avoidance of complex consonant clusters: acts /æks/, scripts /skrips/, clothes /kləʊz/
- 4 Loss of final v before consonants: losts of them /lpts a ðam/

CONNECTED SPEECH – ELISION (2) Juncture – specific minimal pairs

• might rain vs my train

keep sticking vs keeps ticking

**r** in *rain* voiced **ai** in *might* shortened t unaspirated after s

t aspirated in initial position

**r** in *train* voiceless

ar shorter

# Connected speech – INTONATION

suprasegmental phonology

- the distinctive use of patterns of pitch or melody
- THE TONE
- the distinctive pitch level of a syllable
  - 1 falling (fall, glide-down) \ yes
  - 2 rising (rise, glide-up) / yes
  - 3 level yes
  - 4 falling-rising (fall-rise, dive) V yes
  - 5 rising-falling (rise-fall) Λ yes

# TONES AND THEIR FUNCTION (1)

- FALL
- regarded as neutral
- gives an impression of finality

A: Is there a post office near here? B: Yes

# TONES AND THEIR FUNCTION (2)

- RISE
- gives an impression that something more is to follow

A: Is there a post office near here? B: Yes?

# TONES AND THEIR FUNCTION (3)

• LEVEL

Its usage is restricted to routine, boring or uninteresting utterances, e.g. Teacher calling the names of pupils and their replies, doctor examining a patient, bank officer filling in a form, ...).

# TONES AND THEIR FUNCTION (4)

- FALL-RISE
- very frequent in English
- used when we want to express limited agreement or response with reservations, e.g.

A: I've heard that he's a brilliant physicist.B: V Yes.
# TONES AND THEIR FUNCTION (5)

- RISE-FALL
- conveys strong feelings of approval, disapproval or surprise

A: Isn't he a darling!B: Λ Yes.

# TONE-UNIT: (PH) - (H) - TS - (T)

- English an intonation language
- English utterances continuous speech
- Intonation analysis **tone-units** (larger units), e.g. *Is it /you?*
- Intonation and stress are vocal equivalents of written punctuation, therefore **intonation transcription** is given in spelling form, no punctuation is used (it would be confusing to include it).

#### TONE-UNIT

#### / <u>you</u>

- underlined syllables that carry a tone is it / you
- a three syllable utterance, consisting of one tone-unit
- the 3rd syllable is more prominent than other two
- the 3rd syllable carries a rising tone = **tonic syllable** (nucleus)
- the 3rd syllable carries a kind of stress = **tonic stress** (nuclear stress)
- the other two are less prominent, on a level pitch

#### THE STRUCTURE OF THE TONE-UNIT

V John is it / you

- a fall-rise tone used in calling someone's name
- each simple tone-unit has one and only one tonic syllable
- tonic syllable = obligatory component of the tone-unit (cf. the role of the vowel in the syllable)

# THE HEAD OF THE TONE-UNIT (1)

- optional element
- \<u>those</u> one syllable utterance with a **tonic syllable**
- 'give me \<u>those</u> a long utterance of one **tone-unit**
- the rest of the tone-unit, i.e. 'give me is called the head
  - the 1st syllable has a stress mark
  - if there is no stressed syllable before the tonic syllable, there cannot be a head
  - extends from the first stressed syllable up to (but not including) the tonic syllable

# THE HEAD OF THE TONE-UNIT (2)

'Bill 'called to 'give me \these

• the head – first five syllables

#### in an ∖<u>hour</u>

- no stressed syllable preceding the tonic syllable  $\rightarrow$  no head
- the syllables "in an" form a **pre-head**

## THE PRE-HEAD

- optional element
- is composed of all the unstressed syllables in a tone-unit preceding the first stressed syllable
- occur in two main environments:

1 when there is no head (no stressed syllable preceding the tonic syllable), e.g. in an  $\underline{\text{hour}}$ 

2 when there is a head, e.g. in a 'little 'less than an \hour

- pre-head: in a
- head: 'little 'less than an
- tonic syllable: \<u>hour</u>

#### THE TAIL

- optional element
- any syllables between the tonic syllable and the end of the tone-unit

 $\underline{both}$  of them were here

- each tone-unit consists of an initial tonic syllable and a tail
- when it is necessary to mark stress in a tail, the symbol used is a raised dot  $/\cdot/$

\<u>both</u> of them were ·here

/<u>what</u> did you ·say

# PRONUNCIATION IN CONVERSATION features of fluent speech

#### **PRONUNCIATION IN SLOW SPEECH**

We are likely to speak more slowly

- carefully explaining sth to sb
- (e.g. a nurse explaining how to make a sling)
- talking to a large audience
- (e.g. giving a presentation)
- unfamiliar/difficult topic
- (e.g. using professional terminology)

**PRONUNCIATION IN FAST SPEECH** 

We are likely to speak more quickly

- in informal conversation
- (e.g. talking to friends, relatives, ...)
- talking about routine or familiar objects
- leaving consonant sounds out of consonant clusters (e.g. jum<del>p</del>s, last night, a bottle of water), contracted forms (e.g. You've gotta be ...), ellipsis (e.g. <del>I've</del> Got a headache)

## PRONUNCIATION IN SLOW & FAST SPEECH (A) $_{\mbox{\tiny A11}}$

Speech is broken up into units, often with a pause between them. Within these *speech units*, words are linked together smoothly. (An and the words spoken quickly. Compare the units (marked with // below) in these examples of slow and fast speech:

Slow speech: A nurse is explaining how to make a sling: // this goes under the arm// and then over the shoulder// all the time// make sure you support the arm// talk to the patient// and find out what position// is most comfortable for them//

Fast speech: Three friends are in a Chinese restaurant:

- A: // is anyone having a starter or not// or are we going straight to the main course//
- B: // I'm going to go straight to the main course//
- C: // yeah//
- B: // but I might have an extra portion of something// you never know//
- A: // do they do nice sweets here//
- C: // I think it's just lychees//
- A: // what's lychees//
- B: // they're the funny little white ones// aren't they//
- C: // that's right// I'm not terribly keen on them//



#### PRONUNCIATION IN SLOW & FAST SPEECH (B) A12

Because words within units are run together, it can sometimes be difficult to understand them. However, one or more word in each unit is emphasised and may be said more clearly than others (contraction). It is important to focus on these, as they usually carry the most important information in the unit. Listen to these speech units from the restaurant conversation and notice how the words with syllables in large capital letters are emphasised:

//i'm going to go STRAIGHT to the MAIN course//
// I think it's just lyCHEES//
// they're the FUNny little WHITE ones//
// that's RIGHT//

#### PRONUNCIATION IN SLOW AND FAST SPEECH (1) A16

In fast speech, sounds that are found in words spoken slowly may be missed out. Listen and notice how the highlighted sounds are missed out in this conversation extract:



# PRONUNCIATION IN SLOW AND FAST SPEECH (2) A17

As well as sounds, syllables or whole words that we would expect to hear in slow speech may be reduced or missed out in fast speech. Listen and notice how the highlighted parts are reduced or missed out in this conversation:



## PRONUNCIATION IN SLOW AND FAST SPEECH (3) A18

