Phonetics

Selected articles

Second Year Students

Compiled by

Dr. Haggag Mohamed Haggag

Associate professor of Linguistics

Vice-Dean of Faculty of Al-Alsun

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SOME ASPECTS OF CONNECTED SPEECH

1 Introduction: Adjustments in connected speech

What is meant by connected speech? /kəˈnektɪd ˈspi:tʃ/

A good definition is: ordinary spontaneous speech, as opposed to the pronunciation of individual words or phrases in isolation.

A practical example; follow these steps:

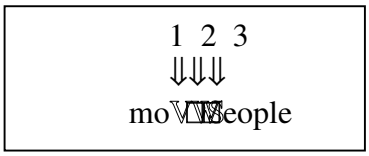
[1] say the word "most". It should be something like /məʊst/.

[2] now say the word "people" (/ˈpi:l/).

[3] finally, pronounce both words together, AND quickly: "most people". Now here we have a problem.

If you did this at a normal speaking rate, you probably found it difficult to say the "t" in the word "most". Why?

Because "t" is now between two consonants:



It is difficult to pronounce three consonants together. Moreover, two of them are plosives

English speakers have a solution for this kind of "pronunciation problem": they simply **omit** the difficult consonant, and say 'mospeople'.

So in this unit we are going to look at the types of PROBLEMS we find when we pronounce English words and syllables together, and what solutions we have in each case.

The problems are <u>difficult sequences of sounds</u>, and the corresponding soolutions tend to be <u>simplifications</u>. As we have just seen, the sequence of three consonants in m o s t p e o p l e, which is difficult to pronounce, is simplified by omitting the consonant in the middle, /t/.

In English, as in all languages, sounds are influenced by other sounds in their environment, taking on different characteristics as a result. The pronunciation of some words is different when they are said on their own, or in slow, careful speech, from when they are used in connected speech.

There are two main reasons for most of the adjustments that will be presented here:

1) to facilitate the transition between sounds when people pronounce English;

2) as we will see during the rest of the course, English has a particular rhythm: syllables are squeezed between stressed elements so that regular timing can be maintained. The things that happen in connected speech also facilitate the natural English rhythm.

Connected speech helps explain why **written English** is so **different** from **spoken English.**

10.2 Linking

Linking (/ˈlɪŋkɪŋ/)is the connection of the final sound (vowel or consonant) of one word or syllable to the initial sound of the next word or syllable.

An easily recognized characteristic of nonnative English is its "choppy quality"; each word is pronounced individually, without any connection to the following word, so that the speech sounds as though someone was tapping out the words.

The ability to speak English "smoothly", to pronounce words or syllables that are appropriately connected entails the use of linking. Linking is the connection of the final sound of one word or syllable to the initial sound of the next word or syllable.

If there is no pause between two words, they should be linked together so that they sound like one word. Linking means that words should be joined smoothly to each other. If you don't link words together, your speech sounds choppy. If you practice linking words, your speech will become much clearer.

When English people speak they generally do not pause between each word, but move smoothly from one word to the next. There are special ways of doing this:

a) Linking of vowel to vowel

When a word or syllable ends in /iː/ /ɪ/, /eɪ/, /aɪ/, or /ɔɪ/ and the following word or syllable begins with a vowel, there is a **linking glide** represented with the phonetic symbol [ʲ]. Examples:

"say‿ it"[seɪʲɪt] "my‿ own" [maɪʲəʊn]

Similarly, when a word or syllable ends in /uː/, /əʊ/, or /aʊ/ and the following word or syllable begins with a vowel, there is a **linking glide** represented with the phonetic symbol [ʷ]. Examples:

"blue‿ink" [bluʷɪŋk] "how‿is" [haʊʷɪz̩] "flour" [flaʊʷə]

Of course, **linking-r** is also included here:

"Is it far? Yes, it's far‿away" [ɪzɪtˈfɑːˌjesˌɪtsˈfɑːrəˈweɪ]

b) Linking of consonant to vowel (resyllabification)

If a word ends in a consonant and the next word begins with a vowel, use the consonant to begin the syllable of the following word. Examples:

"down‿and‿out" "rush‿out" "back‿up"

If a word ends in a **consonant cluster** (more than one consonant), and the next word begins with a vowel, do the same. Examples:

"left‿arm" "pushed‿up" "rest‿area"

The technical name of this type of linking is either resyllabification or phonetic resyllabification.

c) Linking of consonant to consonant (gemination)

When you link two consonants that are the same, do not say the sound twice. Say the consonant once, but make it longer. Examples:

"big girls" "nice summer" "with thanks"

There is a special term for this phenomenon; its name is gemination.

In a phonetic transcription, we will represent it with the length mark [ː]. This phonetic symbol means "long sound", and is the same we used to represent lengthened vowels. In transcription:

"big girls" "nice summer" "with thanks"

[bɪˈgːɜːlz] [naɪˈsːʌmə] [wɪˈəːæŋkɬ]

Remember that when a plosive is followed by another plosive, affricate, lateral or nasal, the first plosive is unreleased. This is as a matter of fact another case of consonant to consonant linking.

10.3 Elision

Elision (/ɪˈlɪʒn/) is the process whereby a sound disappears or is not clearly articulated in certain contexts. A process in connected speech by which a sound is left out in order to make the articulation easier.

Elision is extremely common in spoken English. One familiar case is the contracted form of auxiliary verbs. Examples that you will easily recognize are:

Full form	→	Contracted form
,□□□□gone mad	→	,□□gone mad
phonetics □□□□o bad	→	phonetics □□□o bad
□□□□pass the test	→	□□□pass the test

In "I have gone mad", the auxiliary have is unstressed, because it is a function word. Unstressed parts of the spoken message tend to be reduced or deleted altogether:

/aɪ həv gɒnˈmæd/ → /aɪ v gɒnˈmæd/
⇓⇓

When a sound (consonant or vowel) is left out, that's a case of elision. Elision is a very clever way to save time and effort when you pronounce English. Native speakers are so clever that they do it all the time. And they do it in the following circumstances:

a) Elision of vowels

Unstressed vowels tend to be very weak and reduced in English. Remember, there is normally a big difference between

STRONG (stressed) VOWELS	WEAK (unstressed) VOWELS

Because unstressed vowels are weak, they are sometimes left out when people speak English; they undergo what is known as an elision. When are weak vowels left out? In the following cases:

a.1 Unstressed vowel following a stressed syllable (**syncope**)

In words where the unstressed /ə/ or /ɪ/ follow a stressed syllable, the unstressed vowel tends to be left out.

Examples:	SLOW SPEED **stressed syllable** ⇓	NORMAL SPEED
int[e]resting	/ˈɪn tə rəstɪŋ/	/ˈɪntrəstɪŋ/
med[i]cine	/ˈm e dɪ sən/	/ˈmedsən/
sev[e]ral	/s e və rəl/	/ˈsevrəl/
diff[e]rent	/ˈdɪ fə rənt/	/ˈdɪfrənt/

In these words, it is very frequent that the vowel between square brackets [ ] is omitted. Very frequently this vowel is the vowel / ə / or / ɪ /. The loss of stress, and, thus, of prominence, affects the vowel quality and changes it into a weak vowel, less prone to be prominent.

a.2 Loss of unstressed initial vowel/syllable (**aphesis**)

In very informal, colloquial English the initial vowel or syllable of a word may be omitted IF it is unstressed. Examples:

			SLOW	VERY FAST
"because"	becomes	"cause"	/bɪˈkɒz/ ⇓	/kɒz/
"about"	becomes	"bout"	/əˈbaʊt/ ⇓	/baʊt/

It is not recommended that you do this when you pronounce English, but you will find this phenomenon very often when hearing natives speakers.

b) Elision of consonants

b.1 Loss of /t/ and /d/

When these consonants are in the middle of a cluster of three consonants in a word, they are normally lost. In words that end in /nd/, /d/ is frequently omitted.

Examples:

"windmill" becomes "winmill" /ˈw ɪ n d̸ m ɪ l/
⇓

"restless" becomes "resless" /ˈr e s t̸ l ə s/
⇓

"exactly" becomes "exacly" /ɪ gˈz æ k t̸ l i/
⇓

"hand" becomes "han" /h æ n d̸/
⇓

b.2 Loss of a plosive in a cluster of three consonants

When a plosive is in the middle of a clusters of three consonants formed by two words, it is normally lost.

Examples:

"first three" becomes "firs three" /ˈfɜːsW̸θriː/
⇓

"banned for life" becomes "bann for life" /ˈbændfəˈlaɪf/
⇓

"thank God" becomes "than God" /ˈθ æ ŋ k̸ ˈg ɒ d/
⇓

Remember, however, that if the following word begins with a vowel, there is no elision. Instead, linking takes place:

East‿End wild‿animal

b.3 Simplification of consonant clusters

Some consonant clusters (=group of consonants) are notoriously difficult to pronounce:

"asked"	/æskt/
"lists"	/lɪsts/
"clothes"	/kləʊðz/

The occurrence of 2 and, especially, 3 consonants, implies considerable articulatory effort. Native speakers relax their articulation in the pronunciation of consonant clusters. One alternative to ease this articulation is dropping one consonant, usually the one in the middle.

WORD	CANONICAL FORM	DELETION
"asked"	/æskt/	æst
"lists"	/lɪsts/	lɪss (lɪs:)
"clothes"	/kləʊðz/	kləʊz

10.4 Assimilation

Assimilation is the alteration of a speech sound to make it more similar to its neighbors. It is the process of simplification by which a speech sound is influenced by the surrounding sounds to make them more similar.

The consonant /n/ changes to [m] or [ŋ], depending of the consonant that follows:

"one beer" [wʌm ˈbɪə]

"one cup" [wʌŋ ˈkʰʌp]

In these examples we have an assimilation of the nasal to the following consonant to make the nasal more similar to the neighbouring consonant. This process eases the transition from one consonant to the other and makes articulation possible, especially when the rate of speech is fast.

[w ʌ n	b	ɪə]	→	[w ʌ	m	b	ɪə]
alveolar	bilabial		⇐	bilabial		bilabial	
nasal	plosive			nasal		plosive	
voiced	voiced			voiced		voiced	

If we pay attention to the example above, we can observe that the articulation of the two sounds involved become more similar: from an alveolar nasal voiced sound we change into a bilabial nasal voiced sound. With the new production we approximate the articulation of the nasal sound to the articulation of the plosive sound following. With this change only one articulatory feature differs (nasality). The rest are the same.

This process of assimilation is made unconsciously, to allow for an ease of articulation and economy of muscular effort.

Assimilation occurs very frequently in English, both within words and between words. It happens, and it does so in three different directions:

1. Progressive Assimilation

2. Regressive Assimilation

3. Palatalisation

1. ⇒ Progressive assimilation

In a sequence of sounds A+B, sound A changes sound B. In other words, the conditioning sound precedes and affects the following sound. Very clear examples are the rules for the regular plural and regular past tense:

Plural	**Conditioning sound**	⇒	**Assimilated sound**
"bags"	b æ g + s ending		b æ g ⇒ z
"books"	b ʊ k + s ending		b ʊ k ⇒ s

Past tense	**Conditioning sound**	⇒	**Assimilated sound**
"laughed"	l æ f + d ending		l æ f ⇒ t
"moved"	mu: v + d ending		m u: v ⇒ d

Progressive assimilation also happens in some contractions:

Contraction	**Conditioning sound**	⇒	**Assimilated sound**
"it's"	ɪ t + z		ɪ t ⇒ s

[ɪ	t	z	]	→	[ɪ	t	s	]
	alveolar	alveolar			alveolar	alveolar		
	plosive	fricative			plosive	fricative		
	voiceless	voiced			voiceless	⇒ **voiceless**		

2. ⇐ Regressive assimilation

In a sequence of sounds A+B, sound B changes sound A. In other words, the assimilated sound precedes and is affected by the conditioning sound. This is the most common type of assimilation in English. The two examples we saw before are cases of regressive assimilation:

[w ʌ	n	b	ɪə]	→	[w ʌ	m	b ɪə]	
	alveolar	bilabial				**bilabial**	⇐	bilabial
	nasal	plosive				nasal		plosive
	voiced	voiced				voiced		voiced

[w ʌ n	k	ʌ p]	→	[w ʌ ŋ	k	ʌp]
alveolar	velar			**velar**⇐	velar	
nasal	plosive			nasal	plosive	
voiced	voiceless			voiced	voiceless	

Regressive assimilation occurs frequently in modals "has to" / "have to" (expressing obligation) and "used to" (expressing habitual action in the past):

"have to"	becomes	"haf to"
"has [z] to"	becomes	"ha[s] to"

[h æ v	t	ə]	→	[h æ	f	t	ə]
labiodental	alveolar			labiodental		alveolar	
fricative	plosive			fricative		plosive	
voiced	voiceless			**voiceless**	⇐	voiceless	

[h æ z	t	ə]	→	[h æ	s	t	ə]
alveolar	alveolar			alveolar		alveolar	
fricative	plosive			fricative		plosive	
voiced	voiceless			**voiceless**⇐		voiceless	

The last type of regressive assimilation that is common in native-speaker speech in when we find a sequence of sibilants /s, z, ʃ, ʒ, tʃ, dʒ /. Examples:

"his [z] shoe"	becomes	"hi [ʃ]oe"
"this [s] show"	becomes	"thi [ʃ]ow"

"his [z] sigh" becomes "hi [ʃ]igh"

[h ɪ z ʃ u:] → [h ɪ ʃ ʃ u:]

alveolar	palato-alveolar	**palato-alveolar** ⇐ palato-alveolar
fricative	fricative	fricative fricative
voiced	voiceless	**voiceless** ⇐voiceless

[ð ɪ s ʃ əʊ] → [ð ɪ ʃ ʃ əʊ]

alveolar	palato-alveolar	**palato-alveolar** ⇐palato-alveolar
fricative	fricative	fricative fricative
voiceless	voiceless	voiceless voiceless

[h ɪ z s aɪ] → [h ɪ s s aɪ]

alveolar	alveolar	alveolar	alveolar
fricative	fricative	fricative	fricative
voiced	voiceless	**voiceless**	⇐voiceless

3. ⇔ Palatalisation

In a sequence of sounds A+B, A and B are combined into C. In other words, this is a reciprocal assimilation. The first sound and second sound in a sequence come together and create a third sound:

Sound A + Sound B

⇓

Sound C

All cases of palatalization involve an alveolar consonant + the approximant /j /:

Sound A	Sound B	Sound C	Examples
/s /		⇒ [ʃ]	issue he's coming this year
/z /		⇒ [ʒ]	Does your dog bite?
/t/	+ /j /	⇒ [tʃ]	Is that your dog?
/ts /		⇒ [tʃ]	He hates your hairdo
/d/		⇒ [dʒ]	Did you pass the exam?
/dz/		⇒ [dʒ]	He needs your help

As with linking, the amount of assimilation that occurs in native-speaker speech depends on the formality of the situation, the rate (speed) of speech, and the style of the speaker.

FEATURES OF CONNECTED SPEECH

Every utterance is a continuous, changing pattern of sound quality with associated features of quantity, pitch and stress. It is important to note that a word in isolation is pronounced differently to the pressures of its sound environment or of the accentual or rhythmic group of which it forms part.

These variations may affect the word as a whole, e.g. **weak forms** of structural words in an unaccented situation; or it may especially affect the sound used at word boundaries, which will undergo a series of phonetic adjustments e.g. **assimilations, elisions** and **liaison forms.** The extent of these variations will depend mostly on the speed of the utterance, since the slower and more careful the delivery, the greater the tendency to maintain a form near to that of the isolate word.

We do not always speak in the same way, but we adapt ourselves to situations by using different styles. This means that we vary our choice of vocabulary and grammatical structures depending on the formality or informality of the circumstances. In the same way, we make a series of phonetic adjustments, which include features such as:

- **tempo,** or speed of delivery;
- **rhythm**, or regularity of prominent syllables and words;
- **continuity**, or place and length of pauses;
- **muscular tension**, or articulatory precision
- **weak forms, assimilations, elisions and links.**

ASSIMILATION

Assimilations are changes in pronunciation that take place under certain circumstances at the ends and the beginnings of words (that is, changes at word boundaries), when those words occur in connected speech, or in compounds.

Assimilation is something that varies in extent, according to speaking rate and style; it is more likely to be found in rapid, casual speech than in slow, careful speech. Sometimes the difference caused by assimilation is very noticeable, and sometimes it is very slight. Generally speaking, the most common assimilations occur with consonants, that is, when a word ends in a consonant and is immediately followed by a word that starts with a consonant.

There are two types of assimilations:

a) **regressive** assimilation, which occurs when the following consonant influences the preceding one, for example the word **is** is pronounced [ɪz] and the word **she** is pronounced [ʃiː,ʃɪ]; but when these two words occur together, as in the phrase **is she ?**, they are often pronounced [ɪʒʃiː] rather than [ɪz ʃiː]. The alveolar place of articulation of the sound [z], has changed to a palato-alveolar articulation, under the influence of the following consonant, which is a palato-alveolar fricative sound.

b) **progressive** assimilation, which occurs when the preceding consonant influences the following consonant. This can occur word internally, as for example in the case of the plurals of nouns, the third person singular form of the Simple Present Tense of verbs or the possessive, e.g. **cats** - **dogs; jumps, runs; Pat's - Pam's**. It can also occur at word boundaries, as for example when '**did you'** is pronounced ˈ[dɪdʒuː , dɪdʒə].

Assimilations are not compulsory in many languages, including English: that is to say a speaker may, if he chooses, avoid making them. When they are made, however, they have the effect, whether they are progressive or regressive, of producing some economy of effort in the utterance of a sequence of words. The result of the assimilation is to reduce the number, or the extent, of the movements and adjustments that the speech -producing organs have to perform in the transition from one word to the next.

Assimilations save effort by means of three different sorts of changes in the sequence of speech-producing movements:

a) **Changes involving the state of the vocal folds: assimilation of voice or assimilation of voicelessness.**

Assimilations of voice are common only in Scottish English. For example, in the compound words blackboard and birthday, the words black and birth, which normally end in voiceless consonants, may be pronounced with voiced ones.

Assimilations of voicelessness are common in all types of English. Some examples of regressive assimilations of this type are the phrases: ' **of course '** and ' **have to '** pronounced with the voiceless consonant [f] instead of the voiced [v]; or the compound word '**newspaper'** with the voiceless [s] instead of the voiced [z]. An example of progressive assimilation of this type occurs when the word '**is'** is pronounced [s] in '**what's, it's '**.

b) **Changes involving the position of the soft palate: oral /nasal.**

These assimilations are rare, or non-existent, in English, but they are found in other languages as in Spanish, for example in "**un buen día**", where the vowels [u,e] have a certain degree of nasality in anticipation of the nasal consonant that follows them. In French, for instance, the phrase "**une langue moderne"** may be pronounced [yn lɑ̃ŋ mɔdɛʀn] where /ŋ/ replaces, by a regressive assimilation of nasality the [g] that would be used when the word is said in isolation.

c) Changes involving movement of the articulators: changes in the place of articulation.

This is by far the most frequent type of assimilation in English, and a wide variety of examples can be found. The more familiar and the faster the style of speech, the more frequent such assimilations are likely to be. In the majority of cases they are **regressive**. Some examples are **is she** [ɪʒʃiː]; **ten minutes** [tem mɪnɪts]; **I'm going** [aɪŋ gəʊɪŋ]

The sounds most easily affected by this type of assimilations in English are the **alveolar consonants:** [t-d-s-z-n]. Following the rule, transcribe the phrases below assimilating the alveolar consonants to the place of articulation of the following consonant:

a. [**t, d, n**] become [**p, b, m**] when followed by a bilabial consonant, e.g.

Lend me that pen. [ ];
You'd better do it now! [ ];
He did it on purpose. [ ]

There 're ten men kicking a red ball in the field. [ ];

b. [**t, d**] become [**tʃ, dʒ**] - ***yod coalescence-,*** when followed by [**j**], e.g.

She came last year. [ ];
There's a man behind you. [ ].
He met you last year. [ ];
John, get your sister out of the car! [ ];
I'll let you out, doggie. [ ];
Would you try speaking in Portuguese? [ ];

c. [**s, z**[become [**ʃ, ʒ**] when followed by [**j, ʃ, ʒ, tʃ, dʒ**] e.g.

Her voice shook. [ ];
In case you do it. [ ];
Here's yours. [ ];
He was shot. [ ]
Red roses charm people. [ ];
Is George coming? [ ];
Has Charles arrived? [ ];

d. [**t, d, n**] become [**k, g, ŋ**] when followed by [**k, g, w**], e.g.

Have some hot cakes! [ ];
I should go now. [ ];
He's driving his own car. [ ].
Let Guy do it. [ ];
He got one cake for Alice. [ ];
He told Cathy he had seen Bob. [ ];
Jane bought ten bottles of red wine in this shop last year. [ ];

ELISION

Elision is used to refer to the omission of sounds in connected speech. Both consonants and vowels may be affected, and sometimes even whole syllables may be elided. Unstressed **structural** words, such as **and** and **of** are particularly prone to be elided, as when the **f** is dropped in **cup of tea** (cf. cuppa tea), or the **a** and **d** are dropped in boys 'n girls. Within polysyllabic words, vowels and consonants in unstressed syllables are regularly elided in conversational speech or normal speed, e.g. **camera** /kæmɻ/; **probably** /prɒbblɪ/; **February** /ˈfebrʊrɪ/. Complex consonant clusters are also often reduced, e.g. **twelfths** becoming / twelθs / or / twelfs /.

We can find elisions of two types:

a. Word-internal:

♣**weak, central vowels** /ə, ɪ, ʊ/ are elided when they occur in unaccented syllables between two consonants, specially if the following consonant is /r, n, l/. Examples: **certain** /tn̩\; **importance** /tn̩s/; **student** /dn̩t/, **impatience** /ʃn̩s/, **vision** /ʒn̩/**, classical** /kl̩/, **arrival** /vl/**, nasal** [zl], etc.

* note that schwa [ə] must not be elided when a nasal consonant precedes the sequences [-dən, -tən], e.g. **London, abandon, sentence, Washington.**

♦**alveolar consonants** are elided when they occur between two consonants, e.g. **handsome** /ˈhænsəm/, **postpone** /pəˈspəun/, **asthma** /ˈæsmə/, (notice that this rule has been applied to **asked** /ˆɑst/, even though the consonant in the middle is not an alveolar.

b. At word boundaries:

word-final alveolars [t,d] are generally elided* when they are preceded and followed by other consonants, especially when the **following** consonat is a plosive, e.g. **next turn** /nekst`tɜ:n ~ neks`tɜ:n/; **best joke** [best `dʒəʊk ~ bes`dʒəʊk]; **send two** /send`tu: ~ sen`tu:/ **rubbed down** /rʌbd`daʊn ~ rʌb`daʊn/.

* there is a tendency to retain [t, d] if the following word starts with [h], e.g. **guest house, send home.**
* there is a tendency to retain [t] in the sequences [-nt, -lt], e.g. **sent them, spoilt child.**

♠[h] is elided* in **unaccented, non-initial he, his, her (self), him (self), have, has, had,** and sometimes **who,** e.g. **Give him his pencil.**['gɪv‿ɪm‿ɪz`pensəl]; **George has seen her twice** ['dʒɔ:dʒ‿əz 'si:n‿ɜ:`twaɪs].

* if the preceding word ends in an optional ʔrʔ, only **one** (**[h]** or **[r]**) of them should be elided, e.g. **Peter himself did it.** ['pi:tə‿ɹ‿ɪmself`dɪd‿ɪt ~ 'pi:tə hɪmself`dɪd‿ɪt].

COMPRESSIONS

These occur when:

a. a vowel is reduced to a semivowel, as in the case of **to open** [twəupm̩], in English; and of **agua y aire** [aɣwa jaire] and **como te iba diciendo** ['komo tjiβa ði`sjendo] in Venezuelan Spanish.

b. a diphthong becomes a monothong, e.g. **tomorrow morning** [tə'mɒrə`mɔnɪŋ].

c. word - internally in the following cases:
♦when we pronounce either [ʊ] or [ə] instead of the diphthong [ʊə], in words like ac**tua**lly, u**sua**lly, va**lua**ble;
♣when we pronounce [ə] instead of the diphthong [əʊ], in words like: auto**mo**bile, ex**tro**vert, **mo**bility, **No**vember, **o**mission, **ro**mantic, **vo**cation.
♠when we pronounce [jə] instead of [ɪə], and [wə] instead of [ʊə], in words like en**vious**, bri**lliant**, in**fluence**, an**nual**.

Practice with the following examples in informal colloquial style:

1. **How do you do!** ['haʊ dju: `du:]
2. **I'm gonna buy it.** [ɑ: gənə `bɑ: ɪt]
3. **Right you are!** [raɪtʃu:`ɑ:]
4. **I don't know why.** [aɪ dənə`waɪ]
5. **What did he do?** ['wɒ dɪdɪ`du:]
6. **I'm glad.** [aɪŋ`glæd]
7. **I should think so.** [aɪ ʃ`θɪŋk səʊ]
8. **How are you folks?** ['haʊ jə `fəʊks]
9. **It happened once.** [ɪt 'hæpm̩`wʌns]
10. **Do you want one?** [dju: ˌwɒmp wʌn]
11. **They haven't been.** [ðə 'hæbm`bɪn]
12. **I didn't want to.** [ɑ: dɪbm`wɒn tu:]

STYLES OF PRONUNCIATION

First of all let's review the terms **dialect, idiolect** and **register** (DIALECT & RELATED TERMS handout)

Although from the phonetician's point of view it is difficult to draw a precise dividing line between the different styles of pronunciation, we will adopt the styles presented by Finch and Ortiz (1982:82):

1.- Formal which is characterized by slow tempo, precise articulation, and high frequency of accented words. It is used in formal recitations, church services, etc. Foreign learners should not use this style of pronunciation for normal, everyday use.

2.- Unhurried Colloquial It is the slower of the conversational styles. It uses a high frequency of accented words, a minimal number of contextual assimilations and elisions and precise articulation.

3.- Informal Colloquial. It is the most informal of the conversational styles. It is faster, uses a maximum number of assimilations, elisions and compressions; lax, slurred articulation and a reduction of accented words.

We can put the two conversational styles on a scale, with the Unhurried Colloquial at the formal end and the Informal Colloquial at he informal end. Nevertheless, there is an infinite number of styles in between, depending on the situation, the topic, the backgrounds of speaker and listener, and the relationship between them.

To play safe, you as a foreign learner should adopt, for production, the Unhurried Colloquial style, as long as you are exposed to the Informal Colloquial in the advanced stages, so as to become a "passive" user of it, in order to understand it with ease.

On the production side, once you have mastered the pronunciation of the **citation forms** (those appearing in pronouncing dictionaries) and acquired an easy command of spoken English, you can start dealing with problems of linking words together. The better you become in the use of the language, the easier it will be to use the features of connected speech. You should aim at the systematic and consistent use of the more common elisions and assimilations.

In order to develop your "receptive fluency" you will require a theoretical description of the Informal Colloquial style and systematic exposure to spontaneous, informal, conversational English. This will enable you to gradually understand a message from very informal conversational styles.

GLOSSARY OF TERMS

CONNECTED SPEECH A term used in linguistics to refer to spoken language when analyzed as a continuous sequence, as in normal utterances and conversations.

UTTERANCE What is said by any one person before or after another person begins to speak. For example, an utterance may consist of one word, one phrase, one sentence, or of more than one sentence.

PROMINENCE A term used in Auditory Phonetics to refer to the degree to which a sound or syllable **stands out** from others in its environment. The following factors are important to make a syllable prominent: **differences in quality, length (quantity), pitch and stress.**

QUALITY A term used in Auditory Phonetics and Phonology to refer to the characteristic **resonance**, or **timbre,** of a sound which is the result of the range of frequencies constituting the sound's identity. Articulatorily, those frequencies are caused by the vibration of the vocal folds and modified by the resonators as the air passes through them. Therefore, we can say that articulatorily, quality depends on the shape of the resonators. Variations in both **vowels** and **consonants** are describable in terms of quality, e.g. the distinction between /i/ and /e/.

QUANTITY Auditorily, it is that property of a sound that enables us, using only our ears, to place a sound on a **scale going from short to long.** From the **perceptual** point of view, it is referred to as **length.**

PITCH Articulatory, pitch is caused by the **frequency** of vibration of the vocal folds; the tenser they are the faster they vibrate, and the higher (acute) the note. **Auditorily,** it is that quality of a sound, in terms of which, it can be placed on a **scale running from high to low, or acute to grave.**

STRESS Articulatorily, stress in caused by greater muscular energy and breath force. **Auditorily**, it is perceived as **loudness.** So we van say that it is that quality of a sound that enables us, using only our ears, to place it on a **scale from loud to soft.**

There are three levels of stress:

a) **strong or primary,** e.g. a ˈ**round.**
b). **secondary,** e.g. ˌ**pho**to ˈgraphic.
c. **unstressed,** e.g. **a** ˈround.

COMPLEX WORDS are of two major types:

1. **AFFIX** words, made from a basic **stem or base form** with the addition of an **affix.**
Affixes can be of two sorts in English:

- **prefixes,** which come before the stem, e.g. **un** + happy and
- **suffixes,** which come after the stem, e.g. happi + **ness.**

2. **COMPOUND** words, which are made of two (or occasionally more) independent English words, e.g. loud/speaker, second-class.

CONTENT (FULL, LEXICAL) WORDS. These are words that refer to a thing, quality, state, or action and which have meaning (lexical meaning) when the words are used alone. **Content words are mainly nouns, verbs, adjectives and adverbs.**

FUNCTION (FORM, EMPTY, GRAMMATICAL, STRUCTURAL, STRUCTURE) WORDS These are words that have little meaning on their own, that is, when standing in isolation, but which show grammatical relationships **in** and **between** sentences. **Conjunctions, prepositions, articles, auxiliary verbs (including modals), pronouns,** are function words.

OTHER ASPECTS OF CONNECTED SPEECH

A. Assimilation

The term **assimilation** describes how sounds modify each other when they meet, usually across word boundaries, but within words too. If we consider the words *that* and *book*, and look at the phonemes involved, we get / / and /ðæt/. If we then place the words in a sentence, (for example: Could you pass me that book, please?), we notice that the /t/ phoneme at the end of that doesn't sound like it does in the word said on its own. The phoneme /t/ is an alveolar sound, which is formed when the tongue blade forms a temporary closure against the alveolar ridge. If you try saying the sentence a few times over, you will notice that the tongue doesn't actually get there at the end of the word. Rather than having our tongue make the unnecessarily long journey all the way to the alveolar ridge, we employ an economy of effort, and get our articulators (in this case, the lips) ready for the next sound, /b/. The modified sound retains its original voice quality, and so we say that the /t/ assimilates to a /p/, both sounds being unvoiced. As a result, we get Could you pass me / p buk/?This is not to say that we give the /p/ its full plosive manner of articulation either, as we would if we were to say the non-word / p/ on its own, merely that our lips are in the position to make the /p/. The best description is that in readying our articulators for the next sound, certain sounds are either absorbed, or modified into others. There is another possibility: the /t/ at the end of that could also become a glottal stop, where the glottis (the opening between the vocal cords inside the larynx) closes momentarily.

Some rules for assimilation:

1. The phonemes /t/, /d/, and /n/ often become bilabial before bilabial consonants /p/, /b/, and /m/.
   He's a rather fa<u>t b</u>oy
   She's got an apar<u>tm</u>ent in Manhattan.
   He's a very go<u>od b</u>oy
   There are te<u>n m</u>en in the class

2. /t/ assimilates to /k/ before /k/ or /g/ ; /d/ assimilates to /g/ before /k/ or /g/

   Where has that car been all night

   Can you see that girl over there?

   It was a very good concert

   She's a very good girl
3. /n/ can assimilate to / / before /k/ or /g/

   I've been going out too much lately

   He's bringing his own car
4. /s/ can assimilate to / / before / /

   I really love this shiny one over here.
5. /t/ can assimilate to / / before / /

   We found this lovely little cheese shop in Paris.
6. /t/ and /j/ combine to form /t /

   You went to French last year, didn't you.
7. /d/ and /j/ combine to form /d /

   Would you like a cup of tea?

B. Elision

The term elision describes the disappearance of a sound. For example in the utterance *He leaves next week*, speakers would generally elide (leave out) the /t/ in next, saying /neks wi:k/. Again here, the reason is economy of effort, and in some instances the difficulty in putting certain consonant sounds together while maintaining a regular speech rhythm and speed.

Some rules of elision:

1. The most common elision in English are /t/ and /d/ when they appear within a consonant cluster.

   We arrive the next day

   When we reached Paris, we stopped for lunch

   We bough a lovely carved statuette
2. Complex consonant clusters are simplified

She acts like the owns the place

Teachers use authentic texts to teach

George the sixth's throne

3. /ə/ can disappear in unstressed syllables.

   I love you forever.

   It's a question of collective responsibility.

   I think we should call the police

4. /v/ can disappear in of before consonants

   My birthday's on the 11 of November

   It's a complete waste of time.

   That's the least of my worries.

C. Linking and Intrusion

When two sounds meet, speakers often link them in various ways:

1. Linking /r/

   Her English is excellent (/r/ is pronounced)

   Her German is absolutely awful. (/r/ is not pronounced)

   My brother lives in London. (/r/ is not pronounced)

   My brother always phones at the wrong time. (/r/ is pronounced)

2. Intrusive /r/

   Princess Diana was a victim of media exploitation.

   The media are to blame

   It's a question of law and order.

3. Linking /j/

   I agree, wholeheartedly

   I am

   I ought

   They are

4. Linking /w/

   Go on. Go in.

   Are you inside, or are you outside?

Who is

You are

D. Contractions

Contractions occur when two words combine to the extent that the two are pronounce as one word, or one syllable. These have, for the most parts, been conventionalized in written language. Common examples are as follows: I'm, you're, he's.

Exercise 1:

Read the following sentences!

1. At the hospital
   a. How long have you been sick?
   b. Put out your tongue.
   c. Take a deep breath and hold it.
   d. I am going to write you a prescription.
   e. If you don't feel better in three days give me a call.

2. What are your plans for the weekend

a. I thought we would watch a movie or video.

b. We are having our neighbors over for dinner.

c. I want to sleep for as long as possible

d. I'd like to go hiking or camp at the beach.

e. I need to catch up on our work I didn't get done this week.

f. I have a list of a mile long of things to do.

g. I've got to get ready for a math exam.

h. There 's a new exhibit at the art museum I'd like to see.

3. At the airport.

a. We have to check in here.

b. Do you want to get the plane?

c. Look at this line. We‘re never going to make it.

d. Are they going to serve food?

e. When are we going to arrive?

f. We have to fasten our seatbelts now.

g. Do you want to sit by the window?

h. We have to go through custom.

4. At a café

a. Are you open or closed?

b. Will you pass me the cream and sugar?

c. Is that a seven or one on the bill?

d. This table and that one are open.

e. What’s your favorite dessert?

5.What’s up?

a. I’m working on another English assignment.

b. Have a seat. We’re just about to start a video.

c. I’m waiting for a friend to arrive.

d. I have an appointment at eleven, so I need to leave in a minute.

e. A. May I speak to Mr. Abbot?

B. I’m sorry. He’s on another line. May I take a message/

A. No, thanks. I’ll call again in a little while.

6.In a class room.

a. Am I going too fast

b. Does it make sense?

c. Am I late?

d. What does it mean?

e. Is it raining out?

f. Does it look like rain?

7. Reflection

a. Understanding fast talk is almost impossible for me.
b. Linked words sound strange.
c. I understand everything my classmates say.
d. I want to speak as fast as native speakers.
e. Linking will let me understand native speakers better.

8. massages.

Hi, Jack, I'm sorry, but we have to work late tonight. I'll come as soon I'm done. But I 'm not sure about the time. It might take me until ten or eleven to finish. See you in a while.

You have reached the office of Tom Moore, Department of engineering. I'm away from my desk right now or with a student. My office hours are from one to two, Mondays, Wednesdays, and Fridays. Please leave a message, and I'll get back to you as soon as I can.

9.At school

A: Do you think you passed the test?
B: No, I think I've failed. This class is so hard for me.
A: Oh, come on. You're smart. You'll pass.
B: I'm glad you believe that because I'm sure don't.

A: Are there any eggs left?
B: I think we ate them all.
A: Darn, I wanted to make an omelet.
B: What about heating up some of that left-over rice and chicken.
A: No, I'm tired of rice. Any other ideas?
B: Yeah. Let's go out.

Exercise 2: Read the following dialogues in pair

Man : I talked to my great-grandmother on the phone this morning.
Woman : Your great-grandmother? Do you talk with her often?

Man : I try to call her at least once a week. She's a really wonderful woman, and she's over eighty-five years old. I enjoy talking to her, because she's so understanding and because she gives me good advice.

Woman : What advice did she have for you today?

Man : (laughs) She told me to be careful because a big storm is coming.

Woman : She said that a big storm is coming? Is she a weather forecast?

Man : Not exactly. She says that she can feel it in her bones when a storm is coming. I know it sounds funny, but when she feels it in her bones that a storm is coming, she's usually right.

Woman : That's not actually so funny. When people get older, the tissue around their joints can become stiff and swollen. Just before a storm, the air pressure often drops, and this drop in air pressure can cause additional pressure and pain in swollen joints. So when your great-grandmother tells you she thinks a storm is coming, she probably has some aching in her joints from the decreasing air pressure.

Man : Then, I had better pay more attention to my great-grandmother's weather forecasts!

transcription skills. Sections 5 and 6 present the characteristics and classifications of vowels, consonants, and sonorants. In Section 7, several complex phonemes and their allophones are detailed in terms of their articulation and distribution. Section 8 expands beyond the segmental level and briefly dwells on the concept and the structure of the syllable. In addition, stress placement is discussed with reference to complex stress patterns in longer words and compounds. Finally, strong versus weak forms of function words are presented under the influence of sentence stress in Section 9.

Each section also features a list of further reading options, a terminology self-assessment, and several study questions and exercises, which are predominantly focused on the formation of transcription skills. Students are also provided with a glossary that uses Lithuanian equivalents to help explain the key terms and complex anatomy concepts.

The course is not intended to overload the students with theory reading, thus allowing considerable time and opportunity for practice in a language laboratory and offering flexibility for incorporating the instructor's personal preferences for teaching the course. For the extension of this particular course, a suprasegmental study should follow to give students the full picture of English phonetics.

Orthography

For the purpose of convenience, the following orthographic notations are used: target spelling entries are written in *italics*, e.g. *team*, and target transcription entries are highlighted in navy blue and inserted either between slashes for phonemic transcription, e.g. /tiːm/ or, in rare cases, between square brackets for allophonic transcription, e.g. [tʰiːm] (for further details see Section 4). To visually distinguish the basic theory concepts and terms, they are written in **bold**.

The text also features tables, which give synthesised theory concepts and examples, as well as several figures either adapted from Roach (2009) or referenced to their original sources.

1. VARIETIES OF ENGLISH

1.1. Varieties of Language

Varieties of language refer to the differences in the systems of a language that emerge from social, historical, geographic, social, and other changes. In other words, a language variety is "a system of linguistic expression whose use is governed by situational variables" (Crystal 2008: 509). A **dialect** is governed by regional or social distinctiveness and is identified by particular vocabulary, pronunciation, and grammatical structures. Crystal (2008) states that languages develop dialects when they are used by a large number of speakers and if there are "geographical barriers separating groups of people from each other or […] divisions of social class" (2008: 509). All people speak a dialect. A group of people who speak a certain dialect is often referred to as a **speech community**. A language variety that is defined on social grounds is called a **sociolect**. It primarily applies to a particular social class of people or to an occupational group. A regional dialect or **regiolect**, conversely, describes the language spoken in a particular geographic area. An **idiolect** is the individual and unique use of language restricted to a single speaker. This term implies an awareness that each individual speaks in a different manner in terms of vocabulary, grammar, pronunciation, and levels or styles of language use. An **accent** refers to pronunciation only. An accent may be considered to be a spoken representation of a dialect because it reflects "those features of pronunciation which identify where a person is from, regionally or socially" (Crystal 2008: 3). As all people speak a dialect, all people have an accent. A predominating dialect may become the official or **standard** form of the language. Often it is referred to as a prestige variety or, as Crystal (2008) calls it, an "institutionalised form" (2008: 450), the term which is used in the mass media, foreign language teaching, etc. **Nonstandard** varieties, consequently, are defined as dialects which "do not conform to this norm" (Crystal 2008: 450).

1.2. Standard English

Internationally, there are many varieties of English as it is spoken worldwide as a first or a second official language. As a first language, it is spoken in the United

Kingdom, the United States of America, Canada, Ireland, Australia, New Zealand, South Africa, and some islands in Central America. Today all English-speaking nations have their own national varieties of English. A **national variety** is defined as the speech of a nation, e.g. British English, American English, Australian English, Canadian English, etc. Each national variety holds its standardised language as Standard English, General American, etc.

This course is based on **Standard English (SE),** the norm of British English. Trudgill (1999) calls SE "the most important dialect in the English-speaking world from a social, intellectual and cultural point of view" (1999: 123). SE is not regionally based, but instead, it is a purely social dialect. It is the variety of English associated with high status, promoted by educational institutions, used in government, law courts, the church, and media. It is used for printed texts and formal speeches. The linguistic features of this standard variety, however, are matters of grammar and vocabulary, but not pronunciation. As a result, SE is spoken in various accents that vary according to their regional origin, and the social group, or ethnicity of the speaker. The accent which is most often associated with SE is known as **Received Pronunciation.**

1.3. Received Pronunciation

Received Pronunciation (**RP**) is the pronunciation that is associated with the educated, typically the middle and upper classes of the community. As with the SE dialect, RP is also identified not so much with a geographical region as with a certain social group. It has connotations of prestige and authority and is an indicator of formal speech. Various terms for RP include **The Queen's English, Public School Accent, Oxford English, BBC English, the accent of the Court**, etc. All the expressions mentioned above reflect important historical and social aspects of RP.

1.3.1. History of RP

The historical origins of SE can be traced back to the 16th century (Fisher, 1993) when prestige and authority became attached to one accent, particularly the accent used by the court and the central administration in London. Being the language of the educated "upper social class" people, this pronunciation was perceived as the correct and accepted version, whereas other accents were treated as corrupted forms of the norm.

The 19th century saw a flowering of the prestige public schools and this contributed greatly to the growing importance placed on the accepted accent. During the course of the century, the royal family and the upper-class members of the society, attended boarding schools such as Eton, Winchester, Harrow, Charterhouse, Westminster, or Rugby, and they graduated from Oxford and Cambridge Universities. The prestigious accent they used gained a unique status and "became the kind of pronunciation passed down from one educated generation to the next" (Crystal 2004: 3). The term "Received Pronunciation" was proposed in 1869 by the linguist A. J. Ellis, however it was not a widely used term until the phonetician D. Jones adopted it in the second edition of the English Pronouncing Dictionary in 1924.

RP probably received its most accepted status in 1922 when it was adopted as the British Broadcasting Cooperation (BBC) broadcasting standard. The BBC only employed announcers and newsreaders who were RP speakers. To supplement its language policy, the BBC Advisory Committee on Spoken English was established in 1926. After World War II, it was renamed "the BBC Pronunciation Unit", and its authority diminished to that of providing guidelines to newsreaders on the pronunciation of geographical and personal names. The unit still functions today, although modern BBC newsreaders and announcers more often speak in mild local accents and modified RP rather than in its pure form. Moreover, the BBC Overseas Service has taken to using a number of newsreaders from regional stations whose English, by British standards, has a strong foreign accent. Nevertheless, Roach (2009) claims the BBC is still respected by many people in Britain and abroad as a model of good English and can still be classed as **BBC English**.

1.3.2. RP Today

Recent estimates suggest only 3-5% of the UK population speaks RP today. Despite its statistical insignificance, it is still the language of the educated, the most widely studied, and the most frequently described variety of spoken English in the world. Moreover, as England is a place where a person's accent still represents an important index as to the social and educational background of the speaker, RP still maintains its high status.

As well as being a prestigious accent, RP is also a concept in phonetics. Phonemic transcriptions in dictionaries are based on this particular accent, and it serves as a standard for EFL learners in Europe. Therefore, the current social and linguistic status of RP is of special relevance to EFL university students. Moreover, in the field

of accent studies, RP is widely used as a reference accent for comparison with other varieties.

1.3.3. Types of RP

RP, like all accents, changes constantly and incorporates new phenomena, while others are lost. Consequently, different subtypes of RP can be distinguished, which are more or less conservative or progressive, and which are spoken by different age groups. Gimson and Cruttenden (2008) identify three main types of RP:

1. **Conservative RP**, which is the most resistant to change and is characteristic of older generations. It is traditionally used by certain professions or social groups;
2. **General RP**, which is commonly defined as the pronunciation adopted by the BBC and is the type most commonly in use;
3. **Advanced RP**, which typifies attempts to change and is chiefly used by young people of exclusive social groups.

Wells (1982) makes a similar distinction by reducing the number to two types:

1. **Mainstream RP,** which largely corresponds to general RP and is the unmarked and modern type of RP, traditionally spoken by BBC newsreaders.
2. **Upper-Crust RP**, which is a more conservative and old-fashioned type of RP, mostly associated with elderly people, the upper class, or the members of the royal family.

It is also common to distinguish between RP and what Wells (1982) calls **Near-RP** accents. These are close to Mainstream RP but accommodate mild regionalisms and therefore do not fall completely within the boundaries of RP.

1.4. On Cockney and Estuary English

Cockney is a British accent, which originated in the East End of London. It is often associated with London's working class, and originally attributed to those who were "born within the sound of Bow Bells" (Wells 1982: 302), i.e. the bells of Saint Mary-le-Bow Church in Cheapside in London. For some time, the Cockney accent was scorned and regarded as inferior. However, it is currently an accent trending among middle-class Londoners. McArthur and McArthur (2005) indicate the following pronunciation features typified for Cockney accent: glottal stops (see p. 43), /l/ vocalisation (see p. 43), th-fronting (/v/ and /f/ sounds instead of /θ/ and /ð/),

and other phonetic features that have become characteristic in and around London and are notably favoured by the young.

Estuary English (EE) is the term, which seems to best reflect the predominant modern accent in London. EE seems to comprise both the prestige of RP and the back-to-modern features of working-class Cockney. Rosewarne (1994: 3) calls it "the accent between Cockney and the Queen." EE "supposedly originated in the counties adjacent to the estuary of the River Thames" (Crystal 2008: 173), and thus displays the influence of London regional speech. Rosewarne (1994) claims that this form of speech is a new sort of standard, which has replaced RP and is favoured by the young upwardly mobile people in all spheres of life, including professionals. Roach (2009) states that EE is not really an accent, but more a modern deviation from RP used in the London area and characterised by glottal stops and /l/ vocalisation.

1.5. Global English

English has become an international language not only because it is used by so many people all over the world, but also because it has developed into the essential means of global communication, embracing access to the world's intellectual and technical resources. Crystal (2003) defines a global language as a language that "achieves a global status when it develops a special role that is recognised in every country" (2003: 3). Thus, English is often referred to as **Global English** or **World English** and is used as a lingua franca[1] in all spheres of global activity. No other language has such global exposure as English, which is used around the globe for specific purposes other than language. The term **World Englishes** embodies all varieties of English developed in different regions of the world, especially those that emerged in nations colonised by the UK or influenced by the US. Some scientists (e.g. Widdowson 1994) claim that the extensive number of people who now use English means that it is no longer the property of native speakers, which consequently results in the deprivation of the standard dialects and accents. Some scientists (e.g. Jenkins 2000) introduced the term **intelligible pronunciation** to define the extent of the phonological features of the language that make the message recognisable by a listener. Consequently, the pedagogical priorities in pronunciation are reduced to features necessary to adopt international intelligibility only. This course, however,

[1] A **lingua franca** is "a term used in sociolinguistics, and often in everyday speech, to refer to an auxiliary language used to enable routine communication to take place between groups of people who speak different native languages; also sometimes called an interlingua" (Crystal 2008: 282).

points the EFL university students in the direction of a near-native pronunciation – what Gimson calls the target of "high acceptability" (Cruttenden 2014: 328).

Further reading options: Roach (2009: 1-7)**,** Collins and Mees (2003: 2-6, 268-272), Trudgill (1999: 123-125).

Terminology check:
dialect, accent, sociolect, social community, idiolect, national variety, Standard English, RP, BBC English, Cockney, Estuary English, World English, World Englishes, intelligible pronunciation

Study questions:

1. What is the difference between a dialect and an accent?
2. What is a sociolect?
3. What is an idiolect?
4. What is the difference between SE and RP?
5. What are the different types of RP?
6. What are the different names for RP? Why are they called so?
7. What is the difference between RP, Cockney, and Estuary English?
8. What native dialect / accent do you speak?

2. PHONETICS AND PHONOLOGY

2.1. The Object of Phonetics and Phonology

Phonetics and phonology are the branches of linguistics concerned with sounds, thus the main object of investigation in this course is **a sound**. The English alphabet is comprised of 26 letters, while the sound system of English contains 44 sounds as phonemes (see explanation of phonemes below). Both branches investigate the sounds from different perspectives:

- **Phonetics** is concerned with the physical manifestation of language in sound waves and how they are produced, transmitted, and perceived, and also "provides methods for their description, classification, and transcription" (Crystal 2008: 363).
- **Phonology** "studies the sound systems of languages" (ibid: 365) and how sounds function in relation to each other in a language.

Although phonetics and phonology are indistinguishable from one another in most instances, the scope of these pages deal with phonetics essentially and only touches upon a few concepts in phonology for practical purposes.

2.2. On Phone, Phoneme, and Allophone

The term **sound** is often regarded as not being a precise one in the fields of phonetics and phonology and is thus replaced by the term **phone.** Sound could mean any noise or sound, while phone is restricted to the human voice ('Phone' comes from a Greek word 'phone' [human voice] and is regarded as a speech sound which can be cut out from the speech stream. Crystal (2008) defines phone as "the smallest perceptible discrete segment of sound in a stream of speech" (2008: 361).

A **phoneme** includes all the phonetic specifications of phones and is the smallest independent unit that can bring about a change in meaning. Roach (2009) calls phonemes "abstract sounds" as there may be slightly different ways to realise the same phoneme. An example of a phoneme is the sound /t/ in the words ***t****eam* and *s****t****eam*. The slight difference in the realisation of this phoneme is that the /t/ in ***t****eam*

is aspirated [tʰ], while the /t/ in *steam* is not [t]. Phones that belong to the same phoneme, such as [t] and [tʰ] for English /t/, are called **allophones**. Allophones do not affect the semantic meaning of the word, while a substituted phoneme could bring a semantic change. For example, ***t**eam* pronounced with any allophone of the phoneme /t/ maintains its meaning, but if it is substituted with the phoneme /b/, then it brings about a semantic change. These two words then (*team* /**t**i:m/ and *beam* /**b**i:m/) form a **minimal pair**, which is an opposition of two words showing the existence of these two phonemes. For a set of words to form a minimal pair, they may differ in one phoneme only. Phonemes cannot, in fact, be pronounced – in actual speech, they are realised through allophones.

2.3. The Branches of Phonetics

Adopting the different perspectives referred to in the description of phonetics above, it can be viewed as investigating three distinct areas that are represented in the following **branches of phonetics**:

- **articulatory phonetics**, which studies the ways the vocal organs are used to produce speech sounds;
- **acoustic phonetics**, which investigates the physical properties of speech sounds (duration, frequency, intensity, and quality) that are generally measured by spectrographs to depict waveforms and spectrograms;
- **auditory phonetics,** which is concerned with how people perceive speech sounds, i.e. how the sound waves activate the listener's eardrum, and how the message is carried to the brain in the form of nerve impulses.

Further reading options: Roach (2009: 31-38), Crystal (2008: 361-365).

Terminology check:
phonetics, phonology, phone, phoneme, allophone, minimal pair, articulatory phonetics, acoustic phonetics, auditory phonetics

Study questions:

1. What is the difference between phonetics and phonology?
2. What is the difference between a letter and a sound?
3. How many sounds are there in the English sound system?

4. What is the number of sounds and letters in your native language?
5. Why is phone a more appropriate term than sound?
6. What is the difference between phoneme and allophone?
7. What is a minimal pair?
8. What branches of phonetics are distinguished, and what does each branch investigate?

Exercises:

1. Write the number of letters and the number of sounds in these words:

Word	Number of letters	Number of sounds
enough		
philosophy		
Christmas		
answer		
furniture		
Chinese		
picturesque		
delicious		
Wednesday		
colonel		
honour		
thorough		
naughty		
scene		
business		

2. Create minimal pairs substituting the sounds in bold in the following words:

Word	Minimal pairs with that word								
let /**l**et/									
let /le**t**/									
kid /kɪ**d**/									
got /**g**ɒt/									
keen /**k**iːn/									
book /**b**ʊk/									
come /kʌm/									

3. SPEECH MECHANISMS IN ARTICULATORY PHONETICS

3.1. The Stages in Sound Production

For practical purposes, of the three main branches of phonetics, articulatory phonetics will be discussed as an enhanced awareness of the articulatory apparatus and the exact production of each sound can help students to form conscious and physically correct articulation. Articulatory phonetics focuses on the organs of speech and their role in producing speech sounds, which is predominantly based on data provided by other sciences, such as human anatomy and physiology. Human beings do not possess organs used exclusively in the production of speech sounds. Instead, these organs primarily serve other functions (digestive, respiratory, etc). This actually raises an interesting question: whether we were born to speak or whether speech developed accidentally in the evolution of mankind. Either way, the production of speech sounds happens either simultaneously or alternatively with the physiological processes mentioned above.

Speech is the result of neuromotor activity, thus the sound originates in the brain. After the creation of the message in the mind, a number of commands are executed by the organs of speech to physically produce the sound. The physical production initiates in the lungs and undergoes important modifications in the respiratory tract before it is realised. The different stages involved in this process are referred to as a **speech chain**. Clark and Yallop (1992) view this process as a kind of **speech mechanism** involving the active or passive functioning of the organs of speech. The stages in physical speech mechanism are presented in *Figure 1* and are listed as follows:

1. **Initiation or Respiration** (the lungs provide the energy source);
2. **Phonation** (the vocal folds convert the energy into an audible sound);
3. **The Oronasal Process** (the soft palate distributes the audible sound into the oral cavity or nasal cavity);
4. **Articulation** (the organs of speech transform the sound into an intelligible speech sound).

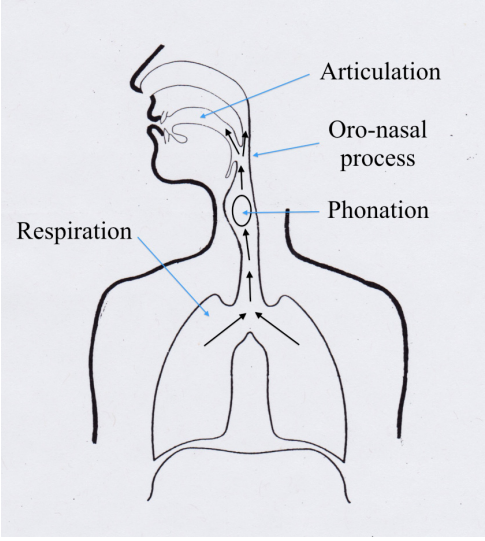


Figure 1. Stages in speech mechanism *(adapted from Roach 2009:25)*

3.2. Initiation or Respiration

The physical initiation process starts in the **lungs**. Clark and Yallop (1992: 21) describe the lungs as the "reservoir for airflow in much of speech". The lungs consist of spongy material that are filled with air when we inhale. The lungs are located in the thoracic cavity within the rib cage and are surrounded at the front by the ribs and at the ventral base by the diaphragm (see *Figure 2*). During the **inspiration** phase, the diaphragm lowers and the rib cage moves upwards and outwards, increasing the dimensions of the thoracic cavity and lowering the air pressure. This enlargement

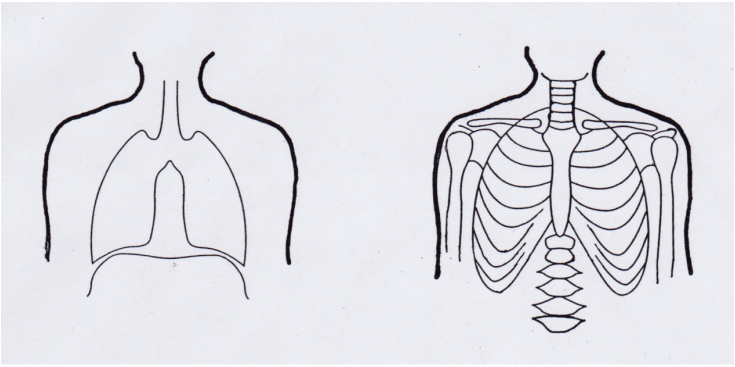


Figure 2. The lungs and the rib cage *(adapted from Roach 2009: 25)*

of the thoracic cavity increases the lung volume, which consequently allows air to flow into the lungs. In the **expiration** phase, the rib cage is pulled downwards and the lung volume is reduced, which in turn forces the airflow out of the lungs and generates an **egressive** airflow. It is during the latter phase that speech production takes place in English, and it is for this reason that the sounds produced are known as **egressive.**

3.3. Phonation

The airflow passes from the lungs into the vocal tract and then to the **larynx**. In the larynx, some of the essential features of the sound production take place as they contain the **vocal folds** (vocal cords). Clark and Yallop (1992) describe the larynx as a skeletal frame situated at the top of the trachea and made of a series of cartilages, with the two main cartilages (the thyroid and the cricoid) playing the crucial role in the process of phonation (see *Figure 3)*. Inside the thyroid cartilage, there is a so-called voice box, which consists of two plates joined together at an angle at the front. The vocal folds are two plates, or rather two thick flaps of tissue and are made of the so-called vocal ligament and a vocal muscle. At the back, the vocal folds are attached to a pair of arytenoid cartilages which move in rotational and sliding motions that shape the position of the vocal folds.

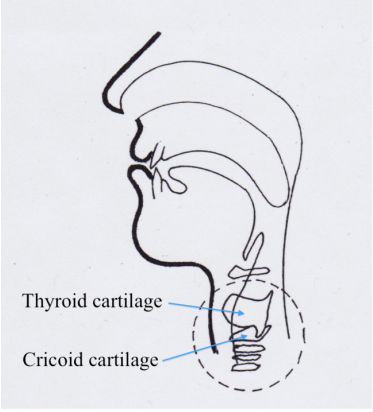


Figure 3. The larynx and the cartilages *(adapted from Roach 2009: 25)*

The vocal folds play a crucial role in one of the most important phonetic processes, which is that of **voicing**. The vocal folds can be brought together and when the airstream is forced between them, they vibrate and produce voice. When the vocal folds are wide apart, the airstream passes between them freely, meaning

that the vocal folds do not vibrate and no voice is produced. This position is set for breathing, so that air can pass in and out of the lungs unimpeded. The laryngeal aperture (or space) between the vocal folds is called the **glottis.** Clark and Yallop (1992: 32) characterise the glottal opening as being approximately 17 to 22 mm long in males and about 11 to 16 mm long in females. Vowels, vowel-like sounds (sonorants), and a number of consonants are produced by the vibration of the vocal folds, and consequently, they are defined as **voiced**. The open glottis with an absence of vibration in the vocal folds is characteristic for **voiceless** sounds. See *Figure 4* for the closing (a) and the opening (b) of the vocal folds.

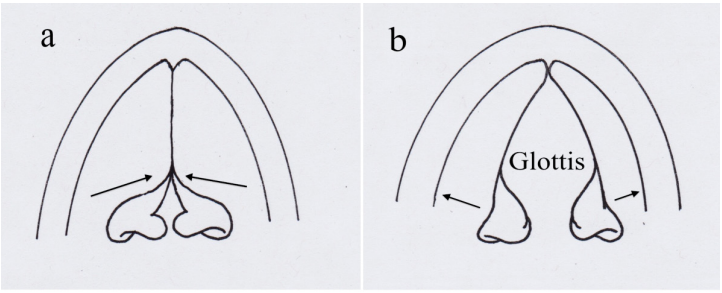


Figure 4. The closing and the opening of the vocal folds

Clark and Yallop (1992: 37) describe the **phonation cycle** in the following stages:

1. the vocal folds are drawn together fairly tightly;
2. the expiratory airflow builds up the pressure and forces the vocal folds apart;
3. as the airflow escapes through the glottis, the pressure is reduced, and the focal folds close again.

By varying the status of the vocal folds (more tense or relaxed, longer or shorter, higher or lower rate of vibration, etc.), we can change the quality of the voice (from loud to quiet, clear, harsh, creaky, etc.). Roach (2009: 25) identifies three basic differences in the **pressure** of the vocal folds as described below:

1. variation in **intensity** (loudness);
2. variation in **frequency** (high and low pitch);
3. variation in **quality** (harsh, breathy, creaky sounds).

Consequently, by manipulating the vocal folds in diverse ways, it is possible to distinguish various sets of categories generally referred to as the **modes of phonation**. Clark and Yalop (1992) recognise five main phonation modes as featured below in *Table 1*:

Table 1. **The modes of phonation** ***(adapted from Clark and Yallop 1992: 59-60)***

voiceless	the absence of any phonation, the airflow passes freely through the glottis;
voiced	the normal vocal fold vibration occurring along most or all the length of the glottis;
whisper	significant turbulence at the glottis, which is narrowed;
breathy voice	the normal vibration of the vocal folds accompanied by some continuous turbulent airflow, which occurs when glottal closure during the vibratory circle is not complete;
creaky voice	low frequency vibration of the vocal folds when the folds open for a very short time, often at irregular intervals.

3.4. The Oronasal Process

The next stage in sound production involves the airflow in the **upper vocal tract** and the configuration of the cavities through which it passes once it has left the larynx.

Clark and Yallop (1992: 42) describe the **pharynx** as a "tube of muscle shaped rather like an inverted cone". It lies between the larynx and the base of the skull and serves as a kind of crossroads between the upper respiratory system and the lower respiratory system, including the larynx. The pharynx functions as an air passage during breathing, and it branches into two cavities that act as resonators for the upward airflow: the **oral cavity** and the **nasal cavity**. The soft palate (velum) plays a significant role in the pharynx because it is the organ that directs the airflow into either of the two cavities. If the soft palate is raised, it closes the entrance to the nasal cavity and directs the air through the oral cavity (mouth) to produce **oral sounds** (see *Figure 5 (a)*). If the soft palate is lowered, the airflow is directed

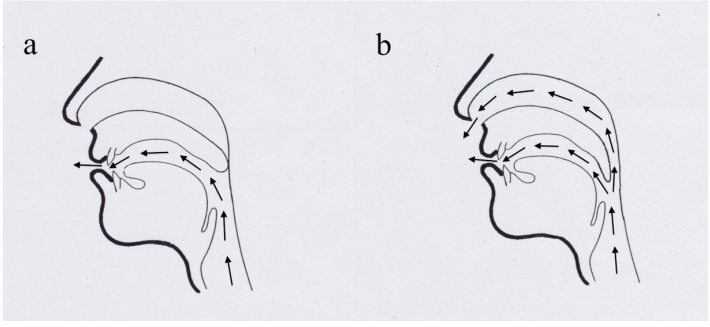


Figure 5. The production of oral and nasal sounds

through both cavities, escaping through the nostrils and mouth at the same time. During this pattern of airflow, the sounds produced are defined as **nasal sounds** (see *Figure 5 (b)*). The complex acoustic structure of the nasal cavity produces nasal sounds that sound relatively quiet as compared to oral sounds.

3.5. Articulation

After the initiation and phonation processes in the larynx and the pharynx, the audible sound is formed into a concrete sound with the help of the **organs of speech (articulators)** situated in the oral cavity. The main organs of speech are illustrated in *Figure 6* and are briefly described below.

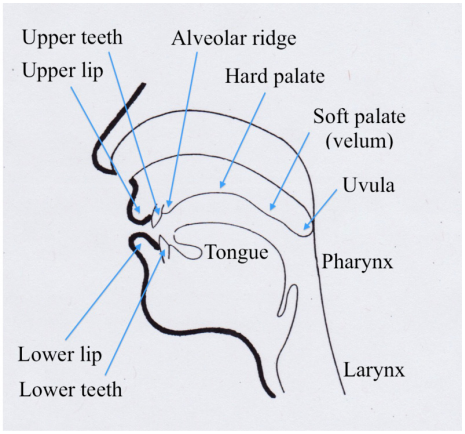


Figure 6. Organs of speech

The most important and flexible of all the organs of speech is the **tongue**, which is situated in the oral cavity and makes the greatest contribution to the articulation process. Gimson and Cruttenden (2008: 14) characterise it as "capable of assuming

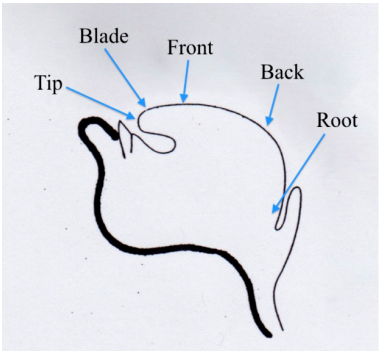


Figure 7. The subdivisions of the dorsum of the tongue

a great many varieties of positions of articulation for both vowels and consonants". The upper surface of the tongue, which comes into contact with other organs of speech is called the **dorsum**. For purposes of phonetic description, the dorsum is subdivided into several parts. Because there are no clear boundaries on the tongue itself, this division is somewhat arbitrary. The basic subdivisions of the dorsum are the **tip,** the **blade,** the **front,** the **back,** and the **root** as indicated in *Figure 7*.

The tongue comes into contact with several other articulators, which are either flexible and mobile or are stable and immobile. The **palate** is a smooth curved surface in the upper part of the mouth and consists of two parts: the **hard palate** and the **soft palate** or **velum** (with its pendent **uvula**). The hard palate is a stable articulator and is essential for the production of several consonants when in contact with the tongue. The soft palate and uvula are flexible and take place in the oronasal process of sound production. The **lips (upper and lower)** are quite mobile and may be shut or held apart to give a shape to the oral cavity. The **upper teeth** and **alveolar ridge** (located behind the upper teeth) are stable (immobile) articulators, while the **lower teeth** and **lower jaw** are mobile. Many organs of speech are located in the upper part of the oral cavity, a region deemed **the roof of the mouth** (*see Figure 8*) by Gimson and Cruttenden (2008: 13).

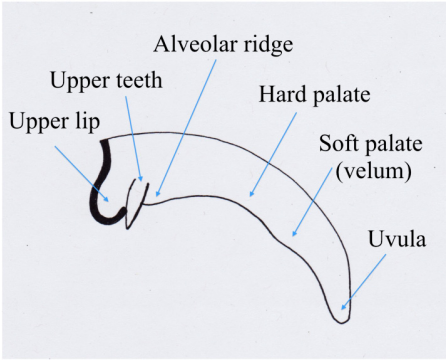


Figure 8. The roof of the mouth

From this discussion, we can see that numerous **organs of articulation** or **articulators** are involved either actively or passively in the production of speech, thus are referred to as active or passive (see Roach 2009a). The **organs of speech** are summarized in *Table 2*.

Although the organs of speech are universal in all people, the position and movements of the articulators differ for certain sounds. **Articulatory settings**, as

Table 2. **Active and passive organs of speech**

Active (flexible) organs of speech (because they can be moved into contact with other articulators)	
the lungs **the vocal folds** **the tongue** **the soft palate (velum)** **the uvula**	**the upper lip** **the lower lip** **the lower jaw** **the lower teeth**
Passive (stable) organs of speech (because they are stable (immobile) in sound production and their most important function is to act as the place of an articulatory stricture)	
the upper teeth **the alveolar ridge** **the hard palate**	**the pharynx** **the larynx** **the vocal tract**

defined by Collins and Mees (2003: 221), refer to "the overall way in which the speech organs (i.e. lips, tongue, mouth and throat muscles, velum, larynx) are held throughout the speech process". It is also worth noting that the settings vary not only between languages but also between different varieties of the same language. EFL learners typically find the acquisition of the articulatory settings of the English language to be the greatest challenge. However, working on these articulatory settings can often produce better results in pronunciation for EFL learners.

Further reading options: Roach (2009: 8-10, 22-24), Clark and Yallop (1992: 9-13, 21-25, 48-56), Collins and Mees (2003: 25-35, 221-225).

Terminology check:
articulatory phonetics, speech chain, initiation or respiratory stage, phonation, voicing, pressure of vocal folds, modes of phonation, glottis, oronasal process, articulation, active and passive organs of speech, the tongue, the roof of the mouth, articulatory settings

Study questions:

1. What stages are involved in sound production?
2. Why is the airflow in the initiation of the sound called egressive?

3. Why is the larynx an essential organ of speech?
4. Describe the phonation process in more detail.
5. Describe how the status of the vocal folds (tense vs relaxed, longer vs shorter, higher vs lower rate of vibration, etc.) is varied.
6. What process takes place in the pharynx, and what articulators are involved?
7. Which organs of speech are called active and which are called passive? What is the difference between an active and a passive articulator?
8. In what cavities does sound resonate?
9. Compare the articulatory settings of English with those of your native language

Exercises:

1. Slightly press two fingers against your throat and try to feel the vibration of vocal folds when you pronounce the sound /b/ and the absence of vibration when you pronounce /p/. Using the same method, decide whether the following sounds are voiceless or voiced:

The sound	Voiced/voiceless
/k/	
/g/	
/n/	
/z/	
/s/	
/r/	
/e/	
/f/	
/v/	

2. Imagine the work of your organs of speech and decide what sounds could be made when they act in the following ways:

Position of organs of speech	The possible sounds
Both lips shape an oval	
The lower lip nearly touches the upper teeth	
The tip of the tongue touches the alveolar ridge	
The lower jaw and the lower teeth are down, the mouth is wide open	
The back part of the tongue touches the hard palate	
The velum along with the uvula are down	

3. Decide which articulators are active and which are passive to produce the following sounds **/v/**, **/m/**, **/w/**, **/ʌ/**, **/n/**, **/e/**, **/k/**, **/h/**, **/ʊ/**, **/p/**:

Sounds	Active organ of speech	Passive organ of speech
/v/		
.		
.		

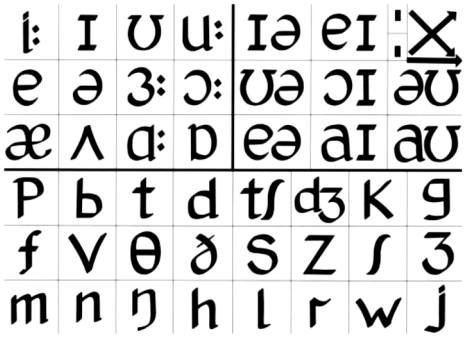
4. ENGLISH PHONEMES

4.1. The International Phonetic Alphabet and Transcription

Articulatory phonetics deals not only with the organs of speech but also with the categorisation and classification of the production features of phones. An extensive knowledge of how concrete vowels and consonants are articulated by particular organs of speech is essential for successful articulation.

There are 44 phonemes in English. **The English Phonemic Chart,** as presented by Underhill (1994) and given in *Table 3,* exhibits clear sets of vowels (monophthongs and diphthongs), consonants, and sonorants.

Table 3. **The English Phonemic Chart**



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The symbols for the English phonemic chart have been compiled from the **International Phonetic Alphabet (IPA)** devised by **International Phonetic Association** (also abbreviated **IPA**). The association was established in 1886, and since then, it has been functioning as the major as well as the oldest representative organisation for world phoneticians. The association's mission is to promote the scientific study of phonetics by providing phoneticians worldwide with a notational standard for the phonetic representation of all languages, i.e. the IPA. The alphabet

is based on the Latin letters and **diacritics** that indicate slight alterations to the usual value of phonetic symbols, e.g. [n̩] (meaning /n/ is syllabic). The latest version of the alphabet was published in 2005.

The term **transcription** refers to the process and "the methods of writing down speech sounds in a systematic and consistent way" (Crystal 2008: 490). Each sound must be identified and written in an appropriate symbol. Principally, there are two kinds of transcription: phonemic and phonetic transcription. **Phonemic transcription** gives only a basic idea of the sounds, and is thus often termed as **broad transcription**. It uses the 44 English phonemic symbols and does not show any phonetic details of the sounds. The symbols are enclosed in slashes / /, e.g. /t/; /taɪp/.

Phonetic transcription has a high degree of accuracy and shows a lot of articulatory and auditory details. It is often termed as the **narrow transcription** or **transcription proper** because it aims to represent actual speech sounds in the narrowest sense and uses additional diacritics. The symbols are therefore enclosed in square brackets [ ]. For example, [tʰ] means that /t/ is aspirated, and [spiːd̥] means that /d/ is a bit devoiced at final position.

4.2. Sound Classes: Vowels, Consonants, and Sonorants

Speech sounds are generally divided into two classes: vowels and consonants. Vowels are produced with a comparatively open vocal tract for the airflow to pass unimpeded. As a result, vowels are considered to be open sounds, whereas consonants are produced with a certain constriction in the vocal tract. Roach (2009a) gives the following characterisation of the sounds:

- **Vowel**s are the class of sounds that are associated with the least obstruction to the flow of air during their production.
- **Consonant**s are the class of sounds that are associated with obstructed airflow through the vocal tract during their production.

Vowels can also be distinguished from consonants as they display a different acoustic energy: vowels are highly resonant and intense and have greater sonority than do consonants. Vowels also have the function to be syllabic (a syllable can contain a minimum of one vowel), while consonants are units that function at the margins of syllables, either singly or in clusters, and are optional (see Section 8). Vowels typically involve the vibration of vocal folds, so they are voiced, while consonants split into voiced and voiceless forms.

A special set of consonants that demonstrate reduced levels of obstructed airflow during their production are called **sonorants (sonants, semivowels)**. According to Roach (2009):

- **Sonorants** are sounds that are voiced and do not cause sufficient obstruction to the airflow to prevent normal voicing from continuing.

A list of the **20 vowel phonemes** in English with word examples is given in *Table 4*:

Table 4. **Vowel phonemes**

/ɪ/	as in *sit*	**/eɪ/**	as in *may*
/iː/	as in *speak*	**/aɪ/**	as in *kite*
/ʊ/	as in *book*	**/ɔɪ/**	as in *toy*
/uː/	as in *tool*	**/ɪə/**	as in *near*
/ʌ/	as in *cup*	**/eə/**	as in *dare*
/ɑː/	as in *heart*	**/ʊə/**	as in *cure*
/ɒ/	as in *box*	**/əʊ/**	as in *cold*
/ɔː/	as in *door*	**/aʊ/**	as in *mouth*
/e/	as in *bed*		
/æ/	as in *cat*		
/ɜː/	as in *bird*		
/ə/	as in *ago*		

A list of the **17 consonant phonemes** in English with word examples is given in *Table 5*:

Table 5. **Consonant phonemes**

/p/	as in *pipe*	**/z/**	as in *zoo*
/b/	as in *be*	**/θ/**	as in *think*
/t/	as in *time*	**/ð/**	as in *that*
/d/	as in *do*	**/ʃ/**	as in *sure*
/k/	as in *car*	**/ʒ/**	as in *casual*
/g/	as in *go*	**/tʃ/**	as in *church*
/f/	as in *fine*	**/dʒ/**	as in *gin*
/v/	as in *vet*	**/h/**	as in *hat*
/s/	as in *sad*		

A list of the **7 sonorant phonemes** in English with word examples is given in *Table 6*:

Table 6. **Sonorant phonemes**

/m/	as in *map*
/n/	as in *nose*
/ŋ/	as in *king*
/l/	as in *love*
/r/	as in *red*
/j/	as in *yacht*
/w/	as in *wet*

Further reading options: Roach (2009; 2-3, 31-35), Underhill (1994: 5-7, 29-30).

Terminology check:
English Phonemic Chart, International Phonetic Association, International Phonetic Alphabet, diacritics, phonetic transcription, broad transcription, narrow transcription, vowel, consonant, sonorant

Study questions:

1. What are the responsibilities of the International Phonetic Association?
2. Compare the sonority in vowels, consonants, and sonorants.
3. How many vowels, consonants, and sonorants are there in your native language?
4. Which of the 44 English phonemes are not present in your native language? Compare and find similarities with the remaining phonemes.

Exercises:

1. Transcribe the vowel phonemes in the following words:

Word	Vowel	Word	Vowel
cup		*how*	
said		*hear*	
sea		*float*	
ash		*foot*	
blow		*first*	
glance		*dare*	
wash		*pool*	
sign		*cream*	
walk		*pill*	

2. Transcribe the consonant phonemes in the following words:

Word	Consonant	Word	Consonant
fee		*the*	
too		*palm*	
egg		*thin*	
show		*view*	
chew		*zoo*	
old		*massage*	
hair		*large*	

3. Transcribe the sonorant phonemes in the following words:

Word	Sonorant	Word	Sonorant
oil		*song*	
use		*knee*	
wave		*yolk*	
comb		*twelve*	
rice		*thumb*	

4. Spell out seven words for each of the 44 sounds.

No	Sound	Word examples						
1.								
.								
.								

5. CHARACTERISATION AND CLASSIFICATION OF VOWELS

The characterisation and classification of vowels is challenging. Clark and Yallop (1992) state that the quality of vowels depends on the size and shape of the tract, which can be modified using the tongue and the lips. The major challenge is to define the position of the tongue as it moves without forming any significant obstruction in the oral cavity. As a result, vowels are produced without any specific point of blockage. The other fundamental articulatory feature of vowels is determined by the shape and degree of protrusion of the lips.

5.1. The Cardinal Vowel Diagram

The cardinal vowel diagram devised by the IPA provides a set of reference points for the articulation and recognition of vowels. In the diagram, vowels are located on a four-sided figure, which in a way represents the shape of the tongue. Two dimensions of the diagram correspond to the positions of the tongue vertically and horizontally. The vertical axis represents tongue height, and the horizontal axis represents tongue fronting or advancement. The current diagram was systematised by D. Jones in the early 20th century, though the idea goes back to earlier phoneticians,

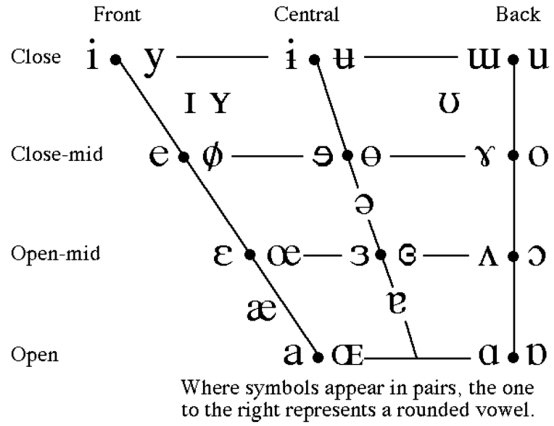

Figure 12. The cardinal vowel diagram *(reproduced by kind permission of the International Phonetic Association, see References)*

most notably A. J. Ellis and A. M. Bell. The cardinal vowel diagram illustrates the extremes of vowel quality that the vocal tract is able to produce, and thus the cardinal vowels are not the sounds of a particular language. Clark and Yallop (1992: 65) claim, that they "are best taken to be auditory qualities rather than articulatory specifications". Phoneticians recognise and articulate these artificial sounds so that they can describe all natural vowels in relation to the nearest cardinal vowel. The cardinal vowel diagram is given in *Figure 12*.

The characterisation of English vowels that follows will use the classification aspects of the cardinal vowel diagram.

5.2. The Height of the Tongue

The vertical movement of the tongue depicts the **height** of the body of the tongue and refers to how high or low the tongue is positioned in the mouth (see *Figure 11*). Carr (2013: 17-21) categorises the following groups of vowels in relation to the Cardinal Vowel Diagram:

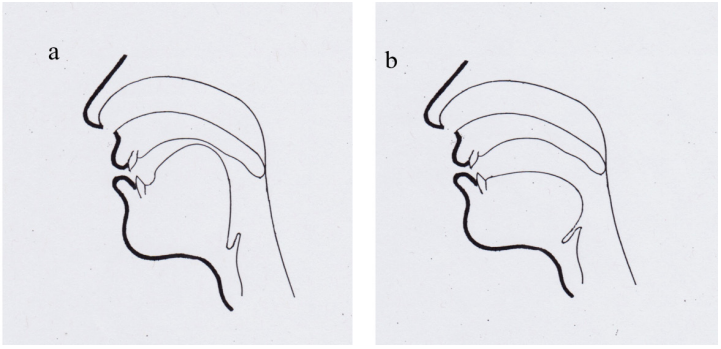

Figure 11. Vertical positions of the tongue

- **high** or **close** vowels articulated with the tongue located as high as possible in the oral cavity, thus narrowing the passage for the airflow: /ɪ/, /iː/, /ʊ/, /uː/;
- **mid** or **mid-open** vowels with the tongue lowered to the mid position in the oral cavity: /æ/, /ɒ/, /ʌ/, /ɑː/;
- **low** or **open** vowels produced with the tongue positioned as low as possible in order to leave a lot of space for the airflow: /e/, /ɔː/, /ɜː/, /ə/.

5.3. The Advancement of the Tongue

The horizontal movement of the tongue, or **tongue advancement** to the front position (see *Figure 10 a*) or back position (see *Figure 10 b*) is essential in forming the following groups of vowels as given by Carr (2013: 17-21):

- **front** vowels articulated with the tongue far forward in the oral cavity toward the hard palate: /iː/, /ɪ/, /e/, /æ/;
- **central or mixed** vowels produced with the tongue retracted to the middle position in the oral cavity: /ʌ/, /ɜː/, /ə/;
- **back vowels** produced with the tongue retracted as far as possible to shape the space in the front part of the oral cavity: /ɒ/, /ɔː/, /ʊ, /uː/, /ɑː/.

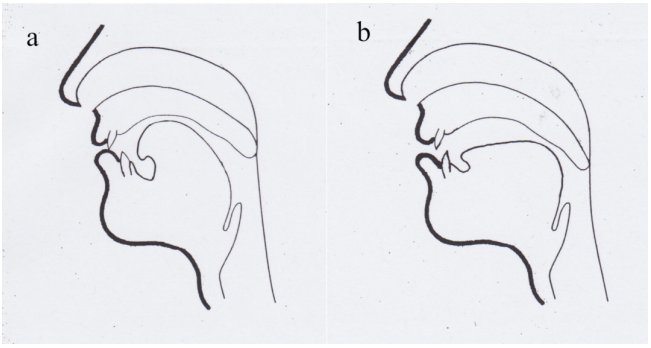

Figure 10. Horizontal position of the tongue

5.4. The Shape of the Lips

Vowels may also be different from each other with respect to the rounding and shaping of the lips necessary to enlarge or diminish the space within the mouth. The following sets of vowels are identified:

- **rounded** vowels**,** as the lips shape into a circle or a tube: /ʊ/, /uː/, /ɒ/, /ɔː/;
- **spread** vowels**,** as the corners of the lips are moved away from each other: /ɜː/, /e/, /iː/, /ɪ/, /æ/;
- **neutral** vowels, as the position of the lips is not noticeably rounded or spread: /ʌ/, /ɑː/, /ə/.

These various lip shapes are illustrated in *Figure 15*:

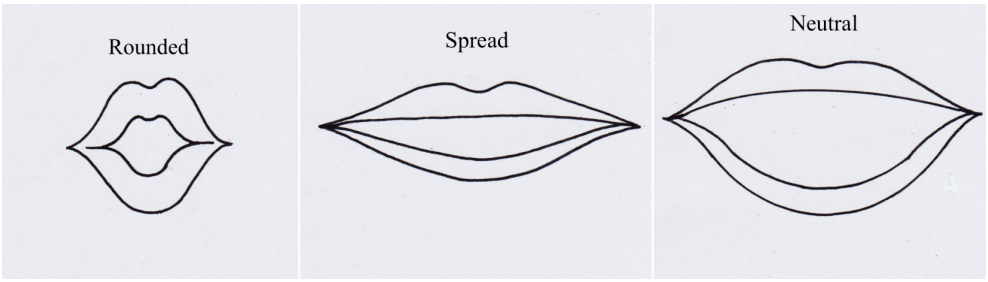

Figure 15. The shape of the lips *(adapted from Clark and Yallop 1992: 66)*

5.5. Tenseness and Length

According to the tenseness of the organs of speech, vowels are classified into one of two groups: **tense** and **lax**. Tense vowels are relatively higher and more marginal, while lax are shorter, lower, and slightly more centralised. Carr (2008: 175) claims that "tense vowels are articulated closer to the periphery of the vowel space and are typically longer than their lax counterparts". Of 12 English pure vowels, five are termed as **long** in duration: /ɑː/, /ɔː/, /iː/, /uː/, /ɜː/, and the remaining seven are termed as short in duration: /ʌ/, /ɔ/, /ɪ/, /ʊ/, /e/, /æ/, /ə/. The symbols for long vowels are followed by a **length mark** of two vertical dots. In addition, length seems to relate to several pairs of vowels:

/ɑː/ - /ʌ/ /ɔː/ - /ɔ/ /iː/ - /ɪ/ /uː/ - /ʊ/ /ɜː/ - /ə/

However, this is just a functional division. Phonology research shows that the length of vowels can only be contrasted in comparable contexts as there is no a clear-cut long/short distinction of one and the same vowel. An example of /iː/ and /ɪ/ having various lengths in centiseconds is illustrated in *Figure 13:*

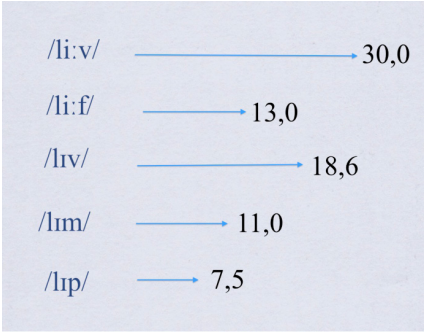

Figure 13. The length of vowels in contrasted contexts *(adapted from Gimson 1980: 98)*

The difference in length is normally accompanied by a difference in the sound quality. Thus, the members within a pair in length (e.g. /ɔː/ and /ɒ/) have slightly different positions concerning the height and advancement of the tongue. *Figure 14* displays English short and long vowels in the cardinal vowel diagram.

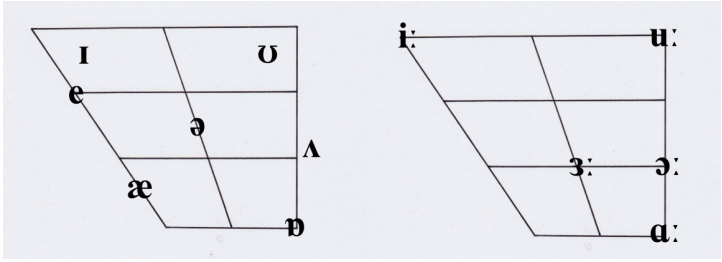

Figure 14. English short and long vowels in the cardinal vowel diagram

The /ə/ sound stands out from all other vowels and requires some further comment. It appears to be the shortest possible vowel, and in some forms of words, it is even omitted. It is known as the **schwa** (from Hebrew, meaning 'emptiness') or the **neutral vowel.** Furthermore, it is the most frequently occurring vowel in English, and it only appears in weak syllables, e.g. *across* /əˈkrɒs/, *character* /ˈkærəktə/.

Another remark should be made regarding the two intermediate sounds in the broad transcription: /i/ and /u/. These can be generally specified as **archiphonemes** because they represent the intermediate status between the phonemic contrasts in length in /iː/ and /ɪ/ as well as /uː/ and /ʊ/. This neutralisation of length suggests that the two sounds /i/ and / u/ have the quality of the respective long vowels and the length of the respective short vowels. Skandera and Burleigh (2011: 51) specify the following phonetic environments for the intermediate /i/:

- in word final position, e.g. *lucky* /ˈlʌki/;
- in prefixes like *re-*, *pre-*, and *de-* when followed by a vowel, as in *react* /riˈækt/, *deactivate* /diˈæktɪveɪt/;
- in suffixes like *-tal*, *-iate*, and *-ious* when they are pronounced as two syllables, e.g. *appreaciate* /əpriːʃieɪt/;
- in many function words (*he, she, we, me, be, the*, etc.) when followed by a vowel, e.g. *the air* /ði eə/.

The intermediate /u/ is much less common and usually occurs in unstressed syllables in these phonetic environments:

- in some function words (*you, to, into, do*, etc.) when followed by a vowel, e.g. t*o us* /tu ʌs/.
- before a vowel within a word, when they are pronounced as two syllables, e.g. *eventually* /ɪˈventʃuəli/, *evacuate* /ɪˈvækjueɪt/ (ibid: 51)

5.6. Diphthongs and Triphthongs

So far, the discussion has characterised pure vowels with a single perceived auditory quality, which are known as **monophthongs**. Such vowels remain constant in their articulation process and do not glide. There are 12 monophthongs in English: /ɪ/, /iː/, /ʊ/, /uː/, /ʌ/, /ɑː/, /ɒ/, /ɔː/, /e/, /æ/, /ɜː/, /ə/.

Diphthongs are vowels in which two vowel qualities can be perceived, and the articulators move from the production of one vowel to the other. The first part of the diphthong is longer and stronger than the second and is often referred as to the **nucleus** of the diphthong. The second part is just a **glide** whose full formation is generally not accomplished. The quality of the phoneme reduces to quite short and decreases in loudness. The organs of speech only move toward the articulation of the glide, but they are not set to pronounce it fully. The total number of diphthongs is eight: /eɪ/, /aɪ/, /ɔɪ/, /ɪə/, /eə/, /ʊə/, /əʊ/, /aʊ/. Diphthongs are usually grouped into the following three categories, depending on the height and advancement of the tongue:

- the diphthongs that glide toward the vowel /ə/ in the centre of the oral cavity are known as **centring to /ə/**: /ɪə/, /eə/, /ʊə/;

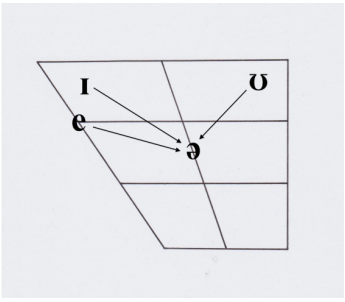

Figure 16. Centring diphthongs in the cardinal vowel diagram

- the diphthongs that glide toward a higher position in the mouth to reach the close sound /ɪ/ are known as **closing to /ɪ/**: /eɪ/, /aɪ/, /ɔɪ/;

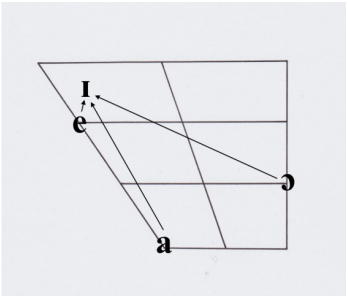

Figure 17. Closing to /ɪ/ diphthongs in the cardinal vowel diagram

- the diphthongs that glide toward a higher position in the mouth to reach the sound /ʊ/ and are known as **closing to /ʊ/**: /əʊ/, /aʊ/.

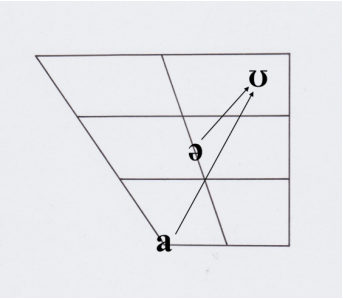

Figure 18. Closing to /ʊ/ diphthongs in the cardinal vowel diagram

There are also **triphthongs** – the most complex type of vowels. These are sounds in which three vowel qualities can be perceived as they glide from one vowel to another and then to a third. Roach (2009: 19) describes triphthongs as "composed of the five closing diphthongs […] with a schwa added on the end". The five examples of triphthongs are given below:

Table 7. **Triphthongs in English**

/eɪə/	as in *player*
/aɪə/	as in *fire*
/ɔɪə/	as in *lawyer*
/əʊə/	as in *lower*
/aʊə/	as in *our*

Further reading options: Roach (2009: 13-19), Gimson and Cruttenden (2008: 35-39), Collin and Mees (89-118), Carr (2013: 17-21).

Terminology check:
the cardinal vowel diagram, the height of the tongue, the advancement of the tongue, tenseness, length, schwa, the shape of the lips, monophthongs, diphthongs, nucleus, glide, triphthongs

Study questions:

1. According to what aspects are vowels classified?
2. Describe the characteristics of the vowels according to the movement of the tongue.
3. What does the cardinal vowel diagram represent?
4. Explain the relationship between tenseness and length of English vowels?
5. What quality do vowels have as monophthongs, diphthongs, and triphthongs?

Exercises:

1. Give the characteristics of the twelve pure vowels in the chart below:

No.	Sound	Tenseness	Length	Shape of the lips	Position of the Tongue	
					Height	Advancement
1.						
.						

2. Spell out 7 words for each of the 5 triphthongs.

No.	Sound	Word examples						
1.								
.								

6. CHARACTERISATION AND CLASSIFICATION OF CONSONANTS

All consonants have certain properties in common that identify them from vowels. There are 24 consonants in English, although seven of them are referred to as sonorants because they share several features (sonority and continuation) with vowels: /m/, /n/, /ŋ/, /l/, /r/, /j/, /w/. The pure 17 consonants are narrowed to the term **obstruents** because the airflow is always obstructed to a great extent when the sounds are articulated: /p/, /b/, /t/, /d/, /k/, /g/, /f/, /v/, /s/, /z/, /θ/, /ð/, /ʃ/, /ʒ/, /tʃ/, /dʒ/, /h/.

Sonorants function in the English language the same way as consonants, and both groups of sounds have a lesser or greater obstruction of the airflow. Therefore, it is customary to attach sonorants to the class of consonants. Consonants can be described in terms of the location of the constriction, the manner of the constriction, and the type of phonation it supports (see Clark and Yallop 1992: 76). In short, consonants are classified by **place, manner,** and **voicing** as detailed below.

6.1. The Place of Obstruction

In the classification system for consonants, "place" denotes the location or place of obstruction and the active organ of speech involved in the articulation stage of the production of the consonants. Clark and Yallop (1992: 79) list the following groups of consonants in which various tongue positions are combined with various locations:

- **bilabial** sounds are produced with the upper and lower lips pushed together (see *Figure 19*): /p/, /b/, /m/, /w/;

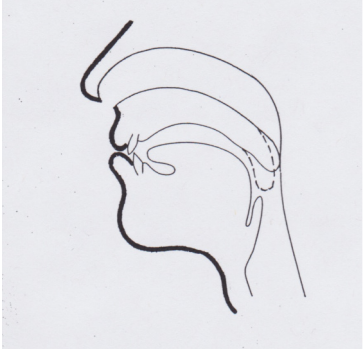

Figure 19. Bilabial sounds

- **labio-dental** sounds are articulated with contact between the lower lip and the upper teeth (see *Figure 20*): /f/, /v/;

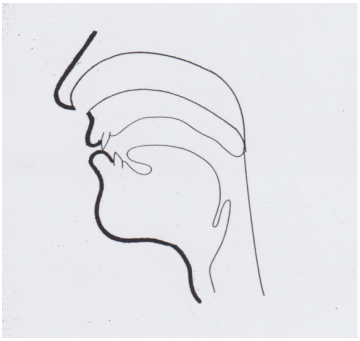

Figure 20. Labiodental sounds

- **apico-dental** sounds are generated with the tip of the tongue protruded between the lower and the upper teeth (see *Figure 21*): /θ/, /ð/;

Figure 21. Apicodental sounds

- **apico-alveolar** sounds are made by advancing the tip of the tongue toward the alveolar ridge (see *Figure 22*): /t/, /d/, /n/, /l/, /s/, /z/;

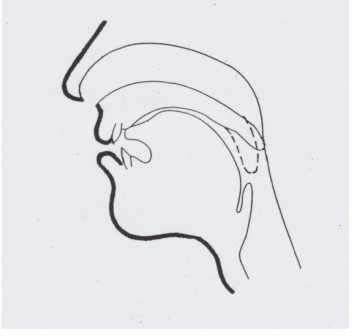

Figure 22. Apico-alveolar sounds

- **lamino-alveolar** sounds are produced by raising the blade of the tongue toward the alveolar region (see *Figure 23*): /ʃ/, /ʒ/, /tʃ/, /dʒ/;

Figure 23. Lamino-alveolar sounds

- **apico-postalveolar** sound is made by upturning the tip of the tongue behind the alveolar ridge (see *Figure 24*): /ɾ/;

Figure 24. Lamino-alveolar sounds

- **lamino-palatal** sounds are pronounced by advancing the blade of the tongue toward the highest part of the hard palate (see *Figure 25*): /j/;

Figure 25. Lamino-palatal sounds

- **velar** sounds are made as the tongue body makes contact with the soft palate (see *Figure 26*): /k/, /g/, /ŋ/;

Figure 26. Velar sounds

- **glottal** sound is produced by the narrowing of the glottis as the wall of the pharynx makes contact with the root of the tongue (see *Figure 27*): /h/.

Figure 27. Glottal sounds

6.2. The Manner of Obstruction

The **manner of obstruction** is concerned with the degree or extent of the obstruction and the way in which it is formed in the vocal tract (see Clark and Yallop 1992: 81). The variables range from total closure of the vocal tract to nearly open. When the obstruction totally blocks the airflow, it is called a complete or **occlusive** obstruction**.** The obstruents and sonorants with this type of obstruction are classified under one of two terms:

- **plosive obstruents:** /p/, /b/, /t/, /d/, /k/, /g/**;**
- **nasal sonorants**: /m/, /n/, /ŋ/.

In the production of the plosive obstruents, the air is obstructed and then released with a small burst of noise (plosion). They are also defined as **stops** because they cannot be prolonged. The following organs of speech form the full closure: lips pressed together for /p/, /b/; the tip of the tongue pressed against the alveolar ridge for /t/, /d/; and the body of the tongue pressed against the velum for /k/and /g/**.** Nasal sonorants have a stoppage at some point in the oral cavity, and the velum is lowered for the air to escape through the nasal cavity.

When the closure is not quite complete, it is called **constrictive**. The air either escapes through a narrow passage and makes a hissing sound for obstruents, or it penetrates through the sides of the obstruction and escapes rather freely through the nasal or oral cavity for sonorants. The following sounds are produced with constriction:

- **fricative obstruents**: /f/, /v/, /s/, /z/, /θ/, /ð/, /ʃ/, /ʒ/, /h/;
- **constrictive sonorants**: /l/, /r/, /j/, /w/.

Clark and Yallop (1992: 83) differentiate between fricatives and approximants by comparing the degree of the constriction. In the production of fricatives, the constriction is narrowed to generate turbulent airflow. The turbulence results in a sound with a hissing or sibilant quality. Moreover, fricatives are all continuant consonants: they can be continued for a long time. Approximants have an articulation in which the constriction is not great enough to cause turbulence, so the airflow penetrates in higher volume. Some phoneticians (e.g. Collins and Mees 2003) subdivide the approximants into lateral /l/ and medial /r/, /j/ and /w/ to demonstrate the escape of the airflow via the rims of the tongue and the middle of the tongue, accordingly.

A few sounds are generated with a double-sided obstruction, which may be defined as **occlusive-constrictive**. Affricates are the two sounds that are produced in this manner: /tʃ/, /dʒ/. The initial complete closure of the plosive sounds /t/ and /d/ is released through a constriction for the fricative sounds /ʃ/ and /ʒ/. In addition, the two affricates are **homorganic**, which means that the place of articulation of the plosive is the same or nearly the same as that of the paired fricative.

6.3. Voicing

All the consonants are subclassified as either **voiced** or **voiceless**. At the phonation stage, the vocal folds are in tight contact for the production of voiced consonants, while the air for voiceless consonants passes through the glottis with vocal folds set apart. All the sonorant sounds are voiced. *Table 8* presents the list of voiced and voiceless consonants and sonorants:

Table 8. **Voiced and voiceless consonants and sonorants**

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

According to the force of articulation or energy with which they are articulated and perceived, consonants are subdivided into relatively strong (**fortis)** or relatively weak (**lenis;** see Roach 2009: 28). English voiced consonants are lenis, whereas English voiceless consonants are fortis. The latter seem to be pronounced with a stronger muscular tension and breath force. For example, compare *pow* /**p**aʊ/ and *bough* /**b**aʊ/. The force of articulation is not easy to define and measure, however some phoneticians prefer to use the terms fortis and lenis rather than the terms voiceless and voiced.

6.4. Articulation of the Plosive Consonants

Roach (2009: 26) details the articulation of the plosive consonants and describes them as starting with **the closing phase** when articulators are pushed together to form a complete closure behind which the air will be trapped. During the **holding phase**, the vocal tract is completely closed. Air cannot escape through the nose because the soft palate is raised. However, the lungs are still forcing the air out of the vocal tract, so the pressure behind the closure builds up. Finally, in the **release phase,** a plosion takes place, allowing the air trapped behind the closure to escape. Because of the pressure, this release generates a burst of noise.

Further reading options: Roach (2009: 26-30, 39-55), Underhill (1994: 29-47), Clark and Yallop (1992: 83-88).

Terminology check:
obstruents, bilabial, labiodental, apicodental, apico-alveolar, lamino-alveolar, apico-postalveolar, lamino-palatal, velar, glottal, occlusive, constrictive, occlusive-constrictive, plosive, fricative, affricate, homorganic, nasal sonorant, lateral approximant, medial approximant, fortis, lenis

Study questions:

1. Why are consonants termed as obstruents?
2. What are the basic features that characterise consonants?
3. What are the various types of obstructions?
4. How do plosives differ from fricatives?
5. How are approximants subdivided?
6. Why are affricates called homorganic sounds?
7. Describe the phases in the production of plosive sounds.

Exercises:

1. Divide each of the following groups of phonemes into sets of three that share common characteristics. The first set is done as an example.

Group of phonemes	Set 1		Set 2	
	Phonemes	Characteristic feature	Phonemes	Characteristic feature
/p/ /m/ /t/ /n/ /k/ /ŋ/	/p/ /t/ /k/	plosive obstruents	/m/ /n/ /ŋ/	nasal sonorants
/s/ /l/ /p/ /m/ /v/ /ʃ/				
/r/ /f/ /j/ /s/ /w/ /ʃ/				
/k/ /g/ /l/ /s/ /n/ /z/				
/t/ /k/ /d/ /s/ /g/ /z/				
/ʒ/ /ð/ /t/ /z/ /k/ /g/				

2. Give the characteristics of consonants and sonorants in the chart below. The first sound is done as an example.

Sound	Voice	Place	Manner		Consonant
/p/	voiceless	bilabial	occlusive	plosive	obstruent
.					
.					

7. ABOVE THE SEGMENTAL LEVEL: ALLOPHONES AND THEIR CONTEXTS

Up to this point in the course, phonemes have been described as phonetic segments as if they existed in isolation and did not affect one another. However, speech production is not a series of isolated events. Instead, it is a complex chain of events, with the organs of speech operating independently and many fine adjustments being made as we speak. As a consequence, allophones are used for actual speech production, and they have different **distribution,** i.e. occupy different **contexts** and **environments**.

7.1. Pre-Fortis Clipping

Clipping is the process of "the reduction of duration of sonorous sounds when followed in the same syllable by a fortis consonant" (Ashby and Maidment 2005: 197). This type of reduction generally affects vowels. In return, a clipped vowel is pronounced quicker when it is located next to a voiceless consonant. Compare the following minimal pairs:

rice /raɪs/ (with clipped /aɪ/) and *rise* /raɪz/

sit /sɪt/ (with clipped /ɪ/) and *seat* /si:t/

7.2. Aspiration

The plosive voiceless (fortis) sounds /p/, /t/, /k/, after they are released, undergo a post-release phasein which the sounds are followed by a brief additional puff of air. Cruttenden (2014: 164) defines the post-release phase as "a voiceless interval consisting of strongly expelled breath between the release of the plosive and the onset of the following vowel". This special feature of articulation is termed **aspiration,** and the plosives are said to be **aspirated**. The IPA diacritics for aspiration are transcribed as a superscript: [ʰ]. The degree and duration of aspiration depend on the context of the sound. Aspiration is the strongest in the initial position of a syllable, e.g. *type* [tʰaɪp], in the initial position of a stressed syllable, e.g. *potato* [pəˈtʰeɪtəʊ], and before a long vowel or a diphthong, e.g. *keep* [kʰi:p].

Aspiration is lost when a fricative sound (usually /s/) follows the voiceless plosives (see Cruttenden 2014: 164). Compare the following pairs of words with the strongest level of aspiration in the first word and absence of aspiration in the second one:

team [tʰiːm] and *steam* [stiːm]
tone [tʰəʊn] and *stone* [stəʊn]
Kate [kʰeɪt] and *skate* [skeɪt]
cold [kʰəʊld] and *scold* [skəʊld]

7.3. Palatalised /l/

The term **palatalisation** refers to a process by which a sound, usually a consonant, is articulated with the tongue shifted near the hard palate (see Crystal 2008: 347). The sound /l/ can be realised as a palatalised allophone with the tongue slightly raised toward the palate. This allophone is called **clear /l/,** and it occurs before vowels (e.g. *light, love*). The nonpalatalised allophone, the **dark/l/,** is realised in other contexts: before consonants and in the final positions of words (e.g. *milk, ball*). It has a special allophonic symbol [ɫ]. However, palatalisation is highly dependent on the dialectal use that is specific to RP speakers. In several nonstandard varieties of English, the dark /l/ may be articulated like a vowel or a sonorant: /w/, /ɒ/ or /ʊ/, e.g., *milk* /mɪʊk/ or *feel* /fiːw/. This is called **/l/ vocalisation** and is a notable feature of Cockney and Estuary English.

7.4. Allophonic Release of the Plosives

In certain contexts, the six plosive sounds are released in a different manner as they acquire the features of their neighbouring sounds (see Roach 2009a for each type of the release below). A plosive sound followed by another plosive sound seems to have **no audible release**, which is typically referred to as **loss of plosion** or incomplete plosion. In the IPA, this allophonic realisation of the consonants is denoted with a diacritic in the upper right corner [t̚], e.g. *expect* [ɪkˈspek̚ t], *dog bite* [ˈdɒg̚ baɪt].

Nasal plosion (nasal release) occurs when a plosive sound is followed by a nasal sound. The release of the plosive sound happens by lowering the soft palate so that air escapes through the nose. The plosive sound becomes nasalised, and the whole process is referred to as **nasalisation** (see Roach, 2009a). The plosive and the nasal are homorganic because they share the same place of articulation. The special

diacritic is a small [ⁿ] symbol above the sound as in [tⁿ], e.g. *goodnight* [gʊdⁿ naɪt], *black magic* [blækⁿ ˈmædʒɪk].

L**ateral plosion** (lateral release) takes place when the compressed air for the production of a plosive sound is released by lowering the sides of the tongue before the lateral sound /l/. The plosive sound becomes lateralised, and the process is called **lateralisation,** which is indicated by a vertical line as in [tˡ], e.g. *plosive* [ˈpˡləʊsɪv], *lightly* [ˈlaɪtˡli].

A glottal release of several plosives is widely found in contemporary English pronunciation. This is termed as a **glottal stop** or **glottalisation**. Instead of the plosive articulation, a complete closure is made at the glottis to cause a period of silence, which is very typical of the sound /t/. The symbol for glottal stop is /ʔ/, e.g. bottle /bɒʔl/; *water* /wɔːʔə/. The glottal closure may occur immediately before plosive sounds at the end of a syllable, which is typical of the plosives /p/ /t/ /k/ and the affricate /tʃ/, e.g.:

butter /ˈbʌtə/ or /ˈbʌʔtə/
atmospheric /ætməsˈferɪk/ or /æʔtməsˈferɪk/
accurate /ˈækjərət/ or /ˈæʔkjərət/
teaching /ˈtiːtʃɪŋ/ or /ˈtiːʔtʃɪŋ/

7.5. Treatment of /ŋ/

The nasal /ŋ/ needs to be discussed separately because this is a sound that often causes problems for EFL students. Roach (2009: 47) gives a thorough explanation on the distribution of the sound. The /ŋ/ sound is never found in the initial position of a syllable or a word. In the medial position, /ŋ/ is always followed by the plosive /k/ if the word has *–nk-* in spelling, e.g. *think* /θɪŋk/ or *banknote* /ˈbæŋknəʊt/. The difficulty starts when /ŋ/ is expected to be followed by the sound /g/ in the words with *–ng- in* spelling. When /ŋ/ occurs at the end of a morpheme (at the end of a minimal unit of meaning), /g/ is not present, e.g. *sing* (root) + *er* (suffix) /ˈsɪŋə/. When /ŋ/ occurs in the middle of a morpheme, it is followed by the plosive /g/, e.g. *finger* /ˈfɪŋgə/, *anger* /ˈæŋgə/.

There are exceptions, however. The main exception to the morpheme-based rule is the pronunciation of /ŋ/ in comparative and superlative forms of adjectives and adverbs: even when /ŋ/ occurs at the end of a morpheme, it is pronounced /ŋg/ when it is followed by the comparative suffix *-er* or the superlative suffix *–est*, e.g. *longer* /ˈlɒŋgə/, *longest* /ˈlɒŋgəst/.

7.6. Treatment of /r/

The approximant /r/ is another case to be considered, as its articulation and distribution are not the same in different accents of English. Most British accents like RP are **non-rhotic,** which means that speakers exclude the sound /r/ before a consonant or in final positions of words before a prosodic break. Meanwhile, **rhotic accents** generally realise /r/ in all contexts, e.g. General American. Accordingly, in the following examples of words in RP, the sound /r/ is not pronounced:

car /kɑː/
ever /ˈevə/
nurse /nɜːs/
farm /fɑːm/
stairs /steəz/

7.7. Treatment of Final /s/, /z/ and /ɪz/

Many students often confuse /s/ and /z/ sounds at the end of words when, in spelling, they write *–s*. This is essentially relevant for the plural forms of nouns, the possessive case of nouns, and the third person singular form of verbs. Actually, there are three types of endings, and they are determined by the voice quality of the preceding sound as presented in *Table 9*:

Table 9. **Treatment of final /s/, /z/, and /ɪz/** ***(adapted from Celcia-Murcia et al 2007: 248)***

/s/	after voiceless consonants	*books, roofs, aunt's, wife's, month's, stops, writes*
/z/	after voiced consonants and vowels	*sons, songs, walls, heroes, dog's, pupil's, goes*
/ɪz/	after /s/ /z/ /ʃ/ /ʒ/ /tʃ/ /dʒ/	*churches, languages, judge's, actress's, teaches*

7.8. Treatment of Final /t/, /d/, and /ɪd/

The past form of regular verbs in spelling *–ed* may be pronounced as /t/, /d/, or /ɪd/, which is again determined by the voice quality of the preceding sounds (see *Table 10*):

Table 10. **Treatment of final /t/, /d/, and /ɪd/** ***(adapted from Celcia-Murcia et al 2007: 252)***

/t/	after voiceless consonants	*looked, missed, passed, baked, crossed*
/d/	after voiced consonants and vowels	*played, served, appeared, spammed, bottled*
/ɪd/	/t/ /d/	*hated, started, wanted, speeded, voted, loaded*

The allophones and their contexts described in the section are the objects of investigation in suprasegmental phonetics. When combined, sounds are often affected by the neighbouring environment and undergo various modifications Because the scope of this course is generally limited to segmentals, just a few allophonic realisations have been discussed.

Further reading options: Roach (2009: 46-51), Cruttenden (2014: 163-164), Ashby and Maidment (2005: 197).

Terminology check:
distribution, clipping, aspiration, palatalisation, clear /l/, dark /l/, /l/ vocalisation, loss of plosion, nasal plosion, lateral plosion, glottalisation, glottal stop, non-rhotic accent

Study questions:

1. Why is the distribution of allophones important?
2. How does a voiceless consonant affect a preceding vowel?
3. What three environments are necessary for the strongest level of aspiration?
4. In what context is /l/ palatalised?
5. How is glottal stop different from glottal reinforcement?
6. In what cases is the sound /ŋ/ followed by the plosive /g/?
7. What does the term **non-rhotic accent** mean?
8. Under what influence is the *–s* ending in the plural of nouns pronounced in three different ways?

Exercises

1. Give minimal pairs showing the existence of a clipped and unclipped vowel.

Minimal pair		Minimal pair	
Clipped vowel	Unclipped vowel	Clipped vowel	Unclipped vowel

2. Underline the plosive sounds that may have the strongest level of aspiration in the given environments:

/fənˈtæstɪk/	/ˈpəʊites/	/kəmˈpeə/	/riˈkɔːl/	/priˈkɔːʃəs/	/ˈtəʊtəlaɪz/	/kəmˈpəʊnənt/

3. Which of the following words are pronounced with clear /l/ and which are pronounced with dark /l/?

Word	Clear /l/ / dark /l/
alphabet	
meal	
bell	
glow	
especially	
milk	
social	
glare	
stumble	
familiar	

4. How are the plosive sounds released in the following words and phrases?

Word / phrase	Loss of plosion / nasal plosion / lateral plosion
bad man	
respect	
nutmeg	
blackleg	

big lad	
big man	
bed covers	
glow	
kidnap	

5. Which of the following words are pronounced with /ŋ/ and which are pronounced with /ŋg/: ***England, strongest, ringer, anger, anguish, banging, hanger, jingle, mongoose, Tango, younger, bungalow, angriest, angry, finger, dangle, language, hungriest.***

/ŋ/	/ŋg/

6. Complete this chart by writing the sound that correctly ends each of these words:

Word	/s/ /z/ /ɪz/	Word	/t/ /d/ /ɪd/
inventions		*placed*	
professors		*allotted*	
coughs		*characterised*	
pronounces		*mentioned*	
matches		*pronounced*	
cultures		*remembered*	
Spencer's		*suggested*	
chocolates		*crusaded*	
Mary's		*computed*	
Gimson's		*argued*	
examples		*flowered*	
entertains		*frightened*	
manages		*masked*	
devotes		*accomplished*	
saves		*bleached*	
attaches		*annoyed*	

8. THE SYLLABLE

8.1. The Structure of the Syllable

The syllable may be defined as an uninterrupted unit of utterance that is typically larger than a single sound and smaller or equal to a word, e.g. *see* /siː/, *simplify* /ˈsɪm.plɪ.faɪ/ (Crystal 2008: 467). In English, a **minimum syllable** is formed by a single vowel, e.g. *are* /ɑː/, *or* /ɔː/. Longer syllables have one or more consonants preceding or following the vowel, e.g. *meet* /miːt/, *consonant* /ˈkɒn.sə.nənt/.

Phonologically, the syllable is "a unit of phonological organisation whose central component is a nucleus, which is normally a vowel, and which may be preceded or followed by consonants" (Carr 2008: 171). The vowel in the centre of the syllable is called the **syllable nucleus,** and the optionally surrounding consonants or sonorants are defined as **margins**. The initial margin is the **onset**, whereas the final margin is called the **coda**. See *Figure 28*:

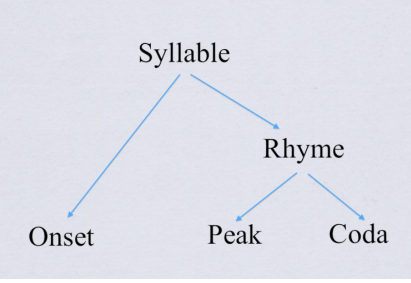

Figure 28. The syllable structure *(adapted from Roach 2009: 60)*

Some syllables have **syllabic sonorants** as their nucleus. Words like *bottle* /ˈbɒtl/, *trouble* /ˈtrʌbl/, *pigeon* /ˈpɪdʒn/, *often* /ˈɒfn/ are formed by two syllables, though they do not have a vowel as the nucleus. Instead, sonorants may serve the function of the nucleus, and in these positions, they are noted with a small vertical diacritics underneath the symbol, e.g. /ˈtrʌb̩/, /ˈpɪdʒn̩/. The typical syllabic sonorants are /l/ and /n/, yet /r/, /m/, and /ŋ/ can also acquire syllabic positions, especially under the influence of some processes in connected speech. If distributed in word final position

or if preceded by a vowel, sonorants do not count as syllabic. Compare the following examples:

sadden /sædn̩/ – *sand* /sænd/
doesn't /dʌzn̩t/ - *don't* /dəʊnt/

The division of words into syllables is referred to as **syllabification** or syllabication, which helps to distinguish between **monosyllabic, disyllabic**, **trisyllabic** and **polysyllabic** words according to the number of syllables they possess.

Syllables are often defined as **strong** or **weak** (see Roach 2009: 64). The strong syllables are relatively longer, more intense, and different in quality as they appear in stressed positions of a word (see section on Word Stress). The weak syllables contain either /ə/, /i/ or /u/ and are never stressed. Syllabic sonorants are also counted as forming weak syllables.

The **transcription** of monosyllabic words is very straightforward. It involves the recognition of concrete sounds and relating them to their phonemic symbols. Monosyllabic content words represent strong syllables only and may hold any phonemes, except for /ə/, /i/ or /u/. Function words, however, may be realised in strong and weak syllables (see Section 9). The usefulness of transcription is undeniably important as it enables the learners to extract precise information on the pronunciation of any word from a dictionary.

8.2. Word Stress

Syllabification is closely connected with the accentual structure of words, which is known as the **word stress** or **lexical stress.** In transcription, a superscribed vertical line appears before the stressed syllable, e.g. *never* /ˈnevə/, *agree* /əˈgriː/. Every disyllabic or polysyllabic word is pronounced with one or more syllables emphasized more than the remaining syllables in the word. Stress is usually equated with the notions of **emphasis** and **strength,** as the stressed syllables seem to be pronounced

Table 11. **The prominence characteristics of stressed and unstressed syllables** (adapted from Roach 2009: 74)

	Loudness	**Vowel length**	**Vowel quality**	**Pitch**
Stressed syllables	loud	long	strong	high
Unstressed syllables	quiet	short	weak	low

with more effort than unstressed ones. Clark and Yallop (1992: 295) say that this emphasis is "signalled by pitch as well as by supporting factors, notably loudness and duration". Roach (2009: 73) defines it as a **prominence** that is determined by four main factors: loudness, vowel length, vowel quality and pitch. In *Table 11* the stressed syllables are opposed to unstressed ones:

8.2.1. Levels of Stress

In some words it is possible to determine a second, weaker, stressed syllable as contrasted to the syllable holding the **primary stress**. This is considered to be the **secondary stress** and is notated by subscripting a low vertical line before the stressed syllable, e.g. pronunciation /prəˌnʌnsiˈeɪʃn/. There is also a third level of stress that is regarded by Roach (2009: 75) as '**unstressed'** and is characterised by the weak prominence factors mentioned above. It should be noted, however, that the syllables containing weak vowels /ə/, /i/, /u/ or a syllabic sonorant will sound even less prominent then the unstressed syllable with any other vowel. Consider the relative prominence of the first syllable in these words:

poetic /pəʊˈetɪk/ the first syllable is more prominent;
pathetic /pəˈθetɪk/ the first syllable is less prominent.

8.2.2. Placement of Stress

The position of the stress determines the different types of it as described below. In many languages, word stress is fairly predictable, i.e. it is determined by rules that apply to the majority of entries in the vocabulary. These languages are said to have **fixed stress**. However, languages with **free stress** have a vocabulary for which stress placement is difficult to predict. English is a free stress language. Moreover, free word stress may be either **constant** (remaining on the same syllable in different word class or in different derivatives from the same root, e.g. ***won**der, **won**derful, **won**derfully*) or **shifting** (varying between the syllables, e.g. ***pro**verb, pro**ver**bial*).

Although English is a free stress language, it is possible to predict the stress placement according to the following information as indicated in Roach (2009: 76): the syllable number in the word, the phonological structure of the syllable, the grammatical category of the word, and the morphological structure of the word. The basic stress patterns are given in the tables below, but there are exceptions, thus learners should treat each single case individually.

Syllabification is one of the factors that support the prediction of stress placement. *Table 12* presents the context when the stress is influenced by strong and weak syllables.

Table 12. **Stress patterns according to syllabification** ***(adapted from Roach 2009: 77-78)***

Disyllabic words	**Nouns**	Stress on the first syllable	*object*	/ˈɒbdʒekt/
			speaker	/ˈspiːkə/
			center	/ˈsentə/
	Verbs	Stress on the final syllable (if the final syllable is strong)	*arrange*	/əˈreɪndʒ/
			release	/rɪˈliːs/
			admit	/ədˈmɪt/
		Stress on the first syllable (if the final syllable is weak)	*fasten*	/ˈfɑːsn̩/
			open	/ˈəʊpən/
			answer	/ˈɑːnsə/
	Adjectives	Stress on the final syllable (if the final syllable is strong)	*polite*	/pəˈlaɪt/
			discrete	/dɪˈskriːt/
			correct	/kəˈrekt/
		Stress on the first syllable (if the final syllable is weak)	*lovely*	/ˈlʌvli/
			fatal	/ˈfeɪtl̩/
			shabby	/ˈʃæbi/
Trisyllabic words	**Nouns**	Stress on the first syllable	*chocolate*	/ˈtʃɒklət/
			paragraph	/ˈpærəgrɑːf/
			emperor	/ˈempərə/
		Stress on the second syllable (if the first syllable is weak)	*confusion*	/kənˈfjuːʒn̩/
			potato	/pəˈteɪtəʊ/
			behaviour	/bɪˈheɪvjə/
	Verbs	Stress on the final syllable (if it is strong)	*entertain*	/ˌentəˈteɪn/
			disconnect	/ˌdɪskəˈnekt/
			resurrect	/ˌrezəˈrekt/
		Stress on the preceding final syllable (**penultimate**) (if the final syllable is weak)	*remember*	/rɪˈmembə/
			acknowledge	/əkˈnɒlɪdʒ/
			determine	/dɪˈtɜːmɪn/
		Stress on the first syllable (if the final and the preceding final syllables are weak)	*motivate*	/ˈməʊtɪveɪt/
			monitor	/ˈmɒnɪtə/
			celebrate	/ˈseləbreɪt/
	Adjectives	Stress on the first syllable	*insolent*	/ˈɪnsələnt/
			positive	/ˈpɒzɪtɪv/
			shimmering	/ˈʃɪmərɪŋ/

Another important factor in stress determination is the **morphological structure** of the words. Some suffixes and prefixes in complex words may influence the level of stress (see *Table 13*).

Table 13. **Stress patterns according to suffixes** ***(adapted from Roach 2009: 83-84)***

Self-stressed suffixes (carry the primary stress themselves)	*-ee*	*refugee*		/ˌrefjʊˈdʒiː/	
	-eer	*engineer*		/ˌendʒɪˈnɪə/	
	-ese	*Portuguese*		/ˌpɔːtʃʊˈgiːz/	
	-ette	*kitchenette*		/ˌkɪtʃɪˈnet/	
	-esque	*sculpturesque*		/ˌskʌlptʃəˈresk/	
Neutral suffixes (do not affect stress placement)	*-able*	*knowledge*	/ˈnɒlɪdʒ/	*knowledgeable*	/ˈnɒlɪdʒəbl̩/
	-ous	*continue*	/kənˈtɪnjuː/	*continuous*	/kənˈtɪnjʊəs/
	-age	*cover*	/ˈkʌvə/	*coverage*	/ˈkʌvərɪdʒ/
	-al	*rebut*	/rɪˈbʌt/	*rebuttal*	/rɪˈbʌtəl/
	-er	*advertise*	/ˈædvətaɪz/	*advertiser*	/ˈædvətaɪzə/
	-ate	*affection*	/əˈfekʃn̩/	*affectionate*	/əˈfekʃənət/
	-en	*threat*	/θret/	*threaten*	/ˈθretn̩/
	-ful	*wonder*	/ˈwʌndə/	*wonderful*	/ˈwʌndəfəl/
	-ess	*steward*	/ˈstjʊəd/	*stewardess*	/ˌstjʊəˈdes/
	-hood	*like*	/ˈlaɪk/	*likelihood*	/ˈlaɪklɪhʊd/
	-man	*business*	/ˈbɪznəs/	*businessman*	/ˈbɪznəsmæn/
	-like	*child*	/tʃaɪld/	*childlike*	/ˈtʃaɪldlaɪk/
	-less	*power*	/ˈpaʊə/	*powerless*	/ˈpaʊəlɪs/
	-ish	*fool*	/fuːl/	*foolish*	/ˈfuːlɪʃ/
	-ly	*hurried*	/ˈhʌrɪd/	*hurriedly*	/ˈhʌrɪdli/
	-ment	*acknowledge*	/əkˈnɒlɪdʒ/	*acknowledgment*	/əkˈnɒlɪdʒmənt/
	-ness	*discursive*	/dɪˈskɜːsɪv/	*discursiveness*	/dɪˈskɜːsɪvnəs/
	-ous	*poison*	/ˈpɔɪzn̩/	*poisonous*	/ˈpɔɪzənəs/
	-fy	*glory*	/ˈglɔːri/	*glorify*	/ˈglɔːrɪfaɪ/
	-ship	*relation*	/rɪˈleɪʃn̩/	*relationship*	/rɪˈleɪʃnʃɪp/
	-some	*burden*	/ˈbɜːdn̩/	*burdensome*	/ˈbɜːdnsəm/
Influencing suffixes (influence stress in the stem)	*-al*	government	/ˈgʌvənmənt/	*governmental*	/ˌgʌvn̩ˈmentl̩/
	-eous	advantage	/ədˈvɑːntɪdʒ/	*advantageous*	/ˌædvənˈteɪdʒəs/
	-graphy	photograph	/ˈfəʊtəgrɑːf/	*photography*	/fəˈtɒgrəfi/
	-ate	origin	/ˈɒrɪdʒɪn/	*originate*	/əˈrɪdʒəneɪt/
	-ic	climate	/ˈklaɪmət/	*climatic*	/klaɪˈmætɪk/
	-ion	transport	/træns ˈpɔːt/	*transportation*	/ˌtrænspɔːˈteɪʃn̩/
	-ious	injure	/ˈɪndʒə/	*injurious*	/ɪnˈdʒʊərɪəs/
	-ity	banal	/bəˈnɑːl/	*banality*	/bəˈnæləti/
	-ive	*prospect*	/prəˈspekt/	*prospective*	/prəˈspektɪv/
	-nda	*agent*	/ˈeɪdʒənt/|	*agenda*	/əˈdʒendə/

Most **compounds words** have two stresses: primary and secondary. Depending on how compounds function in the sentence, the following stress patterns are found (see *Table 14*):

Table 14. **Stress patterns in compounds** ***(adapted from Roach 2009: 85-86)***

Compound nouns	General rule	Primary stress on the first element, secondary stress on the second element	*wristwatch*	/ˈrɪstˌwɒtʃ/
			swimming pool	/ˈswɪmɪŋ ˌpuːl/
			goldfish	/ˈgəʊldˌfɪʃ/
	If the first element is an ingredient of the second element	Primary stress on the second element, secondary stress on the first element	*apple pie*	/ˌæpl ˈpaɪ/
			strawberry milkshake	/ˌstrɔːbri ˈmɪlkʃeɪk/
			chicken bouillon	/ˌtʃɪkɪn ˈbuːjɒn/
			beef stew	/ˌbiːf ˈstjuː/
	Except compounds ending in cake, juice or water	Primary stress on the first element, secondary stress on the second element	*chocolate cake*	/ˈtʃɒklət ˌkeɪk/
			lemon juice	/ˈlemən ˌdʒuːs/
			rosewater	/ˈrəʊz ˌwɔːtə/
Compound adjectives	General rule	Primary stress on the second element, secondary stress on the first element	*blue-eyed*	/ˌbluː ˈaɪd/
			open-minded	/ˌəʊpən ˈmaɪndɪd/
			kindhearted	/ˌkaɪnd ˈhɑːtɪd/
	If the first element is a noun	Primary stress on the first element, secondary stress on the second element	*homesick*	/ˈhəʊm ˌsɪk/
			handmade	/ˈhænd ˌmeɪd/
Compound verbs		Primary stress on the second element, secondary stress on the first element	*overboil*	/ˌəʊvə ˈbɔɪl/
			underestimate	/ˌʌndəˈrestɪmeɪt/
			outrun	/ˌaʊtˈrʌn/

8.2.3. Stress in Word Class Pairs

There are words with identical spelling that represent different parts of speech. These words are differentiated by means of **shifting of the stress**. A small group of words for which the noun is differentiated from a verb by stress without a change in sound quality, e.g.:

increase /ˈɪnkriːs /, Noun, whereas *increase* /ɪnˈkriːs/, Verb
insult /ˈɪnsʌlt/, Noun, whereas *insult* /ɪnˈsʌlt /, Verb
impress /ˈɪmpres/, Noun, whereas or *impress* /ɪmˈpres/, Verb

Next follows another group of words for which the shifting of the stress may or may not be accompanied by a change in the quality of the vowel in the unstressed syllable of the verbs, e.g.:

transport /ˈtrænspɔːt/, Noun, whereas *transport* /trænˈspɔːt/ or /trənˈspɔːt/, Verb
torment /ˈtɔːment/, Noun, whereas *torment* /tɔːˈment/ or /təˈment/, Verb

Finally, there is a large group of words for which the shifting of the stress is accompanied by a change in the quality of the unstressed vowel, e.g.:

combine /ˈkɒmbaɪn/, Noun, whereas *combine* /kəmˈbaɪn/, Verb
conduct /ˈkɒndʌkt/, Noun, whereas *conduct* /kənˈdʌkt/, Verb
contrast /ˈkɒntrɑːst/, Noun, whereas *contrast* /kənˈtrɑːst/, Verb

There are also quite a few nouns that can form compounds but that can also be used like adjectives to make phrases with other nouns. When they constitute a compound, the main stress is placed on the first element. If they function as a phrase, the second element acquires the main stress (see Carr 2013: 86). Consider the following examples:

a blackboard /ˈblækbɔːd/ as a compound noun;
a black board /ˌblæk ˈbɔːd/ as an adjective and noun.

8.2.4. Stress Shift

When the change in stress placement is caused by the context, this is known as **stress shift** (Roach, 2009a). When a polysyllabic word with a stress placed at the end of it is followed by another word with the stress placed in the beginning of it, there is a tendency for the stress in the first word to shift towards the beginning, especially if it has a syllable that is capable of receiving stress, e.g.:

Japanese /ˌdʒæpəˈniːz/, but a *Japanese student* /ˈdʒæpəˌniːz ˈstjuːdnt/

Further reading options: Roach (2009: 56-68, 82-88), Crystal (2008: 467), Cruttenden 2014: (51-54).

Terminology check:
minimum syllable, the syllable nucleus, margins, onset, coda, syllabic sonorants, syllabification, monosyllabic, disyllabic, trisyllabic, polysyllabic, word stress, primary stress, secondary stress, fixed stress, free stress, constant stress, stress shift

Study questions:

1. What is the structure of an English syllable?
2. What is the meaning of the term syllabification?
3. Why is English called a free stress language?
4. What are the levels of stress?
5. What factors may help predict word stress in English?
6. How are word class pairs with identical spelling stressed and pronounced?
7. Under what circumstances does stress shift happen?

Exercises:

1. Transcribe these monosyllabic words:

Word	Transcription	Word	Transcription
Comb		*Choose*	
Last		*Month*	
Feel		*Year*	
Rose		*Quick*	
Bug		*Sword*	
Pack		*Hear*	
Gloves		*Laugh*	
Short		*Large*	
Long		*Five*	
Chair		*Write*	
Want		*Back*	
One		*Hold*	
Three		*Rude*	
Six		*Young*	
Town		*Use*	
Watch		*Joke*	
Age		*Front*	
Worm		*How*	
Warm		*Air*	
Walk		*Fire*	
News		*Wife*	
Phone		*Teeth*	
Next		*Voice*	
Quite		*File*	
Thanks		*Foot*	

Please		*Shoes*	
Kiss		*Check*	
Oil		*John*	
Half		*Jeep*	
Worse		*Chain*	
Wood		*Jazz*	
Twelve		*Bridge*	
Lunch		*Word*	
Thumb		*Chop*	
Each		*French*	
Taught		*Cheese*	
Though		*Cash*	
Bank		*Ash*	
Clothes		*Wage*	
Know		*Says*	
Corn		*Draw*	
Wrong		*Both*	
Wash		*Shelf*	

2. Transcribe the following polysyllabic words:

Word	Transcription	Word	Transcription
Capital		*Apply*	
Picture		*Pleasure*	
Support		*Sentence*	
Additional		*Dictionary*	
Ballad		*Personnel*	
Dramatic		*Future*	
Prefer		*Ordinary*	
Popular		*Philology*	
Particular		*Ability*	
Knowledge		*Learner*	
Affirm		*Command*	
Attempt		*Authentic*	
Activity		*Trainer*	
Teacher		*Register*	
Parents		*Number*	
Nature		*Traditional*	
Approach		*Historically*	
Personal		*Volume*	

Confidence		*Significant*	
Capacity		*Material*	
Example		*Perform*	
Interesting		*Student*	
Practice		*Yesterday*	
Difficult		*Telephone*	
Available		*Happens*	
Separately		*Customer*	
Alone		*Passenger*	
Unit		*Envelope*	
Edition		*Architect*	
Trouble		*Structural*	
Garden		*Brackets*	
Lovely		*Minimal*	
Careful		*Attention*	
Spelling		*Purpose*	
Money		*Surprise*	
Hospital		*Together*	
Husband		*Forever*	
Comfortable		*Another*	
Village		*Energy*	
Perhaps		*Exercise*	
Author		*Expression*	
Leather		*Statement*	
Clothing		*Atmosphere*	
Polite		*Component*	
Computer		*Produce*	
Remember		*Develop*	
Catastrophe		*Generate*	
American		*Translation*	
Important		*Family*	
Entrance		*Circus*	
Appreciate		*Twisters*	
Answer		*Memorable*	
Wonderful		*Although*	
Vegetable		*Feature*	

3. First underline the primary and secondary stresses in these words and then transcribe them.

Word	Transcription	Word	Transcription
Intonation		*Entertainment*	
Pronunciation		*Generation*	
Examination		*Fragmentation*	
Intermediate		*Cooperation*	
Capitalization		*Homogeneous*	
Photographic		*Application*	
Congratulations		*Topicality*	
Understand		*Transportation*	
Acquisition		*Volunteering*	
Opportunities		*Workaholic*	
Education		*Evolution*	
University		*Proportionality*	
Comprehension		*Illumination*	
Supplementary		*Particularisation*	
Punctuation		*Organisational*	
Lexicology		*Normalisation*	
Orthographic		*Neurological*	
Orientation		*Moralistic*	
Obligation		*Mineralogist*	
Acceleration		*Memorisation*	
Accommodation		*Legibility*	
Composition		*Hemispheric*	
Characterisation		*Harmonisation*	
Civilisation		*Gubernatorial*	
Capitalistic		*Guarantee*	
Enthusiastic		*Futurology*	

4. Decide what function the compounds serve in the sentence and transcribe the compounds according to the proper stress pattern:

Word	Function	Transcription	Word	Function	Transcription
Secondhand			*Overreact*		
Post office			*Movie star*		
Childlike			*Fall apart*		
Keyboard			*Undergo*		
Duty-free			*Colour-blind*		

Well-mannered			*Whitehouse*		
Turn away			*Shortsighted*		
Makeup			*Break-through*		
Make up			*Fall apart*		
Notebook			*Olive oil*		
Air-conditioned			*Handmade*		
Bedroom			*Seasick*		
Teapot			*Haircut*		
Look forward			*Toothpaste*		
Windscreen			*Waterproof*		
Trouble-free			*Quick-tempered*		
Update			*Tennis shoes*		
Tongue-tied			*Trainspotting*		
Middle-aged			*Upgrade*		
Outrun			*Software*		
Passer by			*English-speaking*		
Blacklist			*Washing machine*		
Car wheel			*Far-reaching*		
Brightly-lit			*Open-minded*		
Time-saving			*Underworld*		
Well-behaved			*Old-fashioned*		
Sun-dried			*Downsize*		
Long-lasting			*School-teacher*		

9. STRONG AND WEAK FORMS IN RELATION TO SENTENCE STRESS

9.1. Content Words and Function Words

Up to this point in the course, stress patterns have been attached to words in isolation. Stress operates at the word level and at the sentence level. In natural connected speech, however, not all words are stressed. Traditionally, the main meaningful words (those that carry the main semantic content) are stressed, while the other words that convey minor information in sentences are not stressed. The meaningful words, i.e. those that have an independent meaning and refer to a thing, an event, a property, etc. are called **content words,** and they include nouns, verbs, adjectives and adverbs. As opposed to content words are function words that have no or very little lexical meaning and are usually not stressed. They convey only grammatical information and express various grammatical relations. Depending on whether they are stressed or unstressed, the function words have several pronunciations. There are approximately 50 function words in English, including auxiliary verbs, prepositions, conjunctions, particles, etc. Typically, when they are unstressed, they are pronounced in their **weak form.** However, in some rare contexts, they can be stressed and appear in their **strong form**.

9.2. Reduction

The weak form is also often referred to as the **reduced form** because it is generally distinguished from the strong form of the word and undergoes the process of reduction. **Reduction** is the process that affects the quality and quantity of the sound. Thus, depending on the character of the change, reduction may be purely quantitative, qualitative, or zero. The reduction is called **quantitative** when it affects the length of sounds, e.g. *me* /miː/ to /mɪ/. The reduction is called **qualitative** when the vowel changes its quality to a neutral sound, e.g. *can* /kæn/ to /kən/. **Zero realisation** or **elision** is the process when sounds are elided, e.g. *of* /əv/ to /v/ (see Roach 2009: 113). *Table 15* presents the most common English function words in their strong and weak form:

Table 15. **Strong and weak forms of function words** ***(adapted from Collins and Mees 2003: 239-241)***

Function word	Strong form	Weak form
Determiners		
the	/ðiː/	/ði/ (before vowels)
		/ðə/ (before consonants)
a	/eɪ/	/ə/
an	/æn/	/ən/
some	/sʌm/	/səm/
Pronouns		
his	/hɪz/	/(h)ɪz/
him	/hɪm/	/(h)ɪm/
her	/hɜː/	/(h)ə/
you	/juː/	/ju/ (before vowels)
		/jə/ (before consonants)
your	/jɔː/	/jə/
she	/ʃiː/	/ʃi/
he	/hiː/	/(h)i/
we	/wiː/	/wi/
me	/miː/	/mi/
them	/ðem/	/ðəm/
us	/ʌs/	/əs/
who	/huː/	/(h)u/
that	/ðæt/	/ðət/
Prepositions and Particles		
then	/ðen/	/ðən/
at	/æt/	/ət/
for	/fɔː/	/fə/
from	/frɒm/	/frəm/
of	/ɒv/	/əv/
into	/ˈɪntuː/	/ˈɪntu/ (before vowels)
		/ˈɪntə/ (before consonants)
through	/θruː/	/θru/
to	/tuː/	/tu/ (before vowels)
		/tə/ (before consonants)
as	/æz/	/əz/
there	/ðeə/	/ðə/
Conjunctions		
and	/ænd/	/ənd/ /ən//n̩/
but	/bʌt/	/bət/

that	/ðæt/	/ðət/
than	/ðæn/	/ðən/
or	/ɔ:/	/ə/
Auxiliary verbs		
can	/kæn/	/kən/
could	/kʊd/	/kəd/
have	/hæv/	/(h)əv/
has	/hæz/	/(h)əz/
had	/hæd/	/(h)əd/
will	/wɪl/	/wɪl/ /l/
shall	/ʃæl/	/ʃəl/ /ʃl̩/
should	/ʃʊd/	/ʃəd/
would	/wʊd/	/wəd/
must	/mʌst/	/məst/ /məs/
do	/du:/	/du/ (before vowels)
		/də/ (before consonants)
does	/dʌz/	/dəz/
be	/bi:/	/bi/
been	/bi:n/	/bin/
am	/æm/	/əm/
are	/ɑ:/	/ə/
is	/ɪz/	/ɪz/
		/z/ /s/ (in contracted forms)
was	/wɒz/	/wəz/
were	/wɜ:/	/wə/

Strong forms of function words are rare, however, they may appear if the speaker intentionally emphasises the function words. The following environments usually require the use of strong forms:

- when in isolation, as in: *Who?* /hu:/;
- when being quoted, as in: *he said "of", not "off"* /ov/;
- at the end of a phrase or sentence, as in: *What are you looking for?* /fɔ:/;
- as the first of two consecutive auxiliary verbs without a full verb, as in: *would have liked* /wʊd/;
- in coordinations, as in: *he travels to and from London* /tu:/, /frɒm/;
- in contrasts, as in: *a message from John, not for John* /frɒm/, /fɔ:/;
- when used to emphasise a particular aspect of the message, as in: *Paris is the love city* /ði:/.

Further reading options: Roach (2009: 89-96), Collins and Mees (2003: 239-241).

Terminology check:
content word, function word, strong form, weak form, reduced form, reduction, qualitative reduction, quantitative reduction, elision

Study questions:

1. What words are typically stressed in a sentence?
2. How are function words realised under the stress influence?
3. What environments may determine the use of strong forms of the function words?

Exercises:

1. Choose 15 function words and write short sentences for their realisation in strong and weak forms:

Function word	Strong form	Weak form
.		
.		

2. Stress and transcribe the following sentences:

After about an hour, I managed to catch a bus.
Could you keep the secret until we get to our homes?
Don't lose your temper if Ann forgets to come.
I want a pound of sugar for making jam.
Look at the shop windows on the corner of the street.

Say that over and over again to make me feel better and better.
The airplanes are landing every two minutes, making a terrible noise.
There were a lot of people in the room who wanted to stay.
There is nothing better for a cold than a cup of hot tea with honey and lemon.

A LIST OF ABBREVIATIONS

EFL	English as a Foreign Language
SE	Standard English
RP	Received Pronunciation
EE	Estuary English
BBC	The British Broadcasting Corporation
IPA	International Phonetic Alphabet
IPA	International Phonetic Association

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English Intonation

Tonic Syllables, Tones and Intonation Phrases

Although we often say that some speakers speak in a monotonous manner, the fact is that human beings do not utter speech which is monotone in nature: we all inflect our speech, creating intonational contours. But what is intonation, exactly? It is the use of pitch variation in discourse. What is pitch? We have seen that pitch is the auditory impression created by variations in the rate of vibration of the vocal folds. Intonation is the use of pitch contours over stretches of speech which often consist of more than one word. An example is the utterance *Mary went to the doctor*. There are three syllables with primary word stress in this utterance: the penultimate syllable of *Mary*, the single syllable of *went* and the penultimate syllable of *doctor*. But there is additional pitch movement on the primary-stressed syllable of *doctor*. That stressed syllable is perceptually more prominent than the others, and will tend to be longer in duration, and louder, than the other stressed syllables in the utterance. That syllable is said to be the **tonic syllable**. The word 'tonic' denotes the fact

that this syllable is where the **tone** falls. The tone is the extra pitch movement placed on that syllable. In our example, the tone is a **falling** tone: the rate of vibration of the vocal folds decreases as the syllable is uttered, resulting in a transition from a higher to a lower pitch. We will represent these as follows:

(1) ˈMary ˈwent to the ↘doctor. (Track 10.1 at www.wiley.com/go/carrphonetics)

As we saw in chapter 8 on word stress, the diacritics on ˈMary and ˈwent indicate that the following syllables are stressed. The underlining on ↘*doctor* indicates that it is the tonic syllable (and thus, by definition, stressed), and the preceding '↘' diacritic indicates a falling tone. This kind of tone is typical of declarative utterances, in which the speaker is making a statement, as opposed to, say, posing a yes/no question. Other tones are possible in English. In yes/no questions (questions which may solicit the responses 'Yes' or 'No'), it is common to find a **rising** tone in the tonic syllable, as in the question *Is Mary pregnant*? We will represent rising tones as follows:

(2) Is ˈMary ↗pregnant? (Track 10.2)

Here, the penultimate syllables of *Mary* and *pregnant* are stressed, the tonic falls on the stressed syllable of *pregnant*, and the tone is a rise.

A third tone is the **rise-fall** tone, in which the pitch rises and then falls, as in the following exchange:

(3)
Wife:
Have you been ˈseeing ↗Mary?

Husband:
↗↘No! (Track 10.3)

The use of rise-fall tones conveys certainty, exclamation, strong conviction or strength of feeling on the part of the speaker. In this case, the husband is saying that he has certainly *not* been seeing Mary: the intonation conveys a complete denial of the implied accusation.

A fourth tone is the **fall-rise** tone, as in the following exchange:

(4)
Wife:
Have you been ˈseeing ↗Mary?

Husband:
↗↘No! (Track 10.4)

Here, the pitch falls then rises in the second utterance. Use of such a tone conveys hesitation, lack of certainty, prevarication or reservation on the part of the speaker. In this example, the husband is being less than clear and straightforward in his response: he is denying that he's been seeing Mary, or trying to suggest that what he's been doing does not really amount to 'seeing Mary' in the romantic sense.

A stretch of discourse which contains a tonic syllable is called an **intonation phrase** (IP), otherwise known as an intonation group, intonation unit or tone group. These are also

referred to as breath groups, since they constitute units of speech in which we expel air from the lungs. When we stop speaking to draw breath, we often do so at the end of a tone group: it is common for speakers to pause at the end of such units.

It is common to identify three main features of intonation:

- the chunking up of stretches of speech into IPs,
- the placing of the tonic on one of the stressed syllables of that chunk and
- the assignment of a specific tone on the tonic syllable

These are, to some extent, independent variables: what syllable we choose to put the tonic on can be independent of where the IP boundaries go, and what tone we place on the tonic syllable can be independent of where we choose to place the tonic.

In examples (1) to (4), the tonic falls on what is known as the **last lexical item** (LLI). Recall from our discussion of word stress that words can be classified into two broad groupings: words of a lexical category (typically nouns, verbs, adjectives and adverbs) and words of a functional, or grammatical, category (such as articles, conjunctions, prepositions and pronouns). The last lexical item in a syntactic unit is thus the last noun, verb, adjective or adverb. For example, in (1), the LLI is the noun *doctor*, and in (2) it is the adjective *pregnant*. The following examples contain, in (5), an LLI which is a verb, and in (6), an LLI which is an adverb:

(5) My ˈhusband ↘cheats. (Track 10.5)

(6) His ˈlover ˈwalks ↘gracefully. (Track 10.6)

The LLI may not be the last item in an IP, as in:

(7) ˈBill ↘gave it to her. (Track 10.7)

Here, the last item is a pronoun, which is not a lexical item, and thus does not take the tonic. The second-last item is a preposition, and thus also fails to take the tonic. The third-last item is a pronoun, so that too fails to take the tonic. The tonic falls on *gave*, since it is the LLI, but not the last item. In cases like this, any syllables which follow the tonic syllable are said to constitute the **tail** of the IP: after the fall here, the pitch just trails off at a low level into the remaining syllables after the tonic.

10.2 Departures from the LLI Rule

The LLI rule is the default rule for the placement of the tonic. By 'default', we mean the point where the tonic is placed if no special circumstances prevail. Defaults in linguistics are rather like the default settings on your computer: they are the settings that are used unless one deliberately changes the set-up for some special purpose. It is common in English to shift the tonic away from the default position, for various purposes. We now examine some of those.

10.2.1 Contrastive Intonation

(8)
Speaker A:
ˈMary ˈgave ˈJohn a ↘camera.

Speaker B:
No, *she* didn't give it to *him*; *he* gave it to *her*. (Track 10.8) (= ↘No | ↘she ˈdidn't ˈgive it to ↘him | ↘he ˈgave it to ↘her)

Here, the italics show that, in addition to *No*, four pronouns receive the tonics (the vertical lines indicate the boundary between the IPs): it wasn't *Mary* that gave *John* a camera: it was *John* that gave *Mary* a camera. The referent of the word *camera* here is given, once speaker A has spoken. Consider the following possible intonational patterns for the sentence *John is taking the train to London*:

(9) ˈJohn is ˈtaking the ˈtrain to ↘London. (Track 10.9)
(10) ˈJohn is ˈtaking the ↘train to ˈLondon. (Track 10.10)
(11) ↘John is ˈtaking the ˈtrain to ˈLondon. (Track 10.11)

In (9), we have the default pattern for tonic placement, with the tonic on the stressed syllable of the LLI. In (10), we have contrastive intonation: the train is being contrasted with some other mode of transport, such as the plane. In (11), the speaker is stressing the fact that it is John, not someone else, who is taking the train to London.

This use of tonic placement relates to what is called **focus**. In (9), we have **broad focus**, associated with statements in which everything is news. These are statements which are said to come 'out of the blue': all of the information is announced as new information, so everything in the utterance is brought into focus.

In (10), the person being addressed already knows that John is going to London: what is news is the information concerning

his mode of transport. This is called **narrow focus**.

In (11), the addressee knows that someone is taking the train to London, and is being informed that the person in question is John. This too is a case of narrow focus. Narrow focus relates to the **given/new distinction**. Given information is shared (mutual) knowledge, known to both the speaker and the hearer. New information is not previously known to the speaker and the hearer.

The tonic can be moved onto almost any syllable for contrastive purposes, including affixes. Here is a statement by the British prime minister David Cameron in 2010:

(12) It's not ↘<u>un</u>em'ployment that will be cre'ated. | It's ↘<u>em</u>'ployment.

Normally, *employment* and *unemployment* have primary stress on the penultimate syllable, as in *We're* 'trying to cre'ate *em*↘*<u>ploy</u>ment*. Here, the prime minister is contrasting employment with unemployment. We see from this example that, given a context in which we wish to highlight a given word in order to contrast it with another, the tonic may be placed on something other than the LLI (*unemployment* in the first IP), and that even affixes may receive the tonic (the *un-* prefix in *unemployment*).

10.2.2 Given Information

Another situation in which the LLI rule is flouted concerns the notions of given and new information. Consider the following exchange:

(13)
A:
We need tomatoes. (We ˈneed to↘matoes)

B:
We've *got* tomatoes! (We've ↘ got ˈmatoes) (Track 10.12)

The word *tomatoes* is given in the first statement: it has already been mentioned, so the information it conveys is given (shared by the participants in the exchange). The tonic is therefore shifted away from the LLI (*tomatoes*) onto the word *got*. Now consider the following:

(14) In ↘ most ˈcases, | we aˈpply the ↘rule, | but in ↘some cases, | we ↘don't. (Track 10.13)

Here, the LLI in the first IP (*cases*) is given by the context of utterance: if we utter (14), the person we are speaking to already knows what the rule is about, and what kinds of cases are being spoken about.

Synonyms can count as conveying given information:

(15)
A:
She's ˈborrowed ˈJane's ↘frock.

B:
↘No, | it's ↘Mary's ˈdress (Track 10.14)

Here, the word *dress* isn't given, but its meaning is, via the uttering of the synonym *frock*.

Presuppositions can be conveyed via tonic placement:

(16)
A:

Have you ˈspoken to ↗John?

B:
I don't ↘speak to ˈracists (Track 10.15)

B is presupposing that 'John is a racist' is given information. So the tonic shifts from the LLI (*racist*) to the preceding lexical item. Speaker A can *impose* the presupposition that John is a racist, even if that is open to question.

Notice here that the verb *speak* is given, but nonetheless takes the tonic: contrastive intonation can lead to the tonic being placed on given information. Here is another example:

(17)
A:
He's ˈgoing to ↘Paris.

B:
He's not ˈgoing to ↘Paris. | He's ˈgoing to ↘London. (Track 10.16)

Given information can be shared by millions of people (e.g. the fact that Barack Obama was elected president of the United States) or by as few as two people (e.g. husband and wife).

10.2.3 Final Temporal Adverbials

It is common to find that LLIs which are in syntactic units which have an adverbial function, and which convey information relating to time, fail to take the tonic, as in:

(18) ˈJohn’s ˈgoing to ↘London on ˈSaturday. (Track 10.17)

Here, *Saturday* is the LLI, but since the prepositional phrase *on Saturday* is a final temporal adverbial, the LLI within that adverbial expression fails to take the tonic. If we *were* to place the tonic on *Saturday*, that would constitute a case of contrastive intonation:

(19) ˈJohn’s ˈgoing to ˈLondon on ↘Saturday (Track 10.18) (as opposed to some other day of the week).

When final adverbial expressions are fronted, they tend to form a separate IP:

(20) On ↘Saturday, | ˈJohn’s ˈgoing to ↘London. (Track 10.19)

10.2.4 ‘Event’ Sentences

These are rather curious. They are short statements which contain intransitive verbs, but the tonic fails to fall on the intransitive verb rather than the LLI:

(21)
(a)
The ↘kettle’s ˈboiling.

(b)
The ↘baby’s ˈcrying.

(c)

Your ↘house is on ˈfire.

(d)
The ↘sun's ˈcome ˈout. (Track 10.20)

One would have expected the tonics to fall on the LLIs *boiling*, *crying* and fire, and on the particle *out* (see above on LLIs, and below on intransitive phrasal verbs, where we expect the tonic to fall on the particle).

It has been observed that the subjects in such sentences do not denote human agents, but why that should affect the tonic placement is far from clear. There seems to be pragmatic foregrounding (selecting out) of the subject in such cases.

10.2.5 Non-Lexical Items which Often Take the Tonic

The negative equivalents of the non-lexical items *someone, something, somewhere, somebody* (*no one, nothing, nowhere, nobody*) often take the tonic:

(22)
(a)
I ˈsaw ↘no one.

(b)
I've ˈdone ↘nothing.

(c)
We're ˈgetting ↘nowhere.

(d)
This ˈinterests ↘nobody. (Track 10.21)

One *can* place the tonic on the non-lexical items *someone, something, somewhere* and *somebody*, but only if the intonation is contrastive, as in:

(23)
A:
I ˈsaw the ˈneighbour in the ↘pine grove this ˈmorning.

B:
You ↘couldn't have. | He's in ↘Paris ˈright ˈnow.

A:
Well I ˈsaw ↘someone. (Track 10.22)
(That is, not the neighbour, but some other person).

Non-native speakers should be aware that pro-forms such as *one* and *do so* are not lexical items: they convey given information, and thus do not normally take the tonic, as in:

(24)

(a) A: I 'went 'looking for a 'bottle of ↘wine.
B: Did you ↗get one?
A: ↘Yes.
(b) 'Mary 'drank some ↘wine | and ↘Bill did so too. (Track 10.23)

10.2.6 Cleft Sentences

Cleft sentences take the following form:

(25) It's *Scotsmen* that wear kilts.

It was *Bill* that did it.

Clefting is a way of highlighting, or bringing into focus, a syntactic constituent. One could say:

(26) I ˈlove ↘John.

But in the cleft version, the contrast between John and anyone else is more emphasized:

(27) It's ↘John that I ˈlove. (Track 10.24)

Although *love* is the LLI, the tonic falls on the highlighted item. Here, the material after the highlighted material forms the tail of the IP: the hearer knows that the speaker loves someone, so that knowledge is given, and no further tonic is required.

10.2.7 Deictic Expressions

The word **deictic** means 'involved in pointing out', either by literally pointing at something with one's finger while speaking, or bringing something to someone's attention without physically pointing. Deictic expressions in English include the demonstrative words *this, that, these* and *those*. These count as function words, so they do not take the tonic when the LLI rule applies, as in the following questions:

(28)

(a)

Could you ↗give me that?

(b)

Can I have ↗five of those? (Track 10.25)

In such utterances, it is clear from the context of utterance what *that* and *those* are being used to refer to (in the first example, a parent might be asking a child to hand her a knife; in the second example, a shopper might be asking a shopkeeper to give her five oranges).

If the thing being referred to is explicitly mentioned, the LLI rule will assign the tonic to the noun in question, as in:

(29)

(a)

Could you ˈgive me that ↗knife?

(b)

Can I have ˈfive of those ↗oranges? (Track 10.26)

The tonic can fall on deictic expressions when they are being used contrastively, as in:

(30)

(a)

Could you ˈgive me ↗that ˈknife?

(as opposed to some other knife)

(b)

Can I have ˈfive of ↗those ˈoranges? (Track 10.27)

(as opposed to some other varieties of orange)

10.3 IPs and Syntactic Units

10.3.1 Syntactic Units which Normally Form a Separate IP

There are syntactic units which normally form separate IPs, such as relatively short main clauses, as in (1) to (3) in section 10.1: here, we can see that the intonation tracks the syntax. This is unsurprising, since both clauses and IPs convey coherent chunks of information. We will now examine a range of other syntactic units which normally form independent IPs.

10.3.1.1 Parentheticals

Parenthetical information is extra, optional information offered by the speaker. If parentheticals are omitted from a syntactic structure, the structure in question remains grammatically well-formed. Let us look at some types of parenthetical.

Non-restrictive relative clauses

(31) The ˈguys in the ↘car, | who were ↘hungry, | ˈate some ↘sandwiches. (Track 10.28)

Here, the IP boundaries correspond to the commas in the written form of the sentence. The tonics fall on the LLIs in each IP: *car, hungry* and *sandwiches*. The meaning conveyed is that all of the guys in the car were hungry (thus the expression 'non-restrictive relative clause': the range of referents is not restricted).

(Restrictive relative clauses

Note that these do not normally count as parentheticals, and thus do not normally form a separate IP, as in:

(32) The ˈguys in the ˈcar who were ↘hungry | ˈate some

↘sandwiches. (Track 10.28)

In the second example, there are only two IPs, as opposed to three in the first. The subject noun phrase is sufficiently long to form a separate IP, but the restrictive relative clause within that noun phrase does not form a separate IP. The difference in meaning between (31) and (32) is that, in (32) it is not necessarily the case that *all* of the guys in the car were hungry: the meaning is restricted only to the *hungry* guys in the car.)

Noun phrases in apposition

Noun phrases are said to be in apposition when they are co-referential, that is, when they are being used to refer to the same person or entity, as in:

(33) 'Barak O↘bama, | a 'Democrat poli↘tician, | is in↘telligent. (Track 10.29)

Other parentheticals

(34) ↘↗Mary, | you're not 'going to be↘↗lieve this, | but 'Jane is ↗↘pregnant! (Track 10.30)

Note that parentheticals are uttered on a lower pitch range than the preceding and following IPs: if you listen carefully to Tracks 10.28, 10.29 and 10.30, you should be able to hear this.

10.3.1.2 Co-Ordinated Constituents

(35)
(a)
'Mary 'moved to ↘Paris | but 'John 'stayed in ↘London.
(Sentence co-ordination)

(b)
ˈJohn ˈwent to the ↘pub | and ˈordered a ↘ beer. (Verb phrase co-ordination)

(c)
She's ˈvery ↘ tall | and ˈvery ↘ pretty. (Adjective phrase co-ordination)

(d)
His ˈvery ↘well | and ˈvery ↘quickly. (Adverb phrase co-ordination)

(e)
It's ˈeither ˈin the ↘fridge | or ˈon the ↘table. (Prepositional phrase co-ordination)

(f)
He ˈbought the ˈhouse on the ↘hill | and the ˈwoods in the ↘valley. (Noun phrase co-ordination) (Track 10.31)

However, when the constituents are short, separate IPs are not always required:

(36)
(a)
She's ˈtall and ↘lanky. (Adjective phrase co-ordination)

(b)
He ˈstopped and ↘stared. (Verb phrase co-ordination)

(c)
He ˈbought ˈmilk and ↘cheese. (Noun phrase co-ordination)

(Track 10.32)

This is especially noticeable when co-ordinated elements have been lexicalized (formed into lexical items), taken to be used to refer to single entities, such as:

(37)

(a)

ˈfish'n' ↘chips

(b)

ˈbeer and ↘skittles

(c)

ˈstrawberries and ↘cream (Track 10.33)

Other co-ordinated items that are used to refer to what is perceived as a single entity or unit are British pub names:

(38)

(a)

The ˈDog and ↘Duck

(b)

The ˈFox and ↘Hounds

and names of couples:

(c)

ˈBill and ↘Mary ˈJane and ↘Clive (Track 10.34)

(The couples here are considered to be 'an item'.)

10.3.1.3 Items on Lists

Normally, each item on the list constitutes a separate tone

group

(39) He bought ↗eggs, | ↗milk, | to↗matoes | and ↘ham. (Track 10.35)

Non-final items on a list often take a rising tone: this signals that the list is not yet complete.

10.3.1.4 Subordinate Clauses

When a sentence contains a subordinate clause, the clause boundary often corresponds to an IP boundary:

(40)

(a)

I'll 'buy the 'fish'n' ↘chips | when I 'go to the ↘shops.

(b)

I 'told the 'new re'cruit to the ↘company | that he was ↘fired. (Track 10.36)

If the material preceding the subordinate clause is relatively short, the subordinate clause need not form a separate IP:

(41) I 'think she's been ↘sacked. (Track 10.37)

10.3.1.5 Sentence Adverbials

Adverb phrases necessarily have an adverbial function. But other phrases, notably prepositional phrases, can have an adverbial function.

It is common to distinguish verb phrase adverbials from sentence adverbials, as in (42a) and (b) respectively:

(42)

(a)

John went to the interview hopefully.

(b)
John went to the interview, hopefully.

In (42a), John was hopeful. In (42b), the speaker is hopeful.

Notice that (42b) can be rephrased with the sentence adverbial in initial position:

(c)
Hopefully, John went to the interview.

In either case, sentence adverbials form a separate IP, and they have the fall-rise tone:

(43)
(a)
↘↗Hopefully, | ˈJohn ˈwent to the ↘interview.

(b)
ˈJohn ˈwent to the ↘interview, | ↘↗hopefully. (Track 10.38)

10.3.1.6 Pseudo-Clefts

These take the syntactic form *What he needs is a bath.* It is common for these to form two separate IPs:

(44) What he ↘↗needs | is a ↘bath. (Track 10.39)

10.3.1.7 The is . . . is that Construction

(45)
(a)
The ˈthing ↘↗is | is that she's ↘pregnant.

(b)
The al'ternative ↘↗is | is that we'll have to be'come more in 'volved in ↘Europe.

(c)
My con'cern ↘↗is | is that it's 'got 'too ↘big | too ↘quickly.

(d)
The 'fact of the 'matter ↘↗is | is that the 'way it is ↘run | is too ↘complex.

(e)
The 'good 'news ↘↗is | is that they're 'lending to 'small ↘businesses. (Track 10.40)

This construction is very widespread in spoken English, both informal and formal (most of these examples are taken from formal interviews with British politicians on BBC TV). Although it is possible not to have an IP boundary after the first *is*, that is the norm.

10.3.2 Syntactic Units which Do *Not* Normally Form Separate IPs

10.3.2.1 Reporting Clauses

These abound in novels, but also in everyday speech

(46) I'm ↘tired, he said. (Track 10.41)

Here, the falling tone on the tonic syllable keeps trailing off into the reporting clause (*he said*)

It is possible, however, to form a separate IP around a reporting clause. Compare (47a) and (b):

(47)

(a)

He's re↘tired, I think.

(b)

He's re↘tired, | I ↘think. (Track 10.42)

Utterance (47b) conveys less certainty than (47a).

10.3.2.2 Subject Noun Phrases

(48) The ˈold ˈman ˈkicked the ↘dog. (Track 10.43)

But, as we saw in earlier, the longer a subject noun phrase, the more likely it is that a separate IP will be possible.

10.3.2.3 Restrictive Relative Clauses within Subject Noun Phrases

As we have seen, these do not normally form a separate IP, as in example (32), repeated here (the long subject NP forms a separate IP, but not the relative clause):

(32) The ˈguys in the ˈcar who were ↘hungry | ˈate some ↘sandwiches.

10.3.3 Syntactic Units which May, or May Not, Form Separate IPs, Depending on the Sense Conveyed

10.3.3.1 Tag Questions

Reverse polarity tag questions

By **reverse polarity** we mean that the first part is in the positive, and the tag question in the negative, or vice versa, as in:

(49)
(a)
You're going to do this, aren't you?

(b)
You're not going to do this, are you? (Track 10.44)

The intonation of reverse polarity tag questions works as follows: if we form a separate IP on the tag question, and place a falling tone on it, the tag invites agreement:

(50)
(a)
You're ˈgoing to ↘do this, | ↘aren't you?

(b)
You're not ˈgoing to ↘do this, | ↘are you? (Track 10.44)

If there is a rising tone on the tag, it need not form a separate IP:

(51)

(a)
She's ˈcoming to the ↗party, isn't she?

(b)
She's not ˈgetting ↗married, is she? (Track 10.45)

Here, the tag question forms part of the tail of the IP. But the tag question *can* form a separate IP:

(52)
(a)
She's ˈcoming to the ↗party, | ↗isn't she?

(b)
She's not ˈgetting ↗married, | ↗is she? (Track 10.46)

The differences in conveyed meaning are subtle: in (51a), the speaker is not entirely certain whether she's coming to the party. In (51b), the speaker may be expressing surprise, or even astonishment, whereas in (52a) and (52b), the speaker is a lot less sure, and is posing more of a query than in (51a) and (51b).

10.4 Tonic Placement, IP Boundaries and Syntax

10.4.1 Phrasal Verbs

Phrasal verbs in English have two parts: the first part, which looks like a normal verb, and the second part, which looks like

a preposition, and is often called a particle. They can be transitive (which means that they are followed by a direct object, as in *He chatted up the waitress*, where *the waitress* is the direct object) or intransitive (which means that no direct object is required, as in *He backed down*). Learners of English as a foreign language are well-advised to learn the intonation of such verbs, since there are so many of them, and they occur with high frequency in spoken English.

10.4.1.1 Transitive Phrasal Verbs

If the direct object noun phrase is phrasal, the tonic falls on the head noun in the noun phrase (the head noun is the noun in a noun phrase which is semantically the most prominent):

(53)

(a)

He ˈchatted ˈup the ↘waitress.

(b)

He ˈchatted the ↘waitress ˈup.

If the direct object noun phrase is a pronoun, the tonic falls on the particle (which is normally shifted so that it follows the direct object):

(c) He ˈchatted her ↘up. (Track 10.47)

10.4.1.2 Intransitive Phrasal Verbs

These take the tonic on the particle:

(54) He ˈbacked ↘down. (Track 10.48)

However, many short sentences with intransitive phrasal verbs are ‘event sentences’ (see 10.2.4 above), in which case the tonic is retracted:

(55)

(a)

The ↘plane ˈblew up.

(b)

The ↘car ˈbroke down. (Track 10.49)

10.4.2 Degree Adverbials

The most central example of a degree adverbial is the word *very*. It functions to modify adjectives in adjective phrases, and adverbs in adverb phrases, as in:

(56)

(a)

He’s very ↘tall. (Adjective phrase)

(b)

He ˈtalks very ↘slowly. (Adverb phrase) (Track 10.50)

Other degree adverbials include *so*, *incredibly*, the mild swearword *bloody* and the stronger ‘f-word’, as in:

(57)

(a)

He’s so ↘stupid.

(b)

He’s inˈcredibly ↘arrogant.

(c)
He's ˈbloody ↘good.

(d)
He's ˈf*cking ↘good. (Track 10.50)

But the tonic can be placed on the degree adverbial, for emphasis, as in:

(58)
(a)
He's ↗↘so ˈstupid

(b)
He's in↗↘credibly ˈarrogant!

(c)
He's ↗↘bloody ˈ

(d)
He's ↗↘f*cking ˈgood! (Track 10.51)

There is a use of *so* in colloquial English which acts as a verb phrase adverbial, and takes the tonic, with an exclamatory tone, as in:

(59)

(a) A (to C): Has 'anyone ever ↘told you | that you've 'wasted your ↗life?
B: You ↗↘so 'haven't!
(b) A: Why do 'men 'dress up as 'women at 'fancy ↘dress 'parties?
B: They ↗↘so do!
(c) I'm ↗↘so not 'shining 'shoes! (The speaker refuses to shine shoes)
(d) 'You two are ↗↘so 'going 'out with the 'wrong 'men.
(e) That's ↗↘so not 'cool, 'Carol. (Track 10.52)

10.5 Tones and Syntax

10.5.1 WH Questions

These normally have a falling tone:

(60) Where are you ↘going? (Track 10.53)

But not when used echoically:

(61)
A:
I'm ˈmoving to ↘London.

B:
↗Where are you moving to? (Track 10.54)

Speaker B here has either not properly heard what A said, or is expressing incredulity. B's WH question is said to be echoic in that it echoes part or all of what A has just said. Notice that the tone keeps on trailing upwards in the tail of the IP, just as it trails downwards when a tonic syllable before the tail has a falling tone.

10.5.2 Declaratives as Questions

We can use syntax to form yes/no question, in which the first auxiliary verb in the main clause is inverted around the subject noun phrase, as in:

(62) (a) Have they ˈfound your ↗mobile?

The corresponding declarative statement would have a falling tone:

(b) They've ˈfound your ↘mobile.

But we can retain the declarative syntactic structure and still ask a question by placing a rising, rather than a falling, tone on the LLI:

(c) They've ˈfound your ↗mobile? (Track 10.55)

Declarative structures can be uttered with a fall-rise:

(63)

A: They've 'found my ↗↘mobile!
B: They've 'found your ↘↗mobile? (Track 10.55)

In using a fall-rise, B is expressing surprise that the mobile has been found, or that it is the *mobile*, as opposed to some other lost object, that has been found.

10.6 Tonic Placement and Discourse Context

10.6.1 Vocatives

Vocative expressions are used for addressing one's interlocutor, as in the following extracts from telephone messages left by a speaker calling a friend called Nick:

(64)

(a)

Nick, it's me.

(b)

It's me, Nick.

Here the speaker assumes that the addressee (Nick) can identify the voice of the person calling, or that Nick is expecting a call from that person.

Initial vocatives form a separate IP:

(c) ↘Nick, | it's ↘me.

Final vocatives do not:

(d) It's ↘me, Nick. (Track 10.56)

If an IP is formed around the final *Nick*, as in (65):

(65) It's ↘me, | ↘Nick. (Track 10.57)

then the word *Nick* is not interpreted as a vocative; rather, it is interpreted as the name of the caller.

10.6.2 Other Meaning Differences Conveyed by IP Boundaries

As we've seen, the placement of IP boundaries, and/or the

kind of tone we select, can convey differences in meaning. Consider:

(66)

(a)

He didn’t marry her because she was French.

(= He ˈdidn’t ˈmarry her because she was ↘French)

This means that he *did* marry her, but not because she was French.

(b)

He didn’t marry her, because she was French. (Track 10.58)

(= He ˈdidn’t ↘marry her | because she was ↘French)

This means that he *didn’t* marry her, the reason being that she was French.

10.7 Summing Up

We have seen that there are three main structural aspects of English intonation: the dividing up of utterances into intonational phrases which are chunks of information, the placing of a tonic on one of the stressed syllables in each chunk, and the kind of tone we use in that tonic syllable. Intonation in English, we have seen, is connected to syntactic structure, the lexical vs functional distinction, the meaning expressed by the syntactic units in question, and aspects of discourse linked to the context of utterance and phenomena such as conveyed meaning and the speaker’s attitude towards what she or he is saying. Perhaps the most striking aspect of

English intonation is the extent to which it is dynamic, in the sense that speakers of English frequently move the tonic away from the default LLI position, for a wide variety of purposes. For non-native speakers of English, some degree of mastery of this will result in a much more native-like speech style.

Exercises

1 In each of the following utterances, identify the last lexical item.

(a) John went to the pub.

(b) Mary put her finger on it.

(c) My father says he can't understand that.

(d) He talks rather slowly.

(e) I want that pink one.

2 Which of the following questions can have a rising tone?

(a) Is Bush mad?

(b) What do you want?

(c) Have you eaten?

(d) How does this work?

(e) Isn't it time for lunch?

3 Listen to Track 10.59. Where do the tonics fall in the following utterances in that sound file? Explain why.

(a) She chatted up the waiter.

(b) She chatted him up.

(c) She broke down.

(d) We've split up.

(e) I've put him off.

4 Listen to Track 10.60. Identify the IP boundaries in the following utterances in that sound file and say where the tonics fall. Explain why.

(a) Mary, you're fired.

(b) You're fired, Mary.

(c) He's mad, she said.

(d) It's an evil empire, said the president of the United States.

5 Listen to Track 10.61. Identify the IP boundaries in the following utterances in that file and say where the tonics fall. Explain why.

(a) Mary, a good friend of mine, is pregnant.

(b) The guys in the car, who were hungry, ate some sandwiches.

(c) The guys in the car who were hungry ate some sandwiches.

(d) Bill, you won't believe this, you've passed your exam.

(e) His new book, *Making Friends*, is sure to be a bestseller.

6 What is the default tonic placement in the following utterances?

(a) He went to London on Thursday.

(b) I haven't seen her recently.

(c) He left for Paris in a hurry.

(d) She left her bedroom in a mess.

(e) He speaks quickly.

7 What are the intonation group possibilities in the following utterances? Discuss different tone possibilities in the tag questions. Listen to Track 10.62 and describe the intonational structure you hear, including IP boundaries and tones.

(a) You're not pregnant, are you?

(b) You like lasagne, don't you?

(c) You *do* play golf, don't you?

(d) We can sort this out, can't we?

(e) We'll never sort this out, will we?

8 Where do the tone group boundaries fall in the following utterances, and where do the tonics fall? If there are alternative intonational structures, say what you think they are. Listen to Track 10.63 and describe the intonational structure you hear, including IP boundaries and tones.

(a) 'You can't go', said Bill Smith, a good friend of mine.

(b) 'Obama can't win in Texas', claims Hillary Clinton, a woman whose husband Bill, ex-president, is from the South of the USA.

(c) 'Is Amy Winehouse in rehab?', asked Jonathon Ross on the Thursday after she sang out of tune at a concert in London.

(d) 'Dickens I can't stand', confessed the young recruit to a university lectureship in Victorian literature.

(e) 'What does George Bush, a devout Christian, have to say about the treatment of prisoners in Abu Ghraib?', asked the chair of the committee.