U.F.R Angellier

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(A Short Introduction to English Phonetics)

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ACKNOWLEDGMENTS

There is nothing spectacular about this introduction to English phonetics. When I wrote the first (short) version of this syllabus in 1999, my main concern was to provide students in the first year English Studies at the Université Lille3 with an accessible syllabus written in English with some attention to the specific problems of francophone learners. It has drawn on various sources, both English and French (see references).

An important difference in the organisation of this syllabus in comparison to previous versions, is that the exercise section has become a independent compendium. The reason for this change is merely a practical one, to allow for maximal flexibility to both teacher and student.

In the course of the years, many colleagues have provided me with valuable comments to improve the syllabus. In particular, I would like to thank Cyril Auran, Nicolas Ballier, Caroline Bouzon, Rodica Calciu, Chad Langford, Rudy Loock, Laurence Paris, Rebecca Petrush and Annick Rivens for their comments on earlier versions of the text.

While the many students that had to work with this syllabus in the course of these years will largely remain anonymous, their comments and reactions have obviously been quite useful as well. Many thanks to all of them! I remain quite modest in my ambitions; nevertheless, I hope that this syllabus succeeds in giving them a transparent introduction to English phonetics and pronunciation as well as showing them that it can be fun too.

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FOREWORD

In recent years, quite a number of students have told me how much difficulty they have with phonetics courses in general and with correct English pronunciation in particular. Unfortunately, many of those students have become so desperate that they have given up their attempt to arrive at an "unbroken" pronunciation. This is unfortunate, given that the way to an acceptable pronunciation need not be difficult at all. It may be a long one (there is unfortunately no short cut for the language learner), but it should not be a painful one. On the contrary, it should be a *playful* one, an enjoyable road leading to a pronunciation which does not strike the native listener as "marked" or "incorrect" or "disturbing". Such *effortless* communication should be the goal of the teaching of pronunciation.

As far as sound qualities are concerned, listeners are actually quite tolerant to variation. As a matter of fact, there *is* considerable variation among speakers within one and the same language (or dialect) and this even holds for a single speaker. Indeed, many external factors may influence the actual pronunciation (a hoarse voice, eating while speaking, telephoning, etc.). Listeners accept those variations as long as they stay within the boundaries of the sound's domain, but they will not readily accept those variations that take the sound *outside* its proper domain. For example, there is some variation possible for the (low) vowel in English *cat*, but it cannot come too close to the French counterpart (*chat*), as this is not an English vowel and therefore not "acceptable" to English speakers.[1] Learners of English should become conscious of those cut-off points.

Another thing to which the human ear is extremely sensitive is *prosody*. With this we mean the rhythm and the melody of a language. Speaking a language without respecting its prosody is like being out of beat in music: listeners will very much be put off by it. Language learners often underestimate the importance of prosody and often do not realize that by not respecting it, they become quite incomprehensible. According to some researchers (cf. Kjellin 1998a,b), the importance of prosody in both first and language acquisition cannot be overestimated and should become more central in the whole of FL-teaching. My own teaching experience leads me to similar conclusions.

The key to successful pronunciation is then that language learners should become aware of the prosodic features of the language. More specifically, they should tune their ears to the prosody of the target language. As Kjellin observes, "it is the hearing which guides speech and the entire language acquisition process for both children and adults" (1998a:1, translated from Swedish). The advice he gives to students is thus: "train the brain via the ear, and let the nerve reflexes do the job afterwards" (ibid.). If you train yourself to hear correctly, then you will also do it correctly afterwards, because your own speech is constantly monitored and guided by the 'inner ear'. The rule of thumb in phonetics is: "*One hears what one knows and one does what one hears*." (idem:2)

The present course should be seen against the background of the above views. It tries to explain the major issues in English phonetics as relevant for first year students. After an introductory description of the domain of phonetics (Chapter 1), there is a description of what speech (voice, articulation, etc.) actually is (Chapter 2). Given that we see prosody as a central

[1] From a purely acoustic point of view, this variation can be quite considerable, which explains why speech recognition by computers is so difficult to realize: the human ear categorizes, the computer generally does not (or cannot).

issue in good pronunciation, a description of English prosody (rhythm and stress) is given in Chapter 3 (traditionally regarded as *supra-segmental*). Following that, Chapters 4 and 5 offer more detailed descriptions of the English vowels and consonants (traditionally regarded as *segments*).

Clearly, much more is to be said about English phonetics and phonology than we can afford to do here (or in the classes for that matter); students who want to find out more about the subject are referred to the books mentioned in the reference section. Especially recommendable for further reading are Roach (1991), Ginésy (1995) and Lilly & Viel (1975/1998a:Ch.1; 1977/1998b).

The aim of this course is both practical and theoretical. By giving a description of prosody and of the sounds that are produced in Standard English, we hope to offer students a means to help them acquire a better pronunciation. In tandem with this, students are given tools to *represent* the pronunciation of words and phrases in phonetic transcription. Clearly, this is not a goal in and by itself, but a helpful (and indispensable!) device, certainly in the case of words with a more exceptional pronunciation. At the same time, the course wants to help students gain insight into the sound ***system*** of English, and to explain how it differs from French. By doing so, students in principle no longer have to study each and every word individually, but can resort to some general principles, much like in grammar. So, next to the goal of correct pronunciation, the course also aims at some meta-linguistic insights.

When it comes to the practical aspects of pronunciation, it can be reiterated here that continuous practice, and even plain drilling, is essential to automatize correct production leading to an acceptable degree of fluency. The written exercises presented in the exercise compendium will be helpful to think about certain issues or to further practice elements explained in the text. Clearly, good practice goes far beyond the exercise compendium which only presents a selection of exercises. The lab-exercises offered as part of your curriculum are clearly an indispensable complement to this course, giving students the opportunity to deepen their insights into issues described in this course but also to further automate their pronunciation skills. As a whole, the lab sessions will function as a preparation for the final oral exam(s). (Remember that presence and participation in the lab-classes and classes for "comprehension/expression orale" will be taken into account at the final evaluation.) Moreover, in addition to the exercises provided in the exercise compendium and those offered in the lab sessions, students are strongly recommended to do additional exercises especially ear training and production drills, and to some extent transcription exercises. (Your teacher will surely be willing to correct any extra transcription exercise that you may do.) The CRL (*Centre de Roussources des Langues*) is where you find plenty of material to help you improve your pronunciation of English; make good use of that!

As said, the way to correct pronunciation is not heavy or painful, but is one which does require some perseverance and patience. It is hoped that this course succeeds in showing you the right way. For those who still feel it *is* a pain, it may be helpful to remember this slogan (which, of course, is not more than just that):

‖ ðəz ˈnəʊ ˈgeɪn wɪðˈaʊt ˈpeɪn ‖
‖ ðə ˈhaɪə ðə ˈpeɪn | ðə ˈhaɪə ðə ˈgeɪn ‖

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CHAPTER 1: WHAT IS PHONETICS?

1.1.Main branches in phonetics

There are different branches in phonetics. ***Acoustic phonetics*** is concerned with the physical properties of the sound waves produced when people speak (as can be measured by special equipment), such as wave forms, frequency, or actual loudness. ***Auditory phonetics***, on the other hand, takes the auditive perception as its vantage point. These two branches of phonetics are generally not immediately relevant as object of study for the foreign language learner.

The present course situates itself within the realm of articulatory phonetics, that is, the study of how sounds are actually produced by the organs of speech (see below). Without doubt, these articulatory descriptions are helpful to the foreign learners enabling them to adjust their pronunciation.

Phonology or ***phonemics***, is that part of linguistics which considers the ***linguistic structure*** of sound sequences. Its basic building blocks are ***phonemes***, which are traditionally defined as "the smallest contrastive linguistic unit which may bring about a change of meaning" (Gimson 1980:49).[2] For example, the words *beat* and *bit* are semantically distinct and the difference between the words resides in the different vowels, /iː/ versus /ɪ/. The two elements are called phonemes, and the two words form a ***minimal pair***, an opposition of two words showing the existence of these two phonemes. In order for a set of words to form a minimal pair, they may differ in one phoneme only. For example, *beat* and *bin* do not form minimal pair, since in addition to the vowel also the final consonant is different. Clearly, phonemes differ from language to language. French, for instance, has only one high unrounded front vowel, /i/ as in *disque*, whereas English has two, as shown earlier, /ɪ/ and /iː/. Failure to distinguish between the two often results in plain misunderstanding.

Phonemes are abstract or rather, functional units, much like other linguistic units like sentences, clauses, or subjects. They cannot, in fact, be pronounced. Within the system of each language, each of the phonemes has its own typical set of characteristics that distinguish it from all other phonemes of that language; hence the term ***distinctive features*** to refer to those set. Sometimes one such feature is sufficient to distinguish two phonemes, but mostly more than one feature is needed. Moreover, in addition to these phonemic features, the phonemes of a language may display secondary, or ***sub-phonemic***, characteristics as well.

Consider for example the pronunciation of the phoneme /p/ in *pin* and *nip*. In English (unlike in French or Dutch, for instance), the realization of /p/ is not identical in these two words, because for *pin*, /p/ is aspirated at the onset of the stressed syllable. In other words, after the plosion of the /p/ one hears an aspirated /ʰ/. Aspiration does not occur at the end of a word (or after an /s/, as in *spin*). The two realizations of /p/ in *pin* and *nip*/*spin* are thus quite different and the difference can be represented as [pʰ] versus [p]. However, given that the context determines the two different

[2] In recent years, the notion of phoneme as defined by Gimson (among other basically structuralist oriented linguists) has been challenged. These theoretical discussion clearly exceed the scope of this course, and the notion of phoneme is useful for didactic purposes.

realisations (we can write a rule for this), and that there is no change of meaning, the two variants are not considered two different phonemes, but different ***allophones*** of the phoneme /p/. The symbol /p/ that we use thus represents the phoneme, an abstraction from the actual pronunciations [pʰ] and [p]. The latter two are ***allophonic variations*** fully determined and predictable by the context. The two allophones are in ***complementary distribution***, which means that they are mutually exclusive: the first cannot occur in the context of the second, and vice versa. Or as Gimson formulates it, there cannot be "two realizations of the same phoneme which have a markedly different phonetic quality occurring in the same situation" (1980:52).

Some of the allophonic variation in a language is largely automatic. For instance, the pronunciation of /k/ in *kick* and *cool* is not exactly the same: when saying the initial consonant of *kick*, the tongue will be more towards the front than when saying *cool*. This difference, usually inaudible to the human ear, is an automatic adjustment to the vowel that follows /k/; /iː/ is a front vowel, and the more fronted realization of the /k/ anticipates that pronunciation; /ʊ/ on the other hand is a back vowel, so the pronunciation of /k/ will be more to the back as well. Other types of allophonic variation are less automatic (and thus often more problematic to non-native speakers), such as the aspiration described above or the distinction between clear [l] and dark or velarized [ɫ] (see Chapter 5, section 5.2.5., p. 33). This does not mean, however, that one can simply ignore the latter type of variation, since for the English speaker; it is a crucial element to distinguish different words.

In this course, we will follow the convention of using slashes / / to mark phonemes and square brackets [ ] to indicate allophones. Essentially, the former indicate that you are dealing with a phonemic representation; the latter, with a phonetic one.

Allophonic variation should not be confused with ***free variation*** which does not function to distinguish the two utterances as different words and which is not linked to specific sound contexts. For example, when a speaker repeats a word, e.g., *house*, s/he may produce two slightly different pronunciations of, say, the diphthong /aʊ/. Speakers will generally ignore this (if they pic kit up at all) and consider it two realisations of the same thing. Another example of free variation is that no two speakers actually speak the same, because of the different anatomical shape of their speech organs (which allows you to recognize people by voice). On a wider scale, people may differ collectively in their realisation of certain phonemes; such accumulation of free variants within a group gives this group a regional or social "accent". This course will not be concerned with free variation, but will restrict itself to the description of the phonemic and/or sub-phonemic features that distinguish the different phonemes of (standard) English.

The issue of phonemes and allophones is much more complicated than we can afford to elaborate here. Nevertheless, the short description offered here should suffice to master the essential concepts underlying the distinction. The following two comparisons from different domains might be helpful to further clarify the distinction, even if the comparisons are only partially correct.

The first is to compare the distinctions with those of the regular spelling alphabet. The letter < s > can be realised in two different forms, depending on the context: at the beginning of a sentence or proper name, we use a capital < S >, whereas in other contexts we use <*s*>. This would be comparable to allophonic variation. Moreover, people differ greatly in the way in which they

write these two "allographs"; some may have printed letters < S, s >, others use script forms like these < 𝒮, 𝓈 >. This would be free variation. While different, they are still all regarded as representing the letters < S > and < s >. Notice that we generally get (quite) upset when people do not respect the conventions for capitalisation (just as not respecting allophonic variation would be quite disturbing), but that we do not really care whether people use the printed or the script variant, but merely see that as two realisations of the same thin, just as we feel about free variation in speech.

Roach (1991) mentions another interesting comparison, comparing of the phonemic system to a chess game or a deck of cards. Both have a fixed number of objects, which cannot be changed. However, their actual shapes can vary, as long as they are recognized as such: a pawn should be recognized as a pawn, which also entails certain moves that it can or cannot do, and a king of spades should be recognizable as such, regardless of what he actually looks like.

1.2. The representation of phonemes

The careful reader will have noted that special symbols are used to represent phonemes. Indeed, the regular spelling of words leads to problems when talking about pronunciation, as one particular phoneme may be spelt in various ways. Consider, for example, the underlined sounds in words such as *pen*, *head*, *any*, *leisure*, *bury*, *friend*, *says*, *said* and *jeopardy*; although the spelling is in each case different, the sound is the same, viz. /e/. Then again, one spelling may lead to different pronunciations, as illustrated by words as *pen*, *these*, *clerk*, *here*, or *pretty*. For all these words, the grapheme < e > corresponds to a different vowel sound, viz. /e, iː, ɑː, ɪə, ɪ/. (By convention, angled brackets < > are used to mark orthography.) For the few cases mentioned here, the situation can be schematically represented as follows.

spelling		phoneme	spelling		phoneme
<*e*>					
<*ea*>					
<*a*>					/e/
<*ei*>					/iː/
<*u*>	⇨	/e/	<*e*>	⇨	/ɑː/
<*ie*>					/ɪə/
<*ay*>					/ɪ/
<*ai*>					
<*eo*>					

In order to be able to talk about sounds and to remedy the one-to-many mappings (in either direction), then, it is necessary to dispense with the ambiguities inherent in spelling and to come up with a representation that unequivocally maps a particular sound to a particular representation. Thus, people have developed a representation system comprising conventionalized symbols which has become known under the abbreviation IPA, which stands for *International Phonetic Alphabet*. Included in this alphabet are not only letter-like symbols (usually representing phonemes), but also diacritical marks to indicate stress placement, intonation, nasalization, voicing, etc. (see Roach 1991:40-41 for a full overview of the IPA symbols).

Although students embarking on phonetics may at first fail to see the relevance of such a new alphabet, it is imperative that they master the basic symbols early in the course. Knowledge of these symbols is not the aim of this course in and by itself, but it is an indispensable tool to explain and understand the characteristics of English pronunciation. A clear advantage is that it allows the students to look up the pronunciation of a word in a dictionary. The dictionaries to be used are the latest editions of Jones' *English Pronouncing Dictionary*, 17th ed. (Cambridge University Press) or Well's *Longman Pronunciation Dictionary* (Pearson education, 2nd ed. 2000). For the students' convenience, the list of basic symbols is given in the following table; the example words in the list may help you in memorizing the match between symbol and phoneme.

vocalic sounds				**consonants**			
pure vowels		**diphthongs**		**plosives**		**fricatives**	
i:	as in *bee*	əʊ	as in *boat*	p	as in *pipe*	f	as in *face*
ɪ	as in *bid*	aʊ	as in *bough*	b	as in *barb*	v	as in *verve*
e	as in *bed*	eɪ	as in *bay*	t	as in *tight*	s	as in *cease*
æ	as in *bad*	aɪ	as in *buy*	d	as in *deed*	z	as in *zoos*
ʌ	as in *bud*	ɔɪ	as in *boy*	k	as in *kick*	θ	as in *third*
ɑ:	as in *bard*	ɪə	as in *beer*	g	as in *gag*	ð	as in *other*
ɒ	as in *bob*	eə	as in *bear*			ʃ	as in *ship*
ɔ:	as in *board*	ʊə	as in *pure*		**nasals**	ʒ	as in *measure*
ʊ	as in *book*			m	as in *mime*	h	as in *hand*
u:	as in *boot*			n	as in *nine*		
ɜ:	as in *bird*			ŋ	as in *sing*		**affricates**
ə	as in *banana*					tʃ	as in *church*
					approximants	dʒ	as in *judge*
basic diacritics				r	as in *rear*		
ˈ	primary stress			w	as in *west*		**lateral**
ˌ	secondary stress			j	as in *yes*	l	as in *lolly*

Table 1: Overview of basic phonetic symbols for English

In Lilly & Viel (1998a,b) the symbol /e/ is replaced by /ɛ/ which makes that three of their symbols depart from IPA, i.e. /ɛ, ɛɪ, ɛə/. While they have pedagogic reasons for doing so, we will use the standard IPA set throughout this course, and students are recommended to do so as well.

The transcription that we will be using is called a broad transcription, which means that it abstracts away from many allophonic variations (e.g., it does not indicate aspiration, devoicing, syllabification of consonants, assimilation, etc.). In this way, the transcriptions are kept relatively transparent and easy to master, once you have the basics under control. However, we do transcribe the different variants of the *–s* or *–ed* morphemes (see below) as well as some other standard allophonic variations. So our transcriptions are neither the pure underlying phonological form nor a full-fledged representation of contextualised sound.

1.3.A note on word stress

In general, every word in English contains a syllable that is stressed. This means that this particular syllable is more prominent than the others. This prominence is mainly due to it being louder and said on a higher tone. In addition, some syllables in polysyllabic words may have a secondary prominence, leading to secondary word stress. In other words, the prominence due to stress is gradient.

English word stress is often a major stumbling block for non-native speakers. Underlying this difficulty is the fact that in English word stress is "free but fixed". It is free in the sense that it is not the same for every word, unlike French where stress always falls on the last syllable of a phrase. Taking three-syllable words as an example, stress (indicated by a small straight hanging line ˈ preceding the stressed syllable) falls on the first syllable in ˈ*yesterday*, on the second in *ac*ˈ*ceptable*, and on the third in *ciga*ˈ*rette*. On the other hand, word stress in English is fixed, as in general, there is no variation of stress placement in one and the same word (although this may happen when different syntactic categories are involved or different meanings). It should be emphasized, however, that word stress does follow some general rules. In general, this course will not be much concerned with an elaborated analysis of all these stress rules, but some basic principles will be dealt with in Chapter 3, as stress is a crucial factor in correct pronunciation. In this course, primary stress is indicated for each word. It is advisable that you study the stress placement with the transcription.

1.4.Varieties of English

A final note concerns the varieties of English occurring within the English speaking community. As in most language communities, there is considerable variation within the English community as to how people speak. Someone from the North of England has a different accent than someone from Scotland or someone from London. In addition to such "country internal" differences, standard American, standard Australian and standard British English also differ considerably from each other. Obviously, any of those authentic varieties of English is acceptable, but for practical purposes this course will use as its model the British non-localised variety, which is generally called *RP* (*received pronunciation*). Some people may speak of *Oxford English*, *Queen's English* or BBC English, but we will not use these terms here.

What should be avoided at all costs is blending different varieties. Quite often students have a mixed British-American pronunciation. (French speakers, for instance, often selectively follow the American pronunciation of words such as *ask* and *plant* with /æ/ instead of /ɑː/ or *home* with /oʊ/ instead of /əʊ/). Such mixture is strongly discouraged. Of course, there is nothing against you using a variety different from RP as long as you are consistent. But if you have no regionally coloured background, you might as well opt for RP, the reference guide to which are the dictionaries mentioned earlier.

CHAPTER 2. THE PRODUCTION OF SPEECH

2.1. Voice or phonation

Before we can accurately describe the pronunciation of English, we should first consider what physiological processes underlie the production of speech itself. The basic principle of the human speech production is relatively straightforward. When people speak, they breathe out air from the lungs (hence the term ***egressive pulmonic airstream***). Yet there is more to speech than merely breathing out. On its way out, the egressive airstream passes through the larynx, in plain English sometimes called *Adam's apple*, which is a cartilage structure in the neck and which moves up and down when you swallow. Figure 1 presents a simplified side-view of the larynx.

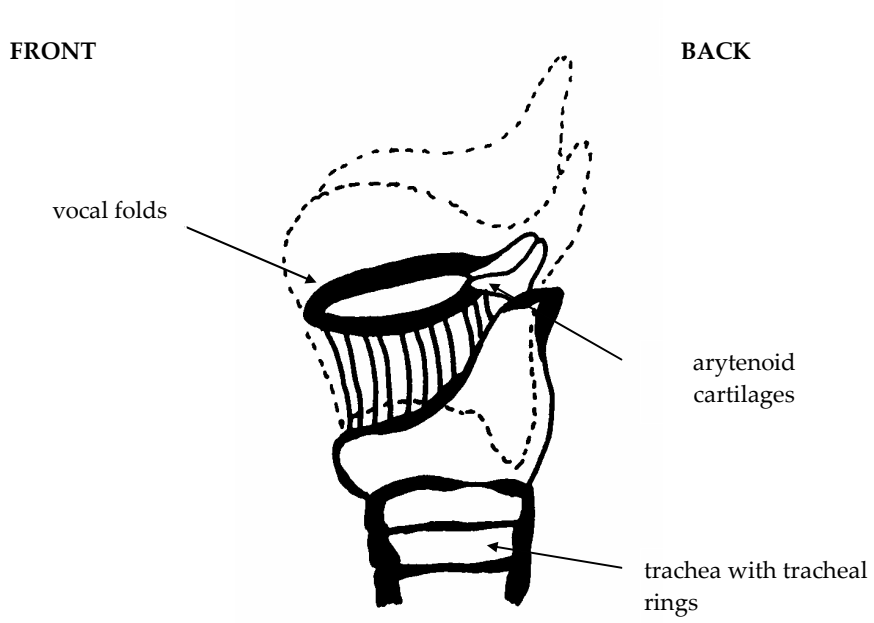
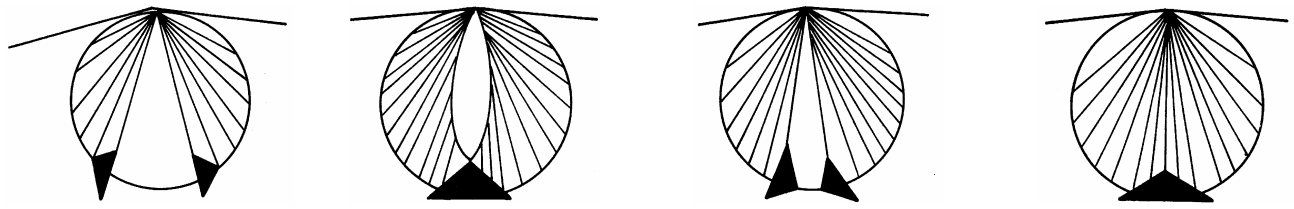


Fig. 1: Side-view of the larynx

The larynx in fact serves as a protection box for two thin muscular tissues, called the ***vocal folds*** (some people also call them ***vocal cords***). The vocal folds are firmly attached to the front of the larynx, and at the back, they are attached to the arytenoid cartilages, two small bone-like structures. These can move and the vocal folds move with them and can thus be firmly together or wide apart. As such they serve as an opening or closing valve, and the opening they control is called the ***glottis***. This reveals the original function of the vocal folds, viz. to close off the windpipe to avoid unbreathable substances (such as food) entering it. Mostly, however, the vocal folds are somewhat apart (the glottis is open) to allow normal breathing. Figure 2 presents a simplified view of the glottis (viewed from above) and the different positions of the vocal folds.



(a) breathing and voiceless sounds (b) voiced sounds (c) glottal fricative /h/ (d) glottal stop /ʔ/

Fig. 2: The various positions of the vocal folds

The first diagram shows the position for normal breathing. Humans use the vocal folds also for the production of a special type of sound, which is known as *voice*. When the vocal folds are loosely held together (Fig. 2,b) and air coming from the lungs passes them, they start vibrating which produces a humming sound, called ***phonation*** or simply ***voice***. (It is in fact similar to what you can do when you hold a thin paper (or a leaf of grass) between your two thumbs and blow to make the paper or the leaf vibrate, producing a sharp sound.) When you hold your finger on the larynx when saying the English word *bee*, you will feel the vibration of the vocal folds. You will, in order words, feel the *voiced* character of the utterance. However, not all sounds in English are voiced (this is true for most languages). When you imitate a snake and say a long *ssss*, there is no voice at all, because the vocal folds do not vibrate. In English, the opposition between voiced and voiceless sounds is systematic:

- some sounds are ***always*** voiced (all vocalic sounds),
- some are ***never*** voiced (such as *p*, *t*, or *k*, hence they are *voiceless*),
- some are ***sometimes*** voiced (such as *b*, *d*, or *g*; hence they are *voiced*).

The presence or absence of voice depends on whether or not the vocal folds vibrate. When voiceless sounds are produced, the glottis is open, just like for normal breathing (cf. Fig. 2,a). Sometimes, the glottis is half open (Fig. 2,c) and the air passes through with audible friction. This is the case for /h/, a sound which is quite frequent in English and often poses difficulties for French speakers. Fig. 2,d shows the vocal cords tightly closed. This is the starting position for a special sound occurring frequently in English, viz. the glottal stop. The obstruction caused by the closed vocal stops is suddenly removed and one hears a plosive sound (like p, b and t which are also plosives). Foreign learners of English should not worry (too much) about this sound, but attention should be drawn to its existence, given that it is spreading rapidly in modern RP.

2.2. *Articulation*

The story of speech obviously involves more than just the absence or presence of voice. For instance, both /p/ and /s/ are voiceless, yet they are quite different sounds and the same holds for voiced /g/ and /v/. Consequently, there must be other features that distinguish sounds from one another. What further differentiates sounds is determined by what happens *after* the air has passed through the larynx (regardless of whether the vocal folds vibrate or not). For example, while the sounds /p/ and /b/ differ as far as voice is concerned, they have a striking element in common, as for both sounds the lips are initially firmly closed, preventing the air from escaping

through the mouth, and in a second stage, the obstruction is suddenly removed and the air escapes with some noise. For /f/ and /v/, on the other hand, the upper teeth make contact with the lower lip and the air moves through this obstruction with friction. Friction also occurs with the production of the <*th*> in *think* and *father* yet this friction differs in quality from that of /f/ and /v/, because the place of the obstruction is different (the tip of the tongue makes contact with the upper teeth). In other words, the lips, the teeth and the tongue play a crucial role in the difference between these consonants. In more technical terms, the difference is said to involve a difference of ***articulation*** and the organs involved are called the ***articulators***. The following diagram gives an overview of the most important organs of speech and particularly of the articulators.

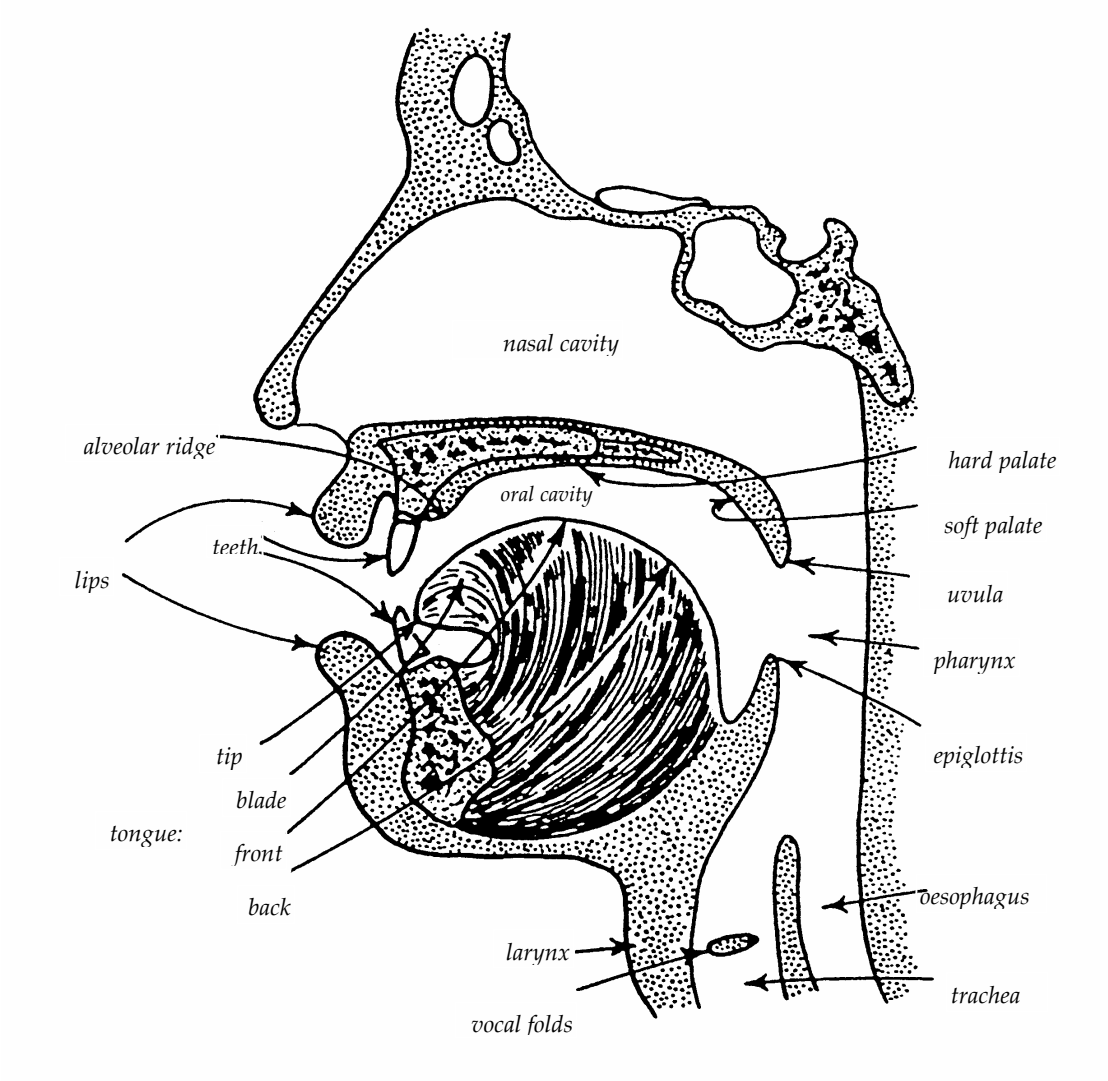


Fig. 3: Organs of speech (Gimson 1980:11)

A last important remark concerns the uvula, the end of the soft palate. The uvula can move up and down and thus functions as a valve which opens or closes the nasal cavity. If the uvula is lowered, as in the diagram, the nasal cavity is open and air can escape through the nose. The result is a nasal sound, like the French nasal vowels in *blanc*, *bon*, *encre*, *brun*, *vin*. While English does not have any nasal vowels, it does have nasal consonants, viz. /n/, /m/ and /ŋ/ (as in *sing*). Nasal /m/ is in fact similar to p and b since both lips are closed, but since the nasal cavity is open, the air can freely escape. It is by observing similarities and differences such as these that

categories of sounds can be set up, distinguishing vocalic sounds from consonants and differentiating different types of consonants. Using such articulatory characteristics, Chapters 4 and 5 of this course provide a more elaborate description of English vowels and the consonants respectively. Before that, however, some issues of the English stress system are taken up.

CHAPTER 3: RHYTHM AND STRESS

3.1.Introduction

To arrive at speaking English fluently and "properly", the articulation of the individual vowels and consonants is clearly relevant, but at the same time, particular attention should be paid to stress patterns, both within the word and the phrase. The issue of stress in English is not an easy matter, certainly not for learners whose native language (e.g., French) does not have stress-based phenomena similar to those in English or other Germanic languages. The Swedish phonetician, Bosse Thorén, has observed (personal communication) that in most Germanic languages, the rhythmic and intonational patterns form the skeleton of an utterance, and the individual vowels and consonants are the cosmetics.[3] While too extreme and too simplistic, his claim can be insightful (as well as pedagogically sound) to help students realize the importance of stress and reduction, also for English.

The following description of stress in English is certainly not meant to trouble students with theoretical descriptions to be studied and subject for questioning at the exam. However, it is hoped that by giving a somewhat more elaborate description of the phenomenon, students come to understand how it functions. Such understanding will surely facilitate the automatic application of the "rules". At the same time, we hope to show that ***stress in English is not some sort of 'sauce' one pours over individual words but a core issue in the language's phonetic system***.

Experience has shown that the French accent of students is most outspoken, and often leads to problems in understanding, when the principles of stress (and, related to it, intonation) are not respected. Let us take, for example, a word like *comfortable*. French students, influenced by the French counterpart of this word, often mispronounce this word as */kɒmfɔːˈteɪbl/, whereas the correct pronunciation is in fact /ˈkʌmfətəbl/.[4] Quite a world apart. The incorrect pronunciation is not merely a matter of incorrect phonemes, as the phonemic mistakes (no vowel reduction to /ə/) are the logical result from applying an incorrect stress pattern.

Difference of stress (and the subsequent different vowel reduction) is often the only difference between two words. Consider a word as *rebel*: if it is used as a verb, the stress is on the second syllable (/rəˈbel/), whereas if it is a noun, the stress is on the first syllable (/ˈrebl/). Once again, worlds apart. There are many words that shift their stress pattern, and consequently their reductions, depending on the syntactic category. It will be readily understood that the English ear needs those patterns to reconstruct the sentences they hear.

Like with the proper articulation of vowels and consonants, stress placement is something that non-native speakers cannot afford to ignore but should study and practice extensively. Reading aloud polysyllabic words and sentences as well as listening carefully to stress patterns in authentic English will be very helpful. It cannot be overemphasized that this is an indispensable preparation for the oral exams.

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[3] In Swedish, the opposition between strong and reduced, as well as that between long versus short, is even more crucial than in English, since in addition to long and short vowels, it has long and short consonants as well.

[4] The * in front of the transcription means it is wrong; putting the *ə* in italics means that it is often dropped (leading to syllabic consonants here).

3.2. Stress-timed versus syllable-timed

It has often been observed in the literature that English and French are radically different in their rhythmic behaviour. As in music, the concept of rhythm as used here refers to the idea that there is a (relatively) regular beat in the sound stream. Clearly, the different beats need not all have the same prominence. Continuing the comparison with music, consider the example of a waltz, where there are three beats to one bar, but the first one is usually more prominent than the subsequent two (the dancers among you will know that this is also reflected in the dance-steps themselves) and you often see beginning dancers frantically counting ÓNE-two-three, ÓNE-two-three, etc. English is very much like this (but of course, with much more variation) in that each utterance has a rhythmical backbone, where certain syllables are more prominent than others. It has been suggested that in English these prominent syllables, called *stresses*, occur are relatively regular intervals. Hence, English is categorized as a stress-timed language. Of course, this timing is not rigid, like in the case of a drumming machine, as this would lead to very artificial speech. But there is some truth in it, in that English speakers *perceive* an utterance as having a regularly-timed rhythm of stressed syllables. Consider the following sentences:

> *Walk down the path to the end of the canal* (Roach 1991:120)
> *What is the difference between a sick elephant and a dead bee?* (Cruttenden 1986)

We can divide the sentences in different rhythmic units (called *feet*), consisting of ***one stressed syllable and all the following unstressed syllables up to, but not including the next stressed syllable***. The rhythmical structure of these sentences can thus be represented as follows (in the first row, the stressed syllable is indicated in bold face).

Foot 1	Foot 2	Foot 3	Foot 4	Foot 5	Foot 6
Walk	**down** the	**path** to the	**end** of the ca-	**nal**	
ˈwɔːk	ˈdaʊn ðə	ˈpɑːθ tə ðiː	ˈend əv ðə kə	ˈnæl	
What is the	**di**fference between ă	**sick**	**e**lephant and a	**dead**	**bee**
ˈwɒts ðə	ˈdɪfrəns bɪtwiːn ə	ˈsɪk	ˈeləfənt ənd ə	ˈded	ˈbiː

As can be observed, the number of syllables is not the same for all the feet. It would clearly be wrong to assume that all the feet have exactly the same duration and that all the stresses occur at the same interval. In the ***actual*** production of the second sentence for example, the fourth foot, containing 1 stressed and 4 unstressed syllables, will be longer than the fifth or the sixth foot, containing only one (stressed) syllable each. Nevertheless, these (single) stressed syllables will most likely be much longer than the stressed syllable in foot 4, creating the ***impression*** that the stresses come at more or less the same interval.

Important to see is that unstressed syllables are reduced. For example, the words *difference* and *elephant* have only one clear vowel, and the others are reduced to /ə/ or even disappear altogether. At other places, whole words are reduced. For example, *and* is not pronounced /ænd/ but /ənd/; the article *the* is not pronounced /ðiː/, but /ðə/ (in front of a consonant, ðə kəˈnæl) or /ðiː/ (in front of a vowel sound, ðiː ˈend); the article *a* is not pronounced /eɪ/ but /ə/. Whole word reduction is restricted to "grammar" words, such as prepositions, articles, determiners, pronouns,

or auxiliaries. Note that the latter reduction is often reflected in the spelling in a contracted form, e.g., *it's*, *'ll*, etc. (See section 3.5 for more on this issue.)

In short, unstressed vowels lose much of their original quality and virtually all reduce to the central vowel /ə/ ("schwa"), or to /ɪ/ or /ʊ/. In the above sentences, the symbol /i/ without length mark has been used. This is a relatively new convention that has been adopted by two renowned pronunciation dictionaries (i.e., Jones and Wells). Similarly, one may find the symbol /u/, e.g., transcribing *to* as /tu/. These symbols do not represent new phonemes, but indicate that the phonemic opposition between /iː/ and /ɪ/ is lost; in other words, there is a ***phonemic neutralisation*** for these vowels in open syllables. This also occurs in unstressed syllable of polysyllabic words, e.g., we get /ˈbɪzi/ and /ˈsɪti/, (instead of /ˈbɪzɪ/ and /ˈsɪtɪ/) and *do* /du/, the strong form being /duː/. This is in opposition with words ending in a stressed high vowel, e.g., addressee /ˌædrəˈsiː/ and *shampoo* /ˌʃæmˈpuː/, where we clearly have a long (tense) vowel. While this may seem a detail, students should observe that the two unstressed high vowels do tend be pronounced as something *in between* /iː/ and /ɪ/ and /uː/ and /ʊ/ (See also Fig. 8, p. 25; further discussion in Roach 1991:77-8).

While the above description of stress and reduction of vowels is a gross oversimplification of a quite complex reality, it is relevant to the foreign language learner, particularly if they have a romance language as their native language, which has a completely different rhythm system. In French, the rhythm does not vary so much over the different syllables, stressed or unstressed; the syllables are pronounced at roughly the same intervals with roughly the same prominence, except for the last syllable in a phrase. In essence, French has a phrase determined rhythm, which means that the last syllable of a phrase is always more prominent than the rest of the syllables (ignoring some possible variation here). This often leads to typical mistakes, e.g., */tiːˈtʃɜː/ or */teɪˈbɜːl/ instead of /ˈtiːtʃə/ and /ˈteɪbl/.

3.3.Stress as prominence

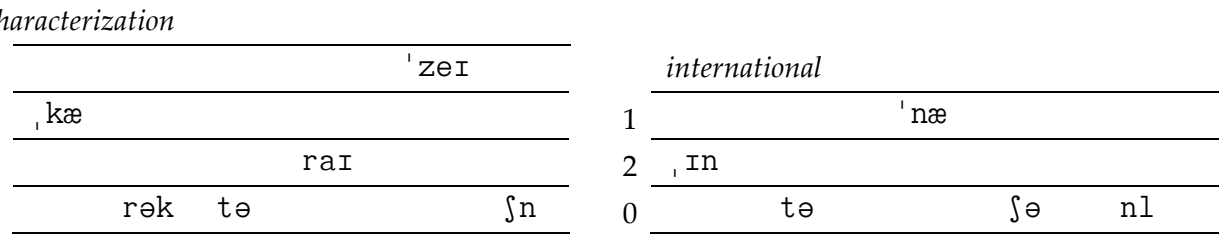
The phenomenon of stress is not easily described, but it may be helpful to remember that a stressed syllable is more prominent than others. Looking at it from the other end of the scale, you could say that ***un***stressed syllables are said more quickly and with less force than stressed syllables. The following characteristics may be helpful in understanding what the prominence of stressed syllables means:

(i) stressed syllables are ***louder***;
(ii) stressed syllables are ***longer***;
(iii) stressed syllables have a ***higher pitch*** (compared to the surrounding ones);
(iv) stressed syllables have a ***clear vowel***;

Clearly, stress is not defined by any of these characteristics individually, but involves the complex *combination* of, and *interaction* between them. In any case, timing seems to be a crucial issue here, as already explained in the previous section.

Another important nuancing to the above description is that stress is usually not an either-or affair; that is, there does not seem to be a black-and-white opposition between stress and no stress. Rather, there are often *degrees* of stress, where certain syllables in polysyllabic words may have secondary or even tertiary stress. For example, for the words *characterization*

/ˌkærəktə̩raɪˈzeɪʃn/ or *international* /ˌɪntəˈnæʃənl/, the primary stress is on the penultimate and the antepenultimate syllable respectively, (in both cases determined by the so-called strong suffix *-ion*, see section 3.4.1 below), but in each case the first syllable has a secondary stress as well. In the former word, moreover, the syllable *–ri–* also seems to have preserved some degree of stress, as it is not reduced to /ɪ/ but still has a diphthong /aɪ/. The relatively complex pattern can thus be represented as follows.[5]



Logically, the higher the syllable in the diagram, the more prominent it is in terms of stress. By convention, primary stress is indicated with a high stress mark (ˈ), whereas the secondary stress is indicated by a low stress mark (ˌ), tertiary stress is represented by a low dot (̩). Another handy convention is the use of numbers: 0 for unstressed syllables, 1 for primary stress, 2 for secondary stress, and 3 for tertiary stress. The stress pattern of *characterization* and *international* can thus also be represented as /200310/ and /20100/ respectively. Some other examples of stress patterns:

father	/10/	ˈfɑːðə
character	/100/	ˈkærəktə
difficulty	/1000/	ˈdɪfɪkəlti
sufficiency	/0100/	səˈfɪʃənsi
balloon	/01/	bəˈluːn
advocate	/102/ (verb)	ˈædvəˌkeɪt
	/100/ (noun)	ˈædvəkət

A similar analysis of variable prominence can be carried out for sentences, in which some of the stressed syllables will be more prominent than other stressed syllables. If you say a sentence like *We can wait for the bus*, /wi kən ˈweɪt fə ðə ˈbʌs/, the words *wait* and *bus* will be stressed (and the others typically reduced), but the stress on *bus* will be stronger than that on *wait*. As can be seen from the above analysis, the issue of stress is a complex one.Notice further that in the pronunciation dictionaries referred to earlier, there is no marking of the secondary accent after the primary stressed syllable in the dictionaries, even if there may be one.

First year students should at this point not worry too much about the theoretical and the technical aspects of stress. In principle it suffices to know (to hear!) ***which syllable has (primary) stress*** and ***which syllables are reduced***. Further, remember that stress has more to do with timing than with volume. Be sure to go over unstressed vowels more quickly than stressed ones.

[5] The use of this notation has been inspired by Williams-Lacroix (1995); there you will also find exercises building on this representation.

As to which syllable(s) is (are) reduced, the basic rule is the following: *any syllable that is not stressed is a potential candidate for reduction*. Conversely, any vowel that has some degree of stress (secondary or tertiary) will not be reduced (cf. *–ri–* in *characterization*). It should have become clear by now that this applies to individual words as well as to phrases and sentences.

As said in the first chapter (section 1.3), every English word has its own fixed stress pattern. This means that the stress pattern of a word in principle does not change when the word is part of phrase or a sentence. (Reduction being a notable exception here, of course.) The following sections give some general guidelines for primary word stress in English. After that, some guidelines for sentence stress (and reduction) will be given.

3.4. Word stress

On the word level, there are some general rules, some more strict than others. The easiest cases, first of all, are those where there is an ending that *predicts* where the stress will fall in the word, regardless of the number of syllables. These are called *strong suffixes* (although they may not be full-fledged "suffixes" in the morphological sense). Secondly, there are other endings that typically carry the stress themselves. While this is in a sense also a type of prediction, they are not considered strong suffixes (at least not in the tradition adhered to by Lilly & Viel 1998b). Notice that many suffixes (e.g., *–ed*, *-s*, *-able*, *-er*, etc.) do not have an effect on the stress placement; those are called *weak suffixes*. Finally, if there are no stress determining endings, the syllable structure of words comes into play. The present section takes up these various possibilities in turn.

3.4.1. Strong suffixes

-ic(s)	**...10**# : stress on preceding syllable[6]

ec'centric, *mo'saic*, *prag'matic*, *pho'netics*, *mathe'matics*, *re'public*, *ter'rific*, *acro'batic*, *he'roic*, *fa'natics*, *i'talic*, *'critic*, *'epic*, *do'mestic*, *materia'listic*

exceptions: *'Arabic*, *'catholic*, *a'rithmetic*, *'lunatic*, *'heretic*, *'politics*, *'rhetoric*, (*'arsonic*)

BUT: *ca'tholically*, *arith'metical*, *he'retical*, *rhe'torical*, *po'litical* (normalization by *-al*)
politicize (normalization by *–ize*)
Catholicism (normalization by *–ism*)

-(i/e)ty	**...100**#: stress on preceding syllable

'quality, *inge'nuity*, *tran'quillity*, *an'xiety*, *com'munity*, *in'sanity*, *ne'cessity*, *ma'jority*

Vb-ish	**verbs** ending in *–ish*: primary stress on the preceding syllable

em'bellish, *'polish*, *di'minish*, *a'bolish*

exception: *im'poverish*

[6] The symbol # indicates word or syllable boundary, the … indicates that there may (but need not) be other syllables preceding. Remember that you have to strip the word of any weak suffixes that may have been added to the word, e.g. *obviously* or *courteousness*.

i *e* *u*	V	(C)	**...10#**: stress on preceding syllable, (Guierre's "lion-rule")

-***ion*** / -***ian*** / -***ean***: *situ'ation*, *li'brarian*, *De'lorean*.
-***ious*** / -***eous*** / -***uous***: *'copious*, *'obvious*, *cou'rageous*, *'courteous*, *con'spicuous*, *am'biguous* etc.
-***iate*** / -***eate*** / -***uate***: *ap'preciate*, *'permeate*, *'graduate*
-***ience*** / -***uence***: *om'niscience*, *'influence*
-***iency*** / -***uency***: *pro'ficiency*, *con'stituence*
-***ient*** / -***uent***: *pro'ficient*, *con'stituent*
-***ial*** / -***ual***: *co'lonial*, *re'sidual*
-***ia*** / -***io***: *'Asia*, *mi'litia*, *'ratio*
-***iod*** / -***iot*** / -***iom***: *'period*, *'idiot*, *'idiom*
-***uar***: *'jaguar*
-***iar*** /-***ior***: *fa'miliar*, *in'ferior*, *su'perior*
-***ium***: *'calcium*

While the "lion-suffix" is quite productive and widespread, observe that there are exceptions, e.g., *spi'ritual*, *'television*, *mu'seum*, *Carib'bean*, *Euro'pean*, *Ma'ria*, *i'dea(l)*, *or'deal*. If you are in doubt, check your dictionary!

3.4.2. Stress carrying endings

These suffixes are often not as strict as the strong suffixes, and often one could also explain the stress placement in other ways (e.g., via prefix-based rules). Many of these words are of Romance origin. Nevertheless, this list can be helpful. Notice that for some endings or individual words, there may be more variation across the English speaking community. For example, RP *ciga'rette* vs. US *'cigarette* or RP *em'ployee* vs. US *emplo'yee*. So, some caution is warranted.

-*oon*: *ba'lloon*, *ba'boon*, *ra'coon*, etc.
-*oo*: *sham'poo*, *ta'ttoo*, *bam'boo*, *kanga'roo*, *ta'boo*
exc.: *'cuckoo*, *'baboo*, *'igloo*
-*ee*: *refu'gee*, *addre'ssee*, *absen'tee*, *emplo'yee*, *a'gree*, *de'cree*
exc: *'coffee*, *co'mmittee*, *'yankee*
-*eer*: *volun'teer*, *ca'reer*, *engi'neer*, *mountai'neer*, *racke'teer*, *profi'teer*, *auctio'neer*
-*ier*: *briga'dier*, *ca'shier*
-*ese*: *Chi'nese*, *Japa'nese*, *Vietna'mese*, *Leba'nese*, etc.
-*esque*: *pictu'resque*, *humo'resque*, *gro'tesque*, *bur'lesque*, etc.
-*ain*: *enter'tain*, *ex'plain*, *ascer'tain* (only for ***verbs***)

3.4.3. Weak suffixes

Weak suffixes are those that do not determine the stress placement; they themselves, moreover, do not carry stress and are mostly reduced. Some typical cases are the following.

ENDING	EXAMPLES	PRONUNCIATION
-*ed*:	*'kicked*, *'combed*, *'barred*, *'rubbed*, etc.	/d/, /t/, or /ɪd/ (see p. 27)
-*s*:	*'sings*, *'signs*, *'rubs*, *'kicks*, *'combs*, etc.	/z/, /s/, or /ɪz/ (see p. 27)

-ing:	*'singing, 'combing, 'rubbing*, etc.	/ɪŋ/
-er / or	*'maker,' opener,' doctor, 'visitor*	/ə(r)/
-ly:	*'happily, 'gladly, 'hurriedly*	/li/
-ble:	*'comfortable, 'soluble, re'sponsible*	/bl/
-ness:	*'happiness, 'business*, etc.	/nɪs/ or /nəs/
-less:	*'lawless, 'childless*, etc.	/lɪs/ or /ləs/
-ism:	*pra'gmaticism, 'nationalism*, etc.	/ɪzm/
-ful:	*'beautiful, plentiful*, etc.	/fl/ or (/ful/)
-ous	*'ominous, 'callous*	/əs/
-ment	*in'vestment, em'bodiment*	/mənt/

As Ginésy (1995) points out, some of the weak suffixes may nevertheless affect the stress placement (which is why he distinguishes between ***neutral*** and ***non-neutral weak suffixes***). For example, *-ous* is a weak suffix, and in some cases adding it to a word does not affect the stress placement, e.g., *'humour – 'humourous*, *'hazard - ˈhazardous*) but in other cases it does have an affect on the stress placement because it affects the number of syllables, e.g., *'moment* vs. *mo'mentous* (see Ginésy 1995: 96*ff* if you want to find out more on this).

3.4.4. Syllable governed stress placement

The following part gives some guidelines for the stress placement when there are no endings that in one way or another determine the stress. The issue is of course much more complex than we can afford to explain here, but it may nevertheless be helpful to the student to consider the following tendencies.

Two-syllables

Two-syllable words tend to have the stress on the first syllable /**10/**. So, we have *'kitchen*, *'foreign*, *'city*, *'father*, etc. There are some large groups of exceptions that have /01/.

1. words beginning with a Latin or Germanic prefix, (*re*)*'peat*, (*sub)'mit*, (*for*)*'get*, (*be)'hind*, (*be*)*'hold*, (*a*)*'live*, (*a*)*'bout*, … (Notice that these are not "true" prefixes, unlike for example *un-* in *unhappy*)
2. verbs ending in *–ate*: *cre'ate*, *de'bate*, *na'rrate*, *tran'slate*, … The *–ate* ending is pronounced /eɪt/

More than two syllables

Typically have the primary stress on the antepenultimate: /**…100**/. An important variation concerns the **verbs** ending in ***–ate***: *e'limi*ˌ*nate*, *'advo*ˌ*cate*, etc. which have the pattern /**…102**/; given the secondary stress, the *–ate* ending is pronounced /eɪt/ here. Observe that for ***nouns and adjectives*** in *–ate*, the normal /…100/-stress pattern applies and the ending is pronounced /**ət**/, e.g., *illiterate* /ɪ'lɪtərət/. The incorrect pronunciation of the *–ate* ending is a recurrent problem; make sure it does not happen to you!

3.5.Sentence stress

Recall from our earlier description of English as a stress-timed language that there will be stressed syllables and non-stressed ones, and that the latter will be fairly reduced. That is, these syllables will typically lose their clear vowel (and have /ə/, /ɪ/ or /ʊ/ instead) and they will be said faster. As was illustrated above, this clearly applies to the phrase level as well. Syllables that are typically

stressed are those occurring in *nouns*, *verbs*, *adjectives* and most *adverbs*. Words typically reduced are the monosyllabic grammar words, such as auxiliaries, determiners, and prepositions. The following list may be helpful. (Note: in some of the transcriptions you will see a superscript ʳ which indicates that an /r/ will be heard when the following sound is a vowel, e.g., *we were in the house* /wiwərɪnðəˈhaʊs/. In other cases, i.e. in front of a consonant or a pause, /r/ is silent in RP.)

	strong form	**weak form**	**comments**
Articles / Determiners			
a / an	eɪ / æn	ə / ən	
the	ðiː	ði / ðə	before Vo / before Co
some	sʌm	səm	
Auxiliaries			***not*** reduced: *may, might*
am	æm	əm	
is	ɪz	z / s	after voiced Co / after voiceless Co
are	ɑːʳ	əʳ	
were	wɜːʳ	wəʳ	
be	biː	bi	
been	biːn	bɪn	
being	biːɪŋ	biɪŋ	
have	hæv	(h)(ə)v	h not dropped after a pause
has	hæz	(h)(ə)z/s	h not dropped after a pause
had	hæd	(h)(ə)d	h not dropped after a pause
do	duː	də / du	
does	dʌz	dəz	
must	mʌst	məst	WF only if OBLIGATION
can	kæn	kən	
could	kʊd	kəd	
will	wɪl	l	
would	wʊd	wəd	
shall	ʃæl	ʃ(ə)l	
should	ʃʊd	ʃ(ə)d	
Prepositions			usually ***not*** reduced: *in, on, by, with*
of	ɒv	əv	
at	æt	ət	
for	fɔːʳ	fəʳ	
from	frɒm	frəm	
to	tuː	tu / tə	before Vo / before Co
Pronouns			
us	ʌs	əs	
them	ðem	ðəm	
their	ðeəʳ	ðəʳ	
her	hɜːʳ	(h)əʳ	h not dropped after a pause
you	juː	ju	
your	jɔːʳ	jəʳ	

	strong form	weak form	comments
me	mi:	mi	
he	hi:	(h)i	h not dropped after a pause
him	hɪm	(h)(ɪ)m	
Conjunctions			
and	ænd	(ə)n(d)	
but	bʌt	bət	
or	ɔ:^{r}	ə^{r}	
that	ðæt	ðət	
than	ðæn	ðən	
as	æz	əz	
who(m)	hu:(m)	hu(m)	only when relative conjunction
because	bɪˈkɒz	bəkəz	
Adverbs			
there	ðeə^{r}	ðə^{r}	in construction: *There is /are*

These words are typically reduced, but in some contexts they are not, even when they are not stressed. (So, use of strong form does not always mean the word is stressed!) The only partial reduction of *to* and *the*, for example, is motivated on phonetic grounds: a vowel does not (fully) reduce when it directly precedes another vowel:

to do	*to eat*	*the man*	*the infant*
tə du:	tu‿i:t	ðə mæn	ði‿ɪnfənt

When a grammar word is not directly followed by what it is connected to, it is not reduced, e.g.

- a preposition separated from its object:
  Who are you laughing <u>at</u>? I am laughing <u>at</u> you. æt / ət
  Who did you give your present <u>to</u>? tu:
- an auxiliary not followed by the main verb:
  Who <u>can</u> help me? I <u>can</u> for a while. kən / kæn
  Tom <u>was</u> asked before we <u>were</u>. wəz / wɜ:
- the auxiliary *to be* when not between the subject and the predicate:
  Where <u>is</u> Mary? I don't know where she <u>is</u> now. z / ɪz

Some of the words listed above have reduced forms only in particular meanings.

- *some* is only reduced when used as an ***indefinite quantifier***, but not when used as a pronoun or qualifier:
  reduced: *Can you buy me some stamps? Would you like some more?*
  non-reduced: *Some people like it. I read it in some book or other. Some cook you are! I can buy some.*
- *there* is only reduced when used in the construction *there is/are*:
  reduced: *There's someone at the door. There have been many problems lately.*
  non-reduced: *My car's over there.*

- *that* is only reduced when used as a ***relative or subordinating conjunction***, not when used as a demonstrative pronoun:
  reduced: *I think that you're right. The house that I bought is quite old.*
  non-reduced: *Get me that box over there, will you? That's wonderful news!*
- *who* is only reduced when used as a ***relative conjunction***, not when used as an interrogative pronoun:
  reduced: *The man who I saw yesterday is my boss.*
  non-reduced: *Who did you say it was?*
- *have* is only reduced when used as a ***tense auxiliary***:
  reduced: *I've been waiting for hours. I had been given some money.*
  non-reduced: *I had my car washed. You'll have to ask your father. Do you have any money?*

Notice that because of the reduction, some words may become homophonic (i.e. they sound the same), as in the following cases:

ə *The people <u>are</u> poor. He's <u>a</u> poor man.*
ər *Ten <u>or</u> under. Ten <u>are</u> under.*

CHAPTER 4: THE ENGLISH VOWELS

4.1.Introduction

A vowel can perhaps best be described as a voiced sound (the vocal folds vibrate) produced without any obstruction in the mouth and unaccompanied by any frictional noise. Especially with an eye to the last two features, vowels are fundamentally different from consonants which are produced with an obstruction in the mouth and are often accompanied by a frictional noise. In contrast to French, where nasalized vowels exist (as in *blanc*, *son*, *encre*, *brun*, v*in*), all English vowels are oral, i.e. the uvula is raised, making escape of air via the nose impossible.[7]

In the group of vowel sounds, a distinction should be made between *pure vowels* and *diphthongs*. *Pure vowels* consist of one sound only, *diphthongs* are glides from one vowel to another (as in *tile* (/ˈtaɪl/), *tale* (/ˈteɪl/), or *toil* (/ˈtɔɪl/). (See also the overview in Chapter 1, section 1.2). Unless the distinction is relevant, the term *vowel* will be used to refer to either pure vowels or diphthongs. Some phoneticians talk about a third group, *triphthongs*, which are made up of three elements, a closing diphthong followed by a /ə/, e.g. *lower* /ˈləʊəʳ/ or buyer /ˈbaɪəʳ/.

For the pure vowels, a distinction is to be made between *long* or *tense* vowels ("voyelles longues / tendues") and *short* or *lax* vowels ("voyelles brèves / relâchées"):

tense vowels:	iː, uː, ɜː, ɔː, ɑː
lax vowels:	ɪ, ʊ, e, ɒ, ʌ, æ

The distinction between lax and tense vowels is based on the amount of muscular energy needed: vowels produced with great muscular energy are tense, those produced rapidly and somewhat indistinctly are lax. Often, people use the terms *long* and *short* to distinguish between the two types of vowels. For the sake of convenience, this is acceptable, but it should be stressed that the actual length of the vowel sound is determined by the context in which it occurs (i.e., it is allophonic or sub-phonemic). The basic rule is that a vowel is longer at the end of words than when in front of a voiced consonant, where in turn it is longer than in front of a voiceless consonant. Another way of saying it, is that a vowel sound is shortened ("clipped") before voiceless (or *fortis*) consonants. Hence the common term *pre-fortis clipping* for this phenomenon (see the additional information in Wells' Pronunciation dictionary, under "clipping"). So, in terms of vowel length the following schema can be useful (> means "is longer than"):

V #	>	V + C_{voiced}	>	V + $C_{voiceless}$
core / corps /kɔː/	>	*cord* /kɔːd/	>	*caught / court* /kɔːt/
sea /siː/	>	*seed* /siːd/	>	*seat* /siːt/
high /haɪ/	>	*hide* /haɪd/	>	*height* /haɪt/

Table 2: Contextually determined vowel length

[7] From a purely acoustic point of view, this is not entirely correct as there will be some degree of nasalization of vowels when they occur in front of the nasal consonants /m, n, ŋ/, but this assimilation is subphonemic and automatic and of little interest in the context of this syllabus.

Learners of English should take care to arrive at variable vowel length following this general phonological tendency. The variation in length is quite considerable, even so —and this may come as a surprise— that the actual vowel duration of the so-called 'short' vowels in front of a voiced consonant is typically *longer* than that of the so-called 'long' vowels when they occur in front of voiceless consonants, e.g., the /ɪ/ in *bid* is actually longer than the /iː/ in *beat*. This is the reason why the terms *lax* and *tense* have been suggested as more appropriate. However, the terms *short* and *long* are still appropriate when comparing identical contexts. Finally, it can be observed that diphthongs and triphthongs are by definition tense.

4.2.Pure Vowels

How do the English vowels differ from each other from an articulatory point of view? In addition to the opposition between tense and lax, there are other features that are important, of which the position of the tongue and the position of the lips are the most important ones. As far as the position of the tongue is concerned, two axes are relevant: front-back (i.e. what part of the tongue is moving), and high-low (to what position is it moving). So, a particular vowel can be describes as [+front, +high], which means that the front part of the tongue is raised towards the hard palate, and it reaches a relatively high point. English has two such vowels, viz. /ɪ/ and /iː/, whereas French has only one (/i/ as in *disque*). If we add to this the other distinctive features, (±tense, ±spread), we can describe each English vowel in a unique way. If a vowel is said to be high, the tongue is in a relatively high position, such that the passage through which the air can escape is relatively small. Conversely, low vowels lead to a very open air passage.[8] Hence, the alternative terms ***close*** and ***open***, instead of ***high*** and ***low***. A vowel that is neither high/close nor low/open is a *mid* vowel; a vowel that is neither front nor back is said to be a ***central*** vowel.

A quite convenient way of representing the features [±front, ±high] is by the vowel diagram, as in Figure 4. This schematic diagram, which goes back to the well-known English phonetician Daniel Jones, is obtained by plotting the highest tong positions for the cardinal vowels and subsequently joining these points. As such, it is ***not*** really a schematization of the cross-cut of Fig. 3 in Chapter 2, but since the two sufficiently resemble each other, it does not hurt to think of the vowel diagram as the schematic representation of the oral cavity.

The vowels represented in Figure 4 are the cardinal vowels, which are in fact abstract entities, but are sufficiently close to French vowels. If you pronounce the French vowels in *disque*, *été*, *sec*, *patte* (/i, e, ɛ, a/) you will feel the front part of the tongue go down. Similarly, the back of the tongue will go from high to low for the series of the back vowels in *coup*, *beau*, *dogue*, *âne* (/u, o, ɔ, ɑ/).

As explained in the Legend to Figure 5, the position of the lips is represented by the type of dot used. In English, the only vowels pronounced with rounded lips are the back vowels /uː/, /ʊ/, /ɔː/, and /ɒ/. For the front vowels, the lips are slightly spread, and for the central vowels, the lips are in a neutral position. Not explicitly represented in the diagram are the features `tense` or `lax`, but they can be deduced from the symbols themselves, as the `ː` symbol identifies the vowel as tense.

[8] It is thus no coincidence that a doctor examining your throat will ask you to say /ɑː/ because the tongue will be in its lowest possible position.

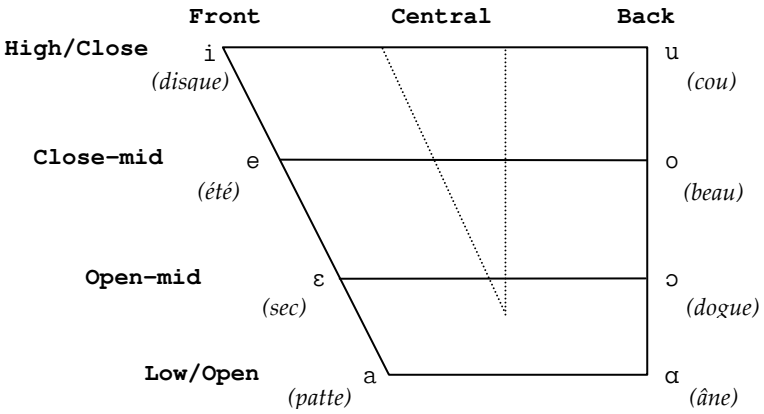


Fig. 4: The vowel diagram with the cardinal vowels

In contrast to French, English does not have such a nice and regular vowel diagram, as shown in Figure 5. For example, English /i:/ is not as high and not as front as the French vowel, and /u:/ not as high and back. Nevertheless, the symbols used /i, u/ are still the same, which some students might find confusing. It should, however, not be forgotten that the symbols, too, are an abstraction of a complex reality, and if we were to represent all the details, the representation would be far too complex to be useful.

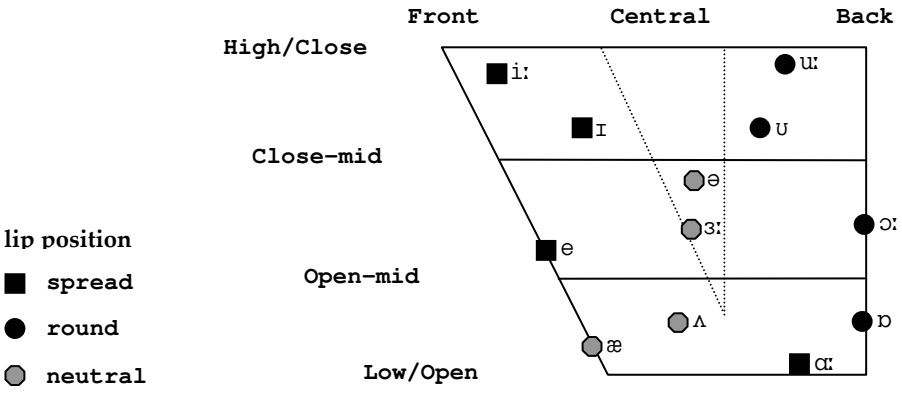


Fig. 5: The English vowel diagram

Some might say that such a vowel diagram is not be very effective in helping students to correct their pronunciation, but some crucial features can nevertheless be deduced, especially from the relative positions of the vowels. For instance, [æ] is clearly higher than cardinal /ɑ/ (French speakers should bear this in mind, as they often pronounce it as [ɑ]), yet is also considerably lower than /e/ (often a problem for speakers of Dutch, as they often conflate the two). A trick to arrive at a good pronunciation is to start saying an /ɛ/ and then slowly lowering your chin a bit which will give the resulting sound its low character. More of such advice can be found in Lilly & Viel 1998a (Chapter 1), which gives a description of the English vowels from a French point of view. In other words, it allows an auto-correction starting from the French vowels.

4.3.Diphthongs

A diphthong is a glide from one vowel to another without a break in between. Practising the pronunciation of diphthongs can at first best be done "slow motion", i.e. you start with the pronunciation of the first vowel and slowly glide to the second. Observe, however, that for certain diphthongs (e.g., /aɪ, aʊ/) the first element does not occur in isolation in English. Commonly, two groups of diphthongs are distinguished: those ending in /ɪ/ or /ʊ/, called ***closing diphthongs*** (because they end in a close vowel) and those ending in /ə/, called ***centring diphthongs*** (because they end in the central vowel /ə/). As with the vowels, diphthongs can be represented on the vowel diagram, as in Figure 6, where an arrow represents the movement from the first to the second element.

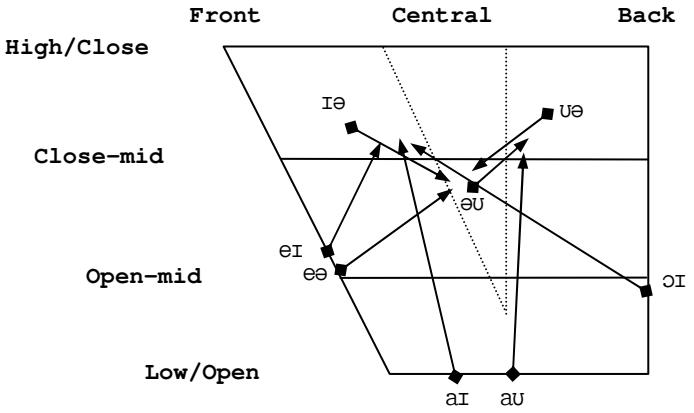


Fig. 6: The English diphthongs

Also here, we can refer to Lilly & Viel 1998a (Chapter 1) for further descriptions from a French point of view.

4.4.Triphthongs

As the name suggests, triphthongs are composed of three elements. In fact, a triphthong is a closing diphthong (/eɪ, aɪ, ɔɪ, aʊ, əʊ/ followed by the central vowel /ə/. This can be either as part of an inseparable word, like *fire* /ˈfaɪə / or *power* /ˈpaʊə /, or due to the addition of a suffix, as in *buyer* /ˈbaɪə /, *player* /ˈpleɪə /, *lower* /ˈləʊə /, etc.

As with diphthongs, this is not merely a juxtaposition of three vowels, but a glide starting from the first element, moving towards the second and ending in the third, ***without any break in between them***. Important is that the mid-element, /ʊ/ or /ɪ/, is only pronounced very lightly. Non-native speakers of English often mispronounce the triphthongs by overemphasizing the mid-vowel, sometimes even going as far as /w/ or /j/. This should be avoided. In fact, colloquial English often goes in the other direction, reducing the mid-vowel even to the extent of completely omitting it. *Fire* may thus be pronounced /ˈfaːə / and *greyer* as /ˈgreːə /. You should not imitate this reduction (many people still regard it as sloppy or typical of uneducated speech), but it is important that you are aware of it, in order to help you understand (rapidly) spoken, colloquial English. (For a more detailed discussion of the reduction of triphthongs, see Gimson 1980:139-142).

Also triphthongs can be represented on a vowel diagram (see Fig. 7 below), as a triple glide, starting from the same vowel as the closing diphthongs, going toward the mid-element (/ɪ/or /ʊ/), but usually not fully reaching that point, and ending in the central vowel /ə/.

For the sake of completeness, it can be added that not all scholars consider the triphthongs a separate set of phonemes, but see it as the juxtaposition of a closing diphthong and /ə/. Notice that following Wells 1991 also our overview of phonetic symbols (Table 1, p. 4), does not list the triphthongs as a separate category. Given the phonetic complexity, and especially the reduction of the middle vowel, it is worthwhile to give them some attention.

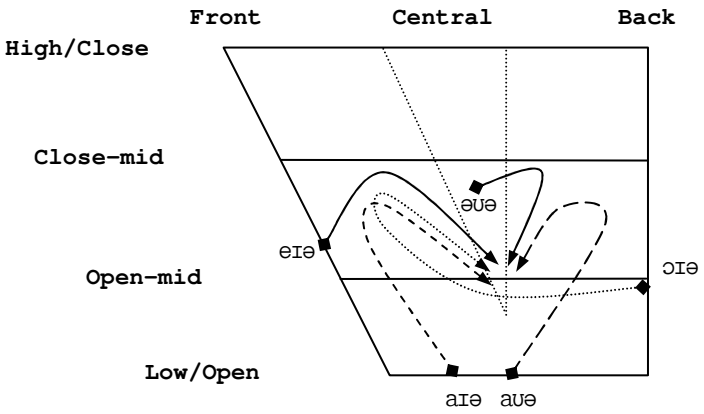


Fig. 7: The English triphthongs

4.5. Weak vowels

Using the vowel diagram, we can also visualize the more extended area of the weak vowels /i, u, ə/, as in Figure 8 below, taken from Wells' Dictionary. The /ə/ has some allophonic variation: it has a more open (lower) position when at the end of words: the two other weak vowels, /i/ and /u/ have already been discussed (see p. 12). The extended areas in the diagram cover the domains of the lax as well as the tense vowels, indicating the loss of the phonemic opposition between /iː/ vs. /ɪ/ and /uː/ vs. /ʊ/, respectively.

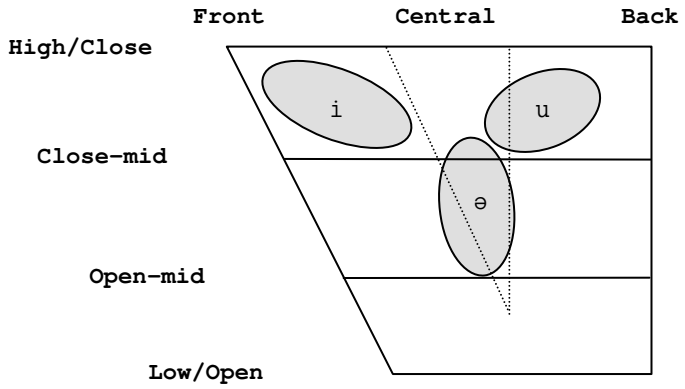


Fig. 8: The English weak vowels (Wells 2000:xvii)

CHAPTER 5: THE ENGLISH CONSONANTS

5.1.Classification of consonants

When the egressive air stream meets an obstruction in the mouth, the resulting sound is a consonant. Clearly, there are quite a number of different consonants in English, and their articulatory features hinge on a number of factors:

- the position of the uvula (leading to oral or nasal consonants)
- the presence or absence of voice (vibration of the vocal folds),
- the manner of articulation (i.e. the kind of obstruction: complete, partial, etc.)
- the place of obstruction (and thus the articulators involved)

In the following, we will briefly take up these factors in turn.

5.1.1. Uvula

The position of the uvula determines whether the consonant is nasal or not. English has three nasal consonants (m, n, ŋ) that arise because the uvula is lowered and the air can escape via the nose (and only via the nose since the oral passage is fully blocked).

5.1.2. Voice

The presence or absence of voice depends on whether or not the vocal folds vibrate. If they do, the result is a voiced consonant; if not, the consonant is voiceless. Many English consonants form pairs on this basis (e.g., p/b, t/d, s/z, ʃ/ʒ, etc.), but for some, the opposition does not apply. The nasals, the approximants (r, j, and w) and the lateral /l/ are commonly voiced. The fricative sound /h/ is voiceless. The opposition between voiced and voiceless consonants proves relevant in many ways. One important phenomenon, already explained in Chapter 2, section 4.1., is that it determines the length of the preceding vowel: a vowel is longer in front of a voiced consonant than in front of a voiceless one.

Vocalic sounds are of course always voiced and thus in this respect align with the voiced consonants.

An important nuance to the above description is that all voiced consonants lose their voiced character at the end of words. In other words, voiced consonants have a devoiced allophone (the variant is fully determined by the context). Still, they do not change to their voiceless counterpart: a devoiced b is *not* pronounced as a p, a devoiced z is ***not*** pronounced as a s, etc. The devoiced consonants remain relatively light. Provided we realize the existence of this allophone (which is fully predictable), we can continue our use of the term *voiced* consonants. For non-native students, this allophone is worth remembering, so as ***to avoid a heavily voiced consonant at the end of words***.

An area in which the ±voice opposition is quite relevant is that of inflectional endings such as –(E)S (verbal or nominal suffix) and -ED. The pronunciation of these endings is influenced by the final consonant of the stem to which they are attached, as explained in the following overview.

	-ED		example	transcription
after	voiceless consonants	t	*worked*, *skipped*	'wɜ:kt, 'skɪpt
after	voiced consonants vocalic sounds	d	*buzzed*, *gagged* *barred*, *towed*, *hired*	'bʌzd, 'gægd 'bɑ:d, 'təʊd, 'haɪəd
after	t, d	ɪd	*chatted*, *ended*	'tʃætɪd, 'endɪd

	-S		example	transcription
after	voiceless consonants	s	*works*, *skips*	'wɜ:ks, 'skɪps
after	voiced consonants vocalic sounds	z	*beds*, *gags* *bars*, *toes*, *hires*	'bedz, 'gægz 'bɑ:z, 'təʊz, 'haɪəz
after	hissing sounds s, z, ʃ, ʒ, tʃ dʒ	ɪz	*buzzes*, *catches*, *judges*, *boxes*	'bʌzɪz, 'kætʃɪz 'dʒʌdʒɪz, 'bɒksɪz

Table 3: -ED and -(E)S allomorphy

5.1.3. Manner of articulation

As to the manner of articulation, the most important type of obstructions made by the articulators are the following:

(1) a complete closure of the air passage, leading to ***plosives***: p, b, t, d, k, g, ʔ
(2) a narrowing of the air passage, leading to ***fricatives***: s, z, ʃ, ʒ, f, v, h
(3) a complete closure followed by a slow frictional release, leading to ***affricates***: tʃ, dʒ
(4) a partial closure not leading to friction, e.g., l (***lateral***) and j, w, r(***approximants***)

5.1.4. Place of articulation

Finally, English consonants are further differentiated on the basis of the place of articulation (i.e., the place where the obstruction is situated) and which articulators are involved. This leads to the following classification:

bilabial both lips (/p, b, m/)
labio-dental upper teeth articulate with lower lip (/f, v/)
dental tip of the tongue articulates with the upper teeth (/θ, ð/)
alveolar tip and blade of the tongue articulate with the alveolar ridge (/t, d, s, z, n, l/)
post-alveolar tip of the tongue articulates with the rear part of the alveolar ridge (/r/)
palato-alveolar the tip and/or the blade of the tongue articulates with the alveolar ridge while the front of the tongue articulates with the hard palate (/ʃ, ʒ, tʃ, dʒ/)
palatal the front of the tongue is raised towards the hard palate (/j/)
velar the back of the tongue articulates with the soft palate, (/k, g, ŋ/)
labio-velar the back of the tongue articulates with the soft palate and the lips are rounded (/w/)
glottal the vocal folds are narrowed (glottal fricative /h/) or completely closed (glottal stop /ʔ/)

Bringing together all these features of articulation, we can thus classify the English consonants as in the table below. Following the table there will be a brief description of some more relevant features of the English consonants.

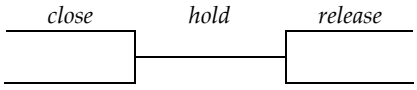
MANNER	PLACE									
	bilabial	**labio-dental**	**dental**	**alveolar**	**post-alveolar**	**palato-alveolar**	**palatal**	**velar**	**labio-velar**	**glottal**
plosive	p			t				k		
	b			d				g		
fricative		f	θ	s		ʃ				h
		v	ð	z		ʒ				
affricate						tʃ				
						dʒ				
lateral				l						
nasal	m			n				ŋ		
approximant					r		j		w	

Table 4: Articulatory classification of the English consonants

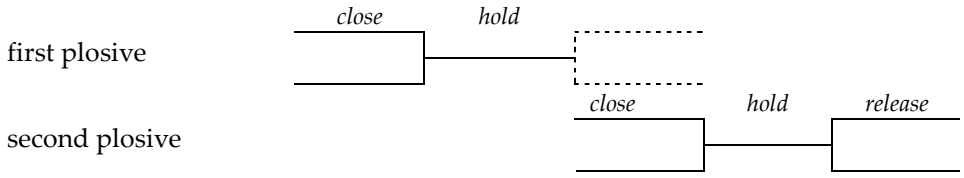
5.2.Further description

5.2.1. Plosives

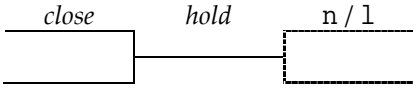
Plosives or stops are produced with a complete obstruction of the air passage. When this obstruction is removed abruptly, the compressed air escapes with audible plosion. As such, three stages can be distinguished, the closing stage during which the obstruction is formed, the hold stage, during which the air is compressed behind the obstruction (the vocal folds may or may not vibrate during this stage) and the release stage, when the obstruction is removed abruptly. Schematically this can be represented as follows.



There are, however, cases where the last stage, the release may be absent or diverted. First, there is no audible release when another plosive follows (e.g., *dokter* /ˈdɒktə/, *kept* /ˈkept/, *asked* /ˈɑːskt/, *black cat* /ˈblækˈkæt/); there is only audible release for the second plosive. In other words, there is no audible release for the first, but it is still formed resulting in a silence. This can be represented as follows:



A second case where plosion may be different is when a plosive is followed by nasal /n/ or lateral /l/. Instead of a removal of the obstruction, the air finds another escape route. In the case of ***nasal plosion*** (e.g., *garden* /gɑ:dn/ or *good night* /ˌgud'naɪt/), the oral obstruction is not removed but the uvula is lowered which allows the air to escape via the nose. In the case of ***lateral plosion*** (e.g., *people* /pi:pl/ or *bad light* /'bæd'laɪt/), the tongue is set into the position for pronouncing /l/ and only then is the obstruction removed. As a result, the air escapes via the two sides of the tongue, as for the regular pronunciation of /l/. In both cases, this means that the close stage of the plosive is not realized in its regular manner, but transferred either via the nasal consonant or via the pronunciation of the lateral. Schematically:



In both cases, there is no h-like or ə-like sound between the plosive and the nasal or lateral. The absence of a vowel sound in these syllables may be helpful for French students to avoid stressing the final syllable of words that have no stress on this syllable, e.g., *situation* /sɪtʃu'eɪʃn/. Notice that in these contexts, the nasal and the lateral consonants function as the core of the syllable, and hence they are said to be ***syllabic***.

Nasal or lateral plosion is sometimes obligatory, sometimes optional, and sometimes not common (check the dictionary if you are in doubt!). In Wells' Pronunciation Dictionary a superscript ᵊ indicates that the insertion of this vowel sound is not recommended, e.g. /'mɪdᵊl/; a *ə* in italics means that the dictionary recommends keeping the vowel sound, even if some speakers often omit it, e.g. *distant* /'dɪstənt/.

An important feature of the voiceless plosives /p, t, k/ is that they are ***aspirated*** when they occur at the beginning of a stressed syllable. More specifically, this means that there is a strong puff of breath, an h-like sound, between the release of the plosive and the following vowel. The actual pronunciation of words like *pin*, *tail*, *appeal* or *retain* is thus [pʰɪn], [tʰeɪl], [ə'pʰi:l], and [rɪ'tʰeɪn]. (Remember, however, that aspiration does not show up in the broad transcription that we use.) If /r, j, w, l/ follow the plosive, the aspiration takes the form of making these consonants ***voiceless fricatives***, as in *approve* ([ə'pru:v]), *play* (['pleɪ]), *twin* (['twɪn]), or *accuse* ([ə'kju:z]). Also, voiceless plosives are not aspirated if preceded by /s/, as in spear (['speə]), *stare* (['steə]), or *scare* (['skeə]). Voiceless plosives are usually unaspirated (or very slightly aspirated) at the beginning of unstressed syllables (e.g., *happy* (['hæpi], *lifted* (['lɪftɪd], or *today* ([tə'deɪ]). They are never aspirated at the end of a syllable, as in *dokter*, *ripe*, *wasp*. It should be stressed that aspiration of voiceless consonants differentiates them from the voiced plosives, which do not have aspiration. The notion of aspiration is quite important. Experiments have shown that if words such as *pit*, *Ted*, or *kill* are pronounced without aspiration, English listeners will understand them as [bɪt], [ded] and [gɪl].

A final comment concerns the glottal plosive /ʔ/, which occurs when the vocal folds are tightly closed and all of a sudden opened to allow the air to escape with a puff. This sound, a borrowing from the Cockney dialect, is becoming increasingly popular among young RP-speakers. It often occurs in the place of a regular plosive (mostly the /t/). So for example, for *Latin*, one may hear /ˈlæʔɪn/ instead of /ˈlætɪn/. Non-native students should not really worry about it, but may note its existence when listening to authentic English.

5.2.2. Fricatives

For fricatives, the obstacle narrows the air passage at some point to such an extent that the airstream passes through with friction. Unlike plosives, fricatives are *continuants* in that their pronunciation can be continued for as long as one has breath. Like plosives, however, fricatives may have nasal or lateral release, e.g., *vision* /ˈvɪʒn/. Recall that this means that the uvula (nasal) or sides of the tongue (lateral) are lowered *before* the obstruction that causes the fricatives is removed. Once, again, insertion of an h-like or ə-like sound between fricative and nasal or lateral is to be avoided.

One fricative that typically causes problems for French speakers is the glottal fricative /h/, not so much for its articulatory features, but for its distribution: French speakers typically drop it when it should be pronounced and pronounce it when it should not be pronounced. This is something that requires practice, both in listening and production. The general rule is: **if you spell an *h*, you pronounce it as /h/**. However, it is (exceptionally) is ***not*** pronounced in the following cases:

- *heir*, *honour*, *hour*, *honest* and their derivations
- *vehement*, *vehicle* (but pronounced in: *veh<u>i</u>cular*), *shepherd* (but pronounced in: *goat<u>h</u>erd* which marks the (still transparent) morpheme boundary), *forehead*, *shah*, *Sarah*
- after the prefix *ex-*: *exhaust*, *exhibit*, *exhort*, etc.
- in the cluster *wh* for some words: *which*, *wheel* (but in *who* and *whole* the *w* is silent and the *h* pronounced)
- in the suffix *-ham* in names: *Buckingham*, *Maugham*, *Birmingham*, *Durham*
- in the weak forms of *he*, *him*, *her*, *who, have, has* and *had* may be pronounced without the initial /h/, but this necessarily implies linking with the preceding word. If these words are preceded by a pause, the *h* is pronounced.

Another problem in the realm of fricatives is the pronunciation and distribution of the dentals /θ, ð/ which French speakers often substitute with /s, z/. Clearly, this is incorrect and leads to plain misunderstanding. Often there are minimal pairs differing solely in these phonemes, e.g., *sink/think*, *mouse/mouth*, *teething/teasing*, *breathe/breeze*. For a correct pronunciation of the dental fricatives, make sure that the tip of the tongue makes a light contact with the edge and inner surface of the upper teeth. A trick is to stick your tongue out a bit, between the upper and lower teeth. While this is somewhat exaggerated, it may be helpful as a starting point. Practice is indispensable.

As to the distribution of the two dentals, the following rules may be helpful.

(1)	in **grammar words always /ð/**: *the, this, these, that, those, than, they, them, themselves, though, thus, there, their, theirs,* (*thou, thy, thee, thine*), *(al)together, either, neither, with* [9] ***except***: *through, both, underneath, beneath* : /θ/
(2)	in **initial** and **final** position: **always /θ/**: *think, thigh, oath,* etc. ***except***: *to bequeath, to mouth, smooth, booth* : /ð/ the grammar words in (1)
(3)	in **medial** position **/θ/** in words of Greek and Latin origin, e.g., *method, author, anthem, athlete, cathedral, Arthur, ether* **/ð/** in Anglo-Saxon words, e.g., *father, brother, loathe, breathe, (n)either, weather, feather, gather* In medial position /ð/ is most frequent. Note that for verbs as *loathe* or *breathe* the spelling is taken as a criterion (cp. *breath* /ˈbreθ/ versus *breathe* /ˈbriːð/)

Table 5: Distribution of /θ/ and /ð/

The spelling *th* is pronounced /t/ in a limited number of words: *Thames, Theresa, Thailand, Thompson, Mathilda, thyme*.

5.2.3. Affricates

An affricate is a plosive followed by a homorganic fricative. More specifically, the release of the obstruction of the stop is not sudden but so slow that considerable friction occurs approximately at the same place where the plosive is articulated (hence the term ***homorganic***). The two affricates in English are /tʃ/ and /dʒ/, which are palato-alveolar. As the term suggests, compared to regular /t/ and /d/ (which are alveolar), the articulation of the stop is slightly more towards the hard palate, under influence of the palatal fricatives /ʃ/ and /ʒ/. In general, the pronunciation of the affricates does not pose any problem, but their spelling may be problematic, especially <*ch*> which has other pronunciations as well.

5.2.4. Nasals

The most important feature of the nasal consonants in English is that the uvula is lowered so that the air can escape via the nose. For all three nasals, there is a complete obstruction in the mouth, and consequently no air can escape through the oral cavity. In fact, the three nasals find their articulatory equivalent in the plosives: for /m/ the obstruction is like that of /p, b/ (hence ***bilabial***), for /n/ the tongue is in the same position as for /t, d/ (hence ***alveolar***), for /ŋ/ it is in the same position as for /k, g/ (hence *velar*). The nasals are almost invariably voiced, and behave like the voiced consonants when it comes to the length of the preceding vowel: the vowels in *iron* /ˈaɪən/, *foam* /ˈfəʊm/ and *song* /ˈsɒŋ/ are longer than in front of voiceless consonants as in *Hyatt* /ˈhaɪət/, *toast* /ˈtəʊst/ and *sot* /ˈsɒt/. Recall that when /n/ follows a consonant it is mostly syllabic, giving rise to ***nasal plosion***, when the pronunciation of /n/ coincides with the release of the preceding consonant.

[9] Notice that in American English *with* is pronounced with voiceless /θ/.

Another problem is the pronunciation of the graphemically complex <*ng*>. While there are variants of English where this digraph is always pronounced /ŋg/, that is not the case for standard RP: sometimes it is pronounced /ŋg/, sometimes /ŋ/. Producing the latter sound, i.e., a velar nasal ***without*** the plosive g, seems to be difficult for French speakers and is something that will mostly require considerable practice. As to the distribution of the two pronunciations in RP, here are the rules of thumb.

(1) <*ng*> is always pronounced /ŋ/ at the end of words, e.g., w*rong*, *sing*, *long*, *singing*, *during*

(2) in medial position:

- if the word is not morphologically complex (i.e., when you cannot divide the word into meaningful subparts), the pronunciation is /ŋg/ e.g., *anger*, *finger*, *single*, *nightingale*, etc. (you cannot think of *anger* as the combination of *ang+er*)
- if the word is morphologically complex, and *ng* occurs at the morpheme boundary, the pronunciation is /ŋ/.

  e.g., *singer* /ˈsɪŋəʳ/, *longing* /ˈlɒŋɪŋ/, *banger* /ˈbæŋəʳ/ (all of these words have the suffix *-er*: *sing+er*, *long+er*, *bang+er*)

  This rule does not apply when the morpheme in question is that of the comparative or the superlative,

  e.g., *longer* /ˈlɒŋgəʳ/, *longest* /ˈlɒŋgɪst/

5.2.5. Lateral

The lateral /l/ does not pose many problems for French speakers. The English /l/ is articulated with the tip of the tongue against the centre of the alveolar ridge, but with the two sides of the tongue lowered a bit so that the air can escape laterally.

An important allophonic difference between English and French /l/ is that in French this consonant is always a light or clear [l], whereas in English this ***clear*** [l] only occurs in front of a vowel or a /j/ as in *leave*, *plough*, *belly*, or *kill you*. In final position and in front of a consonant, the English /l/ is much darker with an ʊ-like sound preceding it, because the back of the tongue is raised towards the soft palate (the velum). Hence, this allophone is often called ***dark*** or ***velarized*** [l]. So, for words such as *veil*, *apple*, or *silver*, the actual pronunciation is more accurately rendered as [ˈveɪɫ], [ˈæpɫ], [ˈsɪɫvəʳ]. If students neglect making the distinction between clear [l] and dark [ɫ] they may not always be misunderstood, but often they will and will definitely be recognised as speaking with a foreign (French) accent. Remember that since the distinction is allophonic (determined by the context in which the phoneme occurs), it does not show up in the broad phonemic transcriptions as we do them.

Like the nasals, /l/ is mostly voiced and behaves much like a voiced consonant. However, as said, it becomes a voiceless fricative after stressed voiceless plosives. Recall that when /l/ follows a consonant, it is often syllabic, a phenomenon referred to as ***lateral plosion***, e.g., /ˈæpl/.

5.2.6. Approximants

As far as their phonetic characteristics are concerned, the approximants /r, j, w/ are vocalic, as they have neither the closure nor the noise component characteristic of consonants. Nevertheless,

their function is consonantal: they occur at the syllable boundary and the articles *the* and *a* are pronounced /ðə/ and /ə/ in front of them as with the other consonants. Moreover, after voiceless plosives and voiceless fricatives in stressed syllables they are pronounced as voiceless fricatives, as in *try*, *queen*, *pure*, *spring*, *string*, *skewer*, *fry*, *three*, *shrink*. They are also devoiced and pronounced with friction after /d/ in words as *drain*, *dry*, *dwindle*.

The English /r/ is not an easy matter for non-native speakers. For one thing, there are more free variants of this phoneme across the English speaking community than any other English consonant. The American retroflex is quite different, and pronounced in all contexts. In Scotland and Wales, the sound is often a tapped r, which means that the tip of the tongue vibrates against the alveolar ridge. The RP variant is a post-alveolar continuant, which means that *the tip of the tongue is raised towards the post-alveolar area (but is not against it) while the front part of the tongue is somewhat depressed so that it is slightly hollow and the tip is lightly curled back.* Students should take care not to pronounce the /r/ as a /w/, which is usually the result of too much lip rounding. Observe that also here, there are minimal pairs, e.g., *room/womb*, *wed/red*. The lips are only moderately rounded for /r/, and *often already assume the position for the following vowel.*

In RP, /r/ is only pronounced in pre-vocalic position, either within the word or before the initial vowel of the following word. In all other positions (i.e., in front of a consonant or in final position) it is silent (ø-allophone). In the following phrases the *r*'s that are pronounced are underscored:

Can Ryan write the report?
Rita refused to remarry in Paris.

We are all for it.
This diagram gives a better idea of his minor operation.

They are having turkey for dinner.
Were you born in Baltimore on March 4th, 1944?

Recall that in transcriptions out of context, the possible presence of the /r/ is indicated by a superscript ^{r}, following the standard IPA-conventions. This superscript ^{r} is, of course, reserved for dictionaries and de-contextualized examples, since if a word occurs in a context, it will be clear whether or not the /r/ will be pronounced. In the transcription of a phrase, a sentence or a text (like you have to do on the exam), you consequently ***never*** have a superscript ^{r}. Notice further the anomaly of having a superscript ^{r} in the middle of a word, since the word gives you the context in which the consonant will or will not be pronounced, so either you have an /r/ or you do not.

CHAPTER 6: SPELLING AND PRONUNCIATION

6.1.Introduction

As in many other languages, spelling in English does not match up with the pronunciation. This has already been pointed out in the beginning of this course, when we talked about the mismatches between phonemes and graphemes (Chapter 1, section 1.2). This mismatch, it will readily be understood, is due to the history of the language. At some point in time, people started to write down the Anglo-Saxon language using Latin graphemes. Of course, not all of these graphemes were well-suited, as the Latin pronunciation was quite different from Anglo-Saxon. So, right from the start there were already some mismatches. Other spellings (e.g., the *o* in *love*, *brother*, etc.) are due to an artificial change of <*u*> to <*o*> in older manuscripts, to enhance the legibility. The majority of spelling-pronunciation mismatches, however, are due to evolution of the pronunciation itself, with which the spelling has not kept up. Or at least, not as much. In other words, spelling is much more conservative. Spelling reforms not easily done, and mostly lead to heated debates up to the highest level in the political system (cf. recently for Dutch and German).

Nevertheless, not all is chaos in the world of spelling versus pronunciation. Many changes in the pronunciation are systematic; that is, not restricted to one word but to larger groups of words having the same spelling (or rather, having the same phonological environment). A simple example suffices. The (relatively recent) English word *garage* is a loan-word from French. Its first pronunciation [gəˈrɑːʒ] resembled its French counterpart, in its phonemic structure as well as its stress pattern. However, more and more this word was and still is changing to an English pattern, similar to words as *image* /ˈɪmɪdʒ/. At present, more conservative RP speaker often retain the original pronunciation, whereas others have an anglicized pronunciation, ˈgærɪdʒ (with reduced vowel in the last syllable). Still others have an intermediate pronunciation ˈgæ(ˌ)rɑːʒ (primary stress on first syllable yet no reduction on last syllable). This explains why most words on *-age* have /ɪdʒ/ but that there are some with /ɑːʒ/ (more recent loans).

Similar patterns of change have operated on all the words of the English language (indigenous or borrowed). Very often one can date these sound changes or one can date loans depending on whether they have or have not undergone a certain change, as was shown for the *–age* ending. In other words, despite the general spelling/pronunciation mismatch, some of these mismatches are systematic. In the following part, we offer a simplified tour of some major patterns. There is much more to be said, there are many more subgroups and large groups of exceptions, etc. This will be taken up in more detail in the second year course (a good reference is Lilly & Viel 1998a). The following description is meant *not as rules to be studied as such, but to help you in clearing up some of the mysterious relationship between spelling and pronunciation.*

6.2.Some basic correspondences between spelling and pronunciation

6.2.1. Vowels and diphthongs

The following table (adapted from Huart s.d.) gives an overview of the (typical) correspondences for the simple vowel graphemes <*a*, *e*, *i*, *u*, *o*> and their related digraphs. The basic mapping rule is that the simple graphemes lead to *lax* vowels (*viz.* /æ, e, ɪ, ʌ, ɒ/, whereas diagraphs yield *tense* vowels. However, some of the digraphs exceptionally lead to a lax vowel (cf. the *ea* group of exceptions) and in some contexts simple graphemes become tensed. These basic mappings are

schematized in Fig. 9, following Table 6. Despite this neat system, there are exceptions, some of which may be quite numerous (e.g., <*ea*> pronounced /ɛ/ or <*u*> pronounced /ʊ/). These 'irregular' cases have been put in between brackets.

	SPELLING	lax	r-coloured	tense(d)	r-coloured (centralising diphthongs)
simple	<*a*>	**æ** *tap, tapping*	**ɑː** *bar, barring*	**eɪ** *tape, taping*	**eə** (=/**eɪ**+**ə**/) *scare, scaring*
digraph	<*ai, ay*> <*ei, ey*>			**eɪ** *pain, may, grey, vein*	**eə** (=/**eɪ**+**ə**/) *chair, heir*
simple	<*e*>	**e** *pet, petting*	**ɜː** *refer, referring*	**iː** *Pete, completing*	**ɪə** (=/**iː**+**ə**/) *interfere, interfering*
digraph	<*ee*> <*ea*> <*ie*>	(**e**) *(bread)* *(friend)*		**iː** *see, feel* *sea, beat*	**ɪə** (=/**iː**+**ə**/) *steer, queer* *near, fear*
simple	*i*	**ɪ** *sit, sitting*	**ɜː** *stir, stirring*	**aɪ** *site, biting*	**aɪə** (=/**aɪ̯**+**ə**/) *fire, firing*
simple	*u*	**ʌ** *cut, cutting* (**ʊ**) (*put, full*)	**ɜː** *occur, occurring*	**(j)uː** *cute, refuting*	**(j)ʊə** (=/**uː**+**ə**/) *cure, cured*
digraph	<*oo*>	(**ʊ**) *(good, foot)*		**(j)uː** *food*	**(j)ʊə** (=/**uː**+**ə**/) *boor, moor*
simple	*o*	**ɒ** *hop, hopping*	**ɔː** *abhor, abhorring*	**əʊ** *hope, hoping*	**(ɔə)** (=/**ɔː**+**ə**/)→ **ɔː** *store, storing*
digraph	<*oa*>			**əʊ** *coat, road*	**(ɔə)** (=/**ɔː**+**ə**/)→ **ɔː** *roar, coarse*

Table 6: Basic spelling pronunciation correspondences for vowel sounds

The systematic pronunciations of the simple graphemes can also be represented as in Figure 9 below. On the left, you have the "regular" pronunciation of this vowel, on the right, you have the tensed pronunciation. (It can be pointed out in this context that in spelling training in the US, people often speak about short and long *a*, for example, to refer to *cat* and *take* respectively. We use the more technical terms *lax* and *tensed a* to refer to these.) The middle two cases in each of the diagrams represent the lax and tensed vowels coloured by /r/.

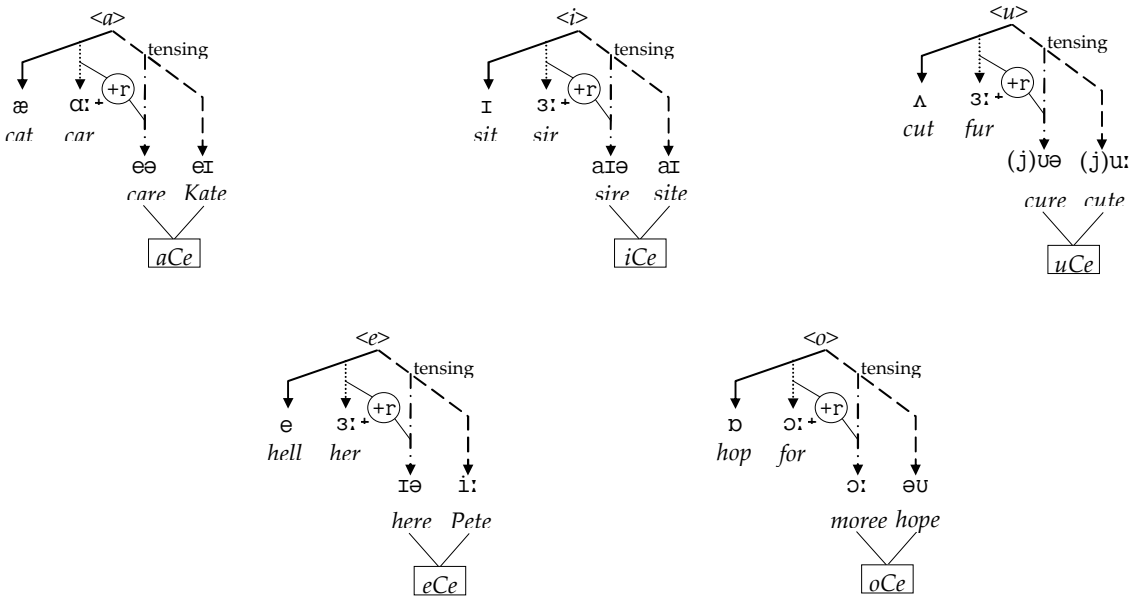


Fig. 9: Basic grapheme/phoneme correspondences for simple vowel graphemes © Maarten Lemmens

Some digraphs fall outside the regular set of correspondences. Some of these, e.g., <*ou*>, are notorious problem cases for language learners. Mostly, it boils down to studying the pronunciation of the various words themselves, as the exceptions are numerous (and often frequent as well), even if they may have a semi-regular structure.

SPELLING	PRONUNCIATION	STATUS	EXAMPLES
<*oi, oy*>	**ɔɪ**	**regular**	*noise, boy, royal*
<*au, aw*>	**ɔː**	**regular**	*pause, caught, saw, lawn*, etc.
	ɑː	**exc.**	*aunt, laugh, draught*, etc.
	ɒ	**exc.**	*because, sausage, Laurel*, etc.
<*ou*>	**aʊ**	**regular**	*loud, sound, amount*, etc.
	uː	**exc.**	*soup, group, you, through*, etc.
	ʌ	**exc.**	*couple, country, double, southern, courage, flourish, touch, tough, young, enough*, etc.
	əʊ	**exc.**	*soul, shoulder, poultry, dough, (al)though, mould*, etc.
	ɔː	**exc.**	*thought, fought, sought, bought*, etc.
<*our*>	**ɑʊə**	**regular**	*sour, hour, flour*, etc.
	ɜː	**exc.**	*courtesy, journal*, etc.
	ɔː	**exc.**	*course, court, four, mourn*, etc.
<ow>	**aʊ**	**regular**	*now, brown, town, crowd*, etc.
	əʊ	**exc.**	*know, blow, crow, show*, etc.
<eu, ew>	**(j)uː**	**regular**	*feud, few, new, threw*
	əʊ	**exc.**	*sew*

Table 7: Regularities for some digraphs

6.2.2. Consonants

As is intuitively obvious, the spelling/pronunciation correspondences for the consonants are much more stable than for the vowels. While some regional variations for consonants do occur (e.g., for *ng*), they are markedly less common than for vowels, where the variation is considerable. The reason arguably is that consonants have a firmer 'anchor point' with specific articulators (which, incidentally, also makes their articulatory features easier to describe). The following table gives an overview of the most common mappings (**GR** means "general rule"; **EXC.** means "exceptional subgroup").

SPELLING	PRONUNCIATION	EXAMPLES
<*b*>	b	*bad, rub*
<*(s)c*>	k	*cat, Mac, scoop*
	s (in front of *i/e*)	*ceiling, scene, circle, scissors*
<*ck*>	k	*back, sticky*
<*ch*>	tʃ (**GR**)	*chair, each*
	ʃ	*machine, Chicago*
	k	*chaos, character*
<*d*>	d	*deed*
<*f*>	f	*five*
<*g*>	g (**GR**)	*gate, go, give (!), get (!)*
	dʒ (in front of *i/e*)	*gem, ginger, logic*
	∅ (*gn__*)	*gnat, gnome*
<*gh*>	g	*ghost*
	f (final position)	*enough, laugh*
<*h*>	h	*happy*
<*j*>	dʒ	*jam, jelly*
<*k*>	k (**GR**)	*kind, bike*
	∅ (*kn__*)	*know, knight*
<*l*>	l	*lolly*
	∅ (**EXC.**)	*palm, calm*
<*m*>	m	*mommy*
<*n*>	n	*none*
<*p*>	p	*puppy*
	∅ (*ps__*)	*psalm, psychology*
<*ph*>	f	*photograph*
<*qu*>	kw	*quiet, equal*
<*r*>	r	*rub*
<*s*>	s	*see*
<*sh*>	ʃ	*ship, shy, shore*
<*t*>	t	*tight*
<*tch*>	tʃ	*watch*
<*th*>	θ	*think, bath*
	ð	*this, other, with*
<*v*>	v	*verve*

SPELLING	PRONUNCIATION	EXAMPLES
<*w*>	w	*will, awake*
<*wh*>	w	*which, where*
	h (**EXC.**)	*who, whole*
<*x*>	ks	*six*
	z (*x*__)	*xerox*
<*y*>	j	*yes*
<*z*>	z	*zoo*

Table 8: Basic correspondences for consonants

SELECTED BIBLIOGRAPHY

Gimson, A.C. (1980), *An Introduction to the Pronunciation of English.* (3rd ed.). London: Arnold.

Ginésy, Michel (1995), *Mémento de phonétique anglaise*, Paris: Nathan. [series *fac. langues étrangères*]

Huart, Ruth. (s.d.), *An Introduction to English Phonetics*. s.l.

Jones, D. J. (2006), *English Pronouncing Dictionary*. (17th ed.), Cambridge: Cambridge University Press.

Kjellin, O. (1998a), "Accent Addition: Prosody and Perception Facilitates Second Language Learning, in O. Fujimura, B.D. Joseph & B. Palek, *Proceedings of LP'98*, Prague: Charles University, 373-398.

———. (1998b) "Hör rätt – gör rätt!". Http://members.xoom.com/SpeechDoctor/.

Lilly, R. & M. Viel, (1998a), *La pronunciation de l'anglais. Règles phonologiques et exercises de transcription*, Paris: Hachette.

Lilly, R. & M. Viel, (1998b), *Initiation raisonnée à la phonétique de l'anglais*, Paris: Hachette.

Roach, P. (1991), *English Phonetics and Phonology. A Practical Course*, Cambridge: Cambridge University Press.

Wells, J. (2000), *Longman Pronunciation Dictionary* (2nd edition). London: Pearson Education .

Williams-Lacroix, F. (1995), *Right oh! A Practical Guide to Oral English for French Students*, Rennes: Presses Universitaires de Rennes.