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Dictionary

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Introduction

Editors' preface to the 17th Edition

The *English Pronouncing Dictionary* was first published in 1917, perhaps the greatest work of the greatest of British phoneticians, Daniel Jones (born in 1881). Jones was Professor of Phonetics at University College London from 1921 until his retirement in 1949. He was still an occasional visitor to the department in 1967 when Peter Roach was there as a postgraduate student of phonetics, though he died in December of that year. The last edition of the *English Pronouncing Dictionary* in which Jones was directly involved was the 12th, and the 13th was substantially revised by A. C. Gimson, his successor as Professor of Phonetics at University College. From the 13th edition, Gimson was assisted by Dr. Susan Ramsaran, and in her preface to the 14th edition she notes that they had been making plans for a 15th edition at the time of Gimson's death. After this, the publishing rights were acquired from the original publishers, J.M. Dent & Sons, by Cambridge University Press.

With the publication of the 15th edition in 1997, the *English Pronouncing Dictionary* entered the computer age. All the entries were converted into a computer database, and transferred electronically between phonetics experts in Reading, Leeds, Kansas, Hong Kong, then back to Cambridge. The process of updating and adding to previous editions has therefore become much more efficient. Versions of this database are available electronically and are currently being used by language researchers in both academic and commercial institutions. For details of licensing the database, see the Cambridge Dictionaries website: www.dictionary.cambridge.org

The other major development for the *English Pronouncing Dictionary* is the creation of a CD-ROM version. This 17th edition now has both British and American spoken pronunciations for every word in the dictionary. For linguists and learners of English, there is also the ability to search on both alphabetic and phonetic characters, and to record the user's own voice and compare it with the spoken pronunciation on the CD-ROM.

The *English Pronouncing Dictionary* has been in use for almost 90 years, and during that time it has become established as a classic work of reference, both for native speakers of English wanting an

authoritative guide to pronunciation, and for users of English as a foreign or second language all over the world.

Above all, the aim of the dictionary is to include information which is relevant to the needs of contemporary users and which is presented in the clearest possible way. This aim has informed both the choice of vocabulary covered and the range of pronunciations shown. The 15th edition saw a massive injection of 18,000 new words. Large numbers of terms connected with science and technology were added, as well as hundreds of people and places which had acquired fame or notoriety in recent years. Personal names, both first names and family names, were based on census reports and statistical analysis, and many subject areas such as literature and law were revised and updated. For the first time, US spellings and vocabulary items were included.

This process of updating continues with each new edition, and we are fortunate to have the use of the *Cambridge International Corpus*, a collection of around 800 million words of written and transcribed spoken texts from a variety of genres. This corpus informs all Cambridge dictionaries, and gives us clear, empirical evidence for new words (general and proper nouns) which have come to prominence since the previous edition. The 16th edition added information panels explaining phonetics terminology and discussing the relationship between spelling and pronunciation, and this 17th edition also has a study section introducing several fascinating pronunciation topics such as differences between British and American pronunciation, Weak forms, and Intonation.

In the Preface to the 15th edition we thanked the many people who had contributed to our work, and our debt to them remains, as it did for the 16th Edition. Above all, we are very grateful to Liz Walter, our Commissioning Editor at Cambridge University Press, who has overseen the production of the 15th and 16th Editions and continued to work tirelessly to advise and encourage us on the 17th. We would also like to thank Diane Cranz and Dominic Glennon, who have grappled heroically with the challenges of producing the CD-ROM, as well as Catherine Sangster and her colleagues in the BBC Pronunciation Unit for their generous advice.

PETER ROACH
 JAMES HARTMAN
 JANE SETTER

Introduction

It is strongly recommended that users of this dictionary read the introduction, since a full understanding of the information in it will ensure the most effective use of the dictionary.

(PART 1) ‘**What is the English Pronouncing Dictionary?**’: The intended use of the dictionary, the principles of its design and the accents of English represented in it.

(PART 2) ‘**Principles of Transcription**’: The main characteristics of the British and American accents.

(PART 3) ‘**Explanatory Notes**’: How to interpret the information provided with the individual words in the dictionary.

Part 1: Introduction to the English Pronouncing Dictionary

1.1 What is the English Pronouncing Dictionary?

This dictionary is designed to provide information on the current pronunciation of approximately 80,000 English words and phrases. For each entry, a British and an American pronunciation is shown (see Section 1.2 below). The pronunciation is given in modified phonemic transcription, and you need to understand the principles of phonemic transcription in order to be able to make proper use of this information (see Section 2.1 below).

The Pronouncing Dictionary provides much essential information that is not available in a general dictionary, such as the pronunciation of proper names, the pronunciation of all inflected forms of each word, and a larger amount of detail about variant pronunciations than is usual in a general dictionary.

1.2 Whose pronunciation is represented?

A pronouncing dictionary must base its recommendations on one or more *models*. A pronunciation model is a carefully chosen and defined accent of a language. In the first edition of this dictionary (1917), Daniel Jones described the type of pronunciation recorded as “that most usually heard in everyday speech in the families of Southern English persons whose menfolk have been educated at the great public boarding-

schools”. Accordingly, he felt able to refer to his model as “Public School Pronunciation” (PSP). In later editions, e.g. that of 1937, he added the remark that boys in boarding-schools tend to lose their markedly local peculiarities, whereas this is not the case for those in day-schools. He had by 1926, however, abandoned the term PSP in favour of “Received Pronunciation” (RP). The type of speech he had in mind had for centuries been regarded as a kind of standard, having its base in the educated pronunciation of London and the Home Counties (the counties surrounding London). Its use was not restricted to this region, however, being characteristic by the nineteenth century of upper-class speech throughout the country. The Editor of the 14th Edition of this dictionary, A. C. Gimson, commented in 1977 “Such a definition of RP is hardly tenable today”, and went on “If I have retained the traditional, though imprecise, term ‘received pronunciation’, it is because the label has such wide currency in books on present-day English and because it is a convenient name for an accent which remains generally acceptable and intelligible within Britain”.

For this edition a more broadly-based and accessible model accent for British English is represented, and pronunciations for one broadly-conceived accent of American English have been added. The time has come to abandon the archaic name *Received Pronunciation*. The model used for British English is what is referred to as *BBC English*; this is the pronunciation of professional speakers employed by the BBC as newscasters and announcers on BBC1 and BBC2 television, the World Service and BBC Radio 3 and 4, as well as many commercial broadcasting organisations such as ITN. Of course, one finds differences between such speakers – individual broadcasters all have their own personal characteristics, and an increasing number of broadcasters with Scottish, Welsh and Irish accents are employed. However, the accent described here is typical of broadcasters with an English accent, and there is a useful degree of consistency in the broadcast speech of these speakers. Their speech does not carry for most people the connotations of high social class and privilege that PSP and RP have had in the past. An additional advantage in concentrating on the accent of broadcasters is that it is easy to gain access to examples, and the sound quality is usually of a very high standard.

For American English, the selection also follows what is frequently heard from professional voices

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on national network news and information programmes. It is similar to what has been termed “General American”, which refers to a geographically (largely non-coastal) and socially based set of pronunciation features. It is important to note that no single dialect – regional or social – has been singled out as an American standard. Even national media (radio, television, movies, CD-ROM, etc.), with professionally trained voices have speakers with regionally mixed features. However, “Network English”, in its most colourless form, can be described as a relatively homogeneous dialect that reflects the ongoing development of progressive American dialects (Canadian English has several notable differences). This “dialect” itself contains some variant forms. The variants included within this targeted accent involve vowels before /r/, possible differences in words like ‘cot’ and ‘caught’ and some vowels before /l/. It is fully rhotic. These differences largely pass unnoticed by the audiences for Network English, and are also reflective of age differences. What are thought to be the more progressive (used by educated, socially mobile, and younger speakers) variants are listed first in each entry. The intent is to list the variety of pronunciations with the least amount of regional or social marking, while still being sensitive to the traits of the individual word.

1.3 How are the pronunciations chosen?

It is important to remember that the pronunciation of English words is not governed by a strict set of rules; most words have more than one pronunciation, and the speaker’s choice of which to use depends on a wide range of factors. These include the degree of formality, the amount of background noise, the speed of utterance, the speaker’s perception of the listener and the frequency with which the speaker uses the word. For example, the two words ‘virtuous’ and ‘virtuoso’ are closely similar in spelling and share a common origin. However, the former is more common than the latter, and for British English /'vɜː.tʃu.əs/ is given as the first pronunciation of the former but /'vɜː.tju.əs.səʊ/ for the latter (which in general is typical of more careful speech). If such variation did not exist, most of the work of compiling a pronouncing dictionary could be done easily by means of one of the available computer programs that convert English spelling into a phonemic transcription. Ultimately, however, the decisions about which pronunciation to recommend, which pronunciations have dropped out of use, and so on, have been based on the editors’ intuitions as professional phoneticians and

observers of the pronunciation of English (particularly broadcast English) over many years. The opinion of many colleagues and acquaintances has also been a valuable source of advice.

In general, a pronunciation typical of a more casual, informal style of speaking is given for common words, and a more careful pronunciation for uncommon words. In real life, speakers tend to articulate most carefully when listeners are likely to have difficulty in recognising the words they hear. When more than one pronunciation of a word is given, the order of the alternatives is important. The first pronunciation given is believed to be the most usual one although the distance between the alternatives may vary, with some alternant forms rivalling the first-given in perceived frequency while others may be a more distant second.

1.4 Regional Accents

A pronouncing dictionary that systematically presented the pronunciations of a range of regional accents would be very valuable, but it would be very much bigger than the present volume and the job of ensuring an adequate coverage which treated all accents as equally important would have taken many years. In the case of some place-names, information about local pronunciations has been retained or added as well as “official” broadcasting ones, but the other words are given only in the standard accents chosen for British and American English.

1.5 Pronunciation of foreign words

Many of the words in an English dictionary are of foreign origin, and in previous editions of this dictionary many such words have been given both in an Anglicised pronunciation used by most English speakers, and in a broad phonetic transcription of the “authentic” pronunciation in the original language. This edition does not give detailed phonetic transcriptions of foreign words; the primary aim of this dictionary is to list pronunciations likely to be used by educated speakers of English, and an authentic pronunciation would in some circumstances be quite inappropriate (pronouncing ‘Paris’ as /pær'i:/, for example). In some cases the information is unnecessary (very few English speakers would attempt, or even recognise, an authentic pronunciation of a word from a non-European language), while in other cases it is difficult to establish the authentic original (many African place-names, for example, have reached us after being adapted by British, French or Portuguese colonists; place-names in Spain may be

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pronounced in different ways according to their regional affiliation, so that the name of Barcelona might be given a Catalan or a Castilian Spanish pronunciation, while other Spanish names are different according to whether they originate in Spain or South America). Words and names of foreign origin are therefore given in what is felt to be the pronunciation likely to be used among educated speakers of English.

In some cases it is possible to identify an alternative pronunciation which represents an attempt to pronounce in a manner closer to the supposed original. This is marked by first indicating the language which the speaker would be aiming at, then giving the pronunciation, using where necessary additional phonetic symbols not required for the phonemic transcription of English. For example, the word ‘bolognese’ is widely used to refer to a sauce served with pasta. This is given as /ˌbɒl.əˈneɪz/ for British English and as /ˌboʊ.ləˈniːz/ for American; for speakers of both groups, a pronunciation aimed at being nearer to the Italian original would be /ˌbɒl.əˈnjeɪ.zɛɪ/ (though this would still be different from the pronunciation that would be produced by an Italian speaker). To indicate that this last pronunciation is aimed at sounding Italian, it is marked in the entry

as: *as if Italian*: ˌbɒl.əˈnjeɪ.zɛɪ. In a few cases it has been necessary to mark separate British and American pronunciations within this field, as the degree of Anglicisation of any given word may vary between British and American English.

1.6 Usage notes

Usage notes are included with some words. In some cases these are needed so that users of the dictionary can understand how alternative pronunciations are to be used. In some cases the rules needed for correct pronunciation are quite complex, most noticeably in the case of the so-called “weak-form words” such as ‘there’, ‘her’. Explanations with examples are given in such cases.

1.7 Syllable divisions

Earlier editions of this dictionary regularly marked the division between syllables. This practice was largely abandoned in the 14th Edition, but the present edition gives syllable divisions in all cases, since it is felt that foreign learners will find the information useful. Syllable division is marked with the symbol . recommended by the International Phonetic Association. The decision on where to place a syllable division is not always easy, and the rules used in this work are explained later in this Introduction (Section 2.6).

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Part 2: Principles of transcription

2.1 The phoneme principle

The basic principle of the transcription used is, as in all previous editions, *phonemic*. This means that a small set of symbols is used to represent the sounds that can be shown to be distinctive in English, so that replacing one phoneme by another can change the identity of a word. We do not usually add phonetic detail such as the presence of glottal stops, aspiration or vowel devoicing. It is usual to put slant brackets before and after symbols representing phonemes (e.g. the word ‘cat’ would be represented phonemically as /kæt/). When non-phonemic symbols are used, the convention is to use square brackets (e.g. the glottal stop will be represented as [ʔ]). In entries in the dictionary itself, however, we do not use these brackets, in order to keep the information simple; only in explanatory notes do we use slant or square brackets. For an explanation of the principle of the phoneme and some of the problems associated with it, see Roach (2000), Chapters 5 and 13. The use of phonemic transcription in works on pronunciation (including this one) has remained in the “realist” tradition established by Jones, while approaches to the phoneme by theoretical phonologists have changed radically during recent decades and become much more abstract. There are a few exceptions to our general use of the phoneme principle that should be mentioned here, however. One is the use, in American pronunciations, of the [̣] diacritic to indicate the voicing and “flapping” of /t/ in words such as ‘getting’ /ˈɡet̬.ɪŋ/, and ‘better’ /ˈbet̬.ə/. This is an important feature of American pronunciation, but speakers of British English find it difficult to apply the rule which determines when /t/ is voiced and/or flapped. Another is the use of the symbols [i] and [u], the use of which is explained below (Section 2.9). Finally, it is necessary to use a number of special symbols which are not normally used for English phonemes. This set includes some nasalised vowels used particularly in some words taken from French, the [x] sound found in Scottish words such as ‘loch’, and some non-linguistic sounds used in certain exclamations and interjections (see Section 2.4).

2.2 Vowels and diphthongs

It is standard practice in phonetics to represent the quality of vowels and diphthongs by placing them on a four-sided figure usually known as the *Cardinal Vowel quadrilateral* (see Roach (2000), pp. 13–14). This device is used in the vowel descriptions in the following section.

(a) British English

British English (BBC accent) is generally described as having short vowels, long vowels and diphthongs. There are said to be seven short vowels, five long ones and eight diphthongs. At the end of this section some attention is also given to triphthongs.

- Short vowels:

pit pet pat putt pot put another
 ɪ e æ ʌ ɒ ʊ ə ə

- Long vowels:

bean barn born boon burn
 iː aː ɔː uː ɜː

- Diphthongs:

bay buy boy no now peer pair poor
 eɪ aɪ ɔɪ əʊ aʊ ɪə eə ʊə

These vowels and diphthongs may be placed on the Cardinal Vowel quadrilateral as shown in Figs. 1–3. It should be noted that though each vowel (or diphthong starting-point) is marked with a point (●), it is misleading to think of this as a precise target; the point represents the centre of an area within which the typical vowel pronunciation falls.

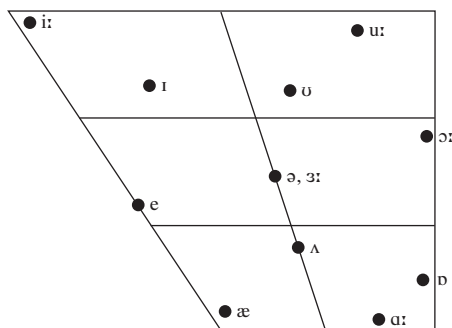


Fig. 1 BBC English pure vowels

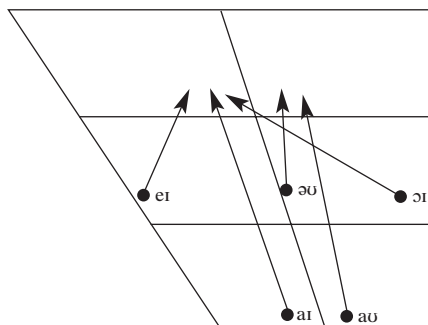


Fig. 2 BBC English closing diphthongs

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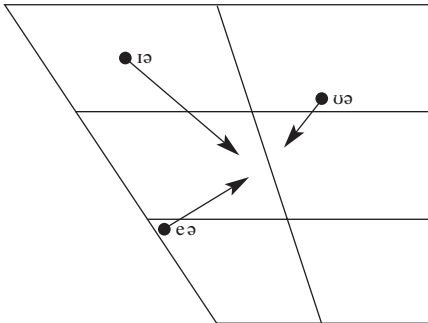


Fig. 3 BBC English centring diphthongs

A few comments on individual vowels and vowel symbols are needed. The pronunciation of any language is constantly changing, and a dictionary such as this one should reflect such changes. However, there is a general reluctance among users of phonemic transcription to change the symbols used too frequently, as this causes existing teaching materials and textbooks to become out of date. The following remarks apply chiefly to BBC pronunciation.

(a) The length of long vowels and diphthongs is very much reduced when they occur in syllables closed by the voiceless or fortis consonants /p, t, k, tʃ, f, θ, s, ʃ/. Thus /i:/ in 'beat' has only about half the length of /i:/ in 'bead' or 'bee'; similarly /eɪ/ in 'place' is much reduced in length compared with /eɪ/ in 'plays' or 'play'.

(b) The vowel /æ/, classified as a short vowel, is nevertheless comparatively long before /b, d, g, dʒ, m, n/. The quality of this vowel is more open than it used to be, and the symbol /a/ might one day be considered preferable. We have retained the /æ/ symbol partly because it is phonetically appropriate for the corresponding American vowel.

(c) The vowel /ʌ/ used to be a back vowel, and the symbol was chosen for this reason. This is no longer a back vowel, but a central one. Alternative symbols could be considered in the future.

(d) Among younger speakers, the /u:/ vowel has moved to a more front quality, with less lip-rounding, particularly when preceded by /j/ as in 'use'.

(e) Among the diphthongs, there seems to be a progressive decline in the use of /ʊə/, with /ɔ:/ taking its place (e.g. the pronunciation of the word 'poor' as /pɔ:/ is increasingly common).

(f) Triphthongs create some problems. These three-vowel sequences are generally held to be composed of one of the diphthongs /eɪ, aɪ, ɔɪ, əʊ, aʊ/ plus a schwa (e.g. 'layer' /leɪəʔ/; 'fire' /faɪəʔ/). In British English many of these triphthongs are pronounced with such slight movement in vowel quality that it is difficult for foreign learners to recognise them; for example, the name 'Ireland', which is generally transcribed /'aɪə.lənd/, frequently has an initial syllable which sounds virtually indistinguishable from /aɪ/. It seems reasonable in this case to treat these sounds as being monosyllabic (e.g. the word 'fire' is a single syllable), but in other words and names transcribed with the same symbols it seems necessary to insert a syllable division. This is usually done (i) when there is a morpheme boundary (e.g. 'buyer' /baɪ.əʔ/) and (ii) when the word is felt to be foreign (this includes many Biblical names originating from Hebrew, e.g. 'Messiah').

Another problem with triphthongs is that before an /r/ consonant at the beginning of a following syllable, the distinction between /aɪə/ and /aɪ/ seems to be neutralised – it seems to make no difference whether one represents 'Irish', 'irate' as /'aɪə.rɪʃ/, /aɪə'reɪt/ or as /'aɪ.rɪʃ/, /aɪ'reɪt/, since there is no regular distinction made in pronunciation. In general, the practice of this edition is to transcribe such cases as /aɪə- /.

(b) American English

American English is commonly described as having lax vowels, tense vowels, and wide diphthongs. Generally speaking, lax vowels are lower and made with less oral tension; they do not usually end syllables. Vowel length in American English is generally considered to be conditioned by phonological environment, so the long/short distinction described for BBC English is not usually present, though we have retained the length mark on the tense vowels /i:, aɪ, ɔɪ, ɜ:, u:/ in order to mark their relationship to the English long vowels. Since the diphthongal movement in /eɪ/ and /oʊ/ is small in American pronunciation, these are treated as tense vowels. Vowels preceding /r/ are notably influenced by rhotic colouring. Word spellings such as 'bird', 'word', 'curd', 'earth', 'jerk', which now rhyme with /ɜ:/ in American English, at one time in history had differing vowels. The retroflexed vowels /ɜ:/ and /ə:/, stressed and unstressed, are among those features that noticeably distinguish American English from BBC English. All vowels occurring before /r/ within a syllable are likely to become "r-coloured" to some extent.

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- lax vowels: ɪ e æ ʌ ʊ ə
- tense vowels: iː ɑː ɔː ɜː uː eɪ oʊ
- wide diphthongs: aʊ aɪ ɔɪ
- retroflexed vowels (“r-coloured”) ɝ ɞ

There is an issue in the symbolization of the diphthong in the word “home”. This has for many years been represented as /əʊ/, but in earlier editions of this and others of Jones’ works the symbolization /ou/ indicated a rounded initial vowel. This is still the preferred transcription for the American English diphthong. In order to preserve compatibility with other works, we have chosen to use /əʊ/ for BBC English and /ou/ for American.

The American /æ/ vowel is somewhat closer than BBC /æ/, and seems to be evolving into an even closer vowel in many speakers. It is used in the same words as BBC /æ/ and also in most of the words which in BBC have /ɑː/ when there is no letter r in the spelling and a fricative consonant at the end of the syllable, (e.g. ‘pass’, ‘ask’). The quality of American /ɑː/ is similar to the BBC /ɑː/ vowel; it is used in some of the words which have /ɑː/ in BBC when there is no letter r in the spelling (e.g. ‘father’, ‘calm’). It also replaces the BBC short /ɒ/ vowel in many words (e.g. ‘hot’, ‘top’, ‘bother’): ‘bother’ rhymes with ‘father’. American /ɔː/ is more open in quality than BBC /ɔː/. It is used where BBC has /ɔː/ (e.g. ‘cause’, ‘walk’), and also replaces BBC short /ɒ/ in many words, e.g. ‘long’, ‘dog’. American /uː/ is similar to BBC /uː/, but is also used where BBC has /juː/ after alveolar consonants (e.g. ‘new’, ‘duty’).

2.3 Consonants

(a) British English (BBC)

- Plosives: p b t d k g
pin bin tin din kin gum
- Affricates: tʃ dʒ
chain Jane
- Fricatives: f v θ ð s z
fine vine think this seal zeal
 ʃ ʒ h
sheep measure how
- Nasals: m n ŋ
sum sun sung
- Approximants: l r w j
light right wet yet

These consonants can be arranged in table form as shown below. The layout of the symbols follows the principle that, where there are two consonants which differ only in voicing, they are placed side by side with the voiceless one to the left.

(a) Certain types of consonant have a distinction such as that between /t/ and /d/; this is commonly classed as a distinction between voiceless and voiced consonants, but the distinction is in fact much more complex. Consonants usually classed as voiceless are /p, t, k, f, θ, s, ʃ, h, tʃ/, with voiced partners /b, d, g, v, ð, z, ʒ, dʒ/. Since the presence or absence of voicing is often less important than some other phonetic features, it has been suggested that instead the terms *fortis* (equivalent to voiceless) and *lenis* (equivalent to voiced) should be used. These terms imply that the main distinguishing factor is the amount of energy used in the articulation (fortis consonants being made with greater energy than lenis). These terms

Table of English Consonants								
	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Palatal	Velar	Glottal
<i>Plosive</i>	p b			t d			k g	
<i>Affricate</i>					tʃ dʒ			
<i>Fricative</i>		f v	θ ð	s z	ʃ ʒ		(x)	h
<i>Nasal</i>	m			n			ŋ	
<i>Lateral approximant</i>				l				
<i>Approximant</i>	w				r	j		

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are not used in this dictionary, since the usefulness of this terminology is uncertain. Some of the characteristics of the two types of consonant are set out below.

(b) /p,t,k/ are typically accompanied by aspiration (i.e. an interval of breath before the following vowel onset), especially when initial in a stressed syllable. Thus, ‘pin’ is distinguished from ‘bin’ very largely by the aspiration accompanying /p/. However, in the syllable-initial sequences /sp-, st-, sk-/, /p, t, k/ lack such aspiration. When /l/, /j/, /w/ or /r/ immediately follow /p,t,k/, they are devoiced and are pronounced as fricatives. Another characteristic of /p,t,k/ that is not marked in transcriptions is glottalization; when one of these consonants is followed by another consonant it is now usual to find that a glottal closure precedes the /p/, /t/ or /k/, particularly if the syllable in which they occur is stressed. Thus the pronunciation of ‘captain’, ‘rightful’, ‘Yorkshire’, which are phonemically /'kæp.tɪn/, /'raɪt.fʊl/, /'jɔ:k.ʃə/, could be shown (using the symbol [ʔ] for glottal closure) as ['kæʔp.tɪn], ['raɪʔt.fɪ], ['jɔ:ʔk.ʃə]. Similarly, in American English ‘mountain’ has one pronunciation that could be represented as [maʊ.ʔn].

(c) Voiceless consonants have a shortening effect on sounds preceding them within a syllable. Thus in the words ‘right’ and ‘ride’ (/raɪt/ and /raɪd/) the diphthong is noticeably shorter in the first word than in the second; in the words ‘bent’ and ‘bend’ (/bent/ and /bend/), both the vowel /e/ and the nasal consonant /n/ are shorter in the first word. This length difference is not always easy to observe in connected speech.

(d) The consonant /l/ has two different allophones in BBC English, the so-called “clear” and “dark” allophones. The “clear” one (which has an /i:/-like quality) occurs before vowels, the “dark” one (which has an /u:/-like quality) before consonants or before a pause.

(e) The consonants /ʃ/, /ʒ/, /tʃ/, /dʒ/, /r/ are usually accompanied by lip-rounding.

(b) American English

The consonants of the American English model, at the phonemic level, may be represented by the same broad scheme used for British English above. Similarly, many of the distinguishing phonetic traits discussed for British English hold for American English as well: initial /p,t,k/ are

normally aspirated except when immediately preceded by /s/. Glottalization preceding and, at times, replacing the plosives occurs often in rapid speech. There are, of course, numerous phonetic and phonological differences between British and American English, as there are within regional and social varieties within the two political entities. Two differences receive sufficient attention and have attained sufficient generality within the two varieties that they are represented here. One is phonetic: the “flapped” medial /t/ (as in ‘butter’) is transcribed as /ɾ/ (see Section 2.1 above); the other is phonological: the presence (in American English) of postvocalic /r/ (as in ‘farmer’ /'fɑ:r.mə/). It should also be noted that the difference between “clear” and “dark” /l/ is much less marked in American than in the BBC accent, so that even prevocalic /l/ in American pronunciation sounds dark to English ears.

2.4 Non-English sounds

In addition to the phonemes of English described above, most English speakers are aware of, and often attempt to pronounce, some sounds of languages other than English. The number of such sounds is small, since most foreign words and names are Anglicised so that they are pronounced with English phonemes. We find the voiceless velar fricative [x] in the Gaelic languages of Scotland and Ireland in words such as ‘loch’ and names such as ‘Strachan’. The same sound is often used by English speakers for the German sound which is written ‘ch’ (e.g. ‘Bach’ [bɑ:x]) and the Spanish sound spelt ‘j’ (e.g. ‘Badajoz’ [ˌbæd.əˈxɒθ]). The voiceless lateral fricative [ɬ] is found (always represented in spelling with ‘ll’) in Welsh words and names such as ‘Llanberis’; we give the pronunciation of this sound as *hl* to indicate that it may be pronounced as a voiceless [ɬ] (as many British English speakers do), but alternatively as a voiced one: thus /hlæn'ber.ɪs/. The dictionary lists a few names with more than one of these sounds (e.g. Llanelli). Most non-Welsh speakers are unlikely to pronounce more than one [ɬ] sound in a word, so we give the pronunciation as /θl/ for ‘ll’ sounds after the initial one.

The other case which needs special attention is the pronunciation of French nasalised vowels. Many English speakers attempt to produce something similar to the French vowels /ɛ̃/, /ɑ̃/, /ɔ̃/, /œ̃/ in words such as ‘vin’, ‘restaurant’, ‘bon’, ‘Verdun’.

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Although many speakers do not get close to the French vowels, the principle adopted here is to use symbols for English vowels, with added nasalisation. The equivalents are:

<i>French</i>	<i>English</i>
ẽ	æ̃
ã	ɑ̃:
õ	ɔ̃:
œ	ɜ̃:

2.5 Stress

Stress patterns present one of the most difficult problems in a pronouncing dictionary. One reason for this is that many polysyllabic words have more than one possible stress pattern, and one must consider carefully which should be recommended. Secondly, the stress of many words changes in different contexts, and it is necessary to indicate how this happens. Thirdly, there is no straightforward way to decide on how many different levels of stress are recognisable.

(a) Where more than one stress pattern is possible, the preferred pronunciation is given first and then alternatives are listed. Many dictionaries use the convention of representing stress patterns using dashes to represent syllables: thus the two possible patterns for 'cigarette' (,ciga'rette and 'cigarette) can be shown as ,--' and '---. This convention, which is sometimes referred to (incorrectly) as "Morse Code", is used in this work for short words, since it is economical on space. However, in longer words users are likely to find it difficult to interpret. In the planning of this edition, an experiment was carried out to test this, and it was found that readers (both native speakers and non-native speakers of English) do indeed take less time to read word stress patterns when the whole word is given, rather than just a "dashes and dots" pattern (Stromberg and Roach, 1993). Consequently, words of more than three syllables are given in full when alternative stress patterns are being given.

(b) The most common case of variable stress placement caused by context is what is usually nowadays known as "stress-shift". As a general rule, when a word of several syllables has a stress near the end of the word, and is followed by another word with stress near its beginning, there is a tendency for the stress in the first word to move nearer the beginning if it contains a syllable that is capable of receiving stress. For example, the word 'academic' in isolation usually has the stress on the penultimate syllable /-dem-/. However, when the

word 'year' follows, the stress is often found to move to the first syllable /æk-/. The whole phrase 'academic year' will have its primary stress on the word 'year', so the resulting stress pattern will be ,academic 'year (where , represents secondary stress and ' represents primary stress). To make this process easier to understand, this dictionary now gives specific examples in each case where stress-shift is possible except where certain prefixes such as 'un-' produce hundreds of such cases. In general, this shift is not obligatory: it would not be a mispronunciation to say aca,demic 'year. However, it is undoubtedly widespread and in some cases is used almost without exception: for example, although the adjective 'compact' on its own is pronounced with the stress pattern -' , in the phrase 'compact disc' it is virtually always pronounced with stress on the first syllable.

(c) It is necessary to decide how many levels of stress to mark. The minimum possible range is two: stressed and unstressed. This is inadequate for representing English words in a pronouncing dictionary: a word such as 'controversial' clearly has stress(es) on the first and third syllables, and equally clearly has stronger stress on the third syllable than on the first. It is therefore necessary to recognise an intermediate level of stress ("secondary"). The transcription of this word, therefore, is /,kɒn.trə'vɜ:zɪ.ʃəl/. An argument can be made for recognising yet another level (tertiary stress): in a word such as 'indivisibility', for example, it can be claimed that the level of stress on the third syllable /vɪz/ is weaker than that on the first syllable /ɪn/, which has secondary stress (primary stress being placed on the penultimate syllable /bɪl/). However, introducing this extra level creates a degree of complexity that it is better to avoid. In EPD14 some long polysyllabic words were transcribed with two primary stress marks (e.g. 'cross-examination' was given as /'krɒsɪg,zæmɪ'neɪʃn/): for the present edition only one primary stress may occur in a word or compound.

(d) Secondary stresses have only limited occurrence after a primary stress: such a secondary stress is only marked in closed or hyphenated compound words where the second element is polysyllabic (e.g. 'fish,monger).

(e) Stress assignment on prefixes:

- (i) In words containing a prefix such as, for example, **con-**, **de-**, **im-**, **in-**, secondary stress is not applied to the prefix where

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the following (i.e. second) syllable is stressed. Examples include ‘intoxicate’ /ɪnˈtɒk.sɪ.keɪt/ (5) -ˈtɔ:k-.

- (ii) Where the prefix is separable, however, as in **impossible**, a variant showing secondary stress on the prefix is listed, as follows: /ɪmˈpɒs.ə.bəl ,ɪm -/.
- (iii) In all other cases, primary or secondary stress is applied to the prefix where appropriate.

(f) In the case of words which do not have a prefix but have a stressed second syllable preceded by a syllable with a full vowel (e.g. ‘shampoo’, ‘Chinese’) the first syllable is usually treated as unstressed, though in some cases capable of receiving primary stress through stress-shift.

2.6 Syllable divisions

The 14th Edition of EPD marked syllable division (using hyphens) only when it was important to distinguish between the affricate /tʃ/ and the phonemes /t/ and /ʃ/ at a syllable juncture (e.g. ‘satchel’ /ˈsætʃəl/ and ‘nutshell’ /ˈnʌt-ʃel/). However, although native speakers may well find no difficulty in dividing words into syllables, it seems that learners of English have trouble in doing so, and the divisions are therefore marked. Descriptions of stress and rhythm are usually expressed in terms of syllables, and so it is helpful to have polysyllabic words clearly broken up into their constituent syllables. The syllabified transcription of a polysyllabic word is easier to read and interpret than an undivided one. In addition, the dictionary is likely to be of interest to the field of speech and language technology, where syllable divisions can be useful in developing automatic speech and language analysis systems.

A dot . is used to divide syllables, in accordance with the current recommendations of the International Phonetic Association. These may be read in the *IPA Handbook* (International Phonetic Association 1999). However, this is not used where a stress mark ' or , occurs, as these are effectively also syllable division markers.

No completely satisfactory scheme of syllable division can be produced – all sets of rules will throw up some cases which cannot be dealt with properly. The principles used in this edition are set out below. This requires some discussion of *phonotactics*, the study of permissible phoneme sequences.

(a) As far as possible, syllables should not be divided in a way that violates what is known of English syllable structure. The ‘Maximal Onsets Principle’, which is widely recognised in contemporary phonology, is followed as far as possible. This means that, where possible, syllables should be divided in such a way that as many consonants as possible are assigned to the beginning of the syllable to the right (if one thinks in terms of how they are written in transcription), rather than to the end of the syllable to the left. However, when this would result in a syllable ending with a stressed /ɪ/, /e/, /æ/, /ʌ/, /ɒ/ or /ʊ/, it is considered that this would constitute a violation of English phonotactics, and the first (or only) intervocalic consonant is assigned to the preceding syllable; thus the word ‘better’ is divided /ˈbet.əʃ/, whereas ‘beater’ is divided /ˈbi:təʃ/. In the case of unstressed short vowels, /e/, /æ/, /ʌ/ and /ɒ/ are also prevented from appearing in syllable-final position; however, unstressed /ɪ/ and /ʊ/ are allowed the same “privilege of occurrence” as /ə/ when a consonant begins a following syllable, and may therefore occur in final position in unstressed syllables except pre-pausally. Thus in a word such as ‘develop’, the syllable division is /dɪˈvel.əp/.

(b) Notwithstanding the above, words in compounds should not be re-divided syllabically in a way that does not agree with perceived word boundaries. For example, ‘hardware’ could in theory be divided /ˈhɑ:d.dweəʃ/, but most readers would find this counter-intuitive and would prefer /ˈhɑ:d.weəʃ/. This principle applies to open, closed and hyphenated compounds.

2.7 Assimilation

Assimilation is a process found in all languages which causes speech sounds to be modified in a way which makes them more similar to their neighbours. A well-known example is that of English alveolar consonants such as /t, d, n/, which, when they are followed by a consonant which does not have alveolar place of articulation, tend to adopt the place of articulation of the following consonant. Thus the /t/ at the end of ‘foot’ /fʊt/ changes to /p/ when followed by /b/ in the word ‘football’, giving the pronunciation /ˈfʊp.bɔ:l/. A similar case is the assimilation of /s/ to a following /ʃ/ or /j/, resulting in the pronunciation of ‘this ship’ as /ðɪʃˈʃɪp/ and ‘this year’ as /ðɪʃˈjɪə/. This assimilation can be considered to be optional.

The assimilation of /n/ is a rather special case: many English words begin with the prefixes ‘in-’

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and ‘un-’, and in a number of cases the /n/ of these prefixes is followed by a consonant which is not alveolar. In some cases it seems to be normal that the /n/ is regularly assimilated to the place of articulation of the following consonant (e.g. ‘inquest’ /'ɪŋ.kwest/), while in others this assimilation is optional (e.g. ‘incautious’ may be /ɪn'kɔː.fəs/ or /ɪŋ'kɔː.fəs/). Where it is clear that the prefix is attached to a word that exists independently, so that prefix and stem are easily separable, the assimilation is normally treated as optional. When it seems more like an integral part of the word, the assimilation is shown as obligatory. The occurrence of assimilation in British and American English may differ.

2.8 Treatment of /r/

The accent used for British English is classed as *non-rhotic* – the phoneme /r/ is not usually pronounced except when a vowel follows it. The American pronunciations, on the other hand, do show a rhotic accent, and in general in the accent described, /r/ is pronounced where the letter r is found in the spelling.

It is necessary to show, in British English entries, cases of *potential* pronunciation of /r/, mainly in word-final position; in other words, it is necessary to indicate, in a word such as ‘car’, that though the word when said in isolation does not have /r/ in the pronunciation (/kɑː/), there is a *potential* /r/ which is realised if a vowel follows (e.g. in ‘car owner’). This is indicated by giving the transcription as /kɑːr/, where the superscript /r/ indicates the potential for pronunciation. This is traditionally known as ‘linking r’. A controversial question is that of so-called ‘intrusive r’, where the phoneme /r/ is pronounced when no ‘r’ is seen in the spelling. For example, the phrase ‘china and glass’ will often be pronounced with /r/ at the end of the word ‘china’; although this type of pronunciation is widespread in the speech of native speakers of the accent described, it is still safer not to recommend it to foreign learners, and it is therefore avoided in this dictionary.

2.9 Use of /i/ and /u/

There are many places in present-day British and American English where the distinction between /i/ and /i:/ is neutralised. For example, the final vowel of ‘city’ and ‘seedy’ seems to belong neither to the /i/ phoneme nor to /i:/. The symbol /i/ is used in this case (though it is not, strictly speaking, a phoneme symbol; there is no obvious way to choose suitable brackets for this symbol, but phoneme brackets // will be used for simplicity). A parallel argument can be made for the distinction between /u/ and /u:/

(with a corresponding ‘neutralised’ symbol /u/), though this is needed much less frequently. This issue, and the issues which follow, are discussed in detail in Roach (2000), pp. 84–86.

(a) In word-final position, /ɪ/ and /ʊ/ do not occur. Word-final, close vowels are transcribed with /i/ and /u/ if unstressed. Word-final /i:/ and /u:/ are possible both with stress (‘grantee’, ‘bamboo’) and without (‘Hindi’, ‘argue’), although in the unstressed case it is often not possible to draw a clear line between /i:/ and /i/ , or between /u:/ and /u/.

(b) In compounds such as ‘busybody’ and names such as ‘Merryweather’, /i/ is permitted to occur word-medially, e.g. ‘busybody’ is transcribed /'bɪz.i.bɒd.i ⑤ 'bɪz.i.bɑː.di/) and ‘Merryweather’ as /'mer.i.weð.ə ⑤ 'mer.i.weð.ə/. In all other cases word-medially, /ɪ/ is used when the vowel is unstressed, unless a vowel follows (see below).

(c) The vowel symbols /ɪ/ and /ʊ/ only occur in front of another vowel symbol if they form part of a composite (diphthong or triphthong) phoneme symbol (e.g. /ɪə, ʊə/). Otherwise /i/ or /u/ is used (e.g. ‘scurrying’ /'skʌr.i.ɪŋ/, ‘influenza’ /ɪn.flu'en.zə/).

(d) A matter related to this decision concerns words ending in ‘-ier’, ‘-eer’, ‘-ia’. The usual transcription in the 14th Edition of the EPD was /ɪə/. However, ‘reindeer’ and ‘windier’ (comparative form of ‘windy’) do not have identical pronunciations in their final syllables in British English (BBC). In this edition, the alternative /-jə/ previously given for the latter type of word has been dropped; ‘reindeer’ is transcribed as /'reɪn.dɪə/ and ‘windier’ as /'wɪn.di.ə/. The latter transcription, which indicates a different (closer) vowel quality in the second syllable of ‘windier’, and implies a pronunciation with three rather than two syllables, is felt to be accurate in terms of contemporary pronunciation.

The long vowels /i:/ and /u:/ may also occur before other vowels, but only when in a stressed syllable (e.g. ‘skiing’ /'skiː.ɪŋ/, ‘canoeing’ /kə'nuː.ɪŋ/).

2.10 Syllabic consonants

Syllabic consonants are frequently found in English pronunciation: these are cases where instead of an expected vowel-plus-consonant sequence, the consonant alone (usually one of /m, n, ŋ, l, r/) is pronounced with the rhythmical value of a syllable. (See Roach, 2000, pp. 86–90.) In EPD14, syllabic consonants were only marked where there is

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ambiguity in the pronunciation of a word; for example, in a word such as ‘bottle’, the transcription /'bɒtl/ is said to imply unambiguously that the /l/ is syllabic, whereas in the derived form ‘bottling’ there may be two pronunciations, one with and one without a syllabic /l/. In this instance the EPD14 preferred pronunciation was /'bɒtlɪŋ/, with /'bɒtlɪŋ/ given as an alternative.

The main problem here is how to deal with optional and obligatory syllabicity and the permissibility of vowels. The most frequently found case is where an item may have (i) a schwa vowel followed by a non-syllabic consonant, (ii) a syllabic consonant not preceded by schwa or (iii) a non-syllabic consonant not preceded by schwa. For example, ‘lightening’ may be (i) /'laɪ.tə.nɪŋ/, (ii) /'laɪ.t̩.nɪŋ/ or (iii) /'laɪ.nɪŋ/. Such items are transcribed as /'laɪ.t̩.n.ɪŋ/ and /'laɪ.t̩.nɪŋ/, the first representing cases (i) and (ii), in which there are three syllables, and the second representing only the disyllabic pronunciation, (iii). The use of superscript schwa in words such as /'laɪ.t̩.n.ɪŋ/ should be interpreted as meaning that the schwa may be pronounced, or may be omitted while giving its syllabic character to the following consonant.

Syllabic nasals are not usual where they would result in a nasal-plosive-syllabic consonant sequence (e.g. ‘London’, ‘abandon’ must contain a schwa vowel in the final syllable).

2.11 Optional sounds

The convention used in EPD14 of printing phoneme symbols in italics to indicate that they may be omitted is retained, though used more sparingly. It is not necessary to give alternative pronunciations that simply follow general rules of simplification that apply in rapid speech. For example, pointing out the possibility of omitting the [d] sound in ‘engine’ seems unnecessary, whereas it does seem worth recording the fact that some speakers pronounce words such as ‘lunch’ and ‘French’ with a final /ntʃ/ while others have final /nʃ/. There is a difference between the two cases: the former is a straightforward example of elision, and needs no special explanation that refers to a specific word or class of word, while the latter is a particular case of an insertion or deletion that is restricted to a particular phonological environment; speakers are usually consistent in using one or other of the alternative pronunciations in the latter case.

2.12 Elision

As mentioned in the preceding section, there are

many cases where sounds which are produced in words pronounced on their own, or in slow, careful speech, are not found in a different style of speech. This is known as *elision*, and this dictionary normally does not show elisions in order to avoid adding a large number of additional pronunciations that are typical of casual speech. It is usual to explain elision in terms of the Principle of Least Effort – we try to avoid doing more work than is necessary. We find elision most commonly in the simplification of consonant clusters. A common example is the loss of /t/ and /d/ in combination with other consonants. Examples are:

‘act badly’ /,ækt' bæd.li/ (careful speech)
 /,æk' bæd.li/ (rapid speech)

‘strange person’ /,streɪndʒ' pɜː.sən ⑤
 -'pɜː.sən/ (careful speech) /,streɪnʒ' pɜː.sən
 ⑤ -'pɜː.sən/ (rapid speech)

The fricative /θ/ is also frequently lost in clusters in rapid speech. Examples are:

‘sixth place’ /,sɪksθ' pleɪs/ (careful speech)
 /,sɪks' pleɪs/ (rapid speech)

Elision of vowels is also found, and again this seems to be characteristic of rapid or casual speech. Examples are:

‘philosophy’ /fɪ'lɒs.ə.fi ⑤ -'laɪ.sə-/ (careful speech)
 /fə'lɒs.fi ⑤ -'laɪs.fi/ (rapid speech)

‘persuade’ /pə'sweɪd ⑤ pə'-/ (careful speech)
 /psweɪd/ (rapid speech)

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Part 3: Explanatory notes

Pronunciations are shown in order of frequency.

affection ,æf.ek'teɪ.fən, -ɪk' -s -z

Variant pronunciations show the parts that are different from the first pronunciation.

Inflections and derived forms of words are shown after the main form.

adapt ə'dæpt -s -s -ɪŋ -ɪŋ -ed -ɪd
 -ɪv -ɪv

British pronunciations.

Barnardo bə'nɑː.dəʊ, bɑː-
 (US) bə'nɑːr.dou

This sign shows that an American pronunciation follows. If this sign is not shown, the pronunciation is the same for British and American.

American pronunciation.

For US pronunciations, only the part that is different from the British is shown.

deportee ,dɪː.pɔː'tiː (US) -pɔːr' -s -z

The 'cutback bar' shows the place at which a word is divided so that alternative endings can be shown without having to print the entire word again. Inflected forms and derived forms are added to this stem.

actually 'æk.tʃu.ə.rli, -tʃu.ərli
 (US) -tʃu- -ɪz -ɪz

Stress patterns are shown for common compounds and idioms.

apple 'æp. əl -s -z 'apple ,blossom;
 'apple ,butter; 'apple 'sauce
 (US) 'apple ,sauce; 'apple ,tree; the
 ,apple of one's 'eye

In some words, the stress moves according to the position of the word. This is called 'stress shift' and is indicated with an example.

Adriatic ,eɪ.dri'æt.ɪk (US) -'ætʃ - *stress shift*: 'Adriatic 'Sea

Glosses indicate where pronunciations differ according to meaning.

Aden *in the Yemen*: 'eɪ.dən (US) 'aɪ-, 'eɪ-
in Grampian region: 'æd.ən

Words which can be used with or without a capital letter are shown like this.

advent (A) 'æd.vent, -vənt -s -s

A semi-colon indicates that the alternatives that follow cannot be added to the pronunciation given earlier.

adenoidectomy
 ,æd.ə.nɔɪ'dek.tə.m|i,-m.ɔɪ'-
 (US) -'n.ɔɪ'-; ,æd.nɔɪ'- -ies -iz

Variant spelling of the word.

Acheulean, Acheulian ə'tʃuː.li.ən

Italic characters indicate that a sound is optional.

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List of recommended reading

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 A recent addition to Cambridge's 'In Use' series for learners of English language, with descriptive panels followed by practical exercises. Recorded material is also available.

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THE INTERNATIONAL PHONETIC ALPHABET (revised to 1993, updated 1996)

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			ʀ					ʀ		
Tap or Flap				ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

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

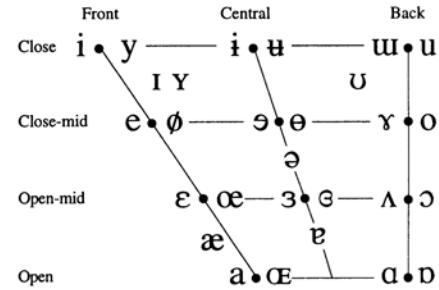
CONSONANTS (NON-PULMONIC)

Clicks	Voiced implosives	Ejectives
◌ ɓ	ɓ Bilabial	ʼ Examples:
◌ ɗ	ɗ Dental/alveolar	ɓ' Bilabial
◌ ɗ͡ʁ	ɗ͡ʁ Palatal	ɗ' Dental/alveolar
◌ ɠ	ɠ Velar	ɠ' Velar
◌ ʙ	ʙ Uvular	ʙ' Alveolar fricative

OTHER SYMBOLS

- ɱ Voiceless labial-velar fricative
- ɰ Voiced labial-velar approximant
- ɸ Voiced labial-palatal approximant
- ħ Voiceless epiglottal fricative
- ʕ Voiced epiglottal fricative
- ʡ Epiglottal plosive
- ɕ ʑ Alveolo-palatal fricatives
- ɻ Alveolar lateral flap
- ɧ Simultaneous ʃ and x
- Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary.

VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

SUPRASEGMENTALS

- ˈ Primary stress
- ˌ Secondary stress
- ː Long
- ˑ Half-long
- ˑ̇ Extra-short
- ˑ̇ Minor (foot) group
- ˑ̇ Major (intonation) group
- ˑ̇ Syllable break
- ˑ̇ Linking (absence of a break)

DIACRITICS Diacritics may be placed above a symbol with a descender, e.g. ɪ̥

◌̥ Voiceless	◌̥	◌̤ Breathy voiced	◌̤	◌̦ Dental	◌̦
◌̇ Voiced	◌̇	◌̣ Creaky voiced	◌̣	◌̧ Apical	◌̧
◌̨ Aspirated	◌̨	◌̩ Linguolabial	◌̩	◌̪ Laminal	◌̪
◌̪ More rounded	◌̪	◌̫ Labialized	◌̫	◌̬ Nasalized	◌̬
◌̫ Less rounded	◌̫	◌̭ Palatalized	◌̭	◌̮ Nasal release	◌̮
◌̬ Advanced	◌̬	◌̯ Velarized	◌̯	◌̰ Lateral release	◌̰
◌̭ Retracted	◌̭	◌̮ Pharyngealized	◌̮	◌̯ No audible release	◌̯
◌̮ Centralized	◌̮	◌̯ Velarized or pharyngealized	◌̯		
◌̯ Mid-centralized	◌̯	◌̰ Raised	◌̰ (ɹ̰ = voiced alveolar fricative)		
◌̰ Syllabic	◌̰	◌̱ Lowered	◌̱ (ɸ̱ = voiced bilabial approximant)		
◌̱ Non-syllabic	◌̱	◌̲ Advanced Tongue Root	◌̲		
◌̲ Rhoticity	◌̲	◌̳ Retracted Tongue Root	◌̳		

- TONES AND WORD ACCENTS LEVEL
- ◌̥ Extra high
 - ◌̇ High
 - ◌̨ Mid
 - ◌̩ Low
 - ◌̪ Extra low
 - ◌̫ Downstep
 - ◌̬ Upstep
- CONTOUR
- ◌̥ Rising
 - ◌̇ Falling
 - ◌̨ High rising
 - ◌̩ Low rising
 - ◌̪ Rising-falling
 - ◌̫ Global rise
 - ◌̬ Global fall

This chart is reproduced by courtesy of the International Phonetic Association

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