A Glossary of Phonology

PHILIP CARR

‘This is an extremely useful piece of work. The terms selected are essential for anyone wishing to become acquainted with the fields of contemporary phonology and phonetics. Not only does the glossary offer definitions for the standard terms used in modern phonology and phonetics, but it also covers aspects of historical linguistics, sociolinguistics, psycholinguistics, language acquisition, bilingualism, and the philosophy of science. In a nutshell, it is a reference work useful for a large audience, from students to professionals in neighbouring disciplines.’

Jacques Durand, Professor of Linguistics, University of Toulouse and CNRS

This pocket-sized alphabetical guide to phonology provides an introduction to the range of phenomena studied in phonology and the main theoretical frameworks for engaging in phonological analysis. The entries are concise and clear, providing an overview of one of the main area of linguistic analysis.

Key features:
• A handy and easily understandable pocket guide for anyone embarking on courses in phonology
• Supplies numerous cross-references to related terms
• Contains an introduction which outlines the range of the field
• Includes an annotated bibliography with suggestions for further reading.

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A Glossary of Phonology

Philip Carr

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Introduction

When I agreed to write this little book, I imagined that it would be easier to put together than a textbook. I was wrong. In a textbook, one can tell the reader the following sort of thing: ‘Recall our discussion of this phenomenon in chapter 2; now we’ll look at it in more detail.’ That cannot be done in a glossary, since it has no narrative structure. And while elementary textbooks require a good deal of simplification, a glossary is bound to be even more simplified, since the entries have to be kept relatively short. None the less, I hope that the definitions given here are accurate, if simplified, and will be of some help to students engaging with a discipline which can appear to have a dauntingly large amount of specialised terminology.

I have chosen to focus on what I take to be phonological phenomena: that is, the kinds of states of affairs which phonologists believe they have often observed in human languages, such as, say vowel nasalisation. In doing so, I have adopted the process metaphor; many of the phenomena in question are described as processes. Because I wish to focus on what I take to be phenomena, I have tried to avoid defining phonological notions in terms of properties of diagrams. Phonologists are fond of diagrams for understandable reasons; human beings find it helpful to be able to depict, and thus visualise, abstract notions. But I believe that one should not mistake the diagrams for the
phenomena under investigation. Since the focus is on phonological phenomena, I have not attempted to list every theoretical construct postulated in the history of phonology. When one considers the vast number of such constructs, particularly in the field of generative phonology, the task would anyway have been impossible, given the space limitations.

It is with the most fundamental, elementary terms in linguistics that the most difficult issues arise. An example is the definition of the word ‘phonology’ itself. The fact is that there is controversy as to exactly what we take the discipline and its object of inquiry to be. I have not sought to sweep such controversy under the carpet. Rather, I have tried to explain, in relatively simple terms, what the different, often competing, conceptions are. One of the issues here is the question of whether a valid distinction can be drawn between phonetics and phonology. And if such a distinction can be drawn, how is it to be drawn, and what might the relation be between these two areas? These are difficult, controversial issues, and I have not hesitated to convey that fact to the reader. Since I believe that we do need to distinguish phonetics and phonology, and assuming that a glossary of phonetics will be forthcoming in this glossary series, I have not attempted a systematic coverage of phonetic terminology. Rather, I have given definitions for phonetic terms as and when I needed to use them.

Related to the kinds of controversy which exist in the field of phonology is the status of expressions such as ‘mentalism’ and other ‘isms’. The moment one tries to define expressions such as ‘phonology’ or ‘phoneme’, one has to explain that there are mentalistic and non-mentalistic conceptions of these, and different kinds of mentalistic conception. I have therefore included brief definitions of various ‘isms’ in order to help the reader understand what lies behind the various different conceptions of notions
such as ‘phoneme’. One would not, of course, think of turning to a glossary of phonology if one were seeking a brief definition of, say, Empiricism. But the Empiricist vs Rationalist debate has formed part of the background to the development of phonological theory and theories as to how children acquire a phonological system, so I have given an indication of what that debate is about. I have also done this because I do not believe that phonology should be taught in an intellectual vacuum, cut off from other disciplines. The history of the discipline also constitutes part of the intellectual context in which phonology should be studied. I have therefore included brief definitions of various schools of thought which have existed in the history of phonology, such as the Prague School, founded in the mid-1920s. In connection with this, I have given brief sketches of prominent phonologists, from the nineteenth century to the present day. There was no way of knowing just how many such figures to cite, or of knowing the extent to which a given phonologist could be described as ‘prominent’. I do hope, however, that the reader will have been given at least some idea of who has been associated with which ideas. The discipline is as much about people and places as it is about ideas. My apologies to phonologists who believe that they are major figures in the field, but whose names do not appear here.

In choosing words, phrases and sentences for the purposes of exemplification, I have tried to stick with languages which I purport to know something about, mostly English and French. But there are many phonological phenomena which are simply not attested in either of those languages, and for those phenomena, I have had to resort to primary and secondary sources, which are cited at the end of the book. There is a great danger in citing examples from languages one is not familiar with, but there is no way around it if one is to achieve a decent coverage of the
kinds of phonological phenomena found in the world’s languages. The result of my attempting to exemplify notions from English and French is that there is a bias towards English in this glossary. This should not be interpreted as an attempt to convey the idea that English is somehow superior to, more important than, or more worthy of study than other languages.

It will be evident to teachers that this book has been written by someone with a background in British descriptive traditions. However, I have not, I hope, fallen into a kind of British insularity; there is a good deal of coverage of notions used in European and North American descriptive traditions. Where there are differences between British and American descriptive traditions, I have attempted to indicate what those are.

Since I believe that the discipline of phonology overlaps with other disciplines, I have given brief accounts, where I deemed it necessary and/or useful, of some notions from the fields of child language acquisition, historical linguistics, morphology, sociolinguistics and syntax. I have also tried to ensure that there is a degree of consistency between the definitions of morphological, sociolinguistic and syntactic terms given here and those given in Laurie Bauer’s *A Glossary of Morphology*, Geoffrey Leech’s *A Glossary of English Grammar* and Peter Trudgill’s *A Glossary of Sociolinguistics*.

I have included informal terms such as ‘smoothing’ (monophthongisation) when they are relatively widely used and can be given a clear definition. Informal terms used in ordinary everyday speech have been included if they are meaningful and are also used by linguists. The term ‘broad’, used to refer to certain accents, has therefore been included. Other informal terms used by the lay person have been omitted because they cannot be given a clear definition. Examples are terms such as ‘twang’, ‘drawl’ and
‘flattened vowels’. Such terms are, in my view, used to refer to such a disparate range of phonetic/phonological properties as to be more or less meaningless.

Cross-referenced terms are in **bold**. Words, phrases and sentences given as examples are in *italics*. Glosses (English translations of non-English words) are given in inverted commas. Where a general phenomenon, such as intervocalic voicing or nasalisation, is discussed, the entry is given in lower case. Where I am describing a process which has been postulated for a specific language, such as the Scottish Vowel Length Rule, Liaison in French or Rendaku in Japanese, I have used upper case for the first letter.
ablaut  A process in which a vowel in a morpheme changes to signal a morpho-syntactic property, as in the English pair *come* vs *came*, where the ablaut process signals past tense.

absolute neutralisation  A form of neutralisation which was postulated in the history of generative phonology. It was characterised by the postulating of underlying representations which corresponded to none of the observed surface forms. For instance, in the analysis of Polish, some instances of phonetic [ɛ] alternate with zero, as in [pɔsɛl] vs [pɔsła], the nominative singular and genitive singular of the word for ‘envoy’, where we can see [ɛ] in the nominative form but no [ɛ] in the genitive form. These alternations are distinct from pairs such as [fɔtɛl] vs [fɔtɛla], the nominative singular and genitive singular forms of the word meaning ‘armchair’, where the [ɛ] does not alternate with zero. The suggestion is that the [ɛ]s which alternate with zero must be derived from an underlying representation other than /ɛ/. That underlying representation is said to be a yer, a non-ATR high vowel, represented as /ɨ/, which may be realised as [ɛ] or as zero. The objection raised to such analyses is that there is no phonetic [ɨ] in contemporary Polish, and that a child acquiring present-day Polish
could not, therefore, possess mentally real underlying representations such as /ɾ/. Those who object to analyses involving absolute neutralisation point out that the yers existed in the history of Polish but no longer exist. To postulate such **abstract** representations for the **synchronic** phonology of Polish is arguably to represent **diachrony** mistakenly as **synchrony**. Most current versions of generative phonology are less abstract than those which adopted absolute neutralisation.

**abstract** This term is often used by phonologists to describe analyses in which phonological representations of words are postulated which are at some remove from the observable pronunciation of the word. A simple example is the phonological representation /wɪɾi/ of the word *witty* in **General American**. The normal pronunciation is [wɪɾi], with a **flap (tap)** rather than a [t]. Some phonologists claim that the flap results from a **synchronic process** of Flapping, in which the phonemes /t/ and /d/ are realised phonetically as an **alveolar** flap. See **realisation**. Phonological representations can be considerably more abstract than this. See **absolute neutralisation**. While some phonologists take the term ‘abstract’ to mean ‘mentally real’ in some sense, others who adopt **instrumentalism** intend ‘abstract’ to mean ‘not corresponding to anything real outside of the theory’.

**accent** A term used, especially by British linguists, to identify varieties of a language with respect only to phonetic and phonological properties of that variety. Accent is often distinguished from **dialect**, which is said to denote, not just phonetic and phonological properties of a given variety, but also differences in vocabulary and syntax. An example of an accent of English is **Standard Scottish English** (SSE), which differs in its
vowel and consonant systems from the accent known as Received Pronunciation (also known as Standard Southern British English). For example, there is no /u:/ vs /u/ contrast in SSE. An example of a dialect is Lowland Scots, whose syntax and vocabulary differ from the dialect known as Standard English. For example, ‘ear’ in Lowland Scots is ‘lug’, and ‘chimney’ is ‘lum’. American linguists tend not to adopt the accent/dialect distinction.

The term ‘accent’ is also used as a synonym for word stress, so that an accented syllable is a stressed syllable.

active articulator The articulator which moves to form an articulation with a passive articulator. For example, in alveolar sounds, the tip and/or the blade of the tongue is the active articulator, and the alveolar ridge is the passive articulator; the tongue moves to form an articulation with the passive articulator.

Advanced Tongue Root (ATR) A property often associated with vowels, in which the root of the tongue is pushed forward, leading to various effects on the tongue body. Typical ATR and non-ATR vowel pairs are [i]/[ɪ], [u]/[ʊ], [e]/[ɛ], [o]/[ɔ]. Low vowels frequently fail to have an ATR counterpart, and often act as opaque vowels in ATR-based vowel harmony systems. ATR/non-ATR distinctions among high vowels often collapse during historical change, leaving only the ATR member, such as [i] or [u]. Such vowels often then act as neutral vowels.

affix A morphological unit attached to a base. The three main types of affix are prefixes, suffixes and infixes. Prefixes precede a base. Examples are the English prefix un-, as in unhappy, and the French prefix re-, as
in *redemander* (‘to ask again’). Suffixes follow a base. Examples are the English suffix *-ness*, as in *happiness*, and the French suffix *-ment*, as in *doucement* (‘gently’, from the adjective *douce*, meaning ‘soft’ or ‘gentle’). Infixes are inserted inside a base. An example is the Tagalog infix *-um*, as in the word *sumulat*, which consists of the base *sulat* (‘to write’) with the infix *-um* inserted after the initial /s/.

**affricate** A type of speech sound involving a **stop** closure followed by slow release of the closure, resulting in audible friction, as in the case of the [tʃ] at the beginning and the end of the English word *church*.

**airstream** The flow of air on which speech sounds are based.

**airstream mechanisms** The various kinds of airstream which are harnessed in the production of human speech sounds. The one found in all human languages is the **pulmonic egressive** mechanism, in which air flows out from the lungs. A less common one is the **pulmonic ingressive** mechanism, in which air is sucked into the lungs. Sounds produced this way are called **implosives**. The **bilabial**, **alveolar** and **velar** implosives are transcribed as [ɓ], [ɗ] and [ʡ]. They are formed by making a **stop** closure in the oral cavity, sucking air into the lungs, releasing the closure, and allowing air to implode into the oral cavity. They are found in many African languages. Sounds produced with the **glottalic airstream mechanism** have a glottal closure and a stricture of complete closure made within the oral cavity. If the **larynx** is then raised, this pushes air upwards, creating an airstream, and if the oral closure is released, the air rushes out. Sounds made this way are called **ejectives**. The bilabial, alveolar and velar ejectives are
transcribed as [p’], [t’] and [k’]. These sounds are found in many American Indian languages. Sounds made with the velaric airstream mechanism have a closure between the back of the tongue and the soft palate, and another closure further forward in the oral cavity. If the velar closure is pulled back, this creates an ingressive airstream. This is the mechanism used in sucking. When the closure further forward in the oral cavity is released, air flows in. Sounds produced this way are called clicks. They are found in child vocal play and certain languages spoken mostly in Southern Africa, such as Zulu and Xhosa. The alveolar click is transcribed as [!] and the alveolar lateral click is transcribed as [ʔ]. The latter sound is used by speakers of various languages to ‘gee-up’ horses.

**Aitken’s Law** see Scottish Vowel Length Rule

**algorithm** A set of rules or procedures. It is common to talk, for instance, of the algorithm for word stress assignment in a language. In Malay, the algorithm for word stress assignment is: place a primary stress on the penultimate syllable of the word, and then place a secondary stress on the initial syllable of the word and each alternate syllable thereafter, subject to stress clash avoidance.

**allophone** see Phonemic Principle

**allophony** The phenomenon whereby a phoneme has two or more allophones.

**alternants** Variant phonetic forms of a morpheme. The English morpheme -in has the alternant [im] in impossible, [in] in indirect, and [in] in incredible. Such
morpho-phonological alternations are rule-governed; in this case, the place of articulation of the nasal stop is determined by the place of articulation of the following consonant.

 alternation The phenomenon whereby a morpheme has more than one alternant.

alveolar Sounds produced with the alveolar ridge as the passive articulator are alveolar sounds.

alveolar ridge The teeth ridge, located behind the upper teeth.

ambisyllabic The boundary between syllables is often easy to establish, as in the French word *bateau* (‘boat’): [ba.to]. But there are cases where there seems to be evidence for more than one possible syllabification. Take the English word *petrol*. On the one hand, the Maximal Onset Principle states that, since /tr/ is a legitimate onset cluster in English, the syllabification should be pe.trol. On the other hand, many speakers have a glottal stop realisation of the /t/ in this word, and for these speakers, /t/ is not normally realised as a glottal stop in onset position. Some phonologists have therefore suggested that in cases like this, the consonant in question is simultaneously in the coda of the penultimate syllable and in the onset of the final syllable; it is ambisyllabic, belonging to two syllables at the same time.

American Structuralism The kind of linguistics practised in the US in the 1930s, 1940s and 1950s, prior to the emergence of generative phonology. Names associated with this period include Leonard Bloomfield, Archibald Hill, Charles Hockett, Martin Joos, George
Trager and Rulon Wells. It is widely believed that the American Structuralists were sceptical about the existence of linguistic universals, unlike Chomsky and his followers. Like Chomsky, the American Structuralists believed that the kind of linguistics they practised was ‘scientific’, but their conception of what scientific method was differed radically from Chomsky’s. Adopting a philosophy of science which was influenced by logical positivism, the American Structuralists assumed that genuinely scientific theories were based solely on observation and on inductive generalisations over those observations. Since the mind is unobservable, this meant excluding mentalism from linguistics. In the field of phonology, the American Structuralists are said to have postulated ‘discovery procedures’ by means of which the linguist can arrive at (‘discover’) the phonemic and morphophonemic system of a given language. Included in those ‘discovery procedures’ is the Phonemic Principle.

analogy A term used in psychology, linguistics and many other fields to refer to the human capacity to spot similarities between distinct objects or events. Some have said that there is an analogy between the Iraq War and the Vietnam War; they are said to be similar in certain respects. In phonology, it is often claimed that certain diachronic changes in languages are based on perceived analogies. The phenomenon known as Intrusive ‘r’ in non-rhotic varieties of English is often said to have come about by analogy with Linking ‘r’. In child language acquisition, it has often been claimed that child forms such as brought (instead of the irregular form brought) and caught (instead of caught) are formed by analogy with the past tense forms of regular verbs such as banged and splashed.
Anderson, John M. A Scottish linguist known, in syntax, for his work on case grammar and, in phonology, for the elaboration of the framework known as Dependency Phonology. Anderson is also known for his support of the Principle of Structural Analogy.

Anderson, Stephen R. An American linguist working in the generative phonology tradition, who has worked on a wide variety of phonological phenomena including nasal consonants, tone, vowel harmony and metrical structure. He is also a specialist in the history of phonology and is known for his theory of morphology.

antepenultimate Third last. Often used to refer to the position of a syllable in a word for the purposes of word stress assignment in languages where word stress is calculated from the end of the word.

anterior A distinctive feature used to differentiate different kinds of coronal speech sound types. Anterior coronals are dental or alveolar (such as [θ] and [s]), whereas postalveolars, such as [ʃ], are non-anterior.

antigemination A phenomenon whereby vowel deletion is blocked if it would lead to two identical adjacent consonants (i.e. a geminate consonant). In the Cushitic language Afar, unstressed vowels are deleted in the context #CVC.CV, so that /wager/ + /é/ (‘he reconciled’) becomes [wagré]. But the deletion fails to apply in cases such as /gonan/ + /a/ (‘search for’), since the deletion would result in the sequence [gonna], with a geminate [nn].

apical Sounds made with the tip of the tongue are said to be apical. The dental fricatives [θ] and [ð] are examples.
apocope  Loss of a word-final segment. This can be a consonant or a vowel. In English, word-final /t/ is often lost if the following word begins with a consonant, as in last chance: [lɑːstʃɑːns]. In Italian, the indefinite articles uno and una undergo loss of their final vowel if the following noun begins with a vowel, as in una ragazza (‘a girl’) vs un’ ora (‘an hour’).

approximant  see degree of stricture

archiphoneme  A term used by Prague School phonologists such as Trubetzkoy when dealing with neutralisation. When the contrast between two phonemes in opposition is suspended (neutralised) in a specific context, one can postulate an archiphoneme, which is a representation of all of the properties shared by the phonemes in question. For instance, in Polish, there is a phonemic contrast between voiced obstruents and voiceless obstruents, but it is neutralised in word-final position, so that /trud/ (‘labour’) undergoes Word-Final Devoicing and is pronounced as [trut] in the singular. When the /d/ is not in word-final position, it is not devoiced, as in the plural form [trudi]. Trubetzkoy argued that what appears in word-final position is neither the voiced phoneme /d/ nor the voiceless phoneme /t/, but an archiphoneme /D/, which represents what the two phonemes have in common: they are both stops and are both alveolar.

Articulatory Phonetics  That branch of phonetics which deals with the way human speech sounds are articulated.

Articulatory Phonology  A phonological model which takes phonological representations to consist of sequences of overlapping phonological gestures such as laryngeal gestures and gestures in the oral cavity.
articulatory planning A term used to refer to the largely unconscious planning of the movements of the articulators during acts of uttering.

ash The name given to the vowel represented as /æ/ in work on the phonology of English. Ash is often a low front unrounded vowel, articulated somewhat higher than cardinal vowel 4.

aspiration Some phonologists argue that sounds which are aspirated are produced with spreading of the vocal cords. Others suggest that aspiration is produced by a delay in the onset of voicing after a stop closure has been released, as in the pronunciation [pʰɪt], in which it is claimed that there is a delay between the release of the bilabial stop closure and the onset of voicing for the following vowel [ɪ]. Aspirated stops are also sometimes referred to as fortis stops. See Voice Onset Time.

assimilation A process whereby two, normally adjacent, sounds become more similar to each other. An example of assimilation for place of articulation can be found in sequences such as ten boys in English, where the /n/ of ten tends to assimilate to the place of articulation of the following bilabial stop: [tʰɛmbɔɹz]. Assimilation for voicing is also common, as in the case of the voiceless obstruents of Hungarian, which become voiced when followed by another voiced obstruent, as seen in the root /kalap/ (‘hat’) which is realised with a voiced stop in [kalabban], where the suffix [ban] is added.

These examples involve regressive (anticipatory) assimilation, in which the first of two sounds assimilates to a following sound. This is the most common kind of assimilation, since it is grounded in ease of
articulation. But progressive (preservative) assimilation is also attested, as in the case of the Lumasaaba morpheme /li/ (‘a root’) which is realised as [di] when a nasal stop precedes it, as in the form [zindi] (‘roots’). Here, the complete closure of the nasal stop carries over on to the following sound, changing it from an approximant to a stop. In some cases, the sounds both preceding and following a segment can induce assimilation. This is what happens with intervocalic voicing, as in the case of voiceless unaspirated stops in Korean, which are realised as voiced stops intervocalically: /pap/ (‘cooked rice’) is realised with a [b] when the suffix /i/ is added: [pabi]. There are also cases of reciprocal assimilation, in which each of the adjacent sounds assimilates to the other, as in the case of Raise your hand! in English, typically uttered as [ɹeɪzəhænd]. In this case, the [z] at the end of raise becomes a postalveolar [ʒ] under the influence of the palatal glide /j/ at the beginning of your, and the palatal glide becomes a [ʒ] as a result of progressive assimilation. Reciprocal assimilation is also known as coalescence. Some phonologists claim that long-distance assimilation exists, in which the segments in question are not adjacent. Examples of this are the phenomena known as consonant harmony and vowel harmony.

**atonic vowel** An unstressed vowel. In the Latin word *amare* (‘to love’), the final vowel is an atonic vowel. See tonic vowel and countertonic vowel.

**ATR** see Advanced Tongue Root

**auditory phonetics** That branch of phonetics which deals with the way that the human ear and perceptual system receive and process speech sounds.
**Autosegmental Phonology** A way of depicting, and conceiving of, phonological representation which departed from previous purely segmental models of phonological structure and postulated several tiers of phonological structure. For tone languages, a tonal tier was postulated on which tones were represented as autosegments, overlaid on a sequence of segments, as in the following diagram:

```
segmental tier  b  u  l  u
                  \  / \\
  tonal tier      H  L
```

Here, ‘H’ and ‘L’ represent **high** and **low** tones.

The same approach came to be applied to certain languages with **nasal harmony**. A nasal autosegment was postulated, located on a nasal tier. The nasal autosegment was then said to be able to attach to individual segments, which would then be nasal consonants or **nasalised** vowels, as in Gokana [nũ] (‘thing’), represented as:

```
segmental tier  /l  u/
      \       /  \n  nasal tier     [N]
```

where ‘[N]’ represents a nasal autosegment which gets attached to the segments on the segmental tier. Autosegmental Phonology is a form of **non-linear phonology**. It has been suggested by some that **Firthian Phonology** was a historical precursor of Autosegmental Phonology, since Firthian **prosodies** seem parallel to autosegments.
avoidance of homophony It is believed by some that there is a general trend towards avoiding the application of phonological processes which create homophones, since we need to maintain lexical contrasts for functional reasons; if most of the minimal pairs of a language were to become homophones, the language would be less useful for purposes of communication.

In the history of French, the Latin word gallus (‘cockerel/rooster’) underwent a sound change whereby the intervocalic /l/ became a /t/, resulting in forms such as gattus, which is homophonous with the Latin word gattus, meaning ‘cat’. In this case, homophony was avoided by using an alternative name for a cockerel, resulting in the present-day word coq.

babbling A phenomenon which begins during the second half of the first year of life, following, but overlapping with, the vocal play period, in which the child utters syllable-like sequences, based on rhythmic movements of the jaw. The syllables in question are often of the CV (consonant-vowel) type, such as [da]. When the child utters reduplicated sequences of identical syllables, such as [dadada], this is referred to as canonical babbling. When the child utters sequences of non-identical syllables, such as [bada], this is referred to as variegated babbling. The amount of variegated babbling increases towards the end of the first year of life. Unfortunately, some writers use the term babbling to refer to the pre-babbling vocalisations of the vocal play period.
back of the tongue That part of the body of the tongue, behind the front of the tongue and in front of the tongue root, which is the active articulator in velar and uvular sounds.

backing see vowel retraction

base A term used in morphology, to denote any part of a word to which an affix may be added. In the English word unhappy, the base is happy. This is the kind of base known as a root. Roots contain no affixes. The base in friendliness is friendly. In this case, the base is not a root; it contains the morphemes friend and -ly.

Baudouin de Courtnay, Jan (1845–1929) Baudouin worked in Russia and later in his native Poland. He was part of the Kazan School. His work influenced the thinking of the Prague School. Baudouin distinguished between the purely physical aspects of sound structure, which he called anthropophonics, and the psychological aspect of sound systems, which he called psychophonetics. This is a phonetics/phonology distinction in which phonology (psychophonetics) is seen as mentalistic phonetics. Baudouin also elaborated a theory of alternations and a theory of phonologisation in which alternations start out as phonetically grounded, but that grounding can become obscured in the course of time, leading to opacity.

BBC English Another term for Received Pronunciation.

Behaviourism A particularly extreme form of Empiricism practised in the mid-twentieth century, in which it was held that only observable behaviour constitutes the object of a properly scientific linguistics. Behaviourism
is thus fundamentally opposed to any variety of mentalism, since the contents of the mind are, by definition, unobservable. It is associated with the work of B. F. Skinner and Leonard Bloomfield. It is important to bear in mind that, if one allows that both observable behaviour and mental realities constitute the object of linguistic (and thus phonological) inquiry, that does not constitute Behaviourism.

**bilabial**  see labial

**bilateral opposition**  see opposition

**bimoraic**  see mora

**binary-valued features**  see feature values

**bisyllabic**  Containing two syllables, as in the French word *bateau*: [ba.to]. The term **disyllabic** is a synonym.

**blade**  That part of the tongue just behind the **tip**, usually involved in **alveolar** articulations.

**blockers**  see opaque vowels and **nasal spread**

**Bloomfield, Leonard** (1887–1949) An American linguist who worked on the native languages of North America and who is often associated with American Structuralism. Influenced by the drift away from mentalism in psychology, Bloomfield adopted, not only **Empiricism**, but also **Behaviourism**. Because he opposed mentalism, Bloomfield argued that one should analyse linguistic structure independently of meaning, but he inevitably failed to do so. Bloomfield embraced the concept of the **phoneme**, but one cannot establish
phonemic contrasts without recourse to meaning (see \textit{minimal pairs}). Bloomfield believed that linguistics could be ‘scientific’, and his conception of what this meant was influenced by \textit{logical positivism}. It is because of this conception that he believed that the only scientifically valid generalisations in linguistics were \textit{inductive generalisations}.

\textbf{Boas, Franz} (1858–1942) A German linguist who became an American citizen in the late nineteenth century. Associated with anthropological linguistics in the USA, in which language is viewed as a set of cultural practices, Boas engaged in a great deal of fieldwork on the native languages of the North American Indians. His best-known student was Edward \textit{Sapir}.

\textbf{body of the tongue} The main part of the tongue, excluding the \textit{tip}, \textit{blade} and \textit{root}.

\textbf{bootstrapping problem} A problem in child language acquisition. The problem is this: if the child decodes speech by mapping utterances of words on to words stored in the child’s mind, how can the child make a start? In order to have mental representations of words stored in the mind, the child must first extract words from the stream of speech. But how can the child extract these if he/she does not already have mental representations of words? There are not normally pauses between words in the stream of speech, so how is the child to know which sequences of phonetic \textit{segments} constitute words? One response to this puzzle is to appeal to the child’s capacity to extract statistical tendencies from the stream of speech (see \textit{stochastic phonology}). The term ‘bootstrapping’ may come from the expression ‘to pull oneself up by one’s
own bootstraps’, meaning to get started from scratch without help, or from its application to computers, which have a bootstrapping program which gets the computer started when it is switched on.

**borrowing** see loanword. The term is also used in the literature on code-switching, to denote words uttered by bilinguals which have been taken from one of the speaker’s languages and phonologically or morphologically modified in accordance with the system of the other language. An utterance such as *L’ordinateur est disconneктé* (‘The computer is disconnected’), uttered by a bilingual speaker, contains the English word *disconnected* which is borrowed and modified, both phonologically and morphologically, to fit with the phonology and morphology of French. The phonological modification lies in the utterance of the English prefix *dis-* as [dis], with a French [i] vowel instead of an English [ɪ] vowel. The morphological modification lies in the uttering of the French suffix -é instead of the English suffix -ed.

**boundary tone** The tone that occurs at the edge of an intonation group. The notion is used by phonologists who analyse intonation contours by separating them into their component tones. Boundary tones are represented in the representational system ToBI.

**branching onset** An onset which contains more than one consonant, as in the English word *brow*. The term ‘branching’ derives from the use of tree diagrams to represent syllable structure; a branching onset is visually represented using a diagram in which the onset node contains two branches.

**breaking** A synonym for diphthongisation.
broad Used to describe non-standard accents which have not been influenced by features of standard accents. Accents may be more or less broad; the broader the accent, the more non-standard features it retains. Thus, a speaker with a broad Liverpool English accent will retain all of the features of that non-standard accent, such as the lenition of voiceless stops to affricates or fricatives, as in [bux] for book. This is one of the few terms to be used, in much the same sense, by specialists and the general public alike.

broad transcription Usually defined in contradistinction to narrow transcription. The difference between the two is that, the narrower a transcription, the more phonetic detail it contains. Broader transcriptions contain less phonetic detail and often approximate to phonemic transcription. Some authors equate broad transcription with phonemic transcription.

Bybee, Joan Under the name Joan Hooper, this American phonologist was associated with Natural Generative Phonology and has more recently been associated with usage-based phonology.

C Stands for consonant. For example, when phonologists speak of CV syllables, they mean simple syllables with a single consonant in the onset position and a single vowel in the nucleus position.

canonical babbling see babbling

cardinal vowels Specific vowel qualities which are used as reference points for locating any given vowel
articulation. The cardinal vowel system of description is based on the idea that one can distinguish the high-low dimension from the front-back dimension. The cardinal vowels are often said to be vowel qualities produced at certain very peripheral points in the vowel space, such as cardinal vowel 1, which is said to be produced with the tongue as high and as far front as it can go in the mouth without friction being created (and with the lips unrounded). It has often been claimed that, in making the transition from, say, cardinal vowel 1 ([i]) through cardinal vowel 2 ([e]), to cardinal vowel 3 ([ɛ]) and on to cardinal vowel 4 ([a]), the body of the tongue descends through a series of equidistant steps. But it has equally often been pointed out that this seems not to be physiologically true. None the less, the cardinal vowel system of representing vowel qualities in a trapezium-shaped chart is still seen as a useful, practical way of visualising the vowel space and the available range of vowel qualities. The cardinal vowel chart is still used in the International Phonetic Alphabet.

categorisation The act of allocating specific objects and events to categories. This can range from categorising a given object as an instance of, say, a spoon, to the categorisation of a given speech sound to a particular category. In decoding the speech signal, humans are able to allocate a given speech sound to a specific speech sound type; we can hear a given speech sound as an instance of a [t] or an [s], for example. Many believe that categorisation is central to perception. See normalisation.

Celtic A language family which subsumes present-day languages such as Scots Gaelic, Irish Gaelic, Welsh and Breton. Part of the Indo-European language family.
central The area of the vowel space between front and back. Front vowels lie below the hard palate, back vowels lie below the velum (soft palate), and central vowels lie below where the two meet. An example of a central vowel is the high, rounded ‘u’-type sound produced in Scottish English; transcribed as [ʉ], it lies between high back [u] and high front [y]. The term is also used, in the description of consonants, for sounds in which the air escapes down a groove in the tongue. Most of the fricatives and approximants in English have central escape of air, as in the alveolar fricative [s]. See lateral.

centralisation A vowel articulation is said to be centralised if it is produced closer to the central area of the vowel space than it might otherwise have been. In the IPA, centralised vowels are transcribed with a dieresis, as in [ɛ], which denotes a centralised version of the cardinal vowel [e]. An example of a centralised vowel in English is the [ɛ] of Scottish English, a centralised version of [ɛ] found in many Scottish speakers’ pronunciation of the stressed vowel in words such as eleven, seven, next, yesterday.

centring diphthong A diphthong in which a transition is made towards the centre of the vowel space, in the area where schwa is produced. The RP centring diphthongs are [ɪə], [ʊə] and [ɛə], as in here, poor and there.

checked syllable Synonym for a closed syllable.

checked vowel Another name for the set of English vowels which are known as short or lax vowels.

Chomsky, Noam An American linguist who has worked in the second half of the twentieth century and in the
early twenty-first century. His name is closely associated with generative linguistics. In the field of phonology, he co-authored *The Sound Pattern of English* (SPE) with Morris Halle, thus establishing the framework known as SPE phonology, widely seen as the starting point for generative phonology. He is known for advocating Rationalism in linguistics.

clash avoidance see stress clash avoidance

Classical Latin The standard language spoken in Ancient Rome, Latin was imposed on the inhabitants of the Roman Empire, and was used as a lingua franca among scholars throughout Europe for centuries after the demise of the Roman Empire. Classical Latin is usually distinguished from Vulgar Latin, the version of Latin spoken by the lay person, by colonising Roman soldiers and by merchants. It is Vulgar Latin that is taken to be the source from which the present-day Romance languages evolved.

‘clear l’ This term could be used to denote a lateral that is palatalised, as in the ‘l’ sound found in the Scottish English of the Highlands of Scotland, in words such as [l̩l̩] (lull), where the superscript diacritic ‘i’ denotes palatalisation. One would then have three main types of ‘l’: ‘dark l’, ‘clear l’, and an ‘l’ which is neither clear nor dark (neither velarised nor palatalised). However, the term is used to refer to ‘l’ sounds which are not palatalised, but are also not pronounced with a retraction of the body of the tongue; they are not ‘dark l’s’. In Received Pronunciation (RP), the /l/ phoneme is realised as a ‘dark l’ in the rhyme of syllables, but it is not ‘dark’ in onset position. Many authors refer to this ‘non-dark’ l as ‘clear l’.
Clements, Nick An American phonologist with French (and British) connections who has worked in the USA. Since 1992, the leader of a phonology research team in Paris, he has worked extensively in both the generative phonology tradition and in the Laboratory Phonology community. He is a specialist in the phonology of various African languages who has worked on, among other things, nasality, distinctive features in the world’s languages, feature geometry, tone and the phonetics/phonology interface.

clicks see airstream mechanisms

cлитic A unit which is intermediate between a word and an affix, as in the French pronouns je, te and le in Je te le rends (‘I’m giving it back to you’), which do not seem to have the status of full words such as livre in Je te rends ton livre. Nor do they seem to have the same status as affixes, such as the prefix re- in redemander (‘ask again’). Such units are not affixes, but they are unlike full words in that they typically do not receive the tonic accent in an intonation group. They also undergo reduction processes, such as the elision of the schwa vowel, often conveyed in spelling via the use of apostrophes, as in J’t’aime (‘I love you’), pronounced [f’tɛm]. In English, units such as the n’t in expressions like couldn’t are said to be clitics. A clitic which follows its ‘host’ (such as n’t) is called an enclitic. A clitic which precedes its ‘host’ (such as the J’ and the t’ in J’t’aime) is called a proclitic.

cлитicisation A process in which full words are ‘demoted’ to the status of clitics. In the expression wannabe, from want to be, the words to and be are ‘fused’ with want to form a single trochaic foot which may then function as a single word.
close approximation see degree of stricture

close juncture see juncture

closed syllable see syllable

coalessence A process in which two sounds assimilate to each other. In English, a sequence of alveolar [s] followed by the palatal approximant [j] will often result in coalescence, yielding the palato-alveolar sound [ʃ], as in [mʃə] for miss you. Also known as reciprocal assimilation.

Cockney The popular term for broad varieties of London English.

coda see syllable

code-switching A phenomenon found among both adult and child bilinguals, in which the speaker switches from one language to another during a single sentence or intonation group. This is relevant for phonological investigation, since such speakers switch from one phonological system to another during a single utterance.

cognition Mental states and processes.

cognitive Relating to cognition. Those who support a cognitive view of phonology argue that phonology is about investigating certain mental states and processes, such as phonological representations understood as representations in the mind. On this view, the study of phonological representations and processes is a part of cognitive science.
cognitive science The science of mental states and processes. Many believe that it is possible to gain scientific understanding of at least some aspects of the human mind.

compensatory lengthening A process in which a segment undergoes elision and an adjacent segment lengthens. Very often, it is a coda consonant which is elided, and a preceding vowel is lengthened. In the history of French, vowel + /s/ + consonant sequences underwent elision of the /s/ and compensatory lengthening of the preceding vowel, as in the transition from Old French 
beste (‘beast’), pronounced [bɛsta], to a later form with an elided /s/ and a lengthened /ɛ/: [bɛːtə], reflected in the present-day spelling bête, where the circumflex historically marked the length of the vowel.

competence A term associated with the work of Noam Chomsky and thus widely used in generative linguistics. It designates a speaker’s linguistic knowledge, as opposed to the use of that knowledge. Most generative linguists assume that there is a phonological component within a speaker’s linguistic competence. It is important to bear in mind that, in speaking of linguistic competence, Chomsky is using an everyday term in a specialist sense. In everyday language, ‘competence’ means ability to do something well, ability to perform certain tasks to a certain level. Chomsky denies that knowing a language is knowing how to do something. See I-language, E-language and performance.

complement A term used in syntax to refer to obligatory syntactic constituents, as in the noun phrase the dog in the sentence John kicked the dog. In this example, the noun phrase the dog is said to be the complement of
the verb *kicked*. The verb *kicked*, being a transitive verb, must be followed by a complement, in this case known as a direct object. Phonologists who postulate parallelisms between syntactic structure and phonological structure have argued that certain phonological constituents are complements. For instance, coda consonants are said by some to be complements of the vowels which precede them, as in the word /kæt/ (*cat*), where the coda consonant /t/ is said to be the complement of the vowel /æ/; the nucleus of the syllable is said to require a complement in the form of a coda consonant. Frameworks which have adopted the notion of complement in phonology include Dependency Phonology, Government Phonology and Head-Driven Phonology.

**complementary distribution** see Phonemic Principle

**complete closure** see degree of stricture

**complex segment** Another term for a contour segment.

**compound** A word made from two or more other words. Simple two-part cases in English include words such as *textbook*, *eyelid* and *mole-hill*. Many phonologists postulate a compound stress rule for English in which the first of the two elements is the most prominent. But there are large numbers of English two-part compounds in which the second element is the most prominent. The criteria for establishing whether a given sequence of two words in English is a phrase or a compound include both phonological and semantic phenomena.

**concrete** A term often used to describe postulated phonological representations which are said to be close to the
phonetic form of words as they are pronounced by speakers. It is often opposed to abstract. The distinction is closely related to the difficult problem of the possible distinction between phonology and phonetics. See realisation.

Connectionism see neural nets

consonant Consonants are a subset of the set of human speech sounds. Consonants are produced with three different degrees of stricture: complete closure, close approximation and open approximation. Consonants can be defined in terms of their position in syllable structure; they usually occupy the onset and coda positions, whereas vowels occupy the head of the nucleus position in a syllable (but see syllabic consonants). Some consonants, such as the glides [w] and [j], often called semiconsonants, share with vowels a stricture of open approximation, but, unlike vowels, do not occupy the head of the syllable nucleus. There is a continuum among the set of human speech sounds from most consonantal to most vowel-like. See sonority hierarchy.

consonant harmony In child speech, a phenomenon in which a consonant is altered so as to harmonise with, i.e. become more similar to, another consonant, as in [wɪpu] for ‘whistle’, where a coronal sound (the [s]) in the adult target is uttered as a labial ([p]), thus harmonising with the initial labial (the [w]). The harmonising consonant may become identical to another consonant, as in [gɒɡ] or [dɒd] for ‘dog’. Child consonant harmony usually involves major place of articulation. There is a general tendency for coronals to cede place of articulation to non-coronals, as in [wɪpu] and
[gɒg], but the reverse is attested, as in [dɒd]. Individual children vary a great deal in the extent to which they produce harmonised forms. There is also variation in the shape of words which undergo consonant harmony. For instance, some individual children will have harmony in CVC and CVCVC words, but not in CVCV words.

In adult phonology, consonant harmony for major place of articulation is unattested, but there are many phenomena involving harmony for minor place of articulation, as in Navajo sibilant harmony, where the underlying representation /j-iʃ-mas/ (I’m rolling along’) becomes [jismas], with the palato-alveolar /j/ harmonising with the alveolar /s/.

consonant system  see Phonemic Principle

consonant vocalisation A process whereby a consonant articulation becomes vowel-like. In London English, an /l/ in the rhyme of a syllable is frequently realised as a [w] sound, as in [gew] for ‘girl’, where the /l/ is in coda position.

consonantal Pertaining to consonants; consonant-like. The term is also used as a distinctive feature.

conspiracy Two or more distinct phonological processes can ‘conspire’ to bring about a specific pattern. In Swedish, the plural ending for nouns is -or. When this is added to a noun root ending in a vowel, the final vowel of the root deletes, so that when the plural suffix is added to a root such as ficka, the resulting form is flickor, with deletion of the -a. The definite article in Swedish is the suffix -an. When this is added to a root ending in a vowel, the /a/ in the suffix is deleted, so that
flicka becomes flickan. These are distinct processes, but they ‘conspire’ to block sequences of two vowels across a morpheme boundary.

**constituent** A term used in both syntax and phonology. In syntax, it denotes a set of words which go together to form a structural unit. In the sentence *Jim is in the park*, the sequence *in the park* forms a constituent known as a prepositional phrase. In phonology, syllables are often said to be composed of the two main constituents *onset* and *rhyme*. Phonologists also postulate metrical constituents of words and phrases, the main such constituent being the metrical *foot*.

**constraint** A way of stating an observed generalisation. Examples are phonotactic constraints, which are ways of stating which sequences of segments may occur in specific parts of a syllable in a given language (for instance, the onset sequence /pn/ violates English phonotactic constraints). In the history of generative phonology, a transition occurred in the 1990s from the SPE tradition, which postulated both rules and constraints, to *Optimality Theory*, which attempts to state all phonological generalisations in terms of constraints. The notion of ‘constraint’ is essentially more declarative than the notion of rule, which is easily interpreted as process. Constraints also play a central role in the Theory of Constraints and Repair Strategies proposed by Carole Paradis.

**constricted glottis** A feature used to denote the closure of the vocal cords found in glottal stops and glottalised sounds.

**constriction** Synonym for stricture. See degree of stricture.
**constructivism** An approach to child language acquisition which takes the child to be actively constructing his/her linguistic knowledge. In the field of child syntax, a well-known constructivist is Michael Tomasello. In the field of child phonology, the work of Marilyn Vihman is constructivist. In the field of developmental disorders in child language acquisition, Annette Karmiloff-Smith’s work is constructivist. Constructivists reject the Chomskyan conception of the child’s linguistic development.

**content word** Another term for words of a *lexical* category.

**contour segment** A segment in which there are two distinct subparts, occurring in sequence. *Affricates* are often said to be contour segments, since they consist of a *stop* closure followed by a *fricative* release. *Prenasalised stops* are also often analysed as contour segments. *Pre-aspirated stops* in some languages may be analysed this way too.

**contrastive function** see phoneme

**contrastive stress** A term used to refer to the placement of *tonics* to highlight a contrast. The ‘neutral’ or unmarked *tonic placement* in the sentence *John went to the pub* would have the tonic on *pub*, since it is the *last lexical item*. But if one were seeking to emphasise the fact that it was John, and not someone else, who went to the pub, one could place the tonic on *John*, thus contrasting John with some other person. The terms ‘contrastive *intonation*’ or ‘contrastive tonic placement’ would seem more appropriate than ‘contrastive stress’.
cooing A term used by some child phonology experts to describe the first comfort sounds, uttered in the 2–4-month age period. These sounds are normally produced in response to adults smiling at and talking to the child.

corner vowels The four corner points in the cardinal vowel chart: cardinal vowel 1 ([i]), 4 ([a]), 5 ([æ]) and 8 ([u]).

coronal A term used to subsume dental, alveolar and postalveolar consonants, which are all produced using the blade of the tongue. The word has the same root as crown and coronation but, for some reason, we speak of the blade, rather than the crown, of the tongue. Various theories of distinctive features make use of [coronal] as a feature.

correlate A term used to denote the relationship between some phonological phenomenon and its phonetic realisation. It is often said, for example, that the phonetic correlates of word stress are increased duration, increased loudness, or pitch movement. Some languages rely more on pitch movement than duration to signal word stress, while others rely equally on both.

The term is used as a verb in work on sociophonetic variation. We may say, for example, that occurrence of pre-aspirated [t] in Tyneside English correlates with age, social class and gender, since it is used mostly by young working-class women.

correlation In sociophonetic inquiry, it is common to try to establish whether a given sociolinguistic parameter, such as age or social class, correlates with the presence of a given pronunciation feature, such as non-rhotic
speech. In **New York City English**, degree of non-rhoticity correlates with the social class of the speaker.

**countertonic vowel** A vowel which receives **secondary stress**. In **Classical Latin** and **Vulgar Latin**, word-initial vowels which did not bear **primary stress** received a secondary stress, as in the word *amare* (‘to love’), in which the initial vowel is the countertonic vowel and the second vowel receives primary stress. See **tonic vowel**.

**creole** When children are exposed to a **pidgin** language as their first language during the language acquisition period, the language becomes less simplified than the pidgin. This **process** is known as **creolisation**.

**creolisation** see **creole**

**CV syllable** A **syllable** consisting of a single **consonant** in the **onset** position and a single vowel in the **nucleus**, with no **coda** consonant. Syllables of this sort are often assumed to be the most basic, or simple, sorts of syllable. They are found universally in the **babbling** stage of child development. Some languages have **phonotactic constraints** which allow only CV syllables.

[D]

‘**dark l**’ An informal term used to denote a **lateral** that has a **secondary articulation** involving the **body of the tongue**, usually the **back of the tongue**, which may form a structure of **open approximation** with the **velum**, resulting in **velarisation** of the lateral. Some ‘dark l’ sounds may have a **retraction** of the body of the tongue which is not raised towards the velum, but is withdrawn
towards the back of the oral cavity, without being raised. The British accent referred to as Received Pronunciation (RP) has ‘dark l’ in the rhyme of syllables, but not in the onset position in syllables, as can be seen in the RP pronunciation of words such as lull: [lʌl]. Here, the /l/ in the onset position is not dark, but the /l/ in coda position of the rhyme is a ‘dark l’. See ‘clear l’.

declarative A distinction is often made between an essentially static way of conceiving of phonological generalisations, and an essentially dynamic way of stating those generalisations. The static way involves stating what the well-formed phonological structures are in a given language (phonotactic constraints are an example). This kind of approach is said to be declarative. The dynamic way leans on the notion of phonological processes, such as the idea of syllabification processes which actively build syllable structure.

declarative phonology A phonological model is declarative if it states phonological generalisations in such a way as to avoid any appeal to the notion of derivation. It is sometimes claimed, in models which are said to be declarative, that phonological representations in those models are more concrete than those in derivational models, in that the phonological representations postulated in declarative models are said to represent surface forms ‘directly’.

declination see downdrift

default A term used to denote an unmarked state of affairs. The placement of the tonic in English on the last lexical item is the default placement. Default values of features are the values that are supplied to
underspecified representations if no process has applied to provide a non-default value. The unmarked voicing state for sonorants in human languages is that they are voiced. Some phonologists have therefore postulated default rules to supply feature [voiced] to sonorants, which are left unspecified for voicing state in underlying representations.

degemination A process in which a geminate segment is simplified to become non-geminate. In the English word immaterial, the prefix in- is added to the adjective material. But the word is pronounced with a non-geminate [m]: [ɪmˈmætərɪəl], and not as [ɪməˈmætərɪəl], with a fake geminate. This is in contrast to words such as unnatural, where degemination does not take place; the prefix un- is added to the root natural, resulting in the pronunciation [ʌnˈnætʃərəl], with a fake geminate.

degree of stricture The extent to which airflow is obstructed in the production of a sound. Three degrees of stricture are often recognised. Complete closure represents the highest degree of stricture: the airflow is blocked completely. Sounds produced this way are called stops or plosives. Examples are the [p] in open, the [t] in butter and the [k] in bucket. Close approximation constitutes a less extreme degree of stricture: the articulators come into close contact, but the airflow is not completely blocked. Rather, it escapes through a small space, causing turbulence, heard as audible friction. Sounds produced this way are called fricatives. Examples are the [θ] in thin, the [f] in fin, the [s] in sin and the [ʃ] in shin. Open approximation is an even less extreme degree of stricture: the articulators do not come close enough to cause friction. Sounds produced this way are called approximants and vowels. Examples
are the approximants [j] and [w] in yes and go, and the vowels [i:] and [ɑ:] in see and far in certain varieties of English. Degree of stricture is also known as manner of articulation.

deletion A term used to refer to the loss (elision) of a segment or syllable.

Dell, François A French phonologist who works in the tradition of generative phonology. In the early 1970s, Dell approached the phonology of French from the perspective of SPE phonology. He is also known for his later work on the phonology of the Berber language. With Nick Clements, he runs a phonology research laboratory in Paris.

dental Sounds which are dental involve an articulation between the tip of the tongue and the upper teeth. An example is the voiceless dental fricative at the end of the English word teeth: [tiːθ]. Dental stops are also widely attested, as in the pronunciation [tʰɪŋ] for thing, where the subscript diacritic indicates that the articulation is dental. This phenomenon is attested in many varieties of English. See TH-Stopping.

depalatalisation A process whereby palatal sounds become non-palatal, usually as a result of a process of assimilation. In Polish, the palatal phonemes /ć/, /ń/ and /ń/ are realised as alveolar [t], [d] and [n] respectively when followed by coronal segments, as in the morpheme /vilgoć/ (‘moisture’) which is realised with a [t] in the adjective [vilgotni] (‘moist’).

Dependency Phonology A framework associated with the linguist John M. Anderson, in which the head-dependent
relation is central. Dependency Phonology uses elements, rather than binary-valued features, in the characterisation of segmental structure. Dependency relations are postulated to hold between elements within segments, between the constituents within a syllable, and between the syllables within a foot. In this framework, elements cluster together to form gestures.

dependent see head

derivation Models of phonological organisation which posit more than one level of representation, and which map one level on to another, contain appeal to the notion of a derivation, in which one level is derived from the other. A simple example would be a phonemic model in which the phonetic level is derived from the phonemic level, as in the derivation of the phonetic representation [pʰʌl] from the phonemic representation /pul/ (pull). SPE phonology is derivational, since it appeals to the idea of postulating two levels of representation (underlying representations and surface forms) and deriving one from the other, often via the ordered application of a set of rules.

derivational phonology Any model of phonology which appeals to the notion of a derivation. An example is SPE phonology.

derived see derivation

derived contrast One often finds minimal pairs in which one member of the pair is morphologically complex, while the other is not. In Northern Irish English, the /e/ phoneme often has an [eə] allophone in closed syllables, as in same and daze: [seəm] and [deəz]. It often
has an [ɛː] allophone in open syllables, as in day: [deː]. When one adds the plural suffix to nouns such as day, the pronunciation tends to retain the [ɛː] allophone of the singular: [deːz] (days), despite the fact that the vowel is in a closed syllable in days. One thus finds minimal pairs such as [deɔz] (daze) vs [deːz] (days). Such contrasts are often referred to as derived contrasts; the contrast is derived from a morphological process (here, the addition of the plural suffix). Such contrasts seem distinct from non-derived contrasts such as [get] (gate) and [get] (get). Also known as marginal contrasts. See paradigm uniformity effect.

devoicing A process in which an underlyingly voiced phoneme is realised as voiceless. Final devoicing involves the devoicing of voiced obstruents in word-final or syllable-final position, as in the German word [ʁat] (‘wheel’), which is underlyingly /ʁad/, as seen in the form [ʁadəs] (‘of the wheel’). Consonants may be devoiced because they are adjacent to a voiceless sound, as in the case of the French voiced uvular fricative /ʁ/, which is devoiced in onset clusters when preceded by a voiceless stop. The French word train (‘train’) is /tʁɛ/ phonologically, but [tʁɛ] phonetically, with a voiceless uvular fricative. This latter kind of devoicing is a form of assimilation.

diachronic Relating to diachrony. The diachronic phonology of a language is the study of how its phonology has changed during its history.

diachrony From the Ancient Greek meaning ‘through time’. Studies in the diachrony of a language are studies of the way it has changed over time. Opposed to synchrony.
**diacritic** A visual symbol used in transcriptions to denote some phonetic property. An example is the ‘ʰ’ diacritic used to denote aspiration in voiceless stops, as in the English word *tip*: [tʰɪp]. Some diacritics are superscript diacritics, such as the one we have just seen; they are written above the relevant symbol. Others are subscript diacritics; they are placed below the relevant symbol, as in the case of the diacritic for **Advanced Tongue Root**: [e] denotes an [e] with ATR. Some diacritics run through the symbols in question, as in the case of the velarisation diacritic used to represent ‘dark l’ and other velarised sounds; *full* in English is often transcribed as [fʊl], although the IPA now represents velarised consonants with a superscript diacritic: [fʊlʰ]

dialect see accent

diphthong A vowel sound in which there is a transition from one vowel quality to another within a single syllable nucleus, as in the English word [baɪ] (*buy*). Transitions from one vowel quality to another across syllable boundaries are not diphthongs; English [siːŋ] (*seeing*) has a transition from [iː] to [ɪ], but this is not a diphthong, since the transition does not take place within a single nucleus.

diphthongisation A process in which a monophthong becomes a diphthong. For example, the monophthongs /e/ and /o/ have undergone diphthongisation in many varieties of English to become, for example, [eɪ] and [əʊ]. Referred to informally as **breaking**.

**Direct Syntax Hypothesis** A claim that syntactic structure may directly affect phonological processes. Some have argued, for instance, that **Liaison** in French is triggered
by sequences of words which form a close syntactic unit, as in *les amis* (‘the friends’): [lezami], in which the latent consonant is pronounced since the definite article and the noun form a syntactic constituent.

disharmony Many languages which have vowel harmony contain words with vowels from different harmonic sets, as in Hungarian [sofør] ‘driver’, which has a vowel from the back set and a vowel from the front set. Such cases are often loanwords, as is the case here, where the word is from French *chauffeur* ([ʃɔfœʁ]). Disharmony can also be induced by the presence of neutral vowels and opaque vowels.

Dispersion Theory The claim that vowel phonemes tend to be dispersed across the vowel space. The idea is that, the fewer the vowel contrasts in a given language, the more unlike each other the vowels will be, so that a language with, say, only three vowel phonemes will have maximally distinct vowel qualities, typically /i/, /u/ and /a/, rather than, say, /i/, /e/ and /ɛ/. This minimal vowel triangle plays a central role in element-based theories such as Dependency Phonology. The three vowels in question are sometimes referred to as the point vowels, since they are visualised as three points on a triangle.

dissimilation The opposite of assimilation. A process whereby two adjacent sounds become less similar. For instance, in the history of Greek, a sequence of two fricatives in an onset was permitted in Ancient Greek, but these tended to become, over time, a sequence of a fricative followed by a stop, as in Ancient Greek [fθinos] (‘cheap’) becoming [fτinos] in Modern Greek.
distinctive features  see features

distribution  see Phonemic Principle

distributionalism  A term associated with American Structuralism, whose practitioners focused on establishing the distribution of linguistic units in order to come up with an analysis. In phonology, this meant examining the distribution of segment types in order to assign them to phonemes.

disyllabic  A synonym for bisyllabic.

domain  A stretch of phonological material within which, or across which, or at the edge of which, phonological processes apply. Examples of postulated domains are the syllable, the foot and the phonological word.

dominant/recessive harmony  A form of vowel harmony in which a property of a vowel in some specific affix is spread throughout the root to which it attaches, as in Turkana, where the root /imɔj/ has RTR vowels, but when the habitual suffix /eeni/ is added, its ATR value spreads throughout the root: [ak-imuj-eeni]. Such suffixes are said to be dominant. In such languages, there will be other suffixes which are not dominant, as in [a-imɔj-ı], where the aspectual suffix undergoes ATR harmony. Such suffixes are said to be recessive.

dorsal  A term used to describe sounds in which the body of the tongue (the dorsum) features. The term subsumes velar and uvular sounds. It is used as a feature in theories of distinctive features, and as a node in theories of feature geometry.
downdrift A phenomenon found in tone languages in which the tones become progressively lower as the utterance goes on, so that a word with a high tone which is uttered near the end of the utterance may have the same pitch, or even a lower pitch, than a word uttered with a low tone early in the utterance. In the Kwa language Igbo, the following sentence has a sequence of alternating high and low tones, marked here with the superscript diacritics ‘ and `: ónààŋ wànjàígwè (‘He is trying to ride a bicycle’). The last high tone, on the first syllable of ígwè, is close in pitch level to the first low tone, on the word nà. Also known as declination.

downstep A phenomenon found in tone languages, whereby a high tone has been lowered because of the effect of a preceding low tone which is not phonetically realised. In the Kwa language Twi, in the phonetic sequence [mí bú] (‘my stone’), the second high tone is lower than the first high tone. It has been downstepped by the underlying low tone in the underlying representation /mí ðbú/. The underlying vowel /ð/ is then deleted, so that the cause of the downstepping is not phonetically present in the utterance. Instances of downstepping may well derive historically from processes of downdrift.

drag chain  see vowel shift

Dravidian A language family. The Dravidian languages are spoken in Southern India. They include Tamil, Malayalam, Toda, Telugu and Kannada. These languages do not belong to the Indo-European language family.

DRESS Raising The name for a phenomenon found in New Zealand English, in which words of the lexical
set DRESS are raised from the low mid [ɛ] position to the high [i] position, so that words such as desk are pronounced [dɪsk]. DRESS Raising forms part of a vowel shift in New Zealand English. Words of the lexical set TRAP are raised from [æ] to low mid [ɛ], while words of the lexical set DRESS move into the space of the lexical set KIT, and words in the latter set have a vowel that is shifted back to the high central unrounded vowel [ɨ]. Thus the claim that check-in desk in New Zealand English sounds like chicken disk.

**Durand, Jacques** A contemporary French linguist who spent much of his career in Britain, before returning to his native France. Durand has worked extensively on machine translation, but is mostly known as a phonologist who has worked on a variety of languages, especially French phonology, including the phonology of Midi French (Southern French).

duration A term used to describe the amount of time taken to articulate a given segment. **Geminate** consonants are said to be articulated with greater duration than non-geminates. **Long** vowels are said to be articulated with greater duration than **short** vowels. The term is clearly relative, but the phonetic duration of segments is more or less measurable in milliseconds. The main problem associated with measuring duration is that it varies from speaker to speaker, depending on context and rate of speech. There are also problems in deciding where exactly a given segment starts when one examines a **spectrogram**. Some phonologists distinguish length as a property of phonological representations with the brute phonetic duration of a given segment uttered on a given occasion.
dyslexia  A condition which may be present from birth or which may be acquired as the result of brain injury of the sort induced by a stroke. Dyslexia is a reading dysfunction. Two main subtypes are identified. In surface dyslexia, the ability to recognise whole written word forms is damaged, but the capacity of individuals to access their graphophonemics may remain intact. In cases of phonological dyslexia, the damage is the other way round: affected individuals can recognise whole written word forms, but cannot access their grapho-phonemic knowledge. These phenomena are important for phonologists, since they suggest that graphophonemic knowledge is modular in nature.

ease of articulation  The tendency that human beings have to produce utterances in which articulatory effort is diminished. Assimilations of various sorts are examples; if one utters an /np/ sequence in English sequences such as /in + put/ (input) as [impʊt], one makes a saving in articulatory effort by keeping the lips closed in the production of the nasal stop. Ease of articulation stands in a relation of tension to the need to sustain oppositions which signal differences in meaning. See avoidance of homophony and Martinet.

ejectives  see airstream mechanisms

E-language  External language. In the view of Noam Chomsky, notions such as ‘French’, ‘German’ and ‘Japanese’ are sociopolitical notions which do not constitute the object of linguistic inquiry. Rather, the object of inquiry is said to be I-language. Chomsky
also argues that languages defined as sets of sentences constitute E-language.

elements see feature values

elide When a speech sound is elided, it is not pronounced. When French-speakers (who have no /h/ phoneme in their native language) speak English, they often elide the [h] sounds in words such as happy and hair.

elision A process in which a segment is not pronounced. In many varieties of English, words such as [fæm′li] (family) can be pronounced with an elided [i]:[fæm′li]. In English, it is usually unstressed vowels which are elided. Consonants too may be elided, as in [sɪksθs] (sixths), often pronounced [sɪks]. The process is often referred to as deletion. For the elision of [h] in English, as in Cockney [æpi] for happy, the informal term ‘h-dropping’ is often used.

emphatic consonants Consonants found in the Semitic languages which are apical, but which have a secondary articulation, often in the pharynx. The pharyngealisation can spread to other segments in a word containing an emphatic consonant. In Cairene Arabic, the word for ‘friend’ is [sˤaʕaˤhɪb], where the diacritic [ˤ] indicates pharyngealisation. In this case, the pharyngealisation spreads from the emphatic consonant [sˤ] to the following two vowels.

Empiricism A tradition in the history of philosophy in which human knowledge is said to emerge from the interaction of the mind with the mind-external world. Empiricism has traditionally denied the existence of
innate cognitive content, such as innate concepts. An Empiricist account of phonology claims that phonological knowledge is internalised from the environment, via social interaction with other human beings. Empiricism is traditionally distinguished from Rationalism, also known as Nativism.

empty onset see syllable

enclitic see clitic

Encrevé, Pierre A French phonologist who is known for combining an investigation of sociophonetic variation in speakers of French with an autosegmental approach to Liaison in French.

enhancement The idea that a phonological contrast can be perceptually reinforced, heightened or enhanced by the addition of some extra articulatory gesture to one member or members of the sounds in contrast. If a back vowel contrasts with a front vowel, the contrast can be enhanced if the back vowel is rounded and the front vowel is unrounded.

environment see phonemic Principle

epenthesis The insertion of a segment in a sequence of segments. The inserted segment is said to be epenthetic. An example of an epenthetic consonant is the Intrusive ‘r’ of non-rhotic varieties of English, as in law and order: [lɔːrəndɔː]. An example of an epenthetic vowel is the epenthetic [ʌ] in Scottish pronunciations of words such as umbrella: [ʌmbʌrɛlə].

epenthetic consonant see epenthesis
epenthetic vowel  see epenthesis

European Structuralism  see structuralist linguistics

eurhythmic  see eurhythm

eurhythmy  In many rhythmic systems, there is a tendency towards sequences of alternating stressed and unstressed syllables, with every alternate syllable being stressed. Such sequences exemplify eurhythmy. The Malay word [sa.ka.,ra.tul.'m ā.ūt] (‘near to death’) exemplifies this. It has a (secondary) stressed syllable, followed by an unstressed syllable, followed by another (secondary) stressed syllable, followed by an unstressed syllable, followed by a (primary) stressed syllable, followed by an unstressed syllable. Such a word is said to be eurhythmic.

Everett, Dan  A linguist who works on South American Indian languages, particularly the language Piraha. Everett is a controversial figure since he claims, among other things, that recursion is not an absolute universal of human languages. Everett is known for his work in phonology, morphology and syntax.

exemplar theory  An approach to the mental lexicon whose central claim is that words are stored in the mind with all of the phonetic detail perceived by the speaker/hearer, including all redundant material. The idea is that each time a speaker/hearer hears a word, a trace of it is stored in the mind with all of the phonetic detail included. Thus, words which are frequently heard will have a large number of traces, or exemplars, which will form a dense exemplar cloud in the mind. Words which are heard infrequently will
have weaker representation in the mind. Exemplar theory assumes that the human mind has a vast capacity for storage, and subsequent recognition, of visual and acoustic images. Phonologists who adopt exemplar theory deny that underlying representations in the mind are stripped of all predictable information.

**exponence** see realisation

**external sandhi** see sandhi

**extrametricality** Segments or syllables are said to be extrametrical if they ‘do not count’ in the calculation of syllabic or foot structure. Supposedly extrametrical material occurs at the edges of phonological constituents. It has been argued that, if one discounts the final segment in English words, it is possible to simplify the statement of the word stress assignment algorithm. If the final segment in a verb such as *astonish* is extrametrical, then the final syllable ceases to be heavy and the primary stress will be assigned to the preceding syllable.

**extrasyllabic**ity One or more segments are said to be extrasyllabic if they are not integrated into syllable structure. The floating consonants which participate in Liaison in French are often said to be extrasyllabic.

**fake geminate** see geminate

**falling diphthong** a diphthong in which the most prominent element is the first one, as in English [aʊ] (sometimes transcribed [aw]), where the off-glide [w] is less
prominent than the [a]. The most prominent element is often referred to as the head of the diphthong.

**feature geometry** The study of the way different features group together. Many believe that the major place of articulation features labial, coronal and dorsal group together in this way, and that this grouping may be represented using a tree diagram in which those features are seen as nodes branching from an Oral Place node. Similarly, the features [ATR] and [RTR] are seen as grouping together under a Tongue Root node.

**feature values** Some phonologists who postulate that segments are bundles of features argue that features have a binary ‘+’ or ‘−’ value, as in [+round], a feature said to characterise speech sounds which have lip rounding. Speech sounds which are said to possess the negative feature value [−round] are characterised as lacking lip rounding. Some phonological theories, such as Dependency Phonology, seek to dispose of such binary-valued features, and replace them with elements which are said to be either present or absent, so that sounds with lip rounding have the element [labial], while sounds which lack lip rounding are characterised as not possessing that element. On this view, feature contrasts are privative in nature (see Trubetzkoy). It is an open question whether there is any profound conceptual distinction between presence vs absence of an element such as [labial] on the one hand, and presence of [+labial] vs presence of [−labial] on the other hand.

**features** Most phonologists agree that segments can be decomposed into features, such as [round], [high],
[low], [front] and [back], so that the [u] vowel, for instance, possesses, among others, the features [round], [high] and [back]. Similarly, the [k] consonant is said to possess, among others, the features [high], [back] and [voiceless]. When phonologists speak of distinctive features, they mean features which function to signal phonological contrasts, such as the contrast between voiced and voiceless phonemes. See also cardinal vowels.

**final devoicing** see devoicing

**Firth, J. R.** (1890–1960) A British linguist based at University College London, and then at the School of Oriental and African Studies in London. Firth was sceptical about the extent to which the speech signal can be segmented into individual speech sounds, and this led him to question the validity of the notion phoneme, which was supported by his contemporary Daniel Jones. He adopted a polysystemic approach to phonological analysis and postulated prosodies, which are parallel to the autosegments of Autosegmental Phonology. An example of a prosody is the nasality which one finds in the language Terena, in which words such as [ajo] (‘his brother’) become [ãjô], which means ‘my brother’. In cases such as this, nasality appears to be a purely suprasegmental morpho-syntactic property. Firth argued that phonological properties such as this often had as their domain, not single segments, but larger units such as the syllable, the phonological word and the intonation group. There is a strong element of instrumentalism in Firth’s ideas, and thus anti-mentalism. Firth also appears to have adopted the thesis that phonological objects lack intrinsic phonetic content.
Firthian Phonology  see Firth  

**flap**  A speech sound type in which an active articulator engages in a brief contact with a passive articulator. Several varieties of English have an alveolar flap, transcribed as [ɾ], which is rather like a short [d], or like an alveolar trill, but with only one tap of the tip/blade of the tongue against the passive articulator. During the production of [ɾ], as in Spanish pero (‘but’) or American English witty, the tongue tip/blade taps briefly against the alveolar ridge. Also known as a tap. Although the IPA takes taps and flaps to be the same thing, some phonologists insist on distinguishing them. On this latter view, flaps are said to be retroflex, while taps are not; taps are said to involve a movement up and down of the upper surface of the tip/blade of the tongue against the alveolar ridge, while flaps are said to involve a back-front movement of the underside of the tongue tip/blade.

**Flapping**  A process in which, historically, a [t] sound or a [d] sound has come to be produced as a flap (also known as a tap). The words *patting* and *padding* in General American are typically produced with a tap: [pætɪŋ].

**floating consonants**  Also known as latent consonants, these are usually word-final consonants which are not realised unless they can occupy the onset position in a following word which would otherwise have an empty onset. The Linking ‘r’ of non-rhotic varieties of English is sometimes analysed as a floating consonant. The claim is that there is a word-final /r/ in words such as *far* in such varieties, and that it is floating, or extrasyl-labic, but that it may be linked to an empty onset in
phrases such as *far away*. Similarly, the ‘latent consonants’ which participate in the phenomenon of Liaison in French are said to be floating consonants, such as the */z/* of *mes* in *mes amis* (‘my friends’): [mezami]. These floating consonants fail to be realised if the following word begins with a consonant, as in *mes gants* (‘my gloves’): [megã ].

**floating tones** In the literature on tone languages, there are two senses in which the expression is used. In the first of these, floating tones are postulated to be present in underlying representations, but are said to be unattached to any segmental material in those representations. In the Central dialect of the Kwa language Igbo, there are two low tones in the underlying representations of the words */àgbà/* (‘jaw’) and */èŋwe/* (‘monkey’). But the expression ‘jaw of monkey’ is realised phonetically as [àgbaáèŋwe], with a high tone on the second vowel of the first element. Phonologists have postulated an underlying high floating tone, meaning ‘of’, placed between the two words, which attaches to the preceding vowel in the word */àgbà/*. In the second sense of the expression, underlying tones are postulated which in this case are attached to underlying segmental material, but that material is deleted, leaving the tone floating and potentially available to be connected with some other segmental material. In the Nigerian language Margi, the underlying sequence */tlà + wà/ (‘to cut in two’) contains a low tone followed by a high tone. A process of vowel deletion deletes the first vowel, and the sequence is realised phonetically as [tlwà], with a rising tone. It is claimed that, while the [a] segment is deleted, its tone is not. Rather, it becomes a floating tone which then attaches to the remaining vowel to produce a rising tone, seen as a
combination of the floating low tone and the underlying high tone in /wá/. Also known as latent tones.

focalisation A process in which some element in a linguistic expression is highlighted. This can be achieved syntactically, but it can also be achieved phonologically, usually using intonation. If one wishes to highlight the word John in the sentence *John went to the pub*, one can place the tonic on John. This places the focus on John.

foot see rhythm

foot-initial A phonological process is said to occur in foot-initial position if the segment it affects is located at the beginning of a metrical foot. In most varieties of English, aspiration is at its strongest in segments which are in foot-initial position, so that the /t/ in *tack* is more strongly aspirated than the /t/ in *witty*. The /t/ in *tack* is in foot-initial position, whereas the /t/ in *witty* is in foot-internal position.

foot-internal A phonological process is said to occur foot-internally if it applies to a segment which is located within a metrical foot. Flapping in American English operates foot-internally; the /t/ in *witty* undergoes Flapping because it is located within a metrical foot, but the /t/ in *attack* does not undergo Flapping since it is in foot-initial position.

formalism Any conception of human language in general, or phonology in particular, in which human language is not seen to be functionalist in nature (designed for the function of communication), but is taken to be a formal object, in the sense of having abstract formal
properties such as *infinitude* and *recursion*. The work of Noam Chomsky is formalist (anti-functionalist) in the sense that he denies that human language is designed for communication (instead, it is, for him, designed for thinking).

The term is also used to denote any set of formal devices for the representation of linguistic structure, such as the formalisms known as metrical grids used in *Metrical Phonology*.

Some linguists take the term to denote a way of describing human languages in terms of mathematical or logical formalisms. Some have argued that Chomsky's work is not properly formalist, in the sense that it is not properly mathematical in nature.

**formant** The cavities above the *larynx*, such as the *pharynx* and the *oral cavity*, act as amplifiers of the sounds created by the vibration of the *vocal cords*. Since all resonators have natural frequencies at which they will resonate, these cavities will resonate some frequencies, but not others. These resonances are called formants.

**fortis** see *lenis*. See also *fortition* and *aspiration*

**fortition** The opposite of *lenition*. A process whereby a segment becomes ‘stronger’, or more consonantal, moving up the *sonority hierarchy*. In the historical change known as Grimm’s Law, the *voiced stops* of Proto-Indo-European (PIE) became *voiceless* stops, as in the case of the PIE root *gews* (‘choose’), which became *kiusan* in Gothic. Processes of *assimilation* can induce fortition. Lumasaaba *morphemes* such as /li/ (‘a root’), with an initial /l/, are realised with a [d] when a *nasal stop* precedes the /l/, as in the form [zindi] (‘roots’). Here, the *complete closure* of the nasal
stop carries over on to the following sound, changing it from an approximant to a stop, which is said to be ‘stronger’ (more fortis) than a lateral approximant.

**frame theory of syllable structure** A theory of how syllables emerge in child speech, proposed by Peter MacNeilage and his colleague Barbara Davis. The idea is that the consonant-vowel syllables found at the babbling stage of child development emerge from the rhythmic alternation of open and closed jaw, which in turn is said to have evolved from cyclic behaviour such as chewing in early primates. The open/closed jaw movement is said to provide the frame for such syllables, with the tongue and lips being carried by the jaw movement. With the tongue body in the neutral position, a sequence such as [bə] is produced, with a central low vowel; with the tongue fronted, a sequence such as [ga] is produced, with a front low vowel; and with the tongue body retracted, a sequence such as [ga] is produced, with a low back vowel. As the child develops, the tongue and lips begin to function as independent articulators.

**free syllable** Synonym for an open syllable.

**free vowel** Used in the analysis of English to refer to what are elsewhere known as the tense, or long, vowels in the vowel phoneme system of most varieties of English. The free vowel phonemes are all the vowel phonemes except the checked vowels /ʊ, ʌ, ɒ, ə/. These latter vowels are also known as the lax vowels, or the short vowels of English.

**frequency of occurrence** The frequency with which a given word is uttered. Two main sorts are distinguished. **Token frequency** denotes the frequency with which
tokens of a given word are uttered. The word \textit{went} in English, which is an irregular past tense form, has a high token frequency; it is often uttered. Type frequency denotes the number of words belonging to a given type. Regular past tense verbs in English, such as \textit{cried}, \textit{shouted} and \textit{kicked}, have high type frequency; the vast majority of English verbs have regular past tense forms. The distinction is central to usage-based phonology and the notion of productivity.

\textbf{fricative} see degree of stricture

\textbf{front} see features

\textbf{front of the tongue} That part of the tongue which lies below the \textbf{hard palate} when the tongue is at rest. It really ought to be called the middle of the tongue, since it excludes the \textbf{tip} and the \textbf{blade} of the tongue, which lie at the very front of the tongue.

\textbf{frontness} The property of being front (see features). Front vowels such as /i/ and /e/ have this property. Some phonologists, particularly those working with privative features, use the term 'palatality' as a synonym for frontness, to subsume both front vowels and consonant articulations made with the \textbf{front of the tongue}, the \textbf{tip} of the tongue and the \textbf{blade} of the tongue.

\textbf{function word} A term used to refer to words of a grammatical category. Important for phonologists, since function words are often unstressed in human languages, and often fail to receive the tonic.

\textbf{functional category} The same thing as grammatical category.
functional load  The extent to which a phonemic contrast serves to sustain semantic contrast in a language, via minimal pairs. In English, the contrast between /ð/ and /θ/ is said to have a low functional load, since there are few minimal pairs based on that contrast, whereas the contrast between /p/ and /b/ is said to have a high functional load, since there are many minimal pairs which exhibit that contrast, such as pat vs bat, pin vs bin, etc.

functionalism  Any view of language in general or phonology in particular, in which language in general, and phonology in particular, is taken to be driven by a major function: that of the need for human beings to communicate. Usually distinguished from formalism.

Gallo-Romance  The language spoken in ancient Gaul after the disintegration of the Roman Empire and before the emergence of Old French, roughly from the end of the fifth century AD until the middle of the ninth century.

geminate  A long, or double, sound, normally a consonant, as in Archi [lappus] (‘to throw’) or Finnish [poltta] (‘burn’). The constriction in such consonants is held for longer than for single, non-geminate, consonants. Geminates are often represented as being connected to two skeletal slots, or two moraic positions, in syllable structure. When a long consonant of this sort occurs within a morpheme, it is known as a true geminate. When two identical segments happen to occur adjacent across a morpheme boundary, as in Archi [k’os-sas] (‘touch a knife’), they are referred to as a fake geminate.
gemination A process whereby a single, non-geminate, consonant undergoes lengthening to become a geminate consonant. For instance, in Malay, when a root ending in a single consonant combines with a suffix beginning with a vowel, the consonant undergoes gemination; thus the root /lətop/ + suffix /an/ is pronounced [lətoppan] (‘explosion’).

General American (GA) A term used to designate a range of American accents (known as dialects in the USA) which are broadly similar, and which differ from RP-type accents in several respects. Among these differences is rhoticity and the existence of Flapping/Tapping in GA. GA is defined as not being a Southern US accent, and not belonging to the non-rhotic accents, such as the Boston accents, found in the northeastern seaboard of the USA.

generate A term used in generative linguistics. It has its origins in a branch of mathematics known as formal language theory, in which very explicit formal rules are said to generate, or characterise, or define certain sequences of symbols. In early work in generative linguistics, this aspect of formal language theory was applied to human languages. The term is often used to mean, simply, ‘fully explicit’, so that an analysis or an entire grammar is said to be generative if it is fully explicit. Some argue that much of generative linguistics has ceased to be fully explicit. The term was not intended to mean ‘produce’, as in ‘produce electricity’, but many linguists use it in exactly that way, talking of speakers generating utterances. The original idea was that a generative grammar, as an account of a speaker’s competence, generated a set of abstract expressions, quite distinct from the utterances produced in performance.
**generative linguistics** Designates various different approaches, often associated with the work of Noam Chomsky, to the study of language in which the term generate is central.

**generative phonology** The phonological aspect of generative linguistics, associated with the work of Noam Chomsky. It is generally agreed that the founding book in this tradition is SPE. Generative phonology subsumes the SPE model, Lexical Phonology, Autosegmental Phonology and Optimality Theory. Some scholars see generative phonology as a continuation of structuralist linguistics, while others believe that the advent of generative phonology represented a radical break with structuralist linguistics.

**Geordie** see Tyneside English

**gesture** In certain models of the internal structure of segments, such as feature geometry, phonological features are bundled together into subunits within the segment. In Dependency Phonology, the two main subgroupings of features (elements) are the categorical gesture, which subsumes laryngeal features, and the articulatory gesture, which subsumes place of articulation in the oral cavity. In Articulatory Phonology, laryngeal and supralaryngeal gestures are said to overlap in the stream of speech and in phonological representations.

**glide** A name given to a class of sounds which are vowel-like, but which, unlike vowels, do not occupy the head position in the nucleus of a syllable, as in French [jauʁt] (‘yoghurt’), [wat] (‘watt’), where the [j] is a palatal glide and the [w] is a labial-velar glide. It is sometimes claimed that such segments can be considered as high
vowels occupying positions outside of the head of the syllable nucleus. In our French examples, the high vowels in question are /i/ and /u/, and the position in syllable structure is the onset position. Glides are sometimes known as semiconsonants or semivowels, since they are vowel-like, but often occupy syllabic positions in which one normally finds consonants. The non-head position in a diphthong is sometimes referred to as a glide, as in the French word [wa] (‘goose’), which consists only of a nucleus, with [a] as the head of the nucleus, and [w] as glide within the nucleus, preceding the head. Glides of this sort are referred to as on-glides. Where a glide follows the head within a nucleus, it is referred to as an off-glide, as in the English word [aj] (eye).

**glide formation** A process in which a nucleus vowel ceases to occupy the nucleus of a syllable, and instead occupies the onset position of a syllable, as in French /lu/ + /e/ (the root ‘rent’ + infinitive suffix), which is pronounced as a single syllable: [lwe], with a labial-velar glide within the onset. Other examples from French are /ty/ + /e/ (the root ‘kill’ + infinitive suffix), pronounced as monosyllabic [tue], with a rounded palatal glide in the onset, and /li/ + /e/ (the root ‘link’ + infinitive suffix), pronounced as [lje], with an unrounded palatal glide in the onset. Glide formation is sometimes distinguished from glide insertion.

**glide insertion** A process whereby the vowel articulation in a nucleus carries over into an empty onset to form a homorganic glide. For instance, in Malay, /tari/ + /an/ (the root ‘dance’ and the suffix /an/) is pronounced [talijan]. Similarly, Malay /buru/ + /an/ (the root ‘hunt’ and the suffix /an/) is pronounced [buruwan].
glossematics  see Hjelmslev

glottal  An adjective used to describe sounds produced in the glottis.

glottal fricative  A fricative made in the glottis by bringing the vocal cords together to produce friction. It is transcribed as [h]. An example can be found in the first sound in the English word happy.

glottal stop  A consonant formed by complete closure of the vocal cords. It is transcribed as [ʔ]. Often, the stop closure will be released, as in the Scottish English pronunciation ['bʌʔə] (butter). Because the closure of the vocal cords blocks the airstream and puts a sudden end to voicing, one often detects a glottal stop because one hears a very abrupt end to a preceding vowel.

Glottalic airstream mechanism  see airstream mechanisms

glottalisation  A process in which the closure in an oral articulation is accompanied by a glottal stop articulation. Glottalised stops are common in Tyneside English, spoken in the North-East of England. Examples are ['hæʔpi] (happy), ['wɪʔri] (witty) and ['pʰʔki] (picky).

glottalised  Exhibiting glottalisation.

glottalling  A process in which oral stops undergo reduction to a glottal stop articulation. Glottalling occurs in many varieties of English, as in Cockney ['wɪʔi] for witty.

glottis  The space between the vocal cords.
Goldsmith, John  An American phonologist known for his work on Autosegmental Phonology, Goldsmith is interesting since his training was in generative phonology, but he came to abandon that tradition in its entirety.

government  A postulated relation between linguistic objects, often found in work on syntax. Transitive verbs such as kick are said by some syntacticians to govern their direct objects, as in The man kicked the dog, where the verb kick may be said to govern the direct object the dog. The term has been taken over into phonology within the framework known as Government Phonology, in which some syllabic positions are said to govern others. For instance, in the Standard French word devenir, the final nucleus position is said to govern the preceding one. The postulated government relations are said to give rise to the observed patterns of alternation in Standard French between schwa and zero, as seen in pronunciations such as bisyllabic [dəvnir] for devenir.

Government Phonology  A framework within generative phonology which adopts an element-based approach to the internal structure of segments, and which sees segments as contracting government relations.

grammatical category  see lexical category

grammatical word  A word which is a member of a grammatical category.

Grammont, Maurice  A late nineteenth-early twentieth-century French phonologist, based at Montpellier University. He is known as an early pioneer in studies
of the way schwa works in French, notably la loi des trois consonnes. He also worked on bilingualism, in which he argued for the One Parent, One Language (OPOL) approach to bringing up bilingual children, whereby each parent sticks to only one language in addressing the child.

**grapheme** A unit in the spelling system of a language. Graphemes are usually distinguished from letters, since a given grapheme may contain more than one letter, but still act as a single unit in the spelling system. Graphemes which contain two letters are called digraphs. An example is the <th> grapheme used in English spelling, which corresponds to the phonemes /θ/ and /ð/.

**graphophonemics** The study of the relationship between spelling and pronunciation, more precisely the relationship between the graphemes of an alphabetic writing system and the phonemes of the language. A complete account of the graphophonemics of a language provides an exhaustive statement of all the grapheme-phoneme correspondences. See dyslexia.

**Great Vowel Shift (GVS)** A historical change which took place in the history of English. Long vowels shifted upwards in the vowel space, with vowels such as the high mid vowels [e:] and [o:] undergoing raising to [i:] and [u:] respectively, and the high vowels [i:] and [u:] undergoing diphthongisation to become [ai] and [au]. Present-day pronunciations of words such as divine ([drvain]) show the results of the vowel shift; they used to be pronounced with an [iː]: [divi:n]. In Scots and in certain accents of English, one can find words which have not undergone the GVS, such as the word toon
‘town’) in Scots, pronounced [tʰən]. In RP, this is pronounced as [tʰəʊn], since the historical [uː] diphthongised to [au] during the GVS. The GVS has been interpreted both as a drag chain (pull chain) and a push chain (see vowel shift).

grounded  see grounding

grounding  A notion appealed to by some scholars who postulate a clear distinction between phonology and phonetics. The idea is that phonological knowledge, by definition mentally real, is rooted in phonetic phenomena, where the term ‘phonetic’ covers facts about the production and perception of human speech sounds in social context. Many processes of assimilation are said to be phonetically grounded in the tendency towards ease of articulation, as in the case of assimilation for place of articulation, witnessed in pronunciations such as [ɪmpʊt] (input), where the nasal assimilates to the place of articulation of the following stop. Those who argue for phonetics-free phonology deny that phonology is grounded in phonetics.

Guierre, Lionel  (1921–2001) A French phonologist who specialised in the phonology of English. Guierre elaborated an analysis of English word stress patterns which departs from the Anglo-American quantity sensitivity approach. He also worked extensively on the graphophonemics of English, claiming that English spelling is, contrary to first impressions, a reliable guide to pronunciation.

gutturals  An informal cover term, not found in the chart of the International Phonetic Association, for sounds
produced at the back of the mouth and in the throat, in the uvular, pharyngeal and laryngeal places of articulation. There is some evidence that sounds produced in these areas constitute a natural class.

half-close  Another term for high mid. See cardinal vowels.

half-open  Another term for low mid. See cardinal vowels.

Halle, Morris  An American phonologist who was professor of phonology at MIT in Boston. He was co-author, with Noam Chomsky, of The Sound Pattern of English (SPE), and widely regarded as one of the founding fathers of generative phonology. Halle has worked on a wide range of phonological phenomena, notably word stress systems.

hard palate  The front part of the palate, located in the roof of the mouth, behind the alveolar ridge and in front of the velum.

Hayes, Bruce  An American phonologist who works in generative phonology. Hayes has worked on a wide range of phonological phenomena, including metrical structure. He is also associated with an interpretation of Optimality Theory in which constraints are said to be phonetically grounded.

head  A term used variably in syntax, morphology and phonology. Several notions are appealed to in talking of heads. One is the idea of obligatoriness; the head of a unit is said to be obligatory. In phonology, one can argue that the obligatory element in a syllable is the
nucleus, and thus the nucleus is the head of the syllable. It can also be argued that a metrical foot must contain a stressed syllable, and that this is therefore the head of the foot. In phonology, the notion of prominence (salience) is also appealed to in talking of heads; the head of a phonological constituent is the most prominent element in that constituent. To return to our two examples: the nucleus of a syllable is said to be the most prominent element in the syllable and is thus the head of the syllable. Similarly, the stressed syllable in a metrical foot is the most prominent and is thus the head of the foot. Within diphthongs, it is often claimed that one vowel quality will be more prominent than the other, and is thus the head, as in the English falling diphthong [au], where the [a] is more prominent than the off-glide [u] and is thus the head of the diphthong. The notion head is often linked to the notion dependent; two or more elements in a phonological constituent are often said to contract a head-dependent, or governor-governee, relation. For instance, the head of a falling diphthong is said to govern the dependent, so that [a] governs [u] in the diphthong [au]. The head-dependent (or governor-governee) relation lies at the heart of Dependency Phonology, Government Phonology and Head-Driven Phonology. These theories apply the notion of head-dependent to the relation between the elements of individual segments.

Unfortunately, the term ‘head’ is used in some descriptions of intonation groups to mean something quite distinct from the notions just mentioned. In such descriptions, the ‘head’ in an intonation group consists of the first stressed syllable occurring before the tonic syllable, and any syllables following it, as in John went to the pub, in which the tonic falls on pub, and John went to the is said to be the head of the intonation.
group, since John is the first stressed syllable before the tonic. ‘Heads’ are not obligatory in intonation groups (Go! contains a tonic syllable, but no head); nor are they the most perceptually salient parts of an intonation group. This notion of head is thus quite unlike the notion described above.

**Head-Driven Phonology** An approach to phonological representation which takes the head-dependent relation to be central at all levels of analysis. Associated with the work of Dutch phonologist Harry van der Hulst.

**heavy syllable** see syllable weight

**hiatus** A sequence of two adjacent vowels across a syllable boundary, as in Standard French le hibou (‘the owl’), which may be pronounced as [lə.i.bu]. Many languages exhibit hiatus avoidance processes, such as glide formation and vowel apocope.

**hierarchical structure** It is widely believed that human languages contain expressions, such as phrases and sentences, which do not consist simply of linear strings of words strung together like a string of beads. Rather, it is believed that those sequences can be subdivided into constituents, and that those constituents can in turn be analysed into smaller constituents. Thus, the sentence *I saw the man who shot the farmer* is said to be analysable into the subject noun phrase *I* followed by the predicate verb phrase *saw the man who shot the farmer*. This latter constituent can be said to contain the constituent *who shot the farmer*, which is said to contain the constituent *the farmer*. This constituent-within-constituent structure is hierarchical. Many
phonologists believe that phonological structures are also hierarchical. For instance, feet are said to be analysable into their constituent syllables, which in turn are said to be analysable into their constituent segments.

**high** A term used in the description of vowels (see cardinal vowels). It is also used as a distinctive feature (see features), and to describe certain types of tone.

**high mid** Vowels which are high mid are articulated above the neutral position of the tongue, but are less high than high vowels. Examples are [e] and [o]. Also referred to as half-close.

**historical phonology** The study of the way the phonology of languages changes over time.

**Hjelmslev, Louis** (1899–1965) A Danish linguist who was associated with a school of linguistic thought known as glossematics. Hjelmslev was influenced by logical positivism, and attempted to devise a purely formal, non-mentalistic account of linguistic structure. The consequence of this purely formalistic approach is that his conception of phonology was substance-free. Hjelmslev also argued in favour of the principle of structural analogy.

**Hockett, Charles** (1916–2000) An American linguist who taught at Cornell University. He is often seen as the last of the great linguists associated with American Structuralism. Hockett remained critical of generative linguistics throughout his career; in 1968, he published a book which constituted a critique of some of the central claims made by Noam Chomsky.
homophone Two words are homophones if they have identical pronunciation. In many accents of the North of England, pairs such as put and putt are pronounced identically: [pʰʌt]. Homophones such as these constitute minimal pairs in accents of the South of England: [pʰʌt] vs [pʰʌt].

homophony The state of affairs whereby homophones exist. Phonemic mergers create homophony. See avoidance of homophony.

homorganic A term used to describe identical place of articulation of two adjacent segments, as in English [θɪŋk] (think), where the nasal stop and the following oral stop are homorganic (they are both velar) because the nasal stop exhibits nasal assimilation.

Hyman, Larry An American phonologist who works in the generative phonology tradition. Hyman works on African languages, and is known for his work on, among other things, tone languages.

hypercorrection A phenomenon connected with the attempt by a speaker to alter his or her pronunciation so as to approximate a pronunciation perceived as more ‘correct’. Hypercorrection occurs when words which do not need to be ‘corrected’ are changed. Speakers with a native accent of English which lacks the /ɛ/ vs /æ:/ distinction may ‘correct’ their pronunciation so as to say [dʌ:ns] (dance) when they attempt to speak with an RP accent. But they may also hypercorrect words such as mass to [mɑːs], when in fact it is pronounced [mæs] in RP.

hypocoristics Pet names or nicknames. These are of interest to phonologists, since they can reveal facts about
phonological structures in specific languages. A simple example comes from French, where names such as Florence and Didier may be pronounced in their hypocoristic forms as [floflo] and [didi], in which the first syllable of the name is reduplicated.

hypocorrection A term associated with the work of John Ohala. The ‘hypo’ part comes from a word in Classical Greek meaning ‘under’. Ohala argues that speakers sometimes fail to engage in normalisation (correction) when perceiving the speech signal. Take velar sounds, such as [k], uttered before a high front vowel; it is phonetically natural for there to be slight affrication of such sounds in that position. Often, this affrication will be factored out by the listener, who will hear words such as kick in such a way as to classify both consonants as instances of the voiceless velar stop [k]; the affrication is factored out as redundant ‘noise’ in the speech signal. When this factoring out fails to take place, the hearer identifies the affricate as an instance of an affricate, not a stop. This is hypocorrection: the hearer mistakenly assumes that the speaker he/she was listening to intended to utter an affricate, not a stop. The hearer can then, in turn, start to utter affricates deliberately in such positions. This, Ohala argues, is what lies behind the well-known sound change known as Velar Softening (Palatalisation), which can be seen in historical changes such as that from [kɪkən] to [tʃɪkən] (chicken).

iamb  see rhythm

iambic  see rhythm
Iambic Reversal  A term used to describe a phenomenon attested in English, in which prominence patterns are switched round (reversed) in phrases containing three metrical feet. In the name *East London*, the word *London* constitutes a trochaic foot which is more prominent than the metrical foot in *East*. But when *East London* occurs in the phrase *East London Airport*, the prominence levels of *East* and *London* are typically switched around, so that *Airport* is more prominent than *East*, which in turn is more prominent than *London*. Also known as the rhythm rule, since this is a rhythmic phenomenon.

I-language  A notion found in work by Noam Chomsky. The ‘I’ stands for ‘internal’, since Chomsky believes that linguistic knowledge is mind-internal, rather than public. It also stands for ‘individual’, since Chomsky believes that linguistic knowledge is located within the minds of individuals, rather than distributed across social communities. Followers of Chomsky believe that a speaker’s I-language contains a phonological component.

implementation  see realisation

implicational universals  see universals

implosive  see airstream mechanisms

Indirect Syntax Hypothesis  Unlike proponents of the Direct Syntax Hypothesis, proponents of this hypothesis argue that syntactic structure does not directly trigger phonological processes. Rather, the purely phonological domains which feature in the prosodic hierarchy are said to be the proper domains for the operation of phonological processes.
Indo-European A major language family which subsumes many of the world’s present-day languages, including most of the languages of Europe and the languages of the North of the Indian subcontinent. The Indo-European language family was reconstructed in the nineteenth century, when systematic phonological and morphological correspondences were established between Sanskrit, a language of Ancient India, and Greek and Latin. Proto-Indo-European was spoken around the period from 2,500 to 2,000 BC.

inductive generalisations Generalisations which arise from the observation of specific instances. If a French-acquiring child often hears *Il a fini* (‘He has finished’) with the past tense of the verb *finir* (‘to finish’) and *Il est sorti* (‘He’s gone out’) with the past tense of the verb *sortir*, it is possible for the child to form the inductive generalisation that the past participle of verbs ending in *-ir* is a form ending in [i]. Application of this generalisation, via a process of analogy, can lead to child utterances such as *Il a couri* (‘He ran’), from the verb *courir* (‘to run’). In this specific case, the form *couri* is an over-generalisation; the past participle of *courir* is the irregular form *couru*.

infinitude A property said by Noam Chomsky and others to be a formal characteristic of all human languages. If one assumes that all human languages exhibit recursion, then this guarantees that there is no limit to the set of well-formed expressions in a given language; the set is literally infinite. On these assumptions, it makes no sense to ask, for instance, how many English sentences there are; there exists an infinite number of such sentences.
insertion A way of talking about epenthesis. Phonologists sometimes argue that epenthetic sounds have been inserted into a sequence of segments, as in the case of the Intrusive ‘r’ in sequences such as law and order when pronounced as [lɔːəɹənɔːdə].

instrumentalism A way of interpreting theories in which one takes theoretical constructs to be mere instruments for organising, classifying and making predictions about observable phenomena. An instrumentalist interpretation of atomic theory would interpret the theory as a mere device, without granting that atoms and atomic structure are real. Instrumentalism is opposed to realism. The American Structuralists are said to have adopted a purely instrumentalist interpretation of notions such as the phoneme.

interface A notion used by those who adopt any modular conception of linguistic knowledge. If one accepts, for instance, the idea that phonological and syntactic knowledge form separate modules in the mind, one needs to address the question of how the two modules interact. The point at which the two modules connect is said to constitute an interface. With respect to phonology and syntax, some claim that phonology does not interact directly with syntax, while others claim that it does; they have different conceptions of the phonology/syntax interface.

internal sandhi see sandhi

International Phonetic Alphabet (IPA) An alphabet designed to provide a symbol for every speech sound type which is capable of functioning in a phonological opposition in a human language. Provided by the
International Phonetic Association, the IPA is regularly updated in accordance with the latest thinking about phonetic and phonological categories. The IPA continues to incorporate the notion of the cardinal vowels.

**interpretation** see realisation

**intervocalic** Between vowels. Consonants often undergo certain lenition processes in this context, as in the case of the voiced stop phonemes in Spanish, which are realised as voiced fricatives or voiced approximants intervocally, as in *la bodega*, pronounced [laβoðeɣə].

**intervocalic voicing** A lenition process, whereby voiceless sounds become voiced between vowels. For instance, the Korean root /pap/ (‘cooked rice’), when followed by the suffix /i/, is pronounced [pabi].

**intonation** The kinds of pitch modulation which are found in whole utterances. Intonation contours can be used to highlight certain elements in an utterance, to bundle words together into information chunks, and to convey the speaker’s attitude to what he/she is saying.

**intonation group** A single word, or a sequence of words, which forms an intonational unit, containing a tonic syllable. The written English sentence ‘It’s me, Tom’ is ambiguous. If a speaker is addressing someone called Tom, then the whole utterance constitutes a single intonation group, with the tonic on ‘me’. If the speaker is called Tom and is announcing that it’s he who is there, there will be two intonation groups: ‘It’s me’, with the tonic on ‘me’, and a second intonation group consisting of the word ‘Tom’, which constitutes a tonic syllable. Intonation groups are also known as
intonational phrases. One of the functions of intonation groups is to bundle up the stream of speech into information chunks. Also known as a tone group or a breath group.

intonational phrase Another term for an intonation group.

intrinsic phonetic content Among the phonologists who adhere to a distinction between phonology and phonetics, some believe that phonology is ‘based on’, or grounded in, phonetics. Thus, the rule of final devoicing in German may be said to be grounded in the natural tendency for obstruents to devoice in utterance-final position. SPE phonology incorporated the view that phonological processes, and phonological features, could be given a phonetic definition; they were said to have intrinsic phonetic content, so that a phonological feature such as [voice] could be defined in terms of the vibration of the vocal cords. Opponents of this notion argue for substance-free phonology; they argue that phonological objects are abstract in at least one sense of the term, and cannot be defined in terms of phonetics.

Intrusive ‘r’ see non-rhotic

IPA see International Phonetic Alphabet

isochronous see stress-timed

linguistics, arguably bridged the gap between European Structuralism, American Structuralism and generative phonology, since he spent the first half of his career in Europe and the second half in the USA, latterly at MIT, where Morris Halle was based. Jakobson co-founded the Moscow School, and later co-founded the Prague School with Trubetzkoy. Jakobson had a wide range of interests, including aphasia, poetry, phonology, Slavic folklore and child language acquisition. He adopted Saussure’s notion of the linguistic sign, and also a functionalist conception of the notion phoneme. Jakobson adhered to the concept of markedness, and attempted to state implicational universals based on markedness. He proposed that historical sound changes were teleological in nature. Jakobson also worked with Gunnar Fant and Morris Halle on an acoustic theory of distinctive features in phonology. His work on phonology also incorporated the idea of redundancy. Jakobson was a functionalist. He believed that linguistic structure was driven by what he took to be the main function of language: that of communication. In this respect, his views are quite distinct from those of the formalist linguist, Noam Chomsky. In the field of child acquisition of phonology, Jakobson argued that there was a major discontinuity between the babbling stage and the first words stage. This view was later discredited by Marilyn Vihman in her empirical work on infant speech.

Jones, Daniel (1881–1967) A British phonetician who worked at University College London. Unlike J. R. Firth, Jones argued for the validity of the notion phoneme. His conception of the phoneme was that of a ‘family’ (a set) of sounds. Jones is still known for his English Pronouncing Dictionary, first published in
1917 and still used by learners of English all over the world.

**juncture** A boundary or transition point in a phonological sequence. Junctures include **syllable**, **foot**, **morpheme** and **word boundaries**. Such boundaries are widely believed to play a role in certain phonological generalisations. In Scottish English, the morpheme boundary between the root and the past tense suffix in words such as *brewed* will induce **lengthening** of the preceding vowel. The lengthening does not occur in the word *brood* since there is no juncture between the vowel and the [d]; *brood* is **morphologically simple**. It is often said that some junctures are ‘weaker’ than others; the juncture between *could* and *n’t* in the sentence *He couldn’t* is said to be weaker than that between *could* and *go* in the sentence *He said he could go*. The juncture between *could* and *go* is said to be a full word boundary, whereas the juncture in *couldn’t* is said to be weaker; *n’t* is said to be joined to *could* as a result of a **process of cliticisation**, with *could* and *n’t* forming a single **trochaic foot**. Weaker junctures are often referred to as **close junctures**, and stronger junctures are known as **open junctures**. In some cases, sequences of words which undergo such cliticisation end up undergoing **lexicalisation**. Examples are *cuppa* (from *cup of*) and *wannabe* (from *want to be*).

K

**Karmiloff-Smith, Annette** A child development expert and advocate of **constructivism**, who believes that she has found a middle way between **Empiricism** and **Rationalism**. She postulates innate biases in specific **cognitive** domains, such as vision, but she denies that
there are richly specified innate modules of the sort postulated by Noam Chomsky. Her work has been influenced by Jean Piaget and is reasonably described as Neo-Piagetian. In the field of child phonological development, the work of Marilyn Vihman is broadly consistent with Karmiloff-Smith’s ideas.

**Kazan School** A name given to two late nineteenth-century scholars and their students, based in Kazan in central Russia: notably the Polish linguists Mikołaj Kruszkewski and Jan Baudouin de Courtenay. Their work pre-dated that of Saussure. Like many Western linguists in later decades, they sought to develop what they took to count as a ‘science’ of language. In doing so, they attempted to find ‘laws’ governing the synchronic structure of human languages. They adopted the idea of the phoneme, and had a static theory of morpho-phonological alternations, in which statements about alternations are not taken to be statements about processes. It has been argued that their work influenced the thinking of Roman Jakobson.

**Kenstowicz, Michael** An American phonologist who has worked in generative phonology throughout his career, studying a wide range of different languages. He took over from Morris Halle when the latter retired as professor of phonology at MIT.

**Kiparsky, Paul** A phonologist known for his work in historical phonology, metrics and the phonology of English. He is the founder of the generative phonology framework known as Lexical Phonology. He played a prominent part in arguments against the abstract nature of the underlying representations postulated in SPE phonology.
La loi des trois consonnes A generalisation, postulated by the French phonologist Maurice Grammont, concerning constraints on schwa deletion in French. The generalisation states that a given schwa cannot be deleted if it would result in a sequence of three consonants. For example, in the phrase *Je te le redemande* (‘I’m asking you this again’), the schwa vowels in *Je, te le, re-* and *de* may be elided, as in *[ʃtɔʁəd]*, where the schwas in *Je* and *de* have been elided, but not the schwas of *te*, *le* or *re*. The phrase cannot be uttered as *[ʃtɔʁəd]*, since the elision of those schwas would result in the three-consonant sequence *[ʃtl]*.

labial One of the major places of articulation. A sound is labial if one or both lips are involved in its production. Subsumes labiodental and bilabial sounds.

labial harmony see vowel harmony

labialisation A process in which a speech sound acquires labial articulation. In the North American Indian language Nootka, the initial consonant of the root */ki:ʃ/ (‘making’) undergoes labialisation when preceded by a labial vowel (a vowel with lip rounding), as in the word *[ʔokwɪːʃ] (‘making it’). The diacritic ‘w’ denotes the labialisation of the [k]. Labialisation is a form of assimilation; in this case, an otherwise non-labial consonant is ‘picking up’ labiality from an adjacent segment which is labial.

labiality The property of labial articulation. Labial consonants such as *[p], [b], [f]* and *[v]*, as well as vowels with lip rounding, such as *[u]* and *[o]*, are said to possess labiality. The property is represented as
"[+labial] in theories of distinctive features which adopt binary-valued features. The element/feature [labial] is said to be a privative feature in element-based theories. Labiality enters into certain vowel harmony systems.

labiodental A place of articulation term which denotes sounds produced with the lower lip as the active articulator and the upper teeth as the passive articulator. Examples are the voiceless labiodental fricative [f] in the English word fin, and the voiced labiodental fricative in the English word van.

Laboratory Phonology (Lab Phon) The members of the Lab Phon community of scholars believe that laboratory techniques, such as acoustic analysis, are central to any properly scientific phonological investigation. Use of mathematical and statistical techniques is also central to Lab Phon. Prominent proponents include Janet Pierrehumbert and Robert D. Ladd.

Labov, William An American pioneer of modern urban sociolinguistics, Labov is famous for his work on sociophonetic variation in New York City and elsewhere in the USA, particularly his work on the sociolinguistic variables which underlie variable rhoticity amongst speakers of New York City English.

Ladd, Robert D. An American phonologist based at Edinburgh University who is widely known for his work on intonation. He is a member of the Laboratory Phonology community.

language family A group of languages which have a common historical origin. Examples are the Indo-European and the Dravidian language families. Much
of the reconstruction of common historical origins has been based on phonological reconstruction.

**language games** It is common to find cases in which speakers of a language ‘play around’ with the pronunciation of certain words in the language, often producing a kind of secret language. An instance of this is the French language game known as *verlan*, pronounced [vεʁlɑ̃], which is based on the expression *l’envers* (‘the reverse’), pronounced [lœvɛʁ]. Phonologists believe that language games are based on systematic processes, which can reveal facts about the phonological structure of the language. In this case, one simply reverses the syllables of the word in question to produce the verlan version. In the case of phonetically monosyllabic words such as *femme* (‘woman’), pronounced [fam], the verlan version is *meuf*, pronounced [mœf]. Some have argued that forms such as this provide evidence for an underlying schwa at the end of the word *femme*, which appears in the verlan form in its stressed form, [œ].

**language-specific** Specific to a particular language. The English phonotactic constraint according to which only /j, w, r, l/ may occur as the second consonant in an onset containing two consonants is a language-specific constraint. The term is not to be confused with the expression ‘specifically linguistic’, meaning specific to human language as a whole.

**langue** A term used by Saussure to denote a language as a set of signs which enter into a series of oppositions. Saussure claimed that langue, which he took to be social in nature, was to be distinguished from *parole*, which he took to be individual in nature.
laryngeal A place of articulation. Laryngeal sounds are produced in the larynx. The term is also used to refer to laryngeal features.

laryngeal features Features postulated to characterise laryngeal properties of speech sounds. Examples are [spread glottis] and [stiff vocal folds].

larynx The voicebox: a structure made of cartilage, located in the windpipe, containing the vocal cords.

Lass, Roger An American linguist who has spent his career in Britain and South Africa. Lass is a phonologist who specialises in the history of English, historical phonology in general, and the application of notions from the field of biology to language study. He was one of the first to query the explanatory power of the notion of markedness.

last lexical item In work on the intonation of English, it is often claimed that the basic rule for the placement of the tonic is on the last lexical item in a clause. Lexical items are words of a lexical category. These are typically nouns, verbs and adjectives. In the sentence John went to the pub, the most ‘neutral’ (unmarked) intonation would have the tonic on the word pub, which is the last lexical item in the sentence.

latent consonant see floating consonant

latent tones see floating tones

lateral Sounds produced with air escaping down one or both sides of the tongue are lateral sounds. An example is the [l] in the RP pronunciation of the word lip: [lɪp].
Lateral escape of air is distinguished from **central** escape of air.

**lax** The opposite of **tense**. Lax vowels are often said to be articulated in a more **central** manner than their tense counterparts, and with less **duration**.

**laxing** Any **process** in which a **tense** speech sound becomes lax. A well-known example is **Trisyllabic Laxing**.

**learning by forgetting** An expression used by the French psycholinguists Jacques Mehler and Emmanuel Dupoux. It is used to refer to a phenomenon attested in child acquisition of phonology whereby, in the first year of life, infants become desensitised to **allophonic** differences in the adult language. For instance, a child being exposed solely to **RP** will ‘filter out’ the purely allophonic distinction between **aspirated** and unaspirated **voiceless stops**, whereas a child being exposed solely to a language, such as Thai, where the aspirated/unaspirated distinction is **phonemic**, will not do this. The term ‘forgetting’ is something of a misnomer; the child is not engaged in forgetting anything, but is focusing on the phonemic contrasts in the adult language and classifying allophones as instances of ‘the same thing’.

**left-headed** Used to refer to phonological **constituents** with the **head** on the left side of the constituent, as in the case of **trochaic** feet, where the head of the **foot** (the stressed syllable) is the leftmost syllable in the foot, as in the English word *happen*. See **right-headed** and **rhythm**.

**length** A term often used to describe the relative **duration** of a vowel or consonant. The **long** vs **short** distinction can be **phonemic** or **allophonic**. In the **Dravidian**
language Malayalam, [koːtːa], with a short [o], means ‘basket’, whereas [koːtːa], with a long [oː], means ‘castle’. Vowel length is phonemic in Malayalam. Similarly, [kaːti], with a short [t], means ‘biting’ in Malayalam, whereas [kaːti], with a long [t], means ‘thickness’. Consonant length is also phonemic in Malayalam. In Scottish English, certain vowels undergo lengthening before voiced fricatives or /ɹ/, as in [bɹuːz] (bruise) and [bɹuːz] (breeze), as opposed to [bruːs] (Bruce) and [flɪs] (fleece), with short vowels. This is allophonic length. Some phonologists distinguish between length, as a phonological property, and duration, as a phonetic property. Long vowels in English are also known as tense, or free, vowels, and are distinguished from the short vowels, also known as lax, or checked, vowels.

lengthening A process in which a consonant or vowel is produced with greater length than it previously was. In the history of Received Pronunciation, the sequence /ɔː/ underwent lengthening of the vowel in coda position, as in the words third and fir, now pronounced with the long vowel [ɜː:]. One kind of lengthening is compensatory lengthening.

lenis The opposite of fortis. Lenis consonants are said to be ‘weaker’ than fortis ones. The voiced obstruents of English are held to be lenis, whereas the voiceless sounds are said to be fortis. Lenis sounds are considered to be produced with less articulatory energy than fortis sounds, with greater muscular effort and greater breath force. See also lenition.

lenition The opposite of fortition. Any process whereby consonants become weaker, in the sense of becoming
voiced and/or undergoing a diminution in stricture. Intervocalic voicing of voiceless sounds is an example of lenition. Another example of lenition is the reduction of voiceless fricatives to [h], which happened in the history of many languages, such as Spanish, where the [f] of Latin filium became an [h] in hijo, which subsequently underwent elision. Lenition processes are often cited as evidence for the sonority hierarchy.

**level-ordering** see Lexical Phonology

**lexical category** Words of a lexical category, also called content words, typically include nouns, verbs, adjectives and adverbs. They convey substantial semantic content, and are often distinguished from words of a grammatical (or functional) category, which typically include articles, conjunctions, auxiliary verbs and pronouns. This is relevant for phonology, since words of a functional category often undergo various forms of reduction, are often unstressed, and often fail to contain the tonic syllable.

**lexical-distributional differences** A difference between two varieties of a language is said to be lexical-distributional if a given phonemic opposition is shared by the two varieties, but specific lexical sets in the two varieties contain different members of the opposition. In both RP and certain varieties of English spoken in the North of England, the opposition between short /æ/ and long /ɑː/ is present, so that pairs such as ant and aunt are minimal pairs: ant is pronounced [ænt] and aunt is pronounced [ɑːnt]. But in words of the lexical set BATH, North of England varieties select the short phoneme, with pronunciations of the sort [bæθ] for bath. The RP pronunciation of words like these is with
the long phoneme: [bɔːθ]. This particular difference between RP and North of England accents often functions as a shibboleth. Differences of this sort are neither realisational nor systemic.

Lexical Phonology Also known as Lexical Morphology or Lexical Phonology and Morphology, Lexical Phonology is a model of the interaction of phonology and morphology which postulates different levels (also known as strata) of word formation, with different phonological rules and/or constraints holding at those different levels. Two levels of word formation have been postulated for English: one at which the so-called stratum 1 (level 1) affixes are added to roots, and a later level at which stratum 2 (level 2) affixes are added. It has been claimed that the level 2 affixes are more productive than the level 1 affixes. An example of a level 2 affix is the prefix un- in words like unnatural. An example of a level 1 affix is the prefix in- in words like innumerable. An example of a lexical rule applying at only one level is the rule of degemination in English, which yields forms such as [ɪnjuːmɑːbəl], with a non-geminate [n]. Degemination is said not to hold at level 2, so that words such as unnatural contain a (fake) geminate: [ʌnˈnætʃəəl]. This idea of word formation taking place at different levels is often referred to as level-ordering. The morphological and phonological processes in question are said to take place in a specific order: level 1 processes first, level 2 processes later.

Lexical Phonology also postulates a distinction between word phonology and phrase phonology, claiming that word-level phonological operations have distinct characteristics from phrase-level operations. In English, word-level phonology contains the kinds of
affixation and process which we have just seen. The phrase-level phonology contains phenomena such the Linking ‘r’ of many non-rhotic accents of English, whereby a word-final underlying /r/ is said to be realised if the following word has an empty onset, as in far away, pronounced [fəːwəɹ].

Versions of Lexical Phonology which contain Optimality Theory constraints (rather than rules) are sometimes referred to as ‘Stratal Optimality Theory’.

**lexical sets** Phonologists, particularly British phonologists, who work on the pronunciation of different varieties of English, often appeal to a list of word sets proposed by J. C. Wells. These sets were devised to bring out the kinds of accent differences which exist between different varieties of English. Examples are the lexical sets THOUGHT, FORCE and NORTH. Words in these sets all have the long /ɔː/ phoneme in Received Pronunciation (RP). Another example is the lexical set LOT, which has the short /ɒ/ phoneme in RP. The usefulness of these sets can be seen in the descriptive statement that, in certain varieties of English, such as Standard Scottish English (SSE), there is a systemic difference with respect to RP: pairs such as horse/hoarse are homophones in RP, but minimal pairs in SSE. In RP, both words have [ɔː], whereas, in SSE, horse has /ɔ/, but hoarse has /o/. This /ɔ/ vs /o/ opposition has undergone a phonemic merger in RP, but not in SSE.

**lexical word** A word which is a member of a lexical category.

**lexicalisation** A process in which a sequence of words becomes a single word, as in the expression wannabe
(from *want to be*), which can now be found in dictionaries, listed as a single word.

**Liaison** A syllabification phenomenon found in French. Many word-final coda consonants were elided in the history of French, as in words such *capot*, pronounced [kapo]. But some word-final consonants in certain words have remained as floating consonants, and will be realised, under certain conditions, if the word in question is followed by a word with an empty onset, as in *les amis* (‘the friends’), pronounced [lezami]. Where the following word does not have an empty onset, the floating consonant is not pronounced, as in *les gants* (‘the gloves’), pronounced [legã].

**light syllable** see syllable weight

**lingua franca** A language used by speakers who do not share a common language. Swahili is used this way in parts of East Africa. English often acts as a lingua franca among speakers of different Indian languages.

**Linking ‘r’** see non-rhotic

**liquid** A kind of consonant in which one part of the oral cavity is blocked while airflow escapes through another part of the cavity. Examples are ‘l sounds’, as in the lateral [l] in RP light, and certain ‘r sounds’, such as the [ɹ] in RP run.

**loanword** A word from one language which is introduced into another, such as the English words *weekend* and *parking*, which have been borrowed by French speakers. Typically, loanwords are pronounced by speakers of the borrowing language according to the phonology
of their native language. In our example parking, for instance, French speakers place the stress on the final syllable of the word, in accordance with the French word stress placement pattern. They also pronounce the <p>, the <a>, the <r>, the <k> and the <I> in a French way: [pʁɛkɛ̃], with no aspiration on the voiceless stops, a French central [ɾ], a uvular ‘r’, and [i] instead of [i], as opposed to RP [pʰɑ:kɛ̃].

**loanword adaptation** The process whereby loanwords are adapted by speakers of the borrowing language. Very often, loanwords are forced into the phonotactic patterns of the speaker’s native language, as in the Japanese utterance of the English word screw: [suːkuruː], which has three syllables, since onset sequences such as /skr/ do not conform to the phonotactic constraints of Japanese.

**logical positivism** A philosophy of science which is said to have influenced American Structuralism and thus the kind of phonological investigation practised by the American Structuralists. Working in the 1920s and 1930s, the logical positivists known as the Vienna Circle argued that truly scientific statements were based on observation statements. On this view, postulated unobservable realities had no part to play in scientific theorising. Applied to linguistics, and to phonology in particular, this led to an anti-mentalistic stance. Some of the philosophers who were members of the Vienna Circle were also members of the Linguistic Circle of Prague. See Prague School.

**Lombard effect** A phenomenon documented by Etienne Lombard in the early twentieth century, in which speakers are said to raise the volume of their speech to
compensate for increased background noise. You can observe this if you go into a public space, such as a bar, early in the evening, and listen to the rising volume of speakers’ voices as the bar gets busier. The phenomenon need not indicate a fully conscious decision to raise one’s voice. A perception/production feedback loop is said to be involved in this phenomenon, and that loop is conceived of as central to speech perception and production. The effect is said by some to be interpretable as a purely self-orientated phenomenon (one wants to be heard), but is said to be an altruistic phenomenon by others (one is bearing one’s listeners in mind).

**London English**  A variety of English which has its origins in the working-class districts of the East End in the inner city in London.

**long vowel/long consonant**  see duration and length

**low**  Vowels which are low are articulated lower than low mid vowels, at the bottom of the vowel space. Examples are [a] and [ɑ]. The term is used as a distinctive feature. See cardinal vowels.

**low mid**  Vowels which are low mid are articulated below the neutral position of the tongue, but are less low than low vowels. Examples are [ɛ] and [ɔ]. Also referred to as half-open vowels.

**lowering**  Any process in which a speech sound is lowered, in articulatory terms. Normally used to refer to vowels which shift down the vowel space, as in the case of the lowering of the high mid vowel /ɛ/ to low mid [ɛ] in French alternations such as *cafeteria*, pronounced [kafeterja], which, in its shortened, informal form, is
pronounced [kafet]. In this particular case, the context which triggers the lowering is the closed syllable created when the word is shortened; the [t] in [kafet] is in coda position, whereas the [t] in [kafeterja] is in onset position.

**Lyman’s Law** A well-known phenomenon in the phonology of Japanese which relates to Rendaku. Lyman’s Law states that Rendaku voicing is blocked if the second element of the compound contains a voiced obstruent. An often-cited example is the combination of [kami] (‘god’) and [kaze] (‘wind’), which does not become [kamigaze], but remains as [kamikaze], because of the presence of the [z] in [kaze].

**McCarthy, John** An American linguist who works in the generative phonology tradition. He has worked extensively on Optimality Theory and is widely known for his work on a prosodic approach to morphology.

**McGurk effect** A form of perceptual illusion in speech perception, in which subjects are exposed to a video recording of a speaker uttering, say, [ba], [ba], [ba], but the audio track features the sequence [ga], [ga], [ga]. Viewers frequently report that they have perceived a sequence [da], [da], [da]. Based on an experiment carried out by McGurk and McDonald in the 1970s, the phenomenon is said by some to show that lipreading occurs spontaneously in humans and is not just a special form of behaviour adopted by the deaf.

**MacNeilage, Peter** A New Zealander based at the University of Texas at Austin, MacNeilage is known
for his theory of the evolution of speech and handedness. He argues that the left-hand/right hemisphere of the brain evolved for the purpose of predation, and that the right-hand/left hemisphere evolved for the control of bodily posture, leading to left hemisphere specialisation for speech. With his colleague Barbara Davis, he is also known for the frame theory of syllabic utterances of infants during the babbling phase.

**major place of articulation** The labial, coronal and dorsal places of articulation. See **minor place of articulation**.

**manner of articulation** A synonym for **degree of stricture**.

**marginal contrast** see **derived contrast**

**mark** see **opposition**

**marked** In the work of Trubetzkoy, a member of an opposition is said to be marked if it possesses a property which enters into a **privative opposition**, so that the /m/ in the opposition /m/ vs /b/ is said to be marked. A further sense of the term relates to the **frequency of occurrence** of certain sounds, or classes of sound, in the world’s languages. For instance, the fricative /s/ occurs much more widely than the fricative /θ/, so that /θ/ is said to be a more marked sound than /s/. Similarly, the class of front vowels tend to be **unrounded**; **rounded front** vowels occur in the world’s languages but are rarer, and are said to be marked with respect to front unrounded vowels. **Markedness** has also been said to be related to sequence of acquisition in child development; some speech sounds, or classes of speech sound, are said to be more difficult to acquire than others and are thus acquired later than others. It
is often claimed that a child acquiring a language which has both /s/ and /θ/ will acquire the former (the less marked segment) earlier than the latter.

**markedness** A notion which appears in a variety of phonological theories, from Prague School phonology to Optimality Theory. The idea is that marked properties of phonological segments and constituents play an active role in phonological processes, the shape of phonological systems and their acquisition. For instance, the unmarked shape of syllables is the shape which contains an onset constituent (containing one or more onset consonants). A syllable with an empty onset is thus said to be marked in comparison with a syllable which contains a filled onset, so that the English word *eye* is marked, in this respect, in comparison with the English word *buy*. Syllables which contain one or more coda consonants are said to be marked with respect to syllables which lack coda consonants, since the most basic syllable structure is said to be the CV syllable, containing an onset consonant and no coda consonants. Syllables with complex (branching) onsets are said to be more marked than syllables which have single onset consonants, so that English */bɹæt/ (bright) is said to have a more marked onset than English */baɪt/ (bite). It is sometimes claimed that certain phonological processes are sensitive to the marked vs unmarked distinction. Some have questioned the explanatory value of the appeal to markedness.

**Martinet, André** (1908–99) A French linguist who worked within European Structuralism (see structuralist linguistics). He worked in Paris in the late 1930s, then at Columbia University from 1947 to 1955, and
finally at the Sorbonne in Paris. He is known for his claim, later reiterated in *Optimality Theory*, that there was a tension in human languages between the need to sustain *oppositions* in the form of *minimal pairs*, and the tendency to *ease of articulation*, which leads naturally to *homophones*. See *avoidance of homophony*.

**Maximal Onset Principle** A principle which states that, where a given consonant could constitute a well-formed *coda* consonant in a word or equally a well-formed *onset*, as determined by the *phonotactic constraints* of the language, then it is syllabified as an onset. For example, in the English word *appraise*, the syllabification *[ə.pɹ.eɪz]* satisfies the phonotactic constraints of English, since a coda containing only a */p/* is legitimate (as in *cup*), and an onset containing only an */r/* is also legitimate (as in *run*). However, the branching onset */pr/* is also legitimate (as in *pray*), so that the syllabification *[ə.pɹ.eɪz]* is also legitimate. The principle states that, in cases such as this, it is the latter *syllabification* which holds, since it maximises the content of an onset.

**melody** A term used to identify properties of *segments*, as opposed to properties of *suprasegmental* phenomena. *Features*, or *elements*, such as *[labial]*, found in labial sounds such as *[b]*, *[m]* and *[u]*, are said to be melodic features.

**mental lexicon** The idea that the mind contains a vast stock of stored mental representations of words, linked together in multiple ways. The mental lexicon is not conceived of as a list of the sort found in dictionaries, but as a network of interconnected representations which vary in the extent to which they resemble each
other. When we select the wrong word from the mental lexicon, this is often because we have selected a word which is similar in some way(s) to the word we were searching for, as in the statement by George W. Bush that ‘coal prevents an environmental challenge’, in which Bush selected *prevents* instead of *presents*; the two words have the same number of *syllables*, the same stress pattern, and differ with respect to only one *segment*. They are therefore closely linked in the mental lexicon.

**mentalism** A given form of linguistics is mentalistic if its practitioners postulate mental realities as part of the object of inquiry. Edward *Sapir* is known for his mentalism: he argued for the psychological reality of *phonemes* in the mind of the speaker. Noam *Chomsky* is a mentalist, of a specific sort; he postulates an innate *module* of mind devoted solely to language. That postulated module is often referred to as *Universal Grammar*, or the Language Faculty.

**merger** A term used in the *phonemic* tradition to denote a historical *process* in which a phonemic distinction is conflated. An example is the traditional phonemic *opposition* between front [a] and back [ɑ] in Standard French, seen in *minimal pairs* such as *pattes* (‘feet of an animal’) and *pâtes* (‘pasta’). While the distinction is still given in dictionaries and can be heard in the speech of older speakers, the phonemes have merged for many younger speakers, and pairs such as these are now *homophones*.

**metaphony** A kind of *assimilation process* involving *vowels*, in which one vowel assimilates to another despite the fact that they are not strictly adjacent to
each other in the stream of speech. The two main kinds are **umlaut** and **vowel harmony**.

**metathesis**  A process in which segments within a word are switched around. In Lithuanian, **fricative** + stop clusters undergo metathesis when they occur before a consonant. The morpheme `/dresk/` (‘to bind’) has the past tense form `[dreske]`, with the addition of a suffix `[e]`, whereas the infinitival form is `[drekst]`, with the addition of the suffix `[ti]` and metathesis of the `/k/` and `/s/`. Metathesis also occurs in child speech, in utterances such as `['tʃɪkɪn]` for *kitchen*.

**metre**  see **rhythm**

**metrical**  Relating to the **metre** (the **rhythm**) of a language.

**Metrical Phonology**  A development in generative phonology which emerged in the early 1980s. Work in Metrical Phonology was chiefly concerned with **suprasegmental** phenomena such as **word stress** and **rhythm**. Metrical phonologists represented such phenomena using either grid-like visual representations or metrical trees. An example of a metrical grid follows:

```
   *
*   *
* * * *
* * * * *
* * * * *
```

Dundee marmalade

The idea is to represent the different degrees of **salience** of each **syllable** in the phrase: the more asterisks, the more salient the syllable. Here, the least
salient syllable is the **penultimate** syllable in the word *marmalade*, which is unstressed. The most prominent syllable is the **antepenultimate** syllable in *marmalade*. The second most prominent syllable is the penultimate syllable in *Dundee*. The representation depicts the result of the application of **Iambic Reversal**.

**metrics** The study of the **metre** (the **rhythm**) of languages.

**mid** A vowel is a mid vowel if the height of the tongue falls between **high** and **low**.

**minimal pair** see **Phonemic Principle**

**minimal word** The minimal amount of phonological material required to form a word. If we analyse English **long** (free) **vowels** as VV (vowel-vowel) sequences, and English **short** (checked) **vowels** as containing a single V slot, then the minimal word for most varieties of English is (C)VV or (C)VC; there are no words consisting of (C)V. So word shapes such as [næ], [nʊ], [nɨ], [nɒ], [nʌ] fail the minimal word requirement for English.

**minor place of articulation** A sub-division within the **major place of articulation** categories, such as the distinction, within coronals, between **dental** and **alveolar**, or between alveolar and **postalveolar/palato-alveolar**.

**MIT** Massachusetts Institute of Technology. A prestigious East Coast American university in Boston. The birthplace of **SPE phonology**, since both Noam **Chomsky** and Morris **Halle** were based there.

**modular** Relating to a specific mental **module**.
modularity see module

module A term used in linguistics and cognitive science to refer to a specific component of mind which is said to be dedicated to a specific cognitive function. Relevant for phonology, since there are phonologists who subscribe to the thesis that the mind contains a language module. Of those who adopt this view, some believe that the putative module is innate (present at birth), a view associated with the linguist Noam Chomsky. Some linguists who subscribe to the idea of a language module in the mind (whether innate or not) believe that there is a submodule devoted to phonology. Others reject this modular conception of the nature of phonological organisation in the mind.

monomoraic see mora

monophthong A vowel in which the quality remains more or less constant during its production.

monophthongisation A process in which a diphthong becomes a monophthong. In some varieties of Yorkshire English and some accents of English spoken in the South of the USA, the diphthong /ai/ loses its off-glide, so that cry is pronounced [kɹaː], with a monophthong. Known informally as smoothing.

monostratal Involving only one level of representation. While classical SPE phonology postulated two levels of phonological representation (underlying representation and surface representation (see surface form)), monostratal models of phonology, such as declarative phonology, abandon this two-level, bis-tratal, approach.
monosyllabic containing one syllable. The English words man, dog and cat are all monosyllabic.

mora A term which is often used to describe the length of segments. Long vowels are often said to have two moras (or morae), whereas short vowels are said to have only one. Segments which have two moras are said to be bimoraic, whereas segments with one mora are said to be monomoraic. Similarly, geminate consonants are often said to have two moras, as opposed to short consonants.

moraic Relating to moras.

Moraic Phonology Any theory of phonological structure in which the mora is postulated as a significant phonological unit.

morpheme see morphology

morpheme boundary The boundary between two morphemes, indicated using a ‘+’ symbol, as in /kæt + s/ (cats). Morpheme boundaries can play a role in phonological processes. In the case of the Scottish Vowel Length Rule, the presence of a morpheme boundary triggers lengthening of a preceding /i/, /u/ or /ʌi/, as in the word [əɡi:i:d] (agreed), which consists of the root morpheme agree and the past tense suffix: /əgi: + d/.

morphological Relating to morphology.

morphologically complex Containing more than one morpheme. The singular noun cat is morphologically simple, whereas the plural noun cats is morphologically complex; it contains the root morpheme /kæt/ and the plural suffix.
morphologically simple  Containing only one morpheme. See morphologically complex.

morphology  The study of the internal structure of words. More specifically, morphology deals with units within the word which have an identifiable meaning or grammatical function. These are often referred to as morphemes. In the English word unhappiness, the prefix un-, the root happy and the suffix -ness are morphemes. Words such as this are therefore said to be morphologically complex; they contain more than one morpheme. Morphology and phonology are connected because of the existence of morpho-phonological processes.

morpho-phonological  Involving the interaction between morphology and phonology. In Malay, when a root ending in a single consonant undergoes the morphological process of suffixation with a vowel-initial suffix, the root consonant undergoes the phonological process of gemination. Thus the root /lətop/ plus suffix /an/ is pronounced [lətoppan] (‘explosion’). This is an example of a morphological process triggering a phonological process; the phenomenon is thus said to be morpho-phonological.

morpho-phonology  see morpho-phonological

morpho-syntactic  see morpho-syntactic

morpho-syntax  The aspect of linguistic structure in which both syntax and morphology play a role. Morphosyntactic properties include properties such as singular vs plural, or present vs past, as in the case of the singular form of the English noun cat, as opposed to the
plural form *cats*. Morpho-syntax is connected to phonology in many cases. In this case, the phonetic form of the plural morpheme is determined by phonological factors. If the root ends in /s/, /z/, /ʃ/ or /ʒ/, the realisation of the plural morpheme will be [ɪz], as in *horses* ([hɔːsɪz]); otherwise, if the root ends in a voiced segment, the realisation of the plural morpheme will be [z], as in *dogs* ([dɒgz]); and if the root ends in a voiceless segment, the realisation of the plural morpheme will be [s], as in *cats* ([kæts]).

**Moscow School** Also known as the Moscow Circle, this was a group of Russian linguists working in the early twentieth century. Influenced by the work of Baudouin de Courtenay and Saussure, these scholars were interested in the linguistic analysis of literary objects, including poetry. Chief among them was Roman Jakobson, who was later involved with the Prague School and then American Structuralism.

**Motor Theory of Speech Perception** A controversial theory of speech perception, according to which we perceive speech sounds by internally synthesising the vocal tract shapes involved in the production of a given speech pattern, and then seek to match these on to the incoming speech signal.

**multilateral opposition** see opposition

| N |

**narrow transcription** see broad transcription

**nasal assimilation** The process whereby nasal stops assimilate to an adjacent obstruent, as in the case of the
English prefix /ɪn-/, realised as [ɪm] in *impossible*, [ɪn] in *indirect*, and [ɪŋ] in *incredible*. This phenomenon is an example of a phonetically motivated process; the speaker anticipates the place of articulation properties of the oral stop, and produces a nasal stop which is homorganic with the stop.

**nasal cavity** One of the three resonance chambers. It refers to the space within the nose through which air may flow during the production of nasal stops and nasalised sounds.

**nasal harmony** A process in which nasality spreads throughout all of, or part of, a word, rather in the way that certain vowel properties spread in the process of vowel harmony. In Malay, nasality will spread from a nasal stop on to all following vowels and approximants, unless blocked by a consonant with oral cavity constriction, as in Malay [mɑːɭaɭ], where the [h] and the vowels undergo nasal harmony, but the [l] blocks the spread of nasality.

**nasal spread** see nasalisation

**nasal stop** A stop consonant in which there is complete closure in the oral cavity but velic opening, allowing air to flow out through the nasal cavity. Nasal stops are usually voiced, resulting in a kind of resonance which is readily identifiable as being nasal in character.

**nasalisation** An assimilation process in which a vowel becomes nasalised when it is adjacent to a nasal sound, often a nasal stop. In many accents of American English, the vowel /æ/ is nasalised when followed by a nasal stop, as in [pæn] (pan). In Malay, a vowel
preceded by a nasal stop becomes nasalised, as in [māsaʔ] (‘cook’). When nasality spreads beyond segments which are strictly adjacent to a nasal stop, this is often referred to as nasal spread, as in Malay [māhāl] (‘expensive’).

**nasalised** Involving escape of air through the nasal cavity. Vowels which are nasalised are transcribed with a superscript diacritic, as in the French nasalised vowel [ã], found in words such as banc.

**nasality** The presence of nasal airflow in speech sounds, namely nasal stops and nasalised vowels. Nasality seems to be able to function at the segmental level and at the suprasegmental level. In English, nasality is a property of segments, as in the word map. In other languages, nasality is overlaid on a sequence of oral vowels to signal a morpho-syntactic property, as in the case of the language Terena, in which words such as [ajo] (‘his brother’) become [ājō], which means ‘my brother’. In cases such as this, nasality appears to be a purely suprasegmental morpho-syntactic property. Some phonologists regard [nasality] as a privative feature.

**Nativism** see Rationalism

**natural class** The idea that speech sounds fall into classes, or ‘families’. Two main classes are consonants and vowels. Other subclasses are obstruents vs sonorants, and stops vs fricatives. It is often claimed that many phonological processes affect all of the members of a given natural class. For instance, spirantisation will often affect the entire set of voiceless stops in a language, yielding [f], [θ] and [x] instead of [p], [t] and [k].
Natural Generative Phonology A development in the history of generative phonology initiated by the phonologist Joan Bybee. This approach to phonological generalisations was founded on a rejection of overly abstract underlying representations which are at a considerable remove from surface forms. In the place of such abstract analyses, it was postulated that true phonological generalisations express phonetically motivated allophonic variation, such as nasal assimilation. For morphologically related pairs such as divine/divinity, Bybee rejected the SPE analysis, which involved postulating a single abstract underlying representation from which the alternants [dɪvain] and [dɪvɪntɪ] could be derived. Instead, she proposed that speakers store the alternants in their surface phonetic form.

Natural Phonology An approach to phonological phenomena which was a reaction to the abstractness of SPE phonology. In the theory bearing this name adopted by David Stampe, a set of natural phonological processes were postulated. By ‘natural’ is meant ‘naturally occurring’, given the nature of human perceptual capacities and the human speech apparatus. An example of a natural process is final devoicing, which is arguably grounded in the phonetic fact that the vocal cords will tend to cease to vibrate at the end of an utterance. Another example is the natural tendency for vowels to undergo nasalisation when followed by a nasal stop. It is common to assume that there is a rule of Final Devoicing in German, but not in most varieties of English. It is also assumed that there is a rule of Nasalisation in (Standard) French, but not in English. To account for the fact that these natural processes are not present as rules in English, Stampe
argued that the child, in acquiring English, must suppress the natural process. Another version of Natural Phonology has been proposed by Wolfgang Dressler.

Network English A synonym for General American.

neural nets A term used in the theory of computing to describe systems which are set up as vast networks of nodes which, when fed input, can apparently learn patterns in the input via a form of inductive generalisation. Neural nets are central to Connectionism, a theory of computation in which patterns can be identified by a neural net simply by the establishing of connections between nodes in the net, on exposure to specific kinds of input. The term ‘neural’ is used since it is suggested that such networks resemble the network of neurons in the human brain. The emergence of work on neural nets in the late 1980s was important for linguists such as Geoffrey Sampson, who support Empiricism, since neural nets are said to start out as a blank slate with, it was claimed, no inherent structure. It has been argued that, if neural nets can learn linguistic patterns without initial built-in ‘knowledge’, then so can the brain of a child, unaided by the Universal Grammar postulated by Chomsky and his followers. Neural nets are important to phonologists who want to argue that statistical learning plays a role in phonological acquisition. See stochastic phonology.

neutral position of the tongue The position of the tongue when the body of the tongue is in the centre of the vowel space. When the lips are unrounded, the vowel quality produced with this position is schwa. The
notion of the neutral position is central to the cardinal vowel system of vowel description, since vowels with the tongue raised above the neutral position are said to be high, while vowels with the body of the tongue lower than the neutral position are said to be low. Similarly, vowels with the body of the tongue in front of the neutral position are said to be front, and vowels with the body of the tongue retracted from the neutral position are said to be back.

neutral vowel A vowel which fails to undergo vowel harmony but none the less does not block the spread of harmony, as Hungarian [radir-to:] ‘frog, ablative’, where the suffix vowel harmonises with the back vowel in the root, ‘skipping over’ the neutral vowel [i]. These are also known as transparent vowels, since harmony ‘passes through’ them.

neutralisation A phonological contrast (see Phonemic Principle) is said to be neutralised in a specific context if the contrast is not attested in that context. For instance, there is a contrast between /t/ and /d/ in many varieties of American English, as in tin vs din. But the contrast is frequently neutralised intervocally in foot-internal position, as in bedding and betting, both typically pronounced [ˈberɪŋ]; the /t/ vs /d/ contrast is neutralised via a postulated process of Flapping, whereby either phoneme is realised as a flap (tap) in this context. See absolute neutralisation.

New York City English A variety of English spoken mostly by people of working-class origins in boroughs of New York City such as Brooklyn and the Bronx. Sometimes known as the Bronx accent, or the Brooklyn accent, this variety is socially stigmatised. Features include
variable rhoticity, raising of the /æ/ vowel and TH-Stop. node A point in a tree diagram, such as the Place node in diagrams used in feature geometry intended to represent the internal structure of segments.
	non-linear phonology A development in generative phonology which emerged in the 1970s. In the late 1960s and early 1970s, SPE phonology postulated phonological representations consisting of a linear sequence of segments, subsuming features representing properties such as word stress and nasality. Non-linear phonology involved the postulating of multiple layers of representation, particularly with respect to suprasegmental properties. The term subsumes Autosegmental Phonology and Metrical Phonology. The term is something of a misnomer, since all varieties of non-linear phonology incorporate linear sequences of segments or syllables.

non-rhotic A term used mostly in the study of English, but which is none the less applicable to other languages. A language, or a variety of a language, is said to be non-rhotic if its ‘r’ sounds do not occur in the rhyme of a syllable. There are many non-rhotic varieties of English. One such is RP, in which an ‘r’ is pronounced in run, since the ‘r’ there occupies an onset position. In RP, there is no ‘r’ pronounced in farm or in far left, since the ‘r’, were it to be pronounced there, would be in coda position. All non-rhotic varieties of English used to be rhotic; the ‘r’ has been elided during the history of the variety in question. Some phonologists define non-rhoticity in non-syllabic terms; they say that non-rhotic accents do not have non-prevocalic ‘r’.
Non-rhotic varieties of English often exhibit the phenomenon known as **Linking ‘r’**, where a **word-final ‘r’** is pronounced when it occupies the otherwise **empty onset** of a following word, as in RP *far away*: [faː.rəwei]. This is an example of **resyllabification**, parallel to what one finds with **Liaison** in French. Connected with this is the phenomenon of **Intrusive ‘r’**, where an ‘r’ is pronounced despite the fact that the word in question had no ‘r’ historically, as in *law and order*: [lɔːrənɔ:dər].

**non-standard** A variety of a language which has not come to be viewed socially as a **standard** variety. Examples are **New York City English**, Midi French and Andalucian Spanish.

**normalisation** A perceptual **process** in which variability in an acoustic signal is factored out. When we articulate speech sounds, there is inherent variability in how we do so. For instance, a given articulation of, say, the speech sound type [æ] in English will not be articulated in exactly the same way every time we utter it. Speakers are able to compensate for this variability, such that they can categorise the variants as instances (tokens) of the same speech sound type. Normalisation is part and parcel of the process of the **categorisation** of speech sounds.

The normalisation process is not foolproof; we can fail to categorise a speech sound as an instance of the speech sound intended by the speaker one is listening to. This can, in turn, result in changes in pronunciation on the part of the speaker who has failed to normalise the speech sound. Some phonologists believe that this is the source of certain kinds of historical change in sound systems. In certain varieties of Spanish, the
Castillian (Standard Iberian Spanish) contrast between the palatal lateral /ʎ/, as in calle (‘street’), and the palatal approximant /j/, as in yo (‘I’) has collapsed; a phonemic merger has taken place, in which both phonemes have come to be pronounced as the voiced palato-alveolar affricate [dʒ]. Thus, calle is pronounced [kaθe] and yo is pronounced [dʒo]. It could be that failure to normalise affricated versions of these phonemes lies behind this merger.

Northern Cities Vowel Shift A vowel shift in American English which is said to have been under way for some time in the central and eastern cities of the North of the USA, such as Milwaukee, Chicago and Syracuse. The /æ/ phoneme in words of the lexical set TRAP is said to be raised to pronunciations such as [ɨ] or [ɪə]. The /ə/ phoneme in words of the lexical set KIT is lowered to [ɛ] or [ʌ]. The /ɛ/ phoneme of the lexical set DRESS is retracted to [ʌ] or lowered to [æ]. The /ʌ/ of the lexical set STRUT is retracted to [ɔ]. The /ɔ/ of the lexical set THOUGHT switches to [ɒ], and the /ɒ/ of the lexical set LOT is fronted to [æ].

nuclear syllable The syllable on which the pitch change occurs in an intonation group, as in the syllable ‘pub’ in the English sentence John went to the pub.

nucleus see syllable and intonation

Obligatory Contour Principle (OCP) A supposed ‘principle’ of phonological organisation, this is a statement of an observed tendency in some languages towards the avoidance of adjacent sequences of like elements. It has
its origins in the frequently observed avoidance of sequences of like tone contours, such as HHL (High, High, Low), as opposed to sequences such as HLH (High, Low, High). The notion has been extended to other phenomena, such as the avoidance of sequences of stressed syllables. The idea probably has some foundation in a human perceptual tendency in favour of alternating opposites, such as sequences of consonant and vowel, sequences of stressed and unstressed vowels, or sequences of high and low tones. Whether it has any genuine explanatory power as a principle of phonological organisation is a moot point. There are countless examples of phenomena which violate this ‘principle’, because of the phonologisation of various phenomena.

obstruent The class of obstruents is a subclass of the class of consonants. Obstruents are characterised by a major constriction in the oral cavity, namely complete closure or close approximation. The term subsumes oral stops, affricates and fricatives. The other subclass of consonants is that of sonorants.

off-glide see glide

Ohala, John An American phonologist who has been a long-standing critic of generative phonology, which he takes to be non-explanatory and ‘non-scientific’. Ohala seeks genuine ‘scientific’ explanations for phonological patterns, which he believes to be grounded in facts about human articulation, perception and social behaviour that, can be investigated in laboratory experiments. Proper explanation, for Ohala, is phonetic explanation. Ohala is known for stressing the role of the listener in phonological change.
Old English Used to refer to a period in the history of English stretching, roughly, from the seventh to the eleventh century.

Old French The language spoken in France from roughly the middle of the ninth century to the end of the fourteenth century.

on-glide see glide

onset see syllable

opacity An phonological process is said to be opaque if its original phonetic grounding is no longer apparent. Vowels tend to be longer before voiced segments for purely phonetic reasons, so that the stressed vowel in bedding will be somewhat longer than the stressed vowel in betting. When a given voiced/voiceless distinction is neutralised, the phonetic basis for such length distinctions may become obscured. This is the case with Flapping in American English; the /t/ vs /d/ contrast is neutralised foot-internally, so that betting and bedding are both realised with a flap/tap, transcribed as [ɾ]. The stressed vowel in betting remains shorter than the one in bedding, but the original phonetic motivation for this length difference has become obscured; the lengthening process has become opaque.

opaque vowel A vowel which fails to undergo vowel harmony and also blocks the spread of harmony, as in Tangale, which has ATR and non-ATR vowel sets, but where the low vowel [a] lacks a harmonic counterpart, so that [top-a] ‘start’ and [top-a] ‘answer’ take the same form of the nominative suffix, despite the fact that ‘start’ is an ATR root, whereas ‘answer’ is a
non-ATR root. When a further suffix is added after a suffix containing /-a/, it fails to undergo harmony, as in [ped-na-n-gɔ] ‘united me’, where the root /ped/ is an ATR root, but where the suffix /na/ blocks the spread of ATR harmony to the final suffix. Opaque vowels are also known as blockers; they induce disharmony.

open approximation  see degree of stricture

open juncture  see juncture

open syllable  A synonym for free syllable. See syllable.

open syllable lengthening  The opposite of closed syllable shortening. A process in which a vowel in an open syllable undergoes lengthening. In the transition from Old English to Middle English, the vowel in the first stressed syllable in a bisyllabic word underwent lengthening, as in Middle English over, with a long mid vowel, which comes from Old English ofer, with a short mid vowel.

opposition  A term associated with the work of Ferdinand de Saussure and Nikolaj Trubetzkoy. A phonological opposition is a contrast (see Phonemic Principle), as in English /p/ vs /b/, exemplified by minimal pairs such as staple and stable. Trubetzkoy distinguished between different kinds of opposition. One type is the bilateral opposition. These are two-way oppositions of the sort /p/ vs /b/. Another type is the multilateral opposition, of the sort /p/ vs /t/ vs /k/, where the contrasts involve more than two members, contrasting for major place of articulation. Among the bilateral oppositions, Trubetzkoy identified privative oppositions, characterised by the presence vs absence of a phonological
property, as in the case of nasal stops vs their equivalent non-nasal counterparts. Thus the opposition between /m/ and /b/ is a privative opposition; the former member contrasts with the latter in that it possesses the property of nasality. The property which may be present or absent was called the mark, and the member of the opposition which possesses this property was said to be marked for that property. The term ‘opposition’ is used loosely in literary theory to mean ‘dichotomy’, as in ‘life’ vs ‘death’.

**Optimality Theory (OT)** An approach to the study of phonological phenomena which replaces the notion of rule with the notion constraint. In OT, constraints are said to be violable, so that a constraint banning voiced obstruents in word-final position would be violated in a language which permits voiced obstruents in that position. Constraints are also said to be capable of clashing with each other, i.e. coming into conflict. A constraint which is said by some to be universal (but violable) is the proposed constraint that the voicing state of a given segment must remain the same in its surface form. In a language which has Word-Final Devoicing, such as German, this universal constraint comes into conflict with the constraint which bans voiced obstruents in word-final position. In OT, constraints are said to be ranked differently in different languages. In our German case, the constraint banning voiced obstruents is said to ‘outrank’, or predominate over, the universal constraint. In a language which has voiced obstruents word-finally, the ranking is reversed.

In some interpretations of OT, all constraints are said to be universal, given by Universal Grammar. Other interpretations reject this view and argue that all constraints are language-specific. There is debate as to
whether constraints should be seen as phonetically grounded or not.

**oral** Sounds in which there is no airflow through the nasal cavity are called oral sounds. During the production of these sounds, there is velic closure. Examples are oral stops, such as [p] and [d], fricatives such as [f] and [s], and affricates such as [dz] and [tʃ].

**oral cavity** That part of the vocal tract above the pharynx, excluding the nasal cavity.

**oral stop** A stop consonant in which the velum (soft palate) is raised. This velic closure prevents nasal airflow. Examples of oral stops are [t] and [b].

**over-generalisation** A phenomenon attested in child language acquisition, in which children grasp a phonological, morphological or syntactic rule and apply it to forms it does not apply to in adult speech. Examples are child utterances such as I catched the butterfly, which suggest that the child has grasped the generalisation for forming regular past tense forms of English verbs, but has over-generalised it to irregular forms such as the past tense of the verb catch. Children pass through this phase and eventually master the irregular forms, especially if they are high in frequency.

**oxytone** A word which has primary stress on the final syllable, as in the English word deny.

**palatal** Sounds in which the active articulator is the front of the tongue and the passive articulator is the hard
palate are said to be palatal. An example is the palatal approximant [j] in the English word yes.

palatalisation A process in which non-palatal sounds become palatal or postalveolar. It is common for velar sounds to become palatalised before front vowels. The postalveolar fricative [ʃ] found in French words such as cher (‘expensive’) was a velar [k] in Latin which palatalised to become the postalveolar affricate [ts], and then became [ʃ]. Processes in which velars undergo fronting to become alveolar sounds are also sometimes referred to as palatalisation processes. The velar stop [k] in Latin was fronted to the alveolar affricate [ts] before the high front vowel [i] in Gallo-Romance, and later became [s] in Old French; the initial [s] in the modern French word ciel (‘sky’) was a [k] in Latin. In the description of English, palatalisation is referred to informally as velar softening, found in present-day alternations such as electric, ending with velar [k] and electricity, in which an [s] is found before the suffix -ity.

palatality see frontness

palato-alveolar see postalveolar

paradigm A term used both in morphology and in phonology. Although there is some variability in the way it is used, it often denotes a set of related word forms, such as the French pronouns moi, toi, lui, elle, nous, vous, eux, elles. These are said to stand in a paradigmatic relationship, in that each can be substituted for the other in a given structural slot, such as the structure Il est chez____, where use of moi yields Il est chez moi (‘He’s at my place’), whereas use of toi yields Il est chez toi (‘He’s at your place’). The term is also
used for sets of morphologically related words, such as kind, unkind, kindness, kindly, kindliness, unkindliness, etc. See paradigm uniformity effect.

paradigm uniformity effect A phonological phenomenon in which the paradigmatic relatedness of words has an effect on phonological processes. In General American, the process of Flapping occurs foot-internally, so that it will occur in the word city, but not in the word military, which has two metrical feet in American English: ['mɪlɪ] [,tɛi], with primary stress on the ['mɪ] and secondary stress on the [,tɛ]. Because the /t/ in [,tɛ] is in foot-initial position, it cannot undergo Flapping. When one forms the paradigmatically related word militaristic, the primary stress shifts: [,mɪlɪtəˈrɪstɪk], with primary stress on the ['ɪs]. The /t/ in question is now in foot-internal position, so one would expect it to undergo Flapping, but it does not. Phonologists believe that, in cases like this, the morphological relatedness of the words in question acts to block the phonological process; in retaining the non-flapped pronunciation, one is retaining a degree of uniformity in the phonetic shape of the members of the paradigm.

paradigmatic Two items stand in a paradigmatic relation if they belong to the same paradigm.

Paradis, Carole A Canadian phonologist associated with the Theory of Constraints and Repair Strategies. See constraint and repair strategies.

parallel distribution see Phonemic Principle

parameter The term is sometimes used in a relatively non-technical way, in its ordinary everyday sense, to mean
some feature according to which languages, or varieties of a language, vary, as in the example ‘If we consider the parameter of lip rounding, we find that back vowels tend to be rounded, whereas front vowels tend not to be.’ Sociolinguistic parameters are also appealed to in work on sociophonetic variation. For instance, the parameter of social class correlates with degree of non-rhoticity among speakers of New York City English: the lower the social class of a speaker, the more non-rhotic the speaker is likely to be.

Used in a more technical sense by those who adopt a principles and parameters approach to generative linguistics. Applied to phonology, postulated parameters include selecting left-headed vs right-headed foot structures.

parole A term used by Saussure to denote individual acts of uttering. Saussure distinguished parole and langue.

paroxytone A word which has primary stress on the penultimate syllable, as in the English word city.

passive articulator see active articulator

Peirce, C. S. (1839–1914) An American philosopher whose work has implications for linguistics in general, and phonology in particular. His conception of signs is distinct from Saussure’s; for Peirce, a sign was a mind-external object, as opposed to a connection between an acoustic image and a concept. Peirce divided signs into three sorts: indices, icons and symbols. It is symbols which act as linguistic signs, for Peirce. The distinction between type and token, much used in linguistics, including phonology, stems from Peirce’s work.
**penultimate** Second last. Often used to refer to the position of a syllable in a word for the purposes of word stress assignment.

**performance** A term associated with the work of Noam Chomsky, and thus much used in generative linguistics. It designates use of linguistic knowledge in a specific context of utterance, as distinct from linguistic knowledge per se (referred to as competence). Some linguists argue that the competence/performance distinction is untenable. Others wish to retain it, but to focus as much on performance as on competence. The competence/performance distinction bears some similarity to Saussure’s langue/parole distinction, but they differ in at least two major respects. Competence is located within the individual for Chomsky, and performance is located in social context. For Saussure, langue is social, not individual, while parole is individual. For Saussure, langue is an inventory of signs. For Chomsky, competence is not; it is a mind-internal grammar. See I-language and E-language.

**pharyngeal** Articulated in the pharynx.

**pharyngealisation** A kind of secondary articulation in which there is constriction in the pharynx. To transcribe such sounds using the IPA, a superscript diacritic \( [\text{̆}] \) is placed after the relevant symbol, as in the Arabic word \([t\text{̆}i:n] \) (‘mud’).

**pharynx** One of the three resonance chambers in the vocal tract, stretching from the larynx up to the oral cavity.

**phoneme** The term dates at least as far back as the work of the nineteenth-century Polish linguist Jan Baudouin.
There is more than one definition of the phoneme in the phonological literature. It is common to find a phoneme defined as a kind of sound, a distinctive sound in a specific language. By ‘distinctive’ is meant ‘having a contrastive function’, where the contrast in question is semantic (related to meaning), as in the distinction between [lɪp] (lip) and [sɪp] (sip) in English; the substitution of one sound-type ([s]) for another ([l]) results in a change of word meaning. This view is a rather concrete, or phonetic, conception of the phoneme. A variant on this concrete view is that a phoneme is a set, or family, of distinct speech sound types which count as ‘the same thing’. This variant version is more abstract than the idea that phonemes are literally sounds, since sets are not sounds; they are abstract, in some sense. Another view is more mentalistic than this. On one version of this view, phonemes are not sounds and cannot be heard, since they are mental categories. These first two views are based on realism. A third view takes phonemes to be no more than theoretical constructs, devised by the linguist as convenient fictions, in order to provide a picture of the sound patterns in a specific language. This view is based on instrumentalism. Some phonologists, such as Trubetzkoy, have argued for a functional view of phonemes; for Trubetzkoy, one must identify phonemes on the basis of their function in the phoneme system of a particular language. Trubetzkoy’s view of phonemes seems to be neither phonetic, nor mentalistic, nor instrumentalist. All of these interpretations of the notion ‘phoneme’ assume the validity of the Phonemic Principle. Some linguists deny the existence of phonemes; they believe that the phoneme notion arises from the influence of alphabetic writing systems on phonologists’ analyses. It is the norm to represent...
phonemes using slanted brackets, as in the case of the English word pull: /pʊl/. Square brackets are used in phonetic transcriptions which show allophonic detail: [pʰʊʃ].

phonemic see phoneme

Phonemic Principle Whatever view one takes of the existence, or the status, of phonemes, one finds a cluster of notions which constitute the Phonemic Principle. Central to this method is the idea of distribution. The distribution of a sound type, such as [l] in RP, is the range of environments in which it can occur. An environment is a specific structural slot in which a sound can occur, such as the onset of a syllable, or word-initial position, or intervocalic position. The sound [l] in RP has the following distribution: it occurs only in onsets, as in the word [lɪp] (lip). The sound [ɬ], often known as ‘dark l’, has a different distribution in RP: it occurs only in rhymes, as in [pʰiːɬ] (peel), where it occurs in coda position, and [kʰɬɪɬ] (couple), where it occurs in nucleus position. When two or more sounds exhibit this kind of non-overlapping distribution, they are said to occur in complementary distribution. Once it is established that two or more sounds are in complementary distribution, we may ask whether the sounds in question are phonetically similar. In this case, they are; both are laterals, both are voiced, both have an alveolar articulation. Once we have established complementary distribution and phonetic similarity, we say that the two (or more) sounds are allophones of the same phoneme. Allophones are said to be rule-governed, predictable realisations of phonemes. In this case the rule is: the /l/ phoneme is realised as [l] in onsets, and as [ɬ] in rhymes. Two or more sounds are said to have overlapping, or
parallel, distribution, if there is at least one structural slot in which either sound can occur. This is true for the two sounds [l] and [s] in RP; both may occur in word-initial onsets before a stressed vowel, as in [lɪp] (lip) and [sɪp] (sip). Once we have established that two sounds are in parallel distribution, we may establish whether they have a contrastive function: that is, whether the presence of one rather than the other may signal a difference in meaning. This is the case here: [lɪp] does not mean the same thing as [sɪp]. Pairs of words of this sort are known as minimal pairs. A minimal pair is a pair of words which differ with respect to only one sound. Once we have established that two or more sounds have parallel distribution and that they function contrastively, we say that they are realisations of different phonemes, in this case /l/ and /s/.

Phonemic contrasts are often known as phonemic oppositions. Typically, the set of phonemic oppositions in a language is systematic; the oppositions form a phonemic system. In English, /p/ stands in opposition to /b/, and the same is true of /t/ vs /d/ and /k/ vs /g/. We have here a system of phonemic oppositions which is symmetrical; in each case, we find an opposition between a voiceless member and a voiced member. We therefore say that the phonetic property of voicing is phonemic for stops in English. This is different from the phonetic property of velarisation which we saw in RP [ɬ], as distinct from RP [l]. Since these two sounds are allophones of the phoneme /l/ in RP, we say that velarisation is allophonic in RP. A given phonetic property may be allophonic in one language but phonemic in another. For instance, voicing is allophonic for stops in Korean; there are no voiced stop phonemes in Korean, but Korean has voiced stop allophones of the phonemes /p/, /t/ and /k/.
Vowel phonemes are also typically organised into phonemic systems of opposition. For instance, French has a series of front unrounded vowel phonemes: /i/, /ɛ/, /ε/. It also has a corresponding set of front rounded vowel phonemes: /y/, /ø/, /œ/. Once again, the system of oppositions is symmetrical. Not all sets of phonemic oppositions are symmetrical, but there is a general tendency towards symmetricality. An alternative to this picture of the way oppositions work is the polysystemic approach. It should be noted that some scholars argue that the idea of the phoneme is based solely on knowledge of alphabetic writing systems and that phonemes do not exist. Others argue that, to the contrary, when an alphabetic writing system is invented, it taps into intuitions based on pre-existing, mentally real phonemes.

**phonemic transcription**  Strictly speaking, this ought to be a form of visual representation of a word, or sequence of words, which contains only symbols representing the phonemes of the language. A strictly phonemic transcription of the RP word *pull* ought to contain only three symbols for the three phonemes in the word: /pul/. Phonemic transcriptions ought not to show allophones. In our example, the difference between a phonemic transcription of the word and a phonetic transcription is that the aspiration on the /p/ and the velarisation of the /l/ would be represented in the phonetic transcription: [pʰuɬ]. However, the reality in many pronouncing dictionaries is that supposedly phonemic transcriptions do indeed contain representations of allophones. An example of this is the representation in such dictionaries of the tap in *General American*; transcriptions such as /sɪɹi/ for the word *city* ought to be /sɪti/ if they are to be truly phonemic, since
the tap is an allophone of the phonemes /t/ and /d/. It is clear what the practical advantage is of representing allophones such as taps, but in doing so, dictionary editors are providing transcriptions which are not strictly phonemic.

**phonetic transcription** see phonemic transcription

**phonetically motivated** A process is said to be phonetically motivated if it can be shown to be driven by facts about acoustics, articulation or the perception of speech sounds. An example of a phonetically motivated process is the phenomenon of voicing assimilation in obstruents, as in the case of Polish /gorod/ (‘town’), which has a voiceless stop at the end of the base when the diminutive suffix /-ka/ is added: [gorotka] (‘little town’). This is a form of anticipatory assimilation, in which the voicelessness of the [k] is anticipated, resulting in devoicing of the /d/ at the end of the base. Such assimilations are driven by facts about articulation.

**phonetics** The study of human speech sounds. Often subdivided into articulatory phonetics (the study of how human speech sounds are made) and acoustic phonetics (the study of the acoustic properties of those sounds). There is no universal consensus on the distinction and relation between phonetics and phonology. See realisation.

**phonetics-free phonology** Any conception of phonological objects in which they are said not to be definable in terms of phonetics. It appears that this view was adopted by the Danish linguist Louis Hjelmslev and the British linguist J. R. Firth. The idea recurs
throughout the history of phonology, appearing in work on Government Phonology and in the notion of ‘substance abuse’, associated with the writings of Mark Hale and Charles Reiss. Here, ‘substance’ means ‘phonetic substance’, which they take to be misused if incorporated into our account of phonological, as opposed to phonetic, objects.

**phonological phrase** A prosodic unit postulated by some phonologists, often said to constitute one of the units in the prosodic hierarchy. In the analysis of the process of Liaison in French, it is possible to argue that a sequence of a determiner and a noun, as in les amis (‘the friends’), or a pronoun and a verb, as in Ils arrivent (‘They are coming’), form a phonological phrase. One can then argue that Liaison must apply within phonological phrases: [lezami] (les amis) and [izaʁiv] (Ils arrivent). But Liaison can be said to be blocked at the boundary between phonological phrases, as in the sentence Les amis arrivent, which can be said to consist of two phonological phrases: [Les amis] and [arrivent], pronounced [lezamiʁiv], with no [z] at the end of the word amis. Phonologists who postulate units such as the phonological phrase often embrace the claim that syntactic structure does not directly trigger phonological processes; rather, certain syntactic configurations in specific languages are said to form phonological phrases, which then act as the **domain** for the application of certain phonological processes.

**phonological word** A prosodic unit postulated by some phonologists. It is claimed by some that this unit acts as the **domain** for the operation of certain phonological processes. It has been claimed that the phonologi-
cal word in French consists of a root plus any suffixes which follow it, and that prefixes in French constitute separate phonological words. The process of glide formation in French is claimed to apply within phonological words, as in the adjective *colonial* (‘colonial’), pronounced [kɔlɔnal], derived from the noun *colonie* (‘colony’), pronounced [kɔlɔni]. Here, the [i] at the end of *colonie* becomes the glide [j] when followed by a vowel-initial suffix, which forms a phonological word with the root. Glide formation fails to occur across the boundary between phonological words, as can be seen in the pronunciation of *Je vis à Paris* (‘I live in Paris’), pronounced [ʒəviapasi]. Here, the [i] at the end of the phonological word *Je vie* does not undergo glide formation: the pronunciation is not [ʒəvjapasi].

**phonologisation** The term is used when ‘low-level’, universal phonetic tendencies attain the status of phonological generalisations in a specific language. Universally, vowels tend to be longer before voiced consonants. But this tendency can evolve into a language-specific vowel lengthening process, such as the Scottish Vowel Length Rule, in which specific vowels are considerably lengthened before specific voiced consonants.

The term is also used to describe the historical process by which a speech sound type changes its status from that of an allophone to that of the realisation of an independent phoneme. In present-day French, there is a /ʃ/ phoneme, as in words like /maʁʃe/ (*marcher*, ‘to walk’). We can tell this because there are minimal pairs such as /maʁʃe/ vs /maʁkɛ/ (*marquer*, ‘to mark’). In Old French, there was no /ʃ/ phoneme; the [ʃ] sound was merely an allophone of the /k/ phoneme (*marcher* comes from the Vulgar Latin verb *marcare,*
with a /k/), but it attained phonemic status during the evolution of the French phonemic system. This kind of phonologisation is also an example of a phonemic split.

**phonology** The study of the sound systems found in human languages. Some define phonology as the study of the functions of speech sounds. On that definition, phonology is functional **phonetics**. Others have a more mentalistic conception of what the discipline of phonology is; they see sound systems as being objects represented in the minds of human beings.

The term is used both for the discipline and for the object of inquiry; we talk of phonology as a field of study, parallel to politics, but as with the term ‘politics’, we also use the word ‘phonology’ to refer to the sound systems under investigation, as in the phrase ‘Vowel harmony occurs in the phonology of Hungarian.’

The distinction and relation between phonology and phonetics is controversial. See **phoneme**, **Phonemic Principle** and **realisation**.

**phonotactic constraints** These are restrictions on the sequence of sounds that can occur in a given position in a syllable. They vary from one language to another. For instance, in most varieties of English, there are constraints on what kinds of consonant can occur in the first and second positions in a branching onset. If a stop consonant occupies the first slot in a branching onset, then only one of the following **approximants** can occur in the second position: /r, l, w, j/, as in **tray**, **play**, **twice** and **cure**. In contrast, French phonotactic constraints allow the consonants /n/ and /s/ in the second position in a branching onset, as in **pneu**
(‘tyre’), pronounced [pnø], and psychiatre (‘psychiatrist’), pronounced [psikjatʁ]. Phonotactic constraints can refer to specific consonant types, as we have seen, but they can be very broad too. For instance, if a language allows only CV syllables, i.e. does not allow coda consonants, then that too would constitute a phonotactic constraint.

**phrasal phonology** see Lexical Phonology

**phrasal stress** Prominence of specific syllables in specific words in a phrase. In English, the phrasal stress rule is said to make the final element in the phrase the most prominent. In the noun phrase tall boy, the noun boy is most prominent. In the verb phrase quickly departed, the verb departed is most prominent. In the adjective phrase very tall, the adjective tall is most prominent. The application of the phrasal stress rule is said to trigger Iambic Reversal. In the word thirteen, -teen is normally more prominent than thir-. But when thir-teen is inserted into a phrase such as thirteen men, the phrasal stress rule is said to create a stress clash between men and -teen, resulting in the reversal of the prominence patterns between thir- and -teen.

**Piaget, Jean** Twentieth-century Swiss psychologist who worked on child development. Unlike Chomsky, he argued that the child’s linguistic development was integrated into the child’s general cognitive development. Present-day Neo-Piagetians include Annette Karmiloff-Smith.

**pidgin** A pidgin language is a form of language which emerges when speakers of different languages seek to communicate. A pidgin language therefore acts as a
lingua franca. Some of the best-known examples are pidgin varieties of English, Dutch, French, Spanish and Portuguese which emerged during the slave trade. Pidgin languages are said to be syntactically, morphologically and phonologically simpler than the languages they are based on, which are the languages of the slave traders and the languages of the slaves. See creole.

Pierrehumbert, Janet An American phonologist known for her work on intonation. Pierrehumbert is a leading light in the Laboratory Phonology community, and is a proponent of stochastic phonology.

pitch The acoustic effect produced by different rates of vibration of the vocal cords. Generally speaking, the higher the rate of vibration, the higher the pitch. Pitch changes feature in word stress, intonation and tone.

pitch accent A form of salience. Syllables which have a pitch accent have pitch movement on that syllable, as in the Japanese word toshōkan (‘library’) which has a sequence of three syllables, the first having a low pitch, the second a high pitch and the third a low pitch.

pitch accent language A language such as Japanese, in which each word has a single tonal pattern. In the Japanese word toshōkan (‘library’), the second syllable, with the high pitch, is the stressed syllable; the stress is conveyed by pitch alone, unlike in English. Pitch accent languages are said by many to be different from tone languages and stress and intonation languages.

place of articulation The point in the oral cavity at which a sound is articulated. For consonants, the main places of articulation are labial, coronal and dorsal.
Plosive. A synonym for a stop. See degree of stricture.

Point vowels see dispersion theory

Polysyllabic Containing more than two syllables. The English words elephant, elaborate and gentlemanliness are all polysyllabic.

Polysystemic Polysystemic approaches to the nature of phonological contrasts differ from the classical phonemic approach. Under the latter, one considers the entire set of environments, and establishes allophones on the basis of complementary distribution. On this view, there is a single set of phonemic oppositions, with the allophones of those phonemes being distributed across a range of environments. On the polysystemic approach, one postulates several sets of phonemic systems for each environment, such as onset position and coda position. On this view, a given language has, for example, a system of onset consonants and a distinct system of coda consonants. Associated with the work of British linguist J. R. Firth.

Postalveolar Sounds which are postalveolar are produced with a stricture involving the blade of the tongue and the area just behind the alveolar ridge. Examples are the English fricatives in words such as ship [ʃɪp] and measure [mɛʒə]. Many phonologists and phoneticians still use the term palato-alveolar for such sounds, though this does not feature in the most recent revision of the IPA.

Postvocalic Occurring after a vowel. The /d/ in the word bad is postvocalic.

Poverty of the Stimulus (POS) argument see stimulus
Prague School  A group of linguists and philosophers, based in Prague from the mid-1920s into the 1930s, who developed several concepts in linguistic analysis, including markedness and the idea of different types of phonological opposition. Perhaps the best-known phonologist working in the Prague School was a Russian prince called Nikolaj Trubetzkoy. The phonologist Roman Jakobson also worked closely with members of the Prague School.

pre-aspirated stops Stops which are pre-aspirated have a period of aspiration preceding the stop closure, as in the case of the [ht] stop found in Icelandic. These are distinct from post-aspirated stops such as the [pʰ], [tʰ] and [kʰ] in English, which are normally referred to simply as aspirated stops. Icelandic has both pre-aspirated and post-aspirated stops. In some languages, such as the Applecross dialect of Scots Gaelic, pre-aspirated stops have been analysed as single contour segments. In other languages, such as Icelandic, they are analysed as sequences of two segments.

prenasalised stops Stops which are treated as single segments, but which contain a nasal articulation prior to the oral stop articulation, as in the Terena word [mbiho] (‘I went’). Prenasalised stops, like affricates, are often described as contour segments, or complex segments, since, in each case, there are two distinct, sequential subparts within a single segment.

pre-pausal Occurring before a pause. The [t] at the end of the utterance ‘He got hit’ is in pre-pausal position if the speaker pauses at the end of that utterance.

prevocalic Occurring before a vowel. The [ɪ] in the sentence I’m ready is in prevocalic position.
**primary articulation** The main articulation produced in sounds which also have a **secondary articulation**. The primary articulation in English ‘dark l’ is alveolar, but this sound also has a secondary articulation, a velarisation in which the **back of the tongue** articulates with the velum.

**primary stress** Some languages have more than one degree of **word stress**. Many varieties of English are said to have both primary stress and secondary stress, as in the word *preconception*, which contains both a secondary stress and a primary stress: [ˌprekon'septən], where the diacritic [ˌ] marks secondary stress, and the diacritic [ˈ] marks primary stress. The idea is that the syllables between the stressed syllables are unstressed, and thus less prominent than the stressed syllables, but that the syllable with primary stress is more prominent than the syllable with secondary stress.

**Prince, Alan** An American phonologist who works within the *generative phonology* tradition. He is known for his work in *Metrical Phonology*. He is considered the co-founder, with Paul Smolensky, of *Optimality Theory*. He has also worked with John McCarthy on Optimality Theory.

**principles** Many linguists believe that there are basic principles which govern the structure of human languages. In the field of phonology, **avoidance of homophony** is considered to be a functioning general principle, which is said to come into conflict with the tendency towards **ease of articulation**.

A more formal sense of ‘principle’ is used in branches of *generative linguistics* which postulate formal principles and **parameters**, given by *Universal Grammar*. 
principles and parameters approach Any approach to the theory of linguistic structure which postulates linguistic principles and parameters that are said to be given by Universal Grammar. Mostly associated with syntactic analyses adopted within present-day generative linguistics, but the notion has been adopted by generative phonologists.

privative feature A feature which is said to be either present or absent, as in the case of the feature [labial], present in segments such as /u/, /o/, /p/, /b/ and /m/, but absent in segments such as /i/, /e/, /t/, /d/ and /n/. See also opposition.

privative opposition see opposition

process One way of talking about the relationship between related phonetic and phonological forms is to appeal to the idea of phonetic or phonological processes. In Korean, there are related forms, such as [pap] (‘cooked rice’) and [pabi] (the ‘subjective’ form of the ‘cooked rice’ morpheme). Phonologists have analysed such pairs by postulating an underlying representation of the form /pap/, with an underlingly voiceless unaspirated stop. Forms such as [pabi] are then said to result from the operation of a process of intervocalic voicing. The process idea tends to be associated with the notion of phonological rule.

proclitic see clitic

productivity The extent to which a given phonological, morphological or syntactic pattern can apply to create new forms. The suffix -ee in contemporary English is currently exhibiting a certain degree of productivity;
speakers are uttering new forms such as *kissee* and *teachee*, in which the new forms denote the person undergoing the experience. It is claimed, particularly in usage-based phonology, that the productivity of a given pattern is largely determined by the type frequency of the pattern.

**progressive (preservative) assimilation** see assimilation

**prominence** A synonym of salience.

**proparoxytone** A word which has primary stress on the antepenultimate syllable, as in the English word *America*.

**prosodic** Relating to **prosody**.

**prosodic domains** see **prosodic hierarchy**

**prosodic hierarchy** It is often claimed that phonological units larger than the segment form a hierarchy of ever-larger units, known as the prosodic hierarchy. An example of such a proposed hierarchy would contain the units known as the syllable, the foot, the phonological word, the phonological phrase, the intonational phrase and the utterance. As one moves from the syllable at the bottom of the hierarchy to the utterance at the top, the units are said to get larger, so that feet contain syllables, phonological words contain feet, and so on. It is a moot point whether all languages have all of these units. It is also debatable whether utterances can be strictly subdivided into neat packages containing such units.

**Prosodic Morphology** An approach to morphology, associated primarily with the work of John McCarthy and
Alan Prince, in which morphological templates are said to be definable in terms of prosodic constituents such as the syllable and the metrical foot.

prosody The study of prosody is the study of suprasegmental features of speech, such as word stress, rhythm and intonation. Some phonologists treat other phenomena, such as nasality, as a potentially prosodic property. The term is used in Firthian Phonology to denote phonological elements which correspond to what were later called autosegments. See Autosegmental Phonology.

proto-language A reconstructed earlier stage in the history of a language family. Examples are Proto-Indo-European, the reconstructed precursor of the Indo-European language family and Proto-Dravidian, the reconstructed precursor of the present-day Dravidian languages, such as Malayalam, Tamil and Telugu.

The term ‘proto-language’ is also used by the linguist Derek Bickerton to refer to a postulated more ‘primitive’ form of human language which he claims was an evolutionary precursor to fully-fledged human language.

prototypes In the work of Eleanor Rosch, it is argued that human perception relies heavily on prototypes, which are central exemplars of a given category. In the field of colour perception, it is said that we have a clear sense of a prototypical example of, say, ‘green’, and a prototypical example of, say, ‘blue’. But we are poor at categorising tokens which lie on the fuzzy boundaries of blueness and greenness, and will often disagree as to whether a given object is green or blue, if the colour is not prototypical. It is argued that vowel perception
works in the same way. Native speakers are good at recognising a prototypical example of, say, /ɪ/ in English, as in the word *pit*; they are also good at recognising prototypical examples of /ɛ/ as in the word *pet*. But if we hear non-prototypical exemplars of these phonemes, articulated halfway between /ɪ/ and /ɛ/, we are less good at identifying the vowel sound (though context of utterance will help immensely in guessing what word is intended).

Prototypes are said by some to be central to speech perception and to our conceptual categories, so that concepts such as ‘dog’ are said to have more and less central exemplars. Prototype theory is similar to exemplar theory.

**Psychological reality** The idea that the phonological representations and generalisations postulated by linguists correspond in some way to mental entities and/or processes in the minds of speaker/hearers. See **realism**.

**Pull chain** A synonym for a **drag chain**. See **vowel shift**.

**Pullum, Geoffrey** A British linguist who spent a great deal of his career in the USA before returning to Britain in 2007 to become Professor of Linguistics at Edinburgh University in Scotland. Pullum’s early work was on **SPE phonology**, but he has worked on a remarkably wide range of areas in linguistics, including syntactic theory (he was one of the co-founders of a framework known as Generalised Phrase Structure Grammar) and the syntax-phonology interface. He is co-author of a phonetic symbol guide and lately known for his work with the philosopher Barbara Scholz criticising the **Poverty of the Stimulus argument** and, more generally, Chomsky’s **Rationalism**.
pulmonic egressive  see airstream mechanisms

pulmonic ingressive  see airstream mechanisms

push chain  see vowel shift

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**Quantity** A property often attributed to syllables, normally the rhyme of the syllable. Syllables are often said to be heavy if the rhyme contains a certain amount of phonological material. Syllable rhymes in Latin are said to have been light if they contained only a short vowel, and heavy if they contained a long vowel, a diphthong, or a vowel followed by a coda consonant. The heavy syllables are said to have have greater quantity than the light syllables. In the Latin word *l[a]udati* (‘praised’), pronounced [lauda:ti], the final syllable is light and the other two syllables are heavy. Many word stress systems are said to be governed by syllable quantity. In Latin, words which are trisyllabic or longer are said to have been stressed on the penultimate syllable if it was heavy, or otherwise on the antepenultimate syllable. Some phonologists distinguish quantity as a phonological property from length as a purely phonetic property of segments.

**Quantity sensitivity** A term for word stress assignment systems in which syllable weight (otherwise known as syllable quantity) plays a role.

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**‘r’ sounds** Otherwise known as rhotics. It is common for phonologists to postulate different ‘r’ sounds in a
language, and the range of sounds considered to be ‘r’ sounds is remarkably broad, subsuming taps, trills, fricatives and approximants. It is a moot point whether there is a natural class of ‘r’ sounds. It is worth noting that, although the class of sounds considered to be rhotics is large, it is none the less constrained; no nasal stops ever count as rhotics, for example, and nor do voiceless stops.

radical consonants Sequences of three consonants in Arabic which constitute morphological roots. Vowels can then be interspersed among these consonants, and various affixes can be added to them. The sequence /drs/ is an example. With the addition of various vowels and affixes, the following forms, among others, can be created: [darasa] (‘he studied’, [darsun] (‘a lesson’), [madrasah] (‘Koranic school’). In the analysis of such forms, phonologists often appeal to the idea of templates such as CVCVC, found in the first example.

Radoppiamento Sintattico (RS) Literally, ‘syntactic doubling’. An external sandhi phenomenon found in Italian, in which a word-initial consonant undergoes gemination (doubling) next to a word boundary, as in Era venuto con tre piccoli cani (‘He came with three little dogs’), in which the underlyingly short [p] in piccoli (the plural form of the adjective meaning ‘little’) is geminated to [pp]. The process applies if the segment following the target consonant is a vowel, a liquid or a glide, and if the syllable preceding the target consonant is stressed. There has been much discussion of the conditions for RS. Like Liaison in French, it does not happen across all sequences of two words, and this has led to discussion as to whether syntactic structure plays a direct role in the trigering of the process, or
whether there is an indirect link between syntactic structure and phonological processes, mediated by postulated units such as the phonological phrase.

**raised** A vowel is said to be raised if its articulation has moved upwards in the vowel space. In the Northern Cities Vowel Shift, many of the articulations of the /æ/ phoneme are raised towards the low mid vowel [ɛ], or even higher than that.

**raising** Any phonological process in which vowels are raised in the vowel space. An example is DRESS Raising in New Zealand English, in which vowels of the lexical set DRESS are raised from the low mid [ɛ] position and pronounced as [i], as in the pronunciation of the word desk as [dɪsk]. Raising in phonology is not to be confused with the use of the same term in the history of generative syntax.

**Rationalism** A tradition in the history of philosophy which rests on the idea that certain kinds of cognitive content are native to, or innate in, the human mind and not acquired via interaction with the environment. It is important not to confuse this meaning with the everyday use of the term, which means ‘relying on rationality’. Rationalism is associated with the work of the French philosopher Descartes, who argued that the human mind is possessed, at birth, with certain ‘innate ideas’. The notion of innate cognitive content was pursued in the twentieth century by Chomsky, who claims that humans are born with innate linguistic knowledge, including phonological knowledge. Rationalism is often referred to as Nativism. The idea that humans are born with innate linguistic knowledge is opposed by those who support Empiricism.
Innate phonological knowledge is said to include general principles governing the shape of the phonological systems of human languages.

**Rationalist**  Relating to Rationalism.

**realisation** A term often used by scholars who postulate a distinction between phonological and phonetic representations, and who see the relation between the two to be one of the phonological representation being realised in phonetic substance. The term is somewhat unfortunate for proponents of realism, since it suggests that the phonological representation is somehow less real than the phonetic representation, but this is usually not intended by authors who use the term. Other terms used to designate the relation between phonology and phonetics are manifestation, phonetic implementation, phonetic interpretation and phonetic exponence. Others use the term transduction to describe the relationship between phonology and phonetics phonological objects, taken to be mental in nature, are said to be transduced into phonetic substance. It is, at times, unclear exactly what terms such as these are supposed to mean. There is no consensus on whether a clear distinction can be drawn between phonology and phonetics, and even those who believe that such a distinction can be drawn do not agree on how it should be drawn, or on what the relation between the two is.

**realisational difference** A difference between two varieties of a language is said to be realisational if there is a difference in the way the phonemes of those varieties are realised. In Received Pronunciation (RP), the /l/ phoneme is realised as a ‘dark l’ in the rhyme of a
syllable, as in the word *dull*: [dʌl], where the /l/ is in the coda position of the rhyme. In the word *lip*, the /l/ is in the onset, and is therefore not realised as a dark l in RP. The word *lull* in RP has an /l/ in onset position and an /l/ in the rhyme, and is therefore pronounced [lʌl], with two different l sounds. In **Standard Scottish English**, the /l/ phoneme is realised as a dark l in all syllabic positions, so that *lull* is pronounced [lʌl]. This kind of difference is realisational, not systemic; the difference does not lie in the set of phonemic **oppositions** found in the two varieties, but in the way a specific phoneme is realised. See **systemic differences**.

**realism** A way of interpreting scientific theories, according to which the theoretical constructs postulated by the scientist are assumed to correspond to real entities and events. A realist interpretation of atomic theory assumes that atoms are real. Adopting a realist interpretation of phonological constructs such as phoneme, syllable and foot means assuming that such things are real entities in some sense. The alternative to this assumption is to adopt an instrumentalist interpretation of theoretical constructs, according to which we are not justified in assuming that phonemes, feet, syllables and other postulated objects actually exist outside of our theories.

**Received Pronunciation (RP)** An accent of English which has often been associated with speakers who attended the English fee-paying schools. It is widely taught to foreign learners of English around the world. Some phonologists prefer to speak of the present-day RP-type accents as Standard Southern British English. RP is also referred to as **BBC English**, although BBC presenters nowadays speak with a wide variety of accents.
reciprocal assimilation  see assimilation

recursion  In syntax, a syntactic category is said to be recursive if one can identify an instance of that category occurring within a category of the same type. For instance, the noun phrase, *The old man in the park*, contains another noun phrase (*the park*). Since noun phrases can occur within noun phrases in English, we say that noun phrase is a recursive category in English. It has often been claimed that recursion is a universal property of human language, present in all human languages. This claim has recently been disputed by the linguist Dan Everett. Recursive categories have been postulated in phonology, but their status is much more questionable than the status of recursive categories in syntax. Examples of postulated recursive categories in phonology are the phonological word and the intonational phrase.

recursive  see recursion

reduced vowel  see reduction

reduction  With respect to consonants, this is a process in which a sound with oral cavity articulation comes to be replaced by another sound without oral cavity articulation. Voiceless fricatives are often historically reduced to glottal fricatives, with loss of stricture in the oral cavity. Spanish *hijo* (‘son’) used to be pronounced with an [h] at an earlier stage in the history of the language. This [h] was a reduced form of Latin [f] in *filium*. Voiceless oral stops are often reduced to glottal stops, again with loss of stricture in the oral cavity, as in the pronunciation [bʌʔə] (*butter*). This process is often called glottalling. With respect to vowels, in many languages, unstressed vowels are often reduced
to schwa, which involves no deviation from the neutral position of the tongue. A word such as personal has reduced vowels in its unstressed syllables, both of them schwas: ['pʰə:sonəl], but in the word personality, the syllable with primary stress has a non-reduced vowel: [,pʰə'sə'nælɪtɪ]. Some languages have a more restricted range of vowel phonemes in unstressed syllables than is found in stressed syllables, but none the less do not reduce the unstressed vowels to schwa. In Catalan, the seven vowels /i, e, ε, a, ɔ, o, u/ can occur in stressed syllables, but in unstressed syllables only /i, a, u/ can occur. This kind of phenomenon is analysed as a kind of vowel reduction by some.

redundancy  see redundant

redundant  A phonetic feature is said to be redundant if its occurrence is predictable from context. The notion is central to the Phonemic Principle: allophonic properties of speech sounds are predictable from context, as in the case of the intervocalic voicing of unaspirated voiceless stops in Korean, where morphemes such as /pap/ (‘cooked rice’) have a [b] realisation of the morpheme-final /p/ in forms such as [pabi]. In SPE phonology, underlying representations were stripped of all such redundant features, so that the underlying representation for ‘cooked rice’ in Korean would be /pap/.

In exemplar theory, it is argued that mental representations of words are not stripped of redundant phonetic material but are stored in the form they are heard, with all the phonetic detail which was perceived when a word was uttered on a specific occasion.

reduplication  A morphological process in which segmental material from a base is copied. In Maori, /mate/
means ‘sick’ and the reduplicated form /matemate/ means ‘sickly’. Reduplication is relevant for phonology because any account of reduplication phenomena requires a statement of exactly which phonological material is to be reduplicated. There are clear cases, such as our Maori example, in which a constituent such as a syllable or a word is reduplicated. But other reduplication phenomena are less straightforward, leading phonologists to appeal to notions such as templates and underspecification. In Ilokano, a Philippine language, the progressive form of the base [basa] (‘read’) is [ag+bas+bas], with [bas] copied from the base. Here, what is copied is neither a syllable nor a base. The same is true for the base [trabaho] (‘work’), whose reduplicated form is [ag+trab+trabaho]. An analysis making appeal to the idea of a template would postulate a prefix consisting of a CCVC template which is underspecified for phonological content. Segmental content from the base is then copied on to the template. Other phonologists have argued that there are prosodic constraints on reduplication, so that the reduplicated material is a prosodic constituent such as the mora, the syllable and the foot. In the case of Ilokano reduplication, the suggestion is that the sequence CCVC is not arbitrary, but corresponds to the language’s maximal syllable.

regressive (anticipatory) assimilation see assimilation

Rendaku A well-known voicing process in Japanese, in which an initial voiceless consonant in a compound becomes voiced when inserted into the compound. The standard example is the combination or ori (‘fold’) plus kami (‘paper’), which together form the compound [origami] (‘paper folding’). See Lyman’s Law.
repair strategies  An idea associated with the work of Canadian phonologist Carole Paradis. In her theory of constraints and repair strategies, both universal and language-specific constraints are postulated. When these are violated, repair strategies may be triggered. For instance, if a given language has a language-specific constraint prohibiting adjacent consonants, then any such sequence could be repaired by the insertion of an epenthetic vowel between the two consonants.

representation  A notion that has been widely appealed to in phonology in a variety of different ways. In SPE phonology, a distinction was made between two significant levels of phonological representation, both attributed with psychological reality. The first was the level of systematic phonemic/phonological representation, otherwise known as underlying representation. This was a level at which all redundant (predictable) phonetic features were stripped away. Those features were then supplied by phonological rules, which yielded a derived level of representation known as the systematic phonetic level of representation.

resonance chamber  Any of the three chambers in the vocal tract in which resonance may take place: the oral cavity, the nasal cavity and the pharynx.

resyllabification  see syllable

retracted  see vowel retraction

Retracted Tongue Root (RTR)  A property often associated with vowels, in which the root of the tongue is retracted, resulting in various effects on the body of the
tongue. Typical RTR and non-RTR vowel pairs are [i]/[ɪ], [u]/[ʊ], [e]/[ɛ], [o]/[ɔ], in which the latter member is RTR. Such pairs often figure in vowel harmony systems. There is often debate as to whether a given system is ATR-based or RTR-based. It appears that ATR-based systems may change into RTR systems over time. Some believe that there are languages with both ATR and RTR vowel harmony.

retraction  see vowel retraction and stress retraction

retroflex A speech sound is said to be retroflex when the tip/blade of the tongue is curled back and the underside of the tip/blade forms a constriction with the passive articulator, usually the alveolar ridge. Retroflex consonants are common in both the Dravidian and the Indo-European languages of India, such as Tamil. They include retroflex stops, such as the voiceless retroflex stop [ʈ] in the Tamil word [ʈaβam] (‘penance’), and the voiced retroflex stop [ɖ] in the Tamil word [puːɳɖu] (‘garlic’). The latter word also contains the retroflex nasal stop [ɳ]. The Tamil word [kuɾu] (‘give’) contains the retroflex tap/flap [ʈ], and the Tamil word [pazɯ] (‘waste’) contains the voiced retroflex fricative [z].

reversal  see Iambic Reversal

rhotic A language, or variety of a language, is said to be rhotic if its ‘r’ sounds may appear in both onsets and codas. In Standard Scottish English and in many varieties of American English, an ‘r’ is pronounced in farm and far left. See non-rhotic.

rhotics  see ‘r’ sounds
rhyme There are two different senses of this word.

There is a phenomenon known as rhyme which is found in poetry and song. In English, the unit for rhyming is the metrical foot, with any onset consonants ignored, so that city rhymes with witty. Each word constitutes a trochaic metrical foot, and when one ignores the onset consonants, both have the foot [itti]. Because metrical feet can cut across word boundaries, it is possible to form rhymes such as the following: pneumonia and stone ya (informal spelling of stone you, as in the sentence They'll stone ya.) The word pneumonia has an initial unstressed syllable, followed by the metrical foot [məʊnjə]. The phrase stone ya consists of the metrical foot [stəʊnjə]. Ignoring the onset consonants, both expressions contain the metrical foot [əʊnjə], and thus they rhyme. Popular music abounds with examples like this.

The term is also used to refer to a constituent within a syllable which consists of the nucleus and any coda consonants. It is worth noting that, despite its name, the rhyme of a syllable is not the basis for rhyming in English. See syllable.

rhythm The regular placement of beats in speech. While all human speech is rhythmic, different human languages exhibit different rhythmic patterns. One pattern contains a perceptually salient syllable followed by a less salient syllable, as in the English word father. Such a structure is known as a trochee, and is referred to as a trochaic structure. Another pattern contains a less salient syllable followed by a more salient one, as in the word [ŋin'tip] (‘bee’) in the language Weri. This is known as an iamb, and is referred to as an iambic structure. The structures in question are often referred to as metrical feet. It is said that
English *father* constitutes a trochaic foot, while *Weri* *ŋintip* constitutes an iambic foot. The most prominent syllable in a foot may have only *secondary stress*, as in the English word *preconception*, which contains two trochaic feet: [ˌprekon] ['prekon].

**rhythm rule** see Iambic Reversal

**right-headed** Used to refer to phonological *constituents* in which the *head* is located at the right edge of the constituent, as in the case of *iambic feet*. These can be found in, for example, the South American language *Weri*. An example from this language is the word [ŋin'tip] (‘bee’), in which the final stressed syllable forms an iambic foot with the preceding unstressed syllable. See *left-headed* and *rhythm*.

**rising diphthong** A *diphthong* in which the most prominent element is the second, as French [wa] (‘goose’), where the [a] is more prominent than the *on-gliding* [w]. The most prominent element in a diphthong is often referred to as the *head* of the diphthong.

**Romance languages** A subgrouping within the *Indo-European language family* which includes present-day languages such as Catalan, French, Italian, Occitan, Portuguese and Spanish. The Romance languages are historically derived from *Vulgar Latin*.

**root** A term from the field of *morphology*, designating the part of a word which remains once all *affixes* have been removed. For instance, in the English word *unfriendliness*, once one removes the prefix *un-* and the suffixes *-ly* and *-ness*, one arrives at the root *friend*. The term is also used in *phonetics* to refer to the *tongue root*. 
rounded Having lip-rounding. Back vowels are typically rounded, as in the case of [u] and [o], but there are front rounded vowels too, as in the case of the French vowels [y], [œ] and [œ] found in the words lune (‘moon’), peu (‘little’) and sœur (‘sister’). Consonants can also have lip-rounding, as in the case of the English palato-alveolar sound [ʃ], found in words such as share and ash.

roundedness The property of being rounded. For some phonologists working with private features, roundedness is subsumed under labiality.

RP see Received Pronunciation

RTR see Retracted Tongue Root

rule A way of stating a generalisation. When we say that there is a rule of voicing assimilation in Polish, this is a way of saying that there is a generalisation to be made about the assimilation that occurs between adjacent obstruents in Polish. An alternative way of stating the generalisation would be in the form of a constraint.

rule-governed A given phonological pattern is said to be rule-governed if it exhibits a clearly stateable regularity. The occurrence of the allophones of a phoneme are said to be rule-governed if we can state exactly which environments they occur in. The word stress patterns of a language are said to be rule-governed if we can state an explicit algorithm for word stress assignment in that language.

Rutgers Optimality Archive (ROA) An on-line archive of papers on Optimality Theory, based at Rutgers University in the USA.
salience A perceptual notion. In all languages, some phonological units will be more salient (prominent) to its speakers than others. Stressed syllables are more salient than unstressed syllables, as in the word *happen*, where the penultimate syllable is more salient than the final syllable. Among the stressed syllables, syllables bearing the tonic are more salient than syllables which do not carry the tonic, as in *Mary bought a dress*, in which the tonic syllable *dress* is more salient than the other stressed syllables *Mary* and *bought*.

**Sampson, Geoffrey** A British linguist who has consistently opposed the Rationalist belief that humans are born with linguistic knowledge. In opposition to this, Sampson claims that we learn the language(s) we speak, using general learning mechanisms. Sampson supports Empiricism; he denies the existence of Universal Grammar. While he has not worked on phonology, his views are relevant for the study of phonology. According to his view, human children learn the phonology of their language from scratch; there is no innate phonological knowledge (though this is not to deny that humans possess certain innate perceptual and articulatory capacities).

sandhi A term taken from Sanskrit, meaning ‘putting together’, from *sam* (‘together’) and *dhi*, (‘put’). The term was first used by the ancient Indian grammarians. Sandhi processes are processes which operate across morphological and syntactic boundaries. External sandhi processes operate across word boundaries. The phenomenon of Linking ‘r’ in non-rhotic varieties of English, as in [fəːwəɹeɪ], *far away*, is an example of
this, since the presence of the ‘r’ is triggered by the presence of a vowel-initial word following the word *far*. Internal sandhi processes operate within word boundaries often across morpheme boundaries, as in the case of Lumasaaba morphemes such as /li/ (‘a root’), realised as [di] when a nasal stop precedes it, as in the form [zindi] (‘roots’). Some processes operate both internally and externally, sometimes beginning as internal sandhi, and then being extended such that they also operate externally.

**Sanskrit** An Indo-European language which was spoken on the Indian subcontinent. The present-day Indo-European languages of India, such as Bengali and Hindi, are said to be descendants of Sanskrit. It was the discovery of systematic phonological and morphological relationships between Sanskrit, Latin and Ancient Greek that led to the postulating of the Indo-European language family.

**Sapir, Edward** (1884–1939) An American linguist who did a great deal of work on native American Indian languages in the first half of the twentieth century. He studied with Boas, and is known for his combination of anthropological linguistics and mentalism. Sapir stressed the cultural, as opposed to biological, nature of linguistic practices. Unlike some of his American successors in the mid-twentieth century, he was committed to the psychological reality of phonological representations. His name is also associated with the ‘Sapir-Whorf Hypothesis’ because of his association with Benjamin Lee Whorf and the idea that the language one has learned shapes the kinds of thought process in which we regularly engage.
Saussure, Ferdinand de (1857–1913) A Swiss linguist often described as ‘the father of modern linguistics’, and frequently associated with various versions of Structuralism. He was concerned to identify what the object of linguistic inquiry was, and argued that it was langue, a system of linguistic signs, as opposed to parole, often referred to as the physical realisation of the underlying system. The distinction between langue and parole bears some similarity to Chomsky’s distinction between competence and performance, but, for Saussure, langue is said to be a social fact, whereas Chomsky takes competence to reside in individuals, not in a social collectivity. The linguistic sign, for Saussure, was an arbitrary connection between a phonological representation (for Saussure, this was said to be an acoustic image) and a concept. But if acoustic images and concepts exist in individual minds, rather than in a social collectivity, it is hard to see how the social concept of langue can be sustained. Linguistic signs were said by Saussure to stand in opposition to each other. Saussure also distinguished between the synchronic and the diachronic study of language. His emphasis on the importance of synchronic linguistics influenced the way linguistics was practised in the twentieth century. He is best known for the Course in General Linguistics, published in French in 1916. Unfortunately, the book was not actually written by Saussure; it is a reconstruction of lecture notes taken by two of his students. There is a large literature on how to interpret Saussure’s ideas, and on decisions taken by different translators as to how best to translate key terms from the Course in General Linguistics into English.

Schane, Sanford An American phonologist who was the first to investigate the phonology of French within the
SPE phonology framework. He later developed an approach to phonological segments, known as Particle Phonology, based on the notion of elements.

**schwa** The name for a **vowel quality** which is produced without lip rounding and with the **body of the tongue** in the **neutral position**. Transcribed as [ə], it occurs widely in unstressed syllables in many varieties of English, as in the word *character*: [ˈkærəktə]. This vowel alternates with a wide variety of other vowels in many languages. It also alternates with **zero** in many languages, such as French.

**Scots** A language spoken in Scotland, Canada and Northern Ireland which is derived historically from the Northumbrian dialect of **Old English**. Scots is not to be confused with Scots Gaelic, which is a Celtic language spoken in Scotland and Canada. Nor is it to be confused with **Standard Scottish English**, the **accent** of English spoken predominantly by the educated middle classes in Scotland. Whether Scots is to be viewed as a **dialect** of English or as a separate language, as suggested here, is a sociopolitical issue. A few examples of Scots words are *bairn* (‘child’), *lum* (‘chimney’) and the verb *fash* (‘get annoyed’), as in the expression ‘Dinnae fash yersel’ (‘Don’t get irritated or upset’).

**Scottish Standard English** see **Standard Scottish English**

**Scottish Vowel Length Rule (SVLR)** A **vowel lengthening process** in Scots and Scottish English whereby the vowels /i/, /u/ and /ai/ are lengthened before **voiced fricatives**, /t/ or a **morpheme boundary**, as in the words [biːz] (bees), [biːɾ] (beer) and [əɡɹiːd] (agreed). Also known as **Aitken’s Law**, after the linguist Jack Aitken.
secondary articulation  see primary articulation

secondary stress  see primary stress

**segmental** Relating to **segments**. Segmental phonology is the study of segmental phenomena such as vowel and consonant **allophones**.

**segments** Many phonologists argue that the continuous stream of speech is analysed by speakers into segments, which may group together to form **syllables**, so that the **monosyllabic** English word *bit* can be analysed as the sequence of segments [b]-[ɪ]-[t]. Some argue that segments are an artefact stemming from our knowledge of alphabetic writing systems. Others argue that the idea of segments is not a mere artefact, but that segments are **psychologically real** objects which enter into the speech planning process, and are reflected in **slip of the tongue** phenomena.

**semiconsonant** There is a class of **segments** which, like **vowels**, are **voiced** and have a stricture of **open approximation**, but which, unlike vowels, do not occupy the **head** position in the **nucleus** of a **syllable**. Examples are the [w] in *wet* and the [j] in *yet*. Also known as **semivowel**. See **glides** and **yod**.

**Semitic** A language family which includes Hebrew and the various dialects of Arabic.

**semivowel** Synonym for **semiconsonant**.

**sentence** The term is often used in its ordinary, everyday sense to denote a syntactic unit consisting of a subject and a predicate, as in the unit *John went to*
the pub, where John is the subject and went to the pub is the predicate. It has been used more technically in the literature on generative linguistics, where a distinction has sometimes been drawn between the sentence as a unit of competence and the utterance as a unit of performance. The notion ‘sentence’ is sometimes used in phonology when discussing sentence stress.

**sentence stress** A term sometimes used to refer to the placement of the tonic in a sentence.

**shibboleth** Any feature of language use which betrays one’s social or ethnic origins. Pronounced [ˈʃɪbələθ], it derives from a Hebrew word which features in a biblical tale in which the members of an ethnic group are identified by their pronunciation of the word, and then slaughtered. Shibboleths can be syntactic, morphological or phonological. An example of a present-day phonological shibboleth in England is the pronunciation, by speakers with a North of England origin, of words of the sort bath and class with the short /æ/ phoneme, instead of the long /ɑ:/ phoneme found in Received Pronunciation (RP) and similar accents. Since speakers from the North of England are sometimes associated with working-class lifestyles, uttering shibboleths of this sort can lead to such speakers being judged socially inferior.

**short** see length

**shortening** Any process in which a segment is shortened. An example is trisyllabic shortening.

**sibilant harmony** see consonant harmony
**sign** A term used by Saussure to denote the arbitrary coupling, in a given language, of an acoustic image and a concept, so that the English acoustic image represented by /dɒɡ/ is arbitrarily coupled, in English, with the concept ‘dog’. Saussure described the acoustic image as a **signifier**, and described the concept as the **signified**. Unfortunately, many writers use the term ‘sign’ to denote actual sequences of speech sounds, such as the **utterance** [dɒɡ]. And many people use the term ‘signified’ to denote, for instance, the set of all dogs, rather than the concept ‘dog’. This is arguably not what Saussure intended.

**signified** see **sign**

**signifier** see **sign**

**slack vocal folds** A **laryngeal** feature said to be present during the production of **voiced** sounds.

**slanted brackets** The brackets used to represent **phonemes**. See **square brackets** and **phonemic transcription**.

**slip of the tongue** A speech error, such as a **Spoonerism**. Slips of the tongue give us insights into articulatory planning and production. ‘It’s roaring with pain’, instead of ‘It’s pouring with rain’, is an example.

**Smolensky, Paul** An American scholar who works on formalist approaches to the study of human **cognition**. Smolensky has worked extensively on **neural nets** and is also known as the co-founder, with Alan Prince, of Optimality Theory.

**smoothing** An informal term for **monophthongisation**.
sociolinguistics The study of the relationship between language use and social context. Important for phonology, since the way people speak is intimately tied into their social background. Examples of sociolinguistic variables which affect the different ways in which people speak are age, social class, ethnicity and gender.

sociophonetic variation Variation in people’s speech which is governed by sociolinguistic factors such as age, gender, ethnicity and social class. An example of this is the occurrence of a pre-aspirated pronunciation of [t] in pre-pausal position in Tyneside English; this pronunciation is correlated with age, social class and gender, since it is found predominantly among young working-class women.

soft palate see velum

sonorants A subset of the set of consonants. Consonants are often subdivided into obstruents and sonorants. The term subsumes nasal stops, such as [m] and [n], and liquids, such as [l] and [ɹ].

sonority hierarchy A hierarchy of classes of speech sound types, organised according to their degree of sonority. Two main factors determine how sonorous a sound is: the degree of obstruction of the vocal tract during the production of the sound, and whether the sound is voiced or not. Oral stops have a high degree of obstruction, the stricture of complete closure, and are thus less sonorant than fricatives. All voiced sounds are more sonorous than their voiceless counterparts, so that, within the class of obstruents, the hierarchy reads as follows: voiced fricatives->-
voiceless fricatives > voiced stops > voiceless stops, where ‘>’ means ‘more sonorant than’. The class of sonorant consonants (sonorants) are all considered more sonorant than the class of obstruents. Among the class of sonorants, there is disagreement as to which are more sonorous than others, but it is common to take glides to be more sonorant than liquids, which in turn are more sonorant than the nasal stops (nasals). The most sonorant of all classes are vowels, which have a structure of open approximation and are typically voiced. Among the vowels, the more open a vowel, the more sonorant it is, since openness equates with less obstruction in the vocal tract. A general depiction of the sonority hierarchy would be: vowels > glides > liquids > nasals > obstruents. The sonority hierarchy is said to figure in processes of lenition, with speech sounds becoming more sonorous as they are lenited. In processes of fortition, sounds are said to move up the sonority hierarchy, becoming less sonorous. The sonority hierarchy is also said to figure in the sonority sequencing principle.

**sonority sequencing principle** The idea that sequences of consonants in the onset of a syllable increase in sonority, according to the sonority hierarchy, as one heads towards the nucleus of the syllable, which is taken to be the most sonorous sound in the syllable. The principle also claims that sequences of consonants in the coda of a syllable decrease in sonority as one heads away from the nucleus. The idea has some validity, and works well for words such English *pleased* (/pliːzd/). But there appear to be many exceptions, and the facts are complicated by the presence of suffix consonants within a syllable (as in *pleads*), as well as the existence of syllabic consonants.
Southern US accent Most agree that the linguistic South in the USA is in the South-east, and that the linguistic South begins in the state of South Carolina, extending south into the states of Georgia and northern Florida, and west into the states of Virginia, Kentucky, Arkansas, Tennessee, Alabama, Mississippi and Louisiana. Quite how the vast state of Texas fits into this is unclear; Eastern Texan accents are to some extent non-rhotic, as in the neighbouring state of Louisiana, which all agree is Southern. Some include the state of North Carolina in the linguistic South of the USA.

SPE *The Sound Pattern of English*, a book published in 1968 by Noam Chomsky and Morris Halle. It is often seen as the founding text for generative phonology.

SPE phonology The model of generative phonology adopted in the book SPE, based on the combined notions of rule and representation, coupled with the idea that rules apply to underlying representations to yield derived representations. The transition from an underlying representation to a surface phonetic representation is known as a derivation, and models of phonological organisation based on this idea are known as derivational phonologies, as distinct from non-derivational models such as various versions of declarative phonology.

spectrogram A visual display of the component parts of a sound wave, made by a device known as a sound spectrograph. Spectrograms have two axes, the horizontal one showing the number of milliseconds that have elapsed in a recording, and the vertical one showing the frequencies of the formants of the speech sounds.
**spirantisation** Fricativisation: the process in which stops become fricatives. This has happened as a historical change in many languages. In the history of Spanish, voiced stops underwent spirantisation in intervocalic position. Thus, a word such as *lugar* (‘place’) changed over time from having the voiced velar stop [g] to having the voiced velar fricative [ɣ]. The same spirantisation process happened with the voiced bilabial stop [b], which became the voiced bilabial fricative [β], and the voiced dental stop [d], which became the voiced dental fricative [ð]. Spirantisation is one form of *lenition*.

**split** A term used in the phonemic tradition when describing historical change in *phoneme* systems. A phonemic split is said to have taken place when a sound which had *allophonic* status takes on *phonemic* status over time. Nasalised vowels used to be allophones of oral vowels in the history of French, occurring before nasal stops. But, with the *elision* of word-final nasal stops in the history of the language, the present-day nasalised vowel phonemes of Standard French emerged, as seen in *minimal pairs* such as [bo] *beau* (‘beautiful’) and [bõ] *bon* (‘good’).

**Spoonerism** A kind of speech error named after the Reverend W. A. Spooner. Examples are ‘You have hissed my mystery lecture and were caught fighting a liar in the quad,’ instead of ‘You have missed my history lecture and were caught lighting a fire in the quad.’ Spoonerisms involve the transposition of segments, syllables or words. The process is often mistakenly described in popular definitions as the transposition of letters, rather than segments. Spoonerisms are interesting for phonologists because they give us insight into
syllabic constituents, articulatory planning and the mental lexicon. In the examples just given, not only are word-initial onsets transposed, but the result of the transposition in each case is a well-formed word which is stored in the mental lexicon.

spread glottis Open glottis: a laryngeal feature said to be present in sounds which are aspirated.

square brackets The brackets used in phonetic transcription, as for the English word pull: [pʰʊl]. They are distinct from slanted brackets, which are used in phonemic transcription, and are thus used for visual representation of underlying representations. In reality, books and articles on phonology frequently fail to stick consistently to the use of slanted brackets for phonemic representations and square brackets for phonetic representations, and indeed some authors often use no brackets at all.

standard A standard variety of a language is a variety which happens to have undergone the sociohistorical process of standardisation, in which fixed forms of words are established as the ‘correct’ pronunciations, and certain grammatical structures are also deemed to be ‘correct’. Several different sociolinguistic and sociopolitical factors may lead to the standardisation of a language variety, including, in many cases, the translation of the Bible into that variety and the adopting of an agreed-upon spelling system. Examples of standard varieties are Standard French (as opposed to Midi French) and Castillian Spanish (as opposed to, say, Andalucian Spanish). Regional standards also exist, as in the case of Standard Jamaican English.
Standard Scottish English (SSE) An accent of English spoken predominantly by the educated middle classes in Scotland. Most Scots speak SSE, but many mix this with Scots to varying degrees. Generally speaking, the more Scots in a speaker’s speech, the more Scottish they will sound, and the more working class. SSE differs from Received Pronunciation in many phonological respects, one of which is the presence of the Scottish Vowel Length Rule. Sometimes referred to as Scottish Standard English.

Standard Southern British English (SSBE) see Received Pronunciation

standardisation see standard

stiff vocal folds A laryngeal feature said to be present in voiceless sounds.

stimulus A term used in Behaviourism in conjunction with the term ‘response’. Stimulus-response Behaviourism took utterances of speakers to be stimuli which induced a verbal response on the part of the hearer. On this view, one conceives of phonology, not as phonological knowledge, but as a set of verbal behavioural patterns and dispositions to behave verbally in certain ways.

The term is used quite differently by the followers of Noam Chomsky to refer to the ambient language (the input) to which the human child is exposed. Chomskyan adopt the Poverty of the Stimulus argument, claiming that the stimulus is impoverished, in that it is full of hesitations, false starts, errors and uncompleted sentences. Having assumed this, they go on to argue that a child could not acquire a language
without the aid of innate linguistic knowledge. Linguists such as the British Empiricist linguist Geoffrey Sampson assume the richness of the stimulus, and argue that everything the child has to acquire is present in the stimulus. As far as phonological knowledge is concerned, Sampson’s view is that all of the phonological knowledge that the child has to acquire is present in the input.

stochastic phonology Probabilistic phonology. Human beings are capable, from birth, of extracting statistical probabilities from the stream of speech. These include the probability of a given speech sound to follow another speech sound. For instance, given a complex onset cluster in English starting with a stop, the following segment will be one of the approximants /w, j, l, ɹ/; the probability of any other segment type occurring in that position is zero. The transitions between segment types are different across word boundaries from what they are within words. Because infants can extract such probabilities from the stream of speech, this helps considerably with the bootstrapping problem. Those who adopt stochastic approaches to the acquisition of phonology and of morphological and syntactic knowledge tend to argue for the richness of the stimulus to which the child is exposed. This approach stands in stark contrast to the approach of Noam Chomsky, who argues that the stimulus is impoverished.

stop see degree of stricture

strata see stratal phonology

stratal phonology Any model of the interaction of phonology and morphology which postulates different
levels or strata of affixation, with specific phonological operations or constraints holding at specific levels of word formation. Lexical Phonology is an example.

strengthening see fortition

stress The term is often used to refer to word stress, synonymous with one of the senses of accent. However, phonologists also use the term when referring to phrasal stress and sentence stress.

stress and intonation language A language like English, which has both a word stress system and an intonation system, but which is neither a tone language nor a pitch accent language.

stress clash a situation in which two stressed syllables in a word are adjacent. Many languages exhibit stress clash avoidance. In English, when one word is derived from another by the addition of affixes, there is a tendency to place a secondary stress on the syllable which had a primary stress in the deriving word, as in 'character-i'sation, where a secondary stress has been placed on the syllable which has primary stress in 'character. But where this tendency would result in a stress clash, the secondary stress is placed so as to avoid a stress clash, as in 'Japan'ese, where the placement of the secondary stress on the syllable which has primary stress in Ja'pan would result in a stress clash; we avoid saying Ja,pa'nese.

stress clash avoidance see stress clash

stress retraction A term sometimes used to refer to the kind of reversal one encounters in phenomena such as
Iambic Reversal. When expressions such as *East London* occur in phrases such as *East London Airport*, the prominence levels (stress levels) of *East* and *London* are switched around; the stress on *London* is said to be retracted, so that *East* becomes more prominent than *London*.

**stress-timed** A language is said to have stress-timed **rhythm** if the beats fall on the stressed **syllables**. It is often claimed that most varieties of English are stress-timed. This claim rests on the idea that there is a tendency for the time between the beats to be the roughly same, or **isochronous**. See **syllable-timed**.

**stressed vowel** A **vowel** which is stressed, as in the vowel [ɪ] in the English word *ambiguous*: [æmˈbɪɡjuəs]. Stressed vowels can have either primary or secondary stress.

**stricture** see **degree of stricture**

**structural analogy** The idea that the structure of phonological **constituents** is analogous to the structure of syntactic constituents. For instance, some linguists believe that the structure of **syllables** is parallel in some serious sense with the structure of sentences, in that both are said to contain constituents, and both are said to exhibit **hierarchical structure**. The idea can be found in the work of the Danish linguist Louis Hjelmslev and, more recently, in *Dependency Phonology*, *Government Phonology* and *Head-Driven Phonology*.

**Structuralism** see **structuralist linguistics**

**structuralist linguistics** In a sense, all forms of linguistics are structuralist, since linguists are typically interested
in structure and believe that human languages have structure. But the term ‘structuralist’ has been used to denote several traditions in linguistics. Firstly, the European tradition which started with Saussure, and continued with the Prague School, is often called European Structuralism. Central ideas here are the notions of sign, markedness and systems of opposition. Secondly, the kinds of linguistics practised in the United States in the 1930s to the 1950s are often referred to as American Structuralism. A key idea here was distribution; both in syntax and in phonology, it was held that one could identify the distribution of syntactic and phonological objects, and thus arrive at an analysis of a language. Scholars working within generative linguistics argue that there was a radical break, or ‘revolution’ between pre-generative American Structuralism and generative linguistics. Others claim that generative linguistics shares so many assumptions with American Structuralism that it is wise to label both generative and pre-generative American linguistics as ‘structuralist’.

**structuralist phonology** see **structuralist linguistics**

**substance-free** An approach to phonological structure which is substance-free attempts to define phonological objects independently of phonetic substance. On this view, phonological objects have no **intrinsic phonetic content**. See **phonetics-free phonology** and Hjelmslev.

**supralaryngeal** Articulatory features and gestures which are supralaryngeal are articulated above the larynx. Articulations involving the tongue and lips are examples.
suprasegmental Concerning phonological phenomena above the level of the segment, such as word stress, intonation and tone.

surface form Often distinguished from underlying representation. The general idea, found in derivational theories of phonology, is that surface forms are somehow closer to the actual pronunciation of the word in question. For example, the surface form of the English word *period* is [ˈpɜːriːd] in many varieties. This more closely represents the actual pronunciation by many speakers than a postulated underlying representation such as /pɜːriːd/. In the latter representation, the primary stress is omitted on the grounds that English word stress is predictable. Aspiration is also omitted because it too is said to be predictable (i.e. allophonic), and the non-reduced vowel /ɒ/ is postulated as forming part of the underlying representation, because the stress assignment principles are said to reduce it, in a predictable manner, to the unstressed vowel [ə] (schwa).

Sweet, Henry (1845–1912) A British phonetics/phonology scholar based at Oxford University. Sweet worked on the history of English and on the transcription of English and other languages. His work contains an appeal to the distinction between phonemic and phonetic representations. It has been widely assumed that Sweet was the model for Professor Henry Higgins in George Bernad Shaw’s play *Pygmalion* (which forms the basis for the film *My Fair Lady*), but the British phonetician Beverley Collins has argued persuasively that Higgins was modelled on Daniel Jones.

syllabic consonants Consonants which occupy the nucleus of a syllable. Transcribed with a subscript diacritic
under the consonant symbol. In English, the pronunciation [hæʔm] of the word *happen* is **bisyllabic**, the second syllable consisting of a syllabic [m].

**syllabification** The **process** whereby **segments** are slotted into syllabic positions. Principles such as **Maximal Onset** are said to guide the syllabification of segments.

**syllable** A unit of phonological organisation whose central component is a **nucleus**, which is normally a **vowel**, and which may be preceded or followed by **consonants**. The most basic kind of syllable is the CV (Consonant-Vowel) syllable (e.g. [ba]). This is the kind of syllable attested in the **babbling** stage of child development. Some languages contain only CV syllables. The syllable is often said to be subdivided into the **onset** (any consonants preceding the nucleus) and the **rhyme** (the nucleus and any consonants following the nucleus). The rhyme is said to be further subdivided into the nucleus and the **coda** (any consonants following the nucleus). Thus, in the English word *but* (/bʌt/), the onset contains /b/ and the sequence /ʌt/ constitutes the rhyme, which contains the nucleus /ʌ/ and the coda consonant /t/. Syllables which contain no coda consonants are **open syllables**, as in the English word *bee* (/bi:/). Syllables which contain one or more coda consonants are **closed syllables**, as in the English word *but*. Syllables which lack an onset consonant are said to have an **empty onset**, as in the English word *eye* (/ai/). Empty onsets are said to be involved in the process of **resyllabification**, whereby a consonant which might otherwise occupy a coda position comes to occupy a following onset position, as in the sequence *green eye*, syllabified as /gri:.nai/ (where the full stop represents a syllable boundary).
syllable quantity  A synonym for syllable weight.

syllable-timed  A language is said to be syllable-timed if the beats in the rhythm fall on each successive syllable, regardless of whether it is stressed or not. It is often said that French is syllable-timed. See stress-timed.

syllable weight  A notion based on the distinction between heavy syllables and light syllables. Generally speaking, heavy syllables have more weight, or quantity, in the rhyme, in the form of more segments, or longer segments, than do light syllables. In many languages, a syllable containing a long vowel in the nucleus will count as heavy, whereas a syllable containing a short vowel will count as light. Coda consonants often contribute to syllable weight, so that a syllable containing a short vowel followed by a coda consonant will count as a heavy syllable. The distinction is often appealed to in analyses of word stress assignment. In many languages, only heavy syllables in certain positions may be stressed. For instance, in Latin, a heavy penultimate syllable was stressed, as in relat:us (with a long vowel in the penultimate syllable) and reflect:us (with a short vowel and a coda consonant in the penultimate syllable). When tree diagrams are used to represent syllable structure, it is often claimed that a heavy syllable can be defined as a syllable with a branching rhyme.

synchronic  Related to synchrony. The study of the synchronic phonology of a language is the study of its present-day phonology, rather than its historical phonology.

synchrony  The present day, rather than the past. Opposed to diachrony.
syncope  The deletion (elision) of a vowel, resulting in the loss of a syllable, as in the bisyllabic pronunciation [ˈfæmli] (family), as opposed to the trisyllabic pronunciation [ˈfæmli]. In English, this deletion typically affects unstressed syllables.

systematic phonemic level of representation  see representation

systematic phonetic level of representation  see representation

systematic phonological representation  A synonym for systematic phonemic level of representation.

systemic differences  A difference between two varieties of a language is said to be systemic if the varieties exhibit differences in the set of phonemic oppositions found in those varieties. For example, in Received Pronunciation (RP), there is a phonemic opposition between short /æ/, as in the word ant, and long /ɑː/, as in the word aunt. In Standard Scottish English (SSE), this opposition does not exist; pairs of words such as ant/aunt are homophones, both being pronounced [ənt], with a low central vowel, half-way between [æ] and [ɑː]. See realisational differences and lexical-distributional differences. The three-way conceptual distinction between systemic, realisational and lexical-distributional differences goes back at least as far as the work of Trubetzkoy, although he used different terms for each of the members of the trichotomy.

tap  see flap
Tapping see Flapping

tautosyllabic A sound is said to be tautosyllabic if it is produced in the same syllable as some other sound. For instance, the [t] in the English word full is tautosyllabic with the preceding vowel.

teleological Goal-orientated, or purpose-orientated. Some phonologists believe that we can conceive of sound changes in the history of human languages as ‘conspiring’ towards specific outcomes. An example would be the various vowel lengthening and vowel shortening changes which led to the elimination of phonemic vowel length in Scots and Standard Scottish English. See conspiracy.

template Generalised phonological patterns, such as CCVC, where the ‘C’ stands for ‘consonant’ and the ‘V’ stands for ‘vowel’. In generative phonology, templates are appealed to in the analysis of Arabic and in the study of reduplication patterns: see reduplication for examples. Also see radical consonants.

In the field of child phonology, templates are appealed to in the work of Marilyn Vihman. These are generalised patterns, such as /CVlV/, specific to the speech of an individual child. Examples of French child utterances conforming to that template are [lələ] (Il/Elle est là: ‘He/She is there’) and [sələ] (C’est là: ‘It’s there’). Vihman argues that utterances which conform to the child’s templates are perceptually salient to the child, and that the child will select such utterances in his/her attempt at adult utterances. She also argues that infants will adapt adult utterance so that they are slotted into the templatic pattern, as in our example [lələ], which does not conform exactly to the targeted adult forms.
tense A feature which has often been postulated to account for certain vowel oppositions, such as the oppositions /i:/ vs /i/ and /u:/ vs /u/ in RP, where the first member of the pair is said to be ‘tense’ and the second member ‘lax’. One definition claims that tense vowels are articulated with ‘heightened subglottal pressure’. Other definitions take tense vowels, as opposed to lax vowels, to be articulated closer to the periphery of the vowel space, and to be typically longer than their lax counterparts. Both of these are certainly true for the RP pairs just mentioned, but the term ‘tense’ remains controversial. Some equate it with Advanced Tongue Root, while others question this equation.

tensing Any process in which a segment is said to be articulated with greater tension. The process known as ‘happY tensing’ in various varieties of English affects the word-final vowel written <-y> in words such as happy, yielding a tense [i], rather than a lax [ɪ]. The opposite of laxing.

tertiary stress see word stress

TH-Fronting An informal term for the uttering of labiodental fricatives in place of dental fricatives, as in the pronunciations [fɪŋ] for thing and [fɛvə] for feather. This is attested in child language acquisition and in many non-standard varieties of English.

TH-Stopping The pronunciation of the dental fricatives /θ/ and /ð/ as stops, often the dental stops [t] and [d]. This is attested in child language acquisition and in several varieties of English, such as New York City English, Indian English and Standard Jamaican English, as in pronunciations such as [tɪŋ] for thing.
tip of the tongue The very foremost part of the tongue, often involved in dental articulations.

tip of the tongue phenomenon The state of affairs in which people report that a word is almost, but not quite, within reach of retrieval from the mental lexicon; the word is said by English speakers to be ‘on the tip of my tongue’. This is relevant for phonologists, since psycholinguistic research suggests that certain phonological properties of the word in question, such as its initial onset consonant or its stress pattern, can sometimes be retrieved, even though the entire phonological form of the word cannot. This is relevant for theories of how phonological information is stored in the mind.

ToBI Tone and Break Index. ToBI is a notational system for the description of intonational patterns which originates in the work of Janet Pierrehumbert. The tones in question are intonational tones and the breaks are various kinds of juncture. The essence of the ToBI system is the breaking down of intonation contours into their component high and low tones. The ToBI system is used a great deal in the USA, but less among phonologists working in the British tradition.

token see type

token frequency see frequency of occurrence

Tomasello, Michael A child syntax specialist who rejects the Chomskyan notion of innate linguistic knowledge. In its place, he argues for a constructivist approach to child language acquisition, emphasising the child’s social interaction with other human beings.
Although his work is in the acquisition of syntax, the general approach carries over into the acquisition of phonology.

**Tone Bearing Unit (TBU)** In **tone languages**, the segmental material to which a **tone** is attached. This is usually a **vowel**, as in the case of vowels in the utterance [míbú] (‘my stone’) in the Kwa language Twi. **Consonants** can also act as TBUs.

**tone** see **tone language**. The term ‘tone’ is used by some phonologists, in describing non-tone languages, to refer to the **pitch** changes that occur on the **nuclear syllable** (also known as the nucleus, or the **tonic syllable**) in an **intonation group**. Examples of tones referred to in the description of English intonation are the falling tone, the rising tone, the fall-rise and the rise-fall. Consider the question ‘Has Mary been seeing Bill?’ The response ‘No!’ with a rise-fall tone, conveys certainty, and the response ‘No’, with a fall-rise tone, conveys hesitation or doubt. The rise tone in English is associated with questioning, as in ‘Has Mary been seeing Bill?’

**tone group** see **intonation group**

**tone language** A language in which **pitch** differences function to differentiate words. Tones are often subdivided into level tones and contour tones. Typical level tones are **high** vs **mid** vs **low** tones. High tones have a higher relative pitch than mid tones, which in turn have a relatively higher pitch than low tones. High tones are often transcribed using the acute accent, as in the word kó, which means ‘build’ in the African language Yoruba. Low tones are often transcribed using the
grave accent, as in the Yoruba word kò, which means ‘refuse’. Mid tones are often transcribed with no marker, as in the Yoruba word ko, which means ‘sing’, though some writers use a level diacritic for mid tones, so that ‘sing’ in Yoruba would be transcribed as kō. The segmental material in these three Yoruba words is the same; they differ only with respect to tone, which is a suprasegmental property. Non-tone languages, such as English, do not exhibit this phenomenon. Contour tones include rising tones and falling tones. Rising tones are often transcribed using a wedge diacritic, as in the Thai word nā, which means ‘thick’. Falling tones are often transcribed with a circumflex, as in the Thai word nâ, which means ‘face’. Tone languages can be found in many parts of the world, including Africa, Asia and South America.

tongue root  That part of the tongue which lies behind the back of the tongue, opposite the back wall of the pharynx.

tonic  see tonic syllable

tonic placement  The placement of the tonic in an intonation group.

tonic syllable  The syllable in an intonation group on which the pitch changes. In the English sentence John went to the pub, the ‘neutral’ (least marked) intonation has pub as the tonic syllable. It is often argued that the basic rule for the placement of the tonic syllable in English is on the last lexical item in a clause, as is the case here.

tonic vowel  A vowel which receives primary word stress, as in the antepenultimate syllable of the Spanish word
bueno (‘good’). Not to be confused with the term ‘tonic’ used in studies of intonation.

**tonogenesis** The historical process in which a non-tone language becomes a tone language. There is a natural affinity between, on the one hand, voiceless obstruents and high tones, and, on the other, voiced obstruents and low tones. High tones and voiceless obstruents are characterised by stiff vocal cords, whereas low tones and voiced obstruents are characterised by slack vocal cords. Tonal contrasts can often be reconstructed as voicing contrasts. For example, a sequence of a voiced obstruent and a following vowel can develop into a voiced obstruent and a vowel with a low tone.

**transduction** see realisation

**transformation** A term used in the earlier stages of generative linguistics. Transformational rules were postulated which applied to a representation to yield a derived representation, by means of inserting, deleting or transposing elements of syntactic structure. In SPE phonology, two of the rules postulated for many varieties of English were Nasal Assimilation and Voiced Velar Deletion. In words of the sort *sing* and *bring*, they applied as follows: Underlying Representation: /sɪŋg/; Nasal Assimilation: /sɪŋɡ/; Voiced Velar Deletion: /sɪŋ/. The second and third of these are derived representation. In phonological frameworks which are derivational, it is possible to formulate certain phonological rules as transformations. For instance, in Lithuanian, there is a process of metathesis under which a fricative + stop sequence is switched around when such a sequence occurs before a consonant, as in /dresk/ + /kite/, which ‘becomes’ [drekskite].
This process can be construed as a transformational rule which transposes two elements.

**transparent vowel** see **neutral vowel**

**tree diagram** A type of visual representation of a structure, used in both syntax and phonology. Tree diagrams take the same form as the family trees used in genealogy; they consist of a central **node** which branches on to other nodes, which themselves have branches. They are used to represent the idea of **constituents**, both in syntax and phonology. In phonology, tree diagrams have been used to represent the structure of **syllables** and **feet**. They have also been used in work on **feature geometry**.

**trill** A sound made with a rapid series of closures and openings, as in the **alveolar** trill [r], where the **blade** of the tongue closes against the **alveolar ridge**, then opens, then closes again and so on, in quick succession. Trills can be made at two other points of articulation. **Bilabial** trills, transcribed as [B], involve rapid closures and openings between the lips. **Uvular** trills, transcribed as [R], involve the same kind of articulation, but with the **back of the tongue** as the **active articulator** and the **uvula** as the **passive articulator**.

**trisyllabic** Containing three **syllables**. The English words **cinema**, **horizon** and **kangaroo** are all trisyllabic.

**Trisyllabic Laxing** Also known as Trisyllabic Shortening, this was a change that took place in the history of English whose effect can be seen in certain **alternations** in present-day English. In **bisyllabic** words which
contained a stressed long (tense) vowel, the addition of a suffix meant that the word had three or more syllables, and the vowel in question then underwent laxing/shortening. An examples of the residue of this change in present-day English is the pair serene/serenity, where bisyllabic serene has the long stressed vowel [i:], but serenity has the short/lax vowel [ε].

trochaic see rhythm

trochaic bias hypothesis The claim that infants are predisposed towards trochaic, rather than iambic, metrical feet.

trochee see rhythm

Trubetzkoy, Nikolaj (1890–1938) A Russian prince who fled Russia at the time of the Russian Revolution. Trubetzkoy’s name is widely associated with the Prague School (although he actually spent most of his career in Vienna). He was known for his collaboration with Roman Jakobson. Trubetzkoy insisted on a distinction between phonetics and phonology, but rejected a mentalistic (psychological, sometimes termed ‘cognitive’) interpretation of phonology. He was interested in systems of opposition between phonemes. Central ideas in Trubetzkoy’s work are the identification of different kinds of phonological opposition (bilateral, multilateral, proportional, isolated, privative, gradual and equipollent oppositions). He also developed the notion of the neutralisation of phonological oppositions. Connected with this is the appeal to markedness in phonological oppositions.

true geminate see geminate
Tyneside English The variety of English spoken in the area around the River Tyne in the North-East of England. Also known as Geordie.

type/token The type/token distinction goes back to the work of the American philosopher C. S. Peirce (1839–1914) and has been adopted in most areas of linguistics. Tokens are specific objects or events at a particular point in space and time, such as the utterance of a voiceless aspirated alveolar stop ([t]) by a specific speaker at a specific point in time. Types are said to be more abstract than this; it may be claimed that a large set of utterances of voiceless alveolar stops are tokens of the type, or kind, ‘voiceless alveolar stop’. Types may be viewed as categories, and many believe that human perception relies heavily on classifying objects and events into categories. Tokens of a type are said to ‘count as the same thing’, so that, when one hears a given [t], it counts as an occurrence of ‘the same thing’ as another, slightly different, [t], uttered on another occasion.

type frequency see frequency of occurrence

typological Relating to typology. The term is used in syntax, morphology and phonology. An example of a postulated typological difference in phonology is the three-way distinction between stress and intonation languages, tone languages and pitch accent languages.

typology The study of different linguistic types. In phonology, the term can subsume the study of different word stress systems, the study of different vowel harmony systems or the study of natural classes.
umlaut A kind of metaphony in which a vowel (normally in a root) assimilates to another vowel (normally in a suffix), even though the two vowels are not adjacent to each other. An example is the historical process of i-umlaut in German, in which the back vowels [u], [o] and [ɔ] in a root fronted to [y], [ø] and [œ] respectively when the plural suffix [-i] was added. For instance, in present-day German, the singular noun Sohn (‘son’) has a high mid, back vowel [o] in the root, but the plural Söhne has the umlauted version of that vowel: [ø], which is high mid and front. Historically, this word, like many others, had a plural suffix consisting of the high front vowel [i]. For some scholars, umlaut is a process in which a vowel in a root assimilates to a vowel in a suffix, while vowel harmony is a process in which a vowel in a suffix assimilates to one or more vowels in a root.

unaspirated Voiceless stops which are unaspirated can be defined as having no delay in Voice Onset Time; the voicing for a following vowel begins at the point at which the stop closure is released, as in the French word pain (‘bread’): [pê]. These are distinct from the voiceless aspirated stops of most varieties of English, as in the word pad: [pʰæd].

underlying representation A level of representation postulated in theories which are derivational in nature. In rule-based derivational theories such as SPE, morphophonological alternations were dealt with by postulating a single underlying representation from which the surface forms could be derived. For alternants such as Hungarian [kut] (‘well’) and [kudban] (‘in the well’), a single underlying representation /kut/ is postulated,
from which the surface form [kud] is derived via a **process of voicing assimilation**.

**underspecification** An *underlying representation* is said to be underspecified if any of its **features** are not present, or are not assigned a value. In the Bantu language Lumasaaba, there is a prefix which attaches only to nouns beginning with a consonant. The realisations of the prefix are [zim], [zin], [ziŋ] and [ziŋ], as in [zimbati] (‘knives’), [zindaha] (‘wings’), [ziŋjejele] (‘buds’) and [ziŋgunija] (‘bags’). The place of articulation of the *nasal* at the end of the prefix is entirely predictable; it will have the same **place of articulation** as the following consonant, because of *nasal assimilation*. Phonologists who argue that underlying representations should contain only arbitrary, non-predictable features postulate a *nasal stop* at the end of the prefix which is underspecified; it is stripped of all place of articulation feature values. Phonologists such as Joan Bybee, who adopt **exemplar theory**, argue against this approach; they claim that words are stored in the mind in full phonetic detail, including entirely predictable information.

**Universal Grammar** (UG) A term associated with the work of Noam Chomsky. It is used as a name for a postulated innate **module** of mind said to contain specifically linguistic knowledge. Chomsky now uses the expression only for the theory of this postulated module, preferring the term ‘the human language faculty’ for that module. But many of his followers continue to use the term for both the theory and its object. The existence of innate linguistic knowledge is hotly disputed by many scholars.
universals The term is used in at least two different senses. For the followers of Noam Chomsky, who believe in the existence of Universal Grammar, linguistic universals are universal principles, given by a supposedly innate language module, which operate in all human languages. This is a strong sense of the term, since the universal principles postulated are absolute. An example of an absolute syntactic universal would be the claim that all human languages exhibit recursion. An example of a phonological universal would be the statement that all languages have both consonants and vowels. For other linguists, talk of universals is talk of tendencies in human languages, such as the tendency for vowels to nasalise when adjacent to a nasal stop. This is a weaker sense of the term. It is conceptually possible to allow that there are absolute universals while denying that they are given by Universal Grammar. Implicational universals take the following form: if a given language has property X, then it will also have property Y. An example would be: if a given language has voiced obstruents, then it will also have voiceless obstruents. See Jakobson.

unmarked see markedness

unrounded Lacking lip-rounding. Front vowels are typically unrounded, as in the vowels [i] and [e], but there are front rounded vowels too, as in the case of the French vowels [y], [ø] and [œ], found in the words lune (‘moon’), peu (‘little’) and sœur (‘sister’).

unstressed Bearing neither primary stress nor secondary stress. In the English word happen, the final syllable is unstressed, while the penultimate syllable has primary stress. Unstressed syllables often have reduced vowels.
usage-based phonology  An approach to phonology, associated with the work of Joan Bybee, which stresses that performance (actual usage in specific contexts of utterance) is as central to our understanding of phonological phenomena as competence. A key notion in usage-based phonology is frequency of occurrence.

utterance  A term sometimes used in its ordinary, everyday sense to mean a stretch of uninterrupted speech made by a speaker. It has been used more technically in the literature in generative linguistics when a distinction is made between sentences and utterances, with the former seen as units of competence generated by a grammar, and the latter as units of performance produced by a speaker. However, the generative literature is inconsistent in its usage of this distinction. In discussion of the prosodic hierarchy, the utterance is often postulated as the largest unit in the hierarchy.

uvula  The part of the soft palate which can be seen dangling down at the back of the mouth.

uvular  Sounds which have the back of the tongue as the active articulator and the uvula as the passive articulator are uvular. Stops, fricatives and approximants can all be produced in this way. An example of a voiced uvular fricative is the ‘r’ sound produced in Northern French, as in the word rat (‘rat’), pronounced [ʁe].

V  Stands for vowel. For instance, when phonologists speak of CV syllables, they mean syllables consisting simply of an onset consonant and a vowel in the nucleus position.
van der Hulst, Harry A Dutch phonologist who has worked on, among other things, vowel harmony systems and word stress systems. He has developed a descriptive framework for phonological representations known as Head-Driven Phonology. See structural analogy.

variegated babbling  see babbling

velar A place of articulation. Velar sounds are characterised by an articulation between the back of the tongue and the velum.

velar softening  see palatalisation

velaric airstream mechanism  see airstream mechanisms

velarisation  A secondary articulation made by the back of the tongue and the velum. It is often said that the ‘dark l’ in many accents of English has a primary articulation which is alveolar and a secondary articulation which is velar. This velarised [l] is transcribed with a diacritic which runs through the phonetic symbol for the consonant, thus: [nå[l] (null).

velarised Articulated with a secondary articulation of velarisation.

velic Relating to the velum. Used to refer to velic closure, in which the velum is raised, preventing air from flowing through the nasal cavity, and velic opening (or lowering) in which the velum is lowered and air may flow through the nasal cavity.

velic closure  see velic
velic opening see velic

velum The soft palate: the soft part of the palate, located behind the hard palate.

verlan see language games

Vihman, Marilyn A specialist in child phonology who has carried out extensive empirical investigation with infants. Vihman is a constructivist who opposes the Chomskyan conception of child linguistic development. See template.

vocal cords Two strips of tissue located in the larynx, which may vibrate, leading to voicing. During the production of voiceless sounds, the vocal cords are said to be slack, whereas they are said to be stiff during the production of voiced sounds. Note that the term is not spelled ‘vocal chords’.

vocal folds A synonym for the vocal cords.

vocal play A stage in the first year of life, which starts before the babbling period. During this period, the child seems to be experimenting with its vocal apparatus. The sounds produced are not syllabic in nature, unlike the CV syllables of the babbling period. They include a range of relatively ‘exotic’ sounds such as clicks and bilabial and uvular trills.

vocal tract The three resonance chambers taken together: the oral cavity, the nasal cavity and the pharynx.

Voice Onset Time (VOT) When one produces a stop consonant in which the vocal cords are not vibrating, and
then follows this with a vowel sound, there may be a delay in the onset of voicing in the vowel. When this happens, we say that the stop in question is aspirated, as in the English word pad: [pʰæd]. If there is no such delay in VOT, we say that the stop is unaspirated, as in the French word pain (‘bread’): [pê].

**voiced** A term for speech sounds which are produced with voicing. Many phonologists have pointed out that the voiced/voiceless dichotomy alone is insufficient to distinguish between the full range of laryngeal contrasts in human languages. One needs, at least, to distinguish between the following: (a) fully voiced stops, in which the vocal cords are vibrating prior to the release of the stop closure, as in the French word bain (‘bath’): [bê]; (b) voiceless unaspirated stops, as in the French word pain (‘bread’): [pê]; (c) voiceless aspirated stops, as in the English word pad: [pʰæd]. It has been pointed out that, although English spelling conventions represent words such as bed with the <b> grapheme, the sound in question is not, in fact, a fully voiced stop, but an unaspirated voiceless stop, unlike the stop at the beginning of the French word bain. The contrast among French stops is thus a contrast between fully voiced and voiceless unaspirated stops, while the contrast in most varieties of English is between voiceless aspirated and voiceless unaspirated stops. Languages such as Thai have a three-way phonemic contrast between fully voiced, voiceless unaspirated and voiceless aspirated stops, as in the words [bàː] (‘shoulder’), [pàː] (‘forest’) and [pʰàː] (‘split’).

**voiceless** Speech sounds are said to be voiceless if the vocal cords are not vibrating during their production. Example of voiceless sounds are the voiceless
unaspirated stops [p], [t] and [k] in the English words *spilt*, *still* and *skin*, and the voiceless fricatives [f] and [s] in the English words *sin* and *fin*.

**voicing** The vibration of the vocal cords. Fully voiced sounds are produced with vibration of the vocal cords during the articulation of the sound, as in the [v] in the word *heavy*. **Word-initial stops** are fully voiced if the vocal cords are vibrating prior to the release of the stop closure, as in the French word bain (‘bath’): [bɛː:].

**voicing assimilation** see assimilation

**vowel** Any sound which occupies the nucleus of a syllable and is produced with a stricture of open approximation. See degree of stricture.

**vowel fronting** Any process in which one or more vowels is produced further forward in the vowel space than it previously was. The front rounded vowels [y], [o] and [æ] in contemporary Standard French all resulted from the historical fronting of the back vowels [u], [o] and [ɔ]. See also *umlaut*.

**vowel harmony** A kind of metaphony in which all the vowels in a word must share one or more properties (but see opaque vowels and neutral vowels), as in Finnish [tyhmæ] ‘stupid’ vs [tuhma] ‘naughty’, where the first word has vowels which share the property of frontness (palatality) and the vowels in the second word all lack that property. Such languages tend to have two sets of vowels, one possessing the harmonic property, the other lacking it. Vowel harmony often spreads from roots to affixes, as in Hungarian [byːn-tøl] ‘crime’, where the ablative suffix undergoes
palatal harmony and thus contains a front vowel, unlike [mokuʃ-tol] ‘squirrel’, where the ablative suffix has a back vowel. Other properties which feature in vowel harmony include the following: (a) labiality (roundedness), as in Turkish [gyl] ‘rose’ (nominative), [gyl-y] ‘rose’ (possessive) as distinct from [is] ‘footprint’ (nominative), [iz-i] ‘footprint’ (possessive); (b) lowness, as in Kikuyu, which has a suffix which takes the form [r] (with a high vowel) or [er] (with a lowered vowel), determined by the height of the first vowel of the stem: [rut-r-a] ‘work for’, [ror-er-a] ‘look at’; (c) Advanced Tongue Root (ATR), as in Tangale [tug-o] ‘pounding’, [wud-o] ‘farming’; (d) Retracted Tongue Root (RTR), as in Yoruba [epo] ‘oil’, [ɛkɔ] ‘pap’. There is often debate as to whether a given system exhibits ATR or RTR harmony. Some languages have harmony for more than one property. For instance, the Khirgiz infinitive forms [bil] ‘know’, [kyl] ‘laugh’, [kɨl] ‘do’ and [bol] ‘be’ take different forms of the past definite suffix: [bil-d], [kyl-dy], [kɨl-dɪ] and [bol-du], showing both palatal and labial harmony. Some languages with vowel harmony have words exhibiting disharmony, involving neutral vowels and/or opaque vowels. There are languages in which harmony may spread from certain affix vowels into the root: see dominant/recessive harmony. Vowel harmony often has no effect on intervening consonants, but there are cases where it does.

vowel quality The acoustic impression given by the production a given vowel type. This is difficult to pin down precisely, because there is a continuum as one moves from one vowel sound to another; there are no sharp boundaries between, say, [i], [e] and [ɛ]. None the less, it is possible for humans to identify
prototypical [i]-type, [e]-type and [ε]-type qualities, just as we can identify prototypical examples of colours such as green and blue, even though there are colours which are intermediate between the two.

**vowel raising** Any process in which one or more vowels is produced higher in the vowel space than it previously was. In Standard French, the vowel [u] results from the historical raising of an [o] vowel, as in the transition from *trover* (‘to find’) to *trouver*, pronounced [tu've].

**vowel reduction** see reduction

**vowel retraction** Any process in which one or more vowels is produced further back in the vowel space than it previously was. In present-day Received Pronunciation, the back vowel [ɑː] in words such as *class* and *grass* results from the historical retraction of front [æː]. Also known as vowel **backing**.

**vowel shift** A process in which the realisation of a vowel phoneme encroaches on the articulatory and perceptual space of another vowel phoneme, resulting in a change in the realisation of the other vowel phoneme, apparently to ‘avoid’ a phonemic merger. In London English, the phoneme /aɪ/ is often realised as [ai] or [ɔɪ], as in *buy* pronounced [bɔɪ]. These realisations encroach upon the space of the phoneme /ɔɪ/, which may be said to ‘take evasive action’, and is often pronounced [ɔɪ], as in [boɪ] (boy), thus avoiding a phonemic merger and sustaining *buy*/*boy* as a **minimal pair**, rather than as homophones. The idea of ‘taking evasive action’ can be conveyed via the notion of ‘push chain’, in which one vowel phoneme can be thought of as ‘pushing’ an adjacent vowel into another, nearby,
part of the vowel space. Equally, one can conceive of vowel shifts as ‘pull chains’ (drag chains), in which one vowel phoneme ‘vacates’ a part of the vowel space, dragging an adjacent vowel phoneme into the vacated space. See Great Vowel Shift and Northern Cities Vowel Shift.

vowel space The space in the oral cavity in which vowels can be produced.

vowel system see Phonemic Principle

vowel triangle see Dispersion Theory

Vulgar Latin The Latin spoken at the height of the Roman Empire by ordinary working people, soldiers and merchants. It is distinct from Classical Latin and is the historical source of the present-day Romance languages.

weakening A synonym for lenition. See also reduction.

weight see syllable weight

well-formed A syntactic sequence in a given language is said to be well-formed if it conforms to the grammatical rules of the language. Thus The man kicked the dog is well-formed in English, but Kicked dog man the the is not. In phonology, the notion can be applied to phonological sequences. The word-initial sequences /kl/, /kw/, /kr/ and /kj/ are all well-formed in most varieties of English, as in the words clown, queen, cry and (arguably) cure. But word-initial sequences such as /kn/ and /ks/ are ill-formed.
Wells, J. C. A British phonetics/phonology specialist based at University College London, perhaps best known for his three-volume work *Accents of English*, published in 1982. This book is a systematic description of the pronunciation of a large number of varieties of English around the world, and is still frequently referred to today.

**word boundary** The boundary between two words, as in the boundary between *far* and *away* in the phrase *far away*. Word boundaries can play a role in phonological processes, as in the case of Linking ‘r’ in non-rhotic varieties of English, where a word-final underlying /r/ is realised if the following word begins with a vowel, as in the phrase *far away*.

Some sequences of two words are said to form a ‘closer’ link to each other than others, and this closeness is believed to play a role in the triggering or non-triggering of certain phonological processes. In the case of obligatory Liaison in French, the underlying /z/ in words such as *mes* (the plural form for ‘my’) is realised if the following word begins with a vowel, as in *mes amis*: [mezami]. Similarly, the plural suffix /z/ is realised in phrases such as *amis américains* (‘American friends’): [amizameʁikɛ]. But the plural /z/ of *amis* is not realised in the expression *Mes amis arrivent* (‘My friends are coming’): [mezamiʁiv]. It is claimed that the link between *mes* and *amis* is closer than the link between *amis* and *arrivent*. It is this ‘closer link’ that is said to trigger the Liaison process. There is disagreement as to whether syntactic structure directly influences phonological processes, or whether the influence is indirect, mediated by phonological units such as the phonological phrase.
word-final  Occurring at the end of a word. The stop /d/ is word-final in the word bad.

Word-Final Devoicing  A process whereby voiced obstruents become voiceless when in word-final position. The Polish root /trud/ (‘labour’) is pronounced as [trut], since the final /d/ undergoes devoicing, but if the final obstruent in the root is not word-final, no devoicing occurs, as in [trudi], the plural form of the noun.

word-initial  Occurring at the beginning of a word. The stop /b/ is word-initial in the word bad.

word-medial  Occurring in the middle of a word. The stop /p/ is word-medial in the word happen: [ˈhæpən]. The term is rather vague and unsatisfactory, since it can be used to denote segments which occur in a wide variety of syllabic and metrical contexts.

word phonology  see Lexical Phonology

word stress  Whatever language we study, we will find that not all of the syllables in a word will have the same degree of perceptual salience (prominence); some will be more prominent/salient that others, as in the English word father, where the penultimate syllable is more prominent than the final syllable. This prominence/salience is known as word stress, sometimes referred to simply as stress. It can be created via any or all of the following: greater loudness, greater segmental or syllabic length, or greater pitch movement. Different languages harness different combinations of these in their word stress systems. In English, it is mostly pitch movement and duration which convey word stress. In Japanese, it is pitch movement alone (see pitch accent
languages). Some languages have a very simple word stress assignment system; a given syllable in the word is the one that will be stressed, such as the last syllable in the case of Standard French. Others have arbitrary patterns of stress in words, in which the stress may appear on any of the syllables of a root, as in Modern Greek. Yet others exhibit rule-governed word stress assignment. An example is Malay, where the rule is as follows: place a primary stress on the penultimate syllable of the word and then place a secondary stress on the initial syllable of the word, and each alternate syllable thereafter, subject to stress clash avoidance, as in the word [silatu'rahim], where a primary stress falls on the penultimate syllable, and a secondary stress on the initial syllable. The third syllable from the beginning of the word does not take a secondary stress since this would result in a stress clash. Some phonologists postulate, in addition to primary stress and secondary stress, a level or tertiary stress, as in the English word survey. It is agreed that words such as this have primary stress on the penultimate syllable. Those who postulate tertiary stress on the final syllable do so because it has a vowel which does not exhibit reduction to schwa (compare the word woman, with primary stress on the penultimate syllable and a schwa in the final syllable. Stress is sometimes referred to as accent and stressed syllables are said to be accentuated.

yers The name for a set of abstract underlying vowels postulated by generative phonologists to account for certain morpho-phonological alternations in the Slavic languages. In Polish, some instances of phonetic [ɛ] alternate with zero, as in [pɔɛɔ] vs [pɔsta], the
nominative singular and genitive singular of the word for ‘envoy’, where we can see [ɛ] in the nominative form, but no [ɛ] in the genitive form. These alternations are distinct from pairs such as [fɔtɛl] vs [fɔtɛla], the nominative singular and genitive singular forms of the word meaning ‘armchair’, where the [ɛ] does not alternate with zero. The argument is that the [ɛ]s which alternate with zero must be derived from an underlying representation other than /ɛ/. That underlying representation is said to be a yer, a non-ATR high vowel, represented as /i̯/, which may be realised as [ɛ], or as zero. This kind of analysis is an example of absolute neutralisation, since there is no phonetic [i̯] in Polish which would provide phonetic evidence for the existence of underlying /i̯/.

yod A term used to refer to the palatal glide [j], often transcribed as [y] by American phonologists.

Yod Dropping A term used to refer to the non- pronunciation of yod in certain accents of English. In many varieties of American English, there is Yod Dropping in words such as new and tune, pronounced [nuː] and [tʌn]. Yod Dropping only applies where the yod would have been preceded by a coronal consonant, and thus fails to apply in words such as cure, pronounced [kʰjouə], and pure, pronounced [pʰjouə].

zero A term often used to describe alternations in which a sound is elided. In Standard French, schwa is said to alternate with zero, as in the various ways of pronouncing sequences such as Je te le redemande (‘I’m asking you this again’), where the schwa vowels in Je,
*te le, re-* and *de* may be elided, subject to the constraint known as *la loi des trois consonnes*. An example is [*ʃtələʁədɑ̃mɑ̃d*], where the schwas in *Je* and *de* have been elided, but not the schwas of *te, le* or *re*-. Many phonologists postulate an *underlying* schwa in words such as *Je*, which is said to have a zero *realisation* when it is elided.
Sources

Many of the examples come from what I know of varieties of English and French. I also know a little about Malay and Spanish, so I have used examples from those languages too. For examples from these and other languages, I have relied on the following primary and secondary sources.

In giving brief details of various schools and scholars in the history of phonology, I have relied heavily on Stephen R. Anderson’s excellent 1985 book, *Phonology in the Twentieth Century* (Chicago: University of Chicago Press). I hope to be forgiven for the extremely simplified thumbnail sketches I have offered of these schools and scholars.
I also hope that no factual errors have crept into those sketches. I have also had recourse to *Key Thinkers in Linguistics and the Philosophy of Language*, edited by Siobhan Chapman and Chris Routledge, and published in 2005 by Edinburgh University Press.
(a) Textbook introductions
The beginning student should follow an introductory course in phonology, preferably using a textbook which contains exercises. Of the textbooks which appear in the sources section, I recommend Spencer (1996). C. Gussenhoven and H. Jacob’s (2005) Understanding Phonology, published by Arnold, is a useful book, as is M. Davenport and S. J. Hannahs (1998) Introducing Phonetics and Phonology, also published by Arnold. Carr (1993), cited above, is slightly out of date (soon to be updated), but has useful exercises. The textbooks cited above by Roca and Johnson, and by Kenstowicz, are both very good but are rather long. B. Collins and I. Mees (2003) Practical Phonetics and Phonology, published by Routledge, is, as the title suggests, practical in its aims, rather than being an introduction to phonological theory as such, but it is a unique and most useful book, with an excellent accompanying CD.

For students looking for an introduction to specifically English phonetics and phonology, Giegerich (1992), cited above, is a very good book but has no exercises. For an elementary introduction to English phonetics and phonology, I suggest either Carr (1999), cited above, or April McMahon’s (2002) An Introduction to English Phonology, published by Edinburgh University Press. The
Collins and Mees book cited above is also useful for coverage of varieties of English. Mehmet Yavaş’s (2006) *Applied English Phonology*, published by Blackwell, is also useful. Students should also consult the late Larry Trask’s (1996) *A Dictionary of Phonetics and Phonology*, published by Routledge, which is admirable in its coverage. Students should be aware, however, that I have reservations about some of Trask’s definitions (which often lack exemplification); because of this, the student will find that my definition of central terms, such as ‘phoneme’ differ substantially from his.

(b) Primary source material
For students wishing to consult primary source material, the following is a very partial list of books and articles which have made an impact on various parts of the field.


An Introduction to English Phonology
April McMahon

An Introduction to English Phonology introduces undergraduates to the basic tools and concepts necessary for the outline description of English phonological systems and processes.

By working through the book and the various exercises included, students should come to understand the need for a dedicated system of description and transcription for speech sounds, and for a degree of phonological abstraction. They should learn to carry out elementary, broad phonetic transcription, and be able to establish contrastive vowel and consonant systems for their own varieties and to express simple generalisations reflecting the productive and predictable patterns of English sounds.

Key Features
- designed for a one-term or one-semester introductory course in English Language
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- an essentially theory-neutral approach, with the concepts central to the practice of phonology clearly explained

April McMahon is Forbes Professor of English Language at the University of Edinburgh.
The Linguistics Student’s Handbook
Laurie Bauer

The book that tells you all the things you felt you were expected to know about linguistics, but were afraid to ask about.

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Every student who has asked these questions needs this book. A compendium of useful things for linguistics students to know, from the IPA chart to the Saussurean dichotomies, this book will be the constant companion of anyone undertaking studies of linguistics. Part reference work, part revision guide, and with tables providing summary information on some 280 languages, the book provides a new learning tool as a supplement to the usual textbooks and glossaries.

Laurie Bauer is Professor of Linguistics at the Victoria University of Wellington.

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