Chapter 10

Words

10.1 Accent

Words are made up of phonemes as shown by meaningful contrasts, e.g. the /t/ and /d/ contrast in *writer* /raɪtə/ and *rider* /raɪdə/. Polysyllabic words have an additional identity determined by the relationship of their parts. Thus *writer* and *rider* have a pattern consisting of a strong syllable followed by a weak syllable. But in the case of *return* /rɪ`tɜːn/ the pattern is reversed: we have a weak syllable followed by a strong syllable. The identity of *return* compared with *writer* and *rider* depends not only on the different sequence of phonemes but also on the different patterns produced by the varying prominence of their syllables. The syllable or syllables of a word which stand out from the remainder are said to be accented, to receive an ACCENT.

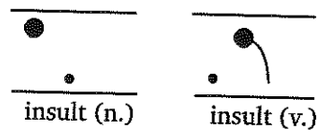
The accentual pattern of English words is fixed, in the sense that the primary accent always falls on a particular syllable of any given word,[1] but free, in the sense that the primary accent is not tied to any particular point in the chain of syllables constituting a word, as it is in some languages, e.g. to the penultimate syllable in Polish, to the first in Czech and to the last in French. Thus, in English the primary accent falls regularly on the first syllable in such words as *finish, answer, afterwards*; on the second syllable in *behind, result, together, impossible*; on the third syllable in *understand, education*; or later in *articulation, palatalisation*, etc.

The accentual shape of a word, in terms of the degree of prominence associated with its parts, is a reality for both the speaker and the listener; but the speaker's impression of the factors which produce such a pattern of varying prominences may differ from the actual auditory cues by which the listener perceives the prominence pattern. It is, therefore, necessary to examine the factors which in English are significant both for the speaker and for the listener in producing the communicated effect of accent.

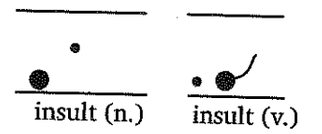
10.2 Accent and prominence

Any of four factors, pitch, loudness, quality and quantity, may help to render a syllable more prominent than its neighbours. But it is principally pitch change which marks an accented syllable.

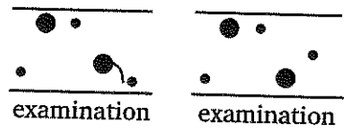
(1) *Pitch change*—The principal cue to accent is pitch prominence, which depends as much upon pitch change as pitch height. The different accentual patterns of *insult* (noun) and *insult* (verb) are easily distinguished by their pitch patterns. If a falling intonation is used, the fall occurs on the first syllable of the noun and on the second syllable of the verb:



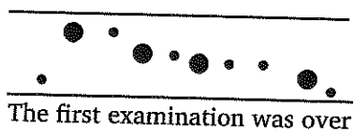
similarly, if a rising intonation is used, the rise begins on the first syllable and the second syllable respectively, (in these so-called 'interlinear' diagrams syllables are indicated by dots and accented syllables by large dots):



Pitch changes may make prominent more than one syllable in a word; thus *examination*:



or, within a phrase like the following, where the first three accented syllables show a change of pitch level while the last accent involves a change of pitch direction:



The final pitch accent in a word or in a group of words is usually the most prominent (and hence referred to as the PRIMARY ACCENT) while a pitch accent on an earlier syllable is usually somewhat less prominent (and referred to as SECONDARY ACCENT).

(2) *Loudness*—Accented syllables are often assumed to be louder than unaccented syllables and in most cases this is so. Greater loudness is carried principally by voiced sounds, in which greater amplitude of vibration of the vocal cords, together with the reinforcing resonance of the supraglottal cavities, results in acoustic terms in relatively greater intensity. This strong intensity and the perceived loudness on the part of the listener results from the relatively greater breath effort and muscular energy expended on the articulation of a sound by the speaker. This effort and energy is frequently referred to as 'stress' although, because of the many different ways in which this word has been used, it is avoided in this book. Loudness is not by itself an efficient device for signalling the location of the accent in English. When they are said on a monotone and without undue lengthening of accented syllables, it is difficult to distinguish by loudness alone *in`sult* (v.), *im`port* (v.), *be`low*, from *`insult* (n.), *`import* (n.), *`billow*, words in which different accentual patterns are not backed up by qualitative differences in the vowels.

(3) *Quantity and quality*—While accent is principally achieved by pitch change, sometimes assisted by extra loudness, among unaccented syllables some will be more prominent than others due to the quality and quantity of the vowels at their centre. (For varying prominence among sounds more generally, see §5.5). Long vowels and diphthongs are generally more prominent than short vowels, while among the short vowels themselves /ɪ,i,ʊ,ə/ are the least prominent and, when not accented by pitch or loudness, are often referred to as REDUCED (non-reduced vowels are said to be FULL). As far as prominence is concerned, syllabic consonants are considered to be sequences of /ə/ plus /l,m,n,ŋ/ and hence are equivalent to reduced vowels. The reduced vowels are so lacking in prominence that they have a high frequency of occurrence in unaccented as opposed to accented syllables, with /ə/ occurring in citation forms only in unaccented syllables (though it may sometimes be accented in connected speech). Despite the lesser prominence of all short vowels, a long vowel in an unaccented syllable is sometimes longer than a short vowel in an adjacent accented syllable, e.g. *pillow* /`pɪləʊ/, *ally* /`alaɪ/, *frontier* /`frʌntɪə/, *placard* /`plakɑːd/, *record* /`rekɔːd/, *expert* /`ekspɜːt/. In similar cases where the unaccented syllable precedes the accent there is often alternation between a full and reduced vowel, e.g. *July* /ʤuː`laɪ/ /ʤə`laɪ/, *November* /nəʊ`vembə/ /nə`vembə/, *proceed* /prəʊ`siːd/ /prə`siːd/, *September* /sep`tembə/ /səp`tembə/. Some dialects, e.g. those of parts of northern England, are more likely to retain the full vowel in these positions, particularly in monosyllabic prefixes, e.g. *obtain* /ɒb`teɪn/ /əb`teɪn/, *contain* /kɒn`teɪn/ /kən`teɪn/, *continue* /kɒn`tɪnju/ /kən`tɪnju/, *expect* /ek`spekt/ /ɪk`spekt/ or /ək`spekt/. In some disyllables (both in GB and in other dialects) there may be alternation in the position of the primary accent with consequent alternation in the use of a full or reduced vowel, e.g. *adult* /`adʌlt/ vs /ə`dʌlt/, *contact* (v.) /`kɒntakt/ vs /kən`takt/.

(4) *Conclusion*—There are therefore four degrees of prominence in English:

(a) primary accent, marked by the last major pitch prominence in a word (or longer utterance);
(b) secondary accent, marked by a non-final pitch prominence in a word (or longer utterance);
(c) a minor prominence produced by the occurrence of a full vowel without pitch prominence;
(d) a non-prominent syllable containing no pitch prominence and one of the reduced vowels /ɪ,i,ʊ,u,ə/.

10.3 Word accentual patterns[2]

Although many longer words contain primary accented syllables, secondary accented syllables and prominent syllables based on vowel quality alone, it is the position of the primary accent which contributes most to a word's accentual pattern (and which will be the principal cue to the nuclear tone (see §11.6.1.2)). Attempts to reduce the placement of primary accent in English words to a set of rules are bedevilled by the existence of large numbers of exceptions to almost any rule. The following sections should therefore be regarded as stating tendencies rather than absolute rules. The status of the final syllable as strong or weak (together with the grammatical class of the word) often governs primary accent placement. Syllables are here counted as STRONG when they contain a long vowel or a diphthong or a short vowel plus two consonants; otherwise they are WEAK.

English words may be divided into ROOTS which are can stand alone as words and which have no AFFIXES attached, e.g. *fool*, *be`gin* and *under`stand*. Affixes include both SUFFIXES like *-ative* in *argu`mentative* and PREFIXES like *mis-* in *misrule*. STEMS are the base to which an affix is attached, which can be a root as in *nation-al*, sometimes referred to in what follows as a free stem; or the stem can be one which cannot stand alone, as in *ephemer-al*, *tremend-ous*, *hospit-able*, referred to below as a bound stem.

10.3.1 Roots

Somewhat different tendencies apply to verbal, adjectival and nominal roots. Among other word classes, adverbs are generally derived from adjectival roots with no alteration to the accentual pattern, while the remaining classes consist of many monosyllabic words, with those few of more than one syllable having no regularity in their accentual patterns.

(1) *Verbs*

(a) If the final syllable is strong, it is accented, e.g. /rɪ`leɪt/, /ʧas`taɪz/, /ə`raɪv/, /meɪn`teɪn/, /ə`kɜː/, /pə`siːv/, /wɪð`həʊld/, /wɪð`stand/, /pə`sweɪd/, /entə`teɪn/, /rɪ`fjuːz/, /ə`griː/, /kən`vɜːt/, /kən`vɪkt/, /kən`teɪn/, /ɪŋ`kluːd/, /əʊvə`teɪk/, /rɪ`ʤekt/, /ʌndə`stand/, /dɪs`laɪk/, /ə`dɔɪn/, /bɪ`liːv/, /priːsə`pəʊz/, /ɪm`vɒlv/, /rekə`mend/, /rɪ`maɪnd/, /ɪn`tend/

(b) Otherwise accent falls on the penultimate syllable, e.g. /sə`rendə/, /`wɪspə/, /`pɒlɪʃ/, /`pʌnɪʃ/, /dɪ`veləp/, /`wɜːʃɪp/, /`vɪzɪt/, /`galəp/, /`travəl/, /ə`stɒnɪʃ/, /ɪg`zamɪn/, /`lɪsən/, /ɪ`maʤɪn/, /rɪ`zembəl/

Some exceptions:

unaccented strong final syllables: /`rekəgnaɪz/, /`rɪəlaɪz/
accented weak final syllables: /ɪm`pres/, /pə`zes/, /bɪ`gɪn/, /fə`get/, /fə`bɪd/, /pə`mɪt/

(2) *Adjectives*

(a) If the final syllable is strong, it is accented, e.g. /mə`tjʊə/, /sɪ`kjʊə/, /ə`freɪd/, /ə`sliːp/, /kəm`pliːt/, /ɪk`striːm/, /ə`brʌpt/, /sə`blaɪm/, /ə`ləʊn/

(b) Otherwise accent falls on the penultimate syllable or (with reduced vowel on the penultimate) on the antepenultimate, e.g.

penultimate: /ɪk`sesɪv/, /`njuːtrəl/, /`sɒlɪd/, /`klevə/, /`feɪməs/, /`rɪʤɪd/, /ɪk`splɪsɪt/, /kɒnfɪ`denʃəl/
antepenultimate: /`nesəsri/, /`deɪnʤərəs/, /`dɪfɪkəlt/, /`defɪnət/, /`ɪntrəstɪŋ/, /`pɒsəbəl/, /`maːvələs/, /`ɪntɪmət/

Some exceptions:

strong final syllables, unaccented: /`mɒrɪbʌnd/, /`tantəmaʊnt/, /`arəgənt/, /`ɪmpɔːtənt/

(3) *Nouns*

(a) If the final syllable is strong, it is *optionally* accented, e.g. /dɪs`pjuːt/, /ɑːftə`nuːn/, /kaŋgə`ruː/, /ka`ʃɪə/, /aɪ`dɪə/, /ʃam`peɪn/, /kə`tɑː/, /bə`luːn/, /pə`liːs/, /mə`ʃiːn/

(b) Otherwise primary accent falls on the penultimate syllable or (with reduced vowel on the penultimate) on the antepenultimate or, rarely, on the ante-antepenultimate, e.g.

strong final syllable, penultimate accent : /`prəʊfaɪl/, /tə`mɑːtəʊ/, /tə`bakəʊ/, /pə`teɪtəʊ/, /`wɪndəʊ/, /`pɪləʊ/, /`arəʊ/, /`feləʊ/, /`wɪləʊ/, /`wɪdəʊ/, /sə`prɑːnəʊ/, /`məʊmənt/, /`sʌfɪks/, /`barəks/, /`mɪŋz/
strong final, antepenultimate accent: /`anəkdəʊt/, /`farənhaɪt/, /`pedɪgriː/, /`apətaɪt/, /`katərakt/, /ə`setɪliːn/, /`teləfəʊn/, /`antɪləʊp/
weak final, penultimate accent: /ŋ`kaʊntə/, /`laŋgwɪʤ/, /`patən/, /kəm`pleksʃən/, /`peɪpə/, /`feɪvrɪt/, /`ʧɒklət/, /`vɜːmɪn/
weak final, weak penultimate, antepenultimate accent: /`kwɒntɪti/, /`dɪsəplɪn/, /`kamərə/, /`hɪstəri/, /ə`naləsɪs/, /`evɪdəns/, /raɪ`nɒsərəs/, /`məsəns/

weak final, weak penultimate and antipenultimate, ante-antepenultimate accent: /ˈhelɪkɒptə/, /ˈteləvɪʒən/

Some exceptions:

weak final accented: /həʊˈtel/, /pɜːsəˈnel/ (*personnel*), /sɪgəˈret/ (but /ˈsɪgəret/ in GA)
weak penultimate accented: /vəˈnɪlə/, /ɪnˈsɪpɪd/, /ˈmɪmɪt/

It should particularly be noted that there are two competing accent patterns for nouns with strong final syllables, one with final accent and one with an earlier accent. The final syllable in the case of (3)(b) is sometimes said to be 'extrametrical', i.e. outside the rhythm of the word.

Cigarette illustrates the problem of deciding whether to treat a word as a single root or as a sequence of stem plus affix, e.g. treating it as an unanalysed root produces an exceptional accentual pattern for GB, i.e. *ˈcigarette* but one which is correct for GA. Whereas an analysis into stem *cigar* plus suffix *-ette* (next section) produces the correct accentual pattern *ciga'rette* for GB in the same way that *disk* becomes *dis'kette*.

10.3.2 Suffixes

Suffixes may be added to a root as stem, e.g. *nation~national*, or the stem may consist of an already combined root plus suffix, e.g. *national~nationalist~nationalistic*. Many suffixes have no effect on the accentual pattern of stems and hence are called ACCENT-NEUTRAL; the primary accent remains where it is in the stem, e.g. *ˈbitter~ˈbitterness*. Many other suffixes regularly take the accent themselves (are ACCENT-ATTRACTING), e.g. *ˈdisc~disˈkette*. A smaller and less predictable number of suffixes have the effect of fixing the accent on a particular syllable of the stem (are ACCENT-FIXING). The accent can be fixed on the final syllable of the stem, e.g. *ˈsensitive~sensiˈtivity*, or on the penultimate syllable of the stem, e.g. *igˈnore~ˈignorance*. Where more than one suffix is applied to a stem, the last suffix determines the word's accentual pattern, e.g. *faˈmiliar~familiˈarity~familiariˈsation*. There are some endings deriving principally from Greek which are like suffixes but which are attached to beginnings also from Greek and in which neither element has a greater claim to be considered as the stem, e.g. *phonograph, microscope*. These are not treated in this section, but dealt with under §10.3.5 as compounds, since their accentual patterning is similar to compounds.

It should be remembered again that the following sections deal only in tendencies and not absolute rules. A distinction is made between inflexional suffixes, which do not change the word class, e.g. *full~fuller*, and derivational suffixes which do change the word class, e.g. *lead~leader*.

(1) *Accent-neutral suffixes*—Included in this category are all inflexional and many common derivational suffixes. Some inflexions are non-syllabic like

plural, possessive and third person singular *-s* (but these are syllabic following /s,z,ʃ,ʒ,ʧ,ʤ/—see §10.10.4) and past tense *-t* (this is syllabic following /t,d/—see again §10.10.4); other inflexions are monosyllabic like *-er*, *-est* (comparative, superlative) and *-ing* (progressive). Most derivational suffixes ending in *-y* (or *-ie*) (e.g. *-ary*, *-ery*, *-ory*, *-cy*, *-acy*, *-ty*, diminutive *-y* or *-ie*, adjectival *-y* and adverbial *-ly*) are accent-neutral, e.g. *inˈfirm~infirmary, ˈcelibate~ˈcelibacy, ˈdifficult~ˈdifficulty, ˈpot~ˈpotty, ˈbag~ˈbaggy, ˈusual~ˈusually*. Other suffixes in this category include *-ish*, *-ism*, *-ist*, *-ise*, *-ment* and agentive *-er* and *-ess*, e.g. *ˈfool~ˈfoolish, ˈalcohol~ˈalcoholism, ˈseparate~ˈseparatist, ˈcircular~ˈcircularise, disaˈgree~disaˈgreement* (but note in particular the irregular *ˈadvertise~adˈvertisement*), *lead~ˈleader* and *ˈlion~ˈlioness*. The suffix *-ative* generally belongs here, e.g. *ˈquality~ˈqualitative, preˈserve~preˈservative, repreˈsent~repreˈsentative, deˈrive~deˈrivative*. But there are exceptions which usually involve rightward movement, e.g. *ˈdemonstrate~deˈmonstrative, ˈargument~arguˈmentative, inˈterrogate~interˈrogative, ˈalternate~alˈternative*.

(2) *Accent-attracting suffixes*. Some common derivational suffixes in this category are *-ade*, *-eer*, *-esque*, *-ette* and *-ation*, e.g. *esˈcape~escaˈpade, ˈmountain~mountaiˈneer, ˈpicture~pictuˈresque, ˈusher~usheˈrette, ˈprivate~privatiˈsation*. Verbal *-ate* belongs here in disyllables, e.g. *miˈgrate* (where *mi-* is a bound stem) (cf. GA *ˈmigrate*).

(3) *Accent-fixing suffixes*.

(a) On final syllable of stem. Here belong *-ic*, *-ion* and *-ity*, e.g. *ˈchaos~chaˈotic, deˈvote~deˈvotion, ˈcurious~curiˈosity*. In the case of *-ion* most words are formed from free disyllabic verbal stems accented on the second syllable and *-ion* could therefore equally well be regarded as accent-neutral.

(b) On penultimate syllable of stem. The number in this category is small, the most important being verbal *-ate* in words of more than two syllables, most involving bound forms, e.g. *inˈaugurate, excoˈmmunicate, ˈoperate*. Here also belongs *-itive*, e.g. *intuˈition~inˈtuitive, poˈsition~ˈpositive*.

(c) On final or penultimate syllable of stem according to the weight of the final syllable. Here are *-ency* and adjectival *-al*, e.g. *ˈpresidency* but *eˈmergency, ˈpharynx~phaˈryngeal* but *ˈmedicine~meˈdicinal*.

(d) A number of suffixes vacillate between two patterns. A common one is *-able* which is in most cases accent-neutral e.g. *aˈdore~aˈdorable, comˈpanion~comˈpanionable, ˈquestion~ˈquestionable, ˈrealise~ˈrealisable, ˈreconcile~ˈreconcilable*. However, in a number of disyllabic stems with accent on the final syllable the accent may be shifted to the first syllable of the stem: *ˈadmirable, ˈapplicable, ˈcomparable, ˈdespicable, ˈdisputable, ˈlamentable, ˈpreferable, ˈreputable, (ir-)ˈreparable*. But the general pressure from the accent-neutrality of *-able* often leads to alternative pronunciations of these words with the accent on the final syllable of the stem, e.g.

ad`mirable, a`pplicable, com`parable, de`spicable, di`sputable, la`mentable, pre`ferable, re`putable, re`parable.* To add to the confusion there are some changes (again optional) in the opposite direction, e.g. *`demonstrate~de`monstrable; `extricate~(in-)ex`tricable, `realise~rea`lisable, `reconcile~recon`cilable (all of which have an alternative form with initial accent). The simplest statement is that it is possible to treat all as accent-neutral.

10.3.3 Prefixes

Prefixes are generally accent-neutral, e.g. *de-, dis-, in-* (and various assimilated forms like *il-, im-, in-, ir-), mal-, mis-, pseudo-, re-, sub-* and *un-*, e.g. *de`foliate, disin`genuous, inco`rrect, i`lliterate, imma`ture, i`rreverent, mal`function, misre`port, pseudoscien`tific, rede`sign, sub`standard, un`necessary.* In general such prefixes result in a doubled consonant when the prefix-final and the stem-initial consonant are identical, e.g. *un`necessary* is pronounced with a double length [nː]. (This rule does not apply to *in-* and its variants, so, for example, *i`llogical* is pronounced with only a single /l/.)

10.3.4 Secondary accent[3]

When words have more than one syllable before or after the main accent, a general rhythmical pattern is often apparent, there being a tendency to alternate more prominent and less prominent syllables. Syllables made prominent in this way will retain a full vowel; additionally syllables before the primary accent will often receive a secondary accent involving pitch prominence (see §10.2(1) above). If there is only one syllable before the primary accent, this is usually unaccented and has a reduced vowel[4] e.g. *a`pply, con`cern, a`round, de`ceive,* etc. If there are two syllables before the primary accent, the first will often receive a secondary accent, e.g. *ˌrhodo`dendron, ˌmedi`eval, ˌrepre`sent, ˌmaga`zine.* Indeed as indicated by pattern (3) under §10.3.1, primary accent shows a tendency to move to the position of the secondary accent, producing, for example, *maga`zine* in GB but *`magazine* in GA (see also alternating accent under §10.4). Where there are more than two syllables before the primary accent, a secondary accent will fall two or three syllables back according to the presence of a full vowel, e.g. *inˌferi`ority, enˌthusi`astically*, but *ˌcircumlo`cution, ˌcharacte`ristically.* As in everything concerned with word accent in English, all of this section should be taken as indicating tendencies rather than rules that are without exception.

10.3.5 Compounds

COMPOUNDS are composed of more than one root morpheme but function grammatically and/or semantically as a single word.[5] In most cases the two roots are free morphemes themselves, e.g. as in *blackbird*: the largest type of exception to this concerns the PSEUDO-COMPOUNDS under (3) below. Compounds are grammatically unitary when the combination of the grammatical classes of its two elements would not normally function as the type of constituent which the compound does, e.g. *daybreak* is composed of the noun *day* plus the verb *break* but such a combination noun-verb does not normally constitute a noun phrase functioning as the subject of a sentence as the compound does in *Daybreak comes early in summer.* A compound is semantically unitary because it has a meaning representing a specialised conjunction of the meanings of its two components, e.g. *glasshouse* is indeed loosely a type of house and is made of glass but the compound cannot be used to describe any sort of glass house. Compounds may be written as one word as with *daybreak* and *glasshouse*, or with a hyphen as in *clear-cut*, or with a space between the two elements, as in *working party*; there is no systematic practice in the choice among these three ways, although there is a tendency for compounds with primary accent on the first element to be written as one word or with a hyphen and for those with the primary accent on the final element to be written as two words.

The primary accent in compounds is most commonly on the first element, e.g. *ˈdaybreak, ˈglasshouse* and in some cases this type of accentuation will distinguish the compound from a more productive phrasal pattern, e.g. *glass `house* (but note that a contrastive accent within the phrase will produce the same pattern as the compound, e.g. *This is a `brick house, not a `glass house*). There are, however, many compounds (judged as such on grammatical and semantic criteria) which have the same pattern as phrases, e.g. *Oxford `Road.* There are also often differences between the accentuation of compounds in GB and in GA, e.g. GB *ˈhorse `chestnut, ˈstage `manager, `season ticket*, compared with GA *`horse chestnut, `stage manager, ˈseason `ticket.* Where the primary accent is on the second element, a secondary accent is usual on the first element. Where the primary accent is on the first element, a full vowel is usually retained in the final element. In the following sections the principal types of compound are exemplified together with their usual accentual patterns.

(1) *Compounds functioning as nouns*—This is by far the most frequent type of compound (and accounts for approximately 90 per cent). Three subtypes (a), (b), (c) can be distinguished:

(a) `N(oun) + N(oun) (around 75 per cent of compound nouns)—*a`drenaline tourism, `alcohol abuse, `bank account, `bar code, `birthplace, `blood-money, `bomb factory, `bottle bank, `breadcrumbs, car `boot sale, `child abuse* (but cf. *child `benefit*), *com`passion fatigue, com`puter virus, con`trol freak, `crime rate, `deckchair, de`signer steroid, `drug addict, `enterprise culture, `fun run, `grief inflation* (three-minute rather than one-minute silences), *`guidebook, `keyboard, `lager lout, `laptop, `lifestyle, `mountain bike, `nursemaid, `ozone layer, `peace dividend, po`lice force, `pressure group, `racehorse, `road rage, `seaside, `shopping centre, `slummy*

mummy (slatternly mother), *`spin doctor*, *`stock exchange*, *`tape measure*, *`theme park*, *`toilet roll*, *`torture victim*, *`wheelbarrow*, *`yield management.* Included here are examples involving nouns in final position formed from V(erb) + *er* e.g. *`bodyscanner*, *`bricklayer*, *`cash dispenser*, *`screwdriver*, *`screensaver.*

Some general categories of exception to the accentual pattern of `N + N are:

(i) where the second item is 'made' of the first item, e.g. *apple `pie* (but cf. *`apple tree)*, *banana `split* (but cf. *`orange juice*), *brick `wall*, *chocolate `biscuit*, *clay `pigeon*, *cotton `wool* (cf. *`lambswool*), *dirt `road* (cf. *`footpath*), *elderberry `wine*, *feather `pillow*, *fruit `salad*, *ice`cream*, *paper` bag* (cf. *`paper clip*), *rice `pudding* (but cf. *`ricepaper*)

(ii) where N1 is a name: *Bermuda `triangle*, *Euston `station*, *Christmas `pudding* (but cf. *`Christmas card*, *`Christmas cake*, the latter because *cake* generally produces a pattern of `N + N, e.g. *`carrot cake*, *`Eccles cake*, *`chocolate cake*, *`cheesecake*), *Highland `fling*, *Humber `bridge*, *knickerbocker `glory*, *Lancashire `hotpot*, *London `Road* (*Road* always induces this pattern whereas *Street* induces `N+N, e.g. *`Oxford Street*), *Manchester U`nited*, *Mexican `wave*, *Neanderthal `man*, *Norfolk `terrier*, *Piccadilly `Circus*, *Thames `estuary*, *Turkish de`light.* (An exception to the exceptional category is *Ale`xander technique.*)

(iii) where both N1 and N2 are equally referential: *acid `rain*, *aroma`therapy*, *banner `headline*, *barrier `reef*, *boy so`prano*, *cauliflower `cheese*, *fridge-`freezer*, *garden `suburb*, *infant `prodigy*, *junk `food.*

(iv) where N1 is a value, e.g. *100% `effort*, *dollar `bill*, *fifty p. `change*, *pound `coin*, *five pound `note*, *ten p. `piece.*

Some other particular exceptions to the `N + N pattern are: *bay `window* (and all involving *window* in final position), *Channel `ferry*, *combine `harvester*, *county `council*, *daylight `robbery*, *day re`lease*, *keyhole `surgery*, *kitchen `sink*, *morning `paper*, *office `party*, *star `turn*, *trade `union*, *week`end.*

(b) `A(djective) + N, `N's + N, `N + V, `V + N, `N + Ving, `Ving + N—*`batting average*, *`boardsailing*, *`bridging loan*, *`building society*, *`bull's eye*, *`chargecapping*, *`crow's nest*, *`drinking water*, *`ear-splitting*, *`eating apple*, *`faintheart*, *`fly tipping*, *`hack saw*, *`handbagging*, *`job sharing*, *`joy riding*, *`landfill*, *`mind boggling*, *`pay cut*, *`pickpocket*, *`poll capping*, *`search party*, *`shop lifting*, *`skateboarding*, *`statesperson*, *`windsurfing.* (There are many exceptions, particularly in the case of `Ving + N, e.g. *alternating `current*, *flying `saucer*, *living `memory* and also *black `economy*, *compact `disc*, *insider `dealing.*) Compounds involving these patterns are much less productive than those under (a) above.

(c) Phrasal and prepositional verbs used as nouns—*`burn-out*, *`buyout*, *`cock-up*, *`lay-offs*, *`let-down*, *`melt-down*, *`rave-in*, *`ring-around*, *`run around*, *`set-up*, *`showdown*, *`work-around.* Note also *`bypass.*

(2) *Compounds functioning as adjectives and verbs*—These are much more limited in number than those under (1). They divide fairly evenly between those with initial accent and those with final accent:

(a) Adjectives:

(i) with initial accent: *`bloodthirsty*, *`gobsmacked*, *`headstrong*, *`hen-pecked*, *`ladylike*, *`moth-eaten*, *`seasick*, *`sell-by* (*date*), *`dumbstruck*, *`trustworthy*, *`waterproof*, *`workshy.* Those compound adjectives where N is a special application of A generally take this pattern, e.g. *`carefree*, *`lovesick*, as do those involving N + past participle, e.g. *`bedridden*, *`sunlit*, *`time-honoured*, *`weather-beaten.*

(ii) with final accent: *deep-`seated*, *faint-`hearted*, *good-`natured*, *ham-`fisted*, *long-`suffering*, *long-`winded*, *rent-`free*, *skin `deep*, *sky `blue*, *stone `dead*, *tax `free*, *tight-`knit*, *user-`friendly.* Those compound adjectives where N modifies an A generally take this pattern, e.g. *dirt `cheap*, *stone-`deaf*, as do sequences of A + V + ing and A (or ADV) + A, e.g. *easy `going*, *high `flying*, *long `suffering*, *over`ripe*, *over`due*, *red`hot.*

(b) Verbs—The number of compounds functioning as verbs (if we exclude phrasal and prepositional verbs) is very small. They usually involve initial accent, e.g. *`babysit*, *`backbite*, *`badmouth*, *`browbeat*, *`headhunt*, *`sidestep*, *`sidetrack*, *`wheelclamp*, *ring`fence.* The sequence ADV or PREP + V generally takes final accent, e.g. *back`fire*, *out`number*, *out`wit*, *over`sleep*, *under`go.*

(3) *Pseudo-compounds*—There are some complex words (often of Greek origin) made up of two bound forms which individually are like prefixes and suffixes and it is thus difficult to analyse such words as prefix plus stem or stem plus suffix, e.g. *`microwave*, *`telegram*, *`thermostat*, *an`tithesis*, *`circumflex*, *`fungicide*, *ka`leidoscope*, *`monochrome*, *`prototype.* Since they have no clear stem, these sequences are here referred to as pseudo-compounds. From these examples it can be seen that, as with compounds generally, the primary accent usually falls on the first element (but not invariably, e.g. it falls on the second element of *homo`phobic*, *hypo`chondriac*). The accentual patterns of pseudo-compounds are affected by suffixes as if they were simple stems, thus *`telephone*, *tele`phonic*, *te`lephonist*; *`photograph*, *pho`tographer*, *photo`graphic.*

Finally, it should be pointed out that the dividing line between phrase and compound is often difficult to draw. It is particularly difficult in those cases where the sequence of word classes involves regular constituents of a phrase

(and where the primary accent is kept on the second item) but where the collocation has become idiomatic (i.e. semantically specialised), as, for example, in *ethnic `cleansing, global `warming, third `world*, where A and N are regular constituents of a noun phrase but where the sequence has acquired a specialised meaning.

10.4 Word accentual instability

Variation in the accentual patterns of particular words occurs as the result of rhythmic and analogical pressures, both of which often also entail changes in vowels and, to a lesser extent, consonants.[6]

(1) *Rhythmic changes*—In some words containing more than two syllables there appears to be a tendency to avoid a succession of weak syllables, especially if these have /ə/ or /ɪ/. Thus, in words of three syllables, there is variation between [`--] and [-`-] patterns, e.g. *exquisite* /`ekskwɪzɪt/ or /ɪk`skwɪzɪt/*, *deficit* /`defɪsɪt/* or /dɪ`fɪsɪt/, *integral* /`ɪntɪgrəl/* or /ɪn`tegrəl/, *mischievous* /`mɪʃʧɪvəs/* or /mɪʃ`ʧi:vəs/ (or even /mɪʃ`ʧi:vɪəs/), *inculcate* /`ɪŋkʌlkeɪt/* or /ɪŋ`kʌlkeɪt/, *acumen* /`akjʊmən/* or /ə`kju:mən/, *kilometre* /`kɪləmi:tə/ or /kɪ`lɒmɪtə/*, *sonorous* /`sɒnərəs/* or /sə`nɔ:rəs/, *precedence* /`presɪdns/* or /prɪ`si:dns/, *inventory* /`ɪnvəntəri/* or /ɪn`ventəri/. There is variation between [-`-] and [--`] in *importune* /ɪm`pɔ:ʧu:n/ or /ɪmpə`ʧu:n/* and between [`--] and [--`] in *premature* /`premətʃə/* or /premə`ʧʊə/.

Similarly, in words of four syllables, there is variation between first and second syllable accenting, e.g. *controversy* /`kɒntrəvɜ:si/ or /kən`trɒvəsi/*, *hospitable* /`hɒspɪtəbl/ or /hɒ`spɪtəbl/*, *despicable* /dɪ`spɪkəbl/* or /`despɪkəbl/, *formidable* /fə`mɪdəbl/* or /`fɔ:mɪdəbl/, *capitalist* /`kapɪtəlɪst/* or /kə`pɪtəlɪst/, *aristocrat* /`arɪstəkrat/* or /ə`rɪstəkrat/, *metallurgy* /`metəlɜ:ʤi/ or /mə`taləʤi/*; and variation in second and third syllable accenting in *centrifugal* /sen`trɪfjʊgl/ or /sentrɪ`fju:gl/*. *Television* now has the pattern /`telɪvɪʒn/* predominantly, the variant /telɪ`vɪʒn/ being less common.

Longer words, too, often exhibit a tendency towards the alternation of accented and unaccented syllables with various rhythmic patterns, e.g. /ɑ:`tɪkjʊlətri/* or /ɑ:tɪkjʊ`leɪtəri/, *Caribbean* /kə`rɪbɪən/ or /karɪ`bi:ən/*, *necessarily* /`nesəsərɪli/ or /nesə`serɪli/*, *inexplicable* /ɪnɪk`splɪkəbl/* or /ɪn`eksplɪkəbl/.

Many compounds are subject to the accentual shift described in §12.3, e.g. *after`noon* but *'afternoon `tea.* Many others may vary in their accentual pattern between GB and GA, e.g. *Adam's `apple* (GB) vs *`Adam's apple* (GA), *peanut `butter* (GB) vs *`peanut butter* (GA), *shop `steward* (GB) vs *`shop steward* (GA), *stage `manager* (GB) vs *`stage manager* (GA), *vocal `cords* (GB) vs *`vocal cords* (GA), *`season ticket* (GB) vs *season `ticket* (GA). As can be seen, nearly all of these involve a shift from final accent in GB to initial accent in GA.

(2) *Analogical changes*—It sometimes happens that a word's accentual pattern is influenced not only by rhythmic pressure but also by the accentual structure of a related word of frequent occurrence. Thus, the ANALOGY of the root forms *apply* /ə`plaɪ/, *prefer* /prɪ`fɜ:/, *compare* /kəm`peɪ/, is responsible for the realisation of *applicable, preferable, comparable* (see also §10.3.2(3)(d)), as /ə`plɪkəbl, prɪ`fɜ:rəbl, kəm`pe:rəbl or kəm`parəbl/ rather than /`aplɪkəbl, `pref(ə)rəbl, `kɒmp(ə)rəbl/*. Again, the existence of *contribution, distribution* /`kɒntrɪ`bju:ʃn, 'dɪstrɪ`bju:ʃn/ may account for the pronunciation /`kɒntrɪbju:t, `dɪstrɪbju:t/ (*contribute, distribute*) instead of the more usual /kən`trɪbju:t, dɪs`trɪbju:t/*, where the first syllable is reduced and the last retains only a prominence based on its full vowel. In the case of *dis`pute* (n.) the verb form has generalised (contrary to the usual direction of influence noted in §10.5(2) below).

10.5 Distinctive word accentual patterns

The accentual pattern of a word establishes the relationship of its parts; it may also have a distinctive function in that it opposes words of comparable sound structure (and identical spelling). Such word oppositions (for the most part disyllables of French origin) may or may not involve phonemic changes of quality.

(1) A relatively small number[7] of pairs of noun and verb may differ only in the location of the primary accent, this falling on the first syllable in the nouns and on the second in the verbs. In most cases (though not all) the differing accentual patterns for nouns and verbs can be related to the accentual tendencies of roots given under §10.3.1. Some speakers may reduce the vowel in the first syllable of the verbs to /ə/:

	Noun	*Verb*
accent	/`aksent/ or /`aksnt/	/ak`sent/ or /ək`sent/
digest	/`daɪʤest/	/daɪ`ʤest/ or /dɪ`ʤest/
torment	/`tɔ:ment/	/tɔ:`ment/
transfer	/`transfɜ:/[8]	/trans`fɜ:/[8] or /trəns`fɜ:/
transport	/`transpɔ:t/[8]	/tran`spɔ:t/[8] or /trən`spɔ:t/

(2) In a somewhat larger number of pairs the occurrence of /ə/ or /ɪ/ in the first syllable of the verb is more regular (although the full vowel may be kept in some dialects outside GB, in particular in northern England). In a few cases there may be a reduction of the vowel in the second element of the noun:

	Noun/Adjective	*Verb*
combine	/`kɒmbaɪn/	/kəm`baɪn/
compress	/`kɒmpres/	/kəm`pres/
concert	/`kɒnsət/	/kən`sɜ:t/
conduct	/`kɒndʌkt/	/kən`dʌkt/
consort	/`kɒnsɔ:t/	/kən`sɔ:t/

contract	/ˈkɒntrakt/	/kənˈtrakt/
contrast	/ˈkɒntrɑːst/	/kənˈtrɑːst/
convict	/ˈkɒnvɪkt/	/kənˈvɪkt/
desert	/ˈdezət/	/dɪˈzɜːt/
export	/ˈekspɔːt/	/ɪkˈspɔːt/
object	/ˈɒbdʒɪkt/	/əbˈdʒekt/
perfect	/ˈpɜːfɪkt/	/pəˈfekt/
permit	/ˈpɜːmɪt/	/pəˈmɪt/
present	/ˈpreznt/	/prɪˈzent/
proceeds	/ˈprəʊsiːdz/	/prəˈsiːdz/
produce	/ˈprɒdʒuːs/	/prəˈdʒuːs/
progress	/ˈprəʊgres/	/prəˈgres/
project	/ˈprɒdʒekt/	/prəˈdʒekt/
protest	/ˈprəʊtest/	/prəˈtest/
rebel	/ˈrebl/	/rɪˈbel/
record	/ˈrekɔːd/	/rɪˈkɔːd/
refuse	/ˈrefjuːs/	/rɪˈfjuːz/[9]
segment	/ˈsegmənt/	/segˈment/
subject	/ˈsʌbdʒɪkt/	/səbˈdʒekt/
survey	/ˈsɜːveɪ/	/səˈveɪ/

Several disyllables do not conform to the general noun/verb accentual patterns or exhibit instability, e.g. *comment* /ˈkɒment/ for both noun and verb; *contact* /ˈkɒntakt/ (n.) and /ˈkɒntakt/, /kɒnˈtakt/ or /kənˈtakt/ (v.); *detail* /ˈdiːteɪl/ (n.) and /ˈdiːteɪl/ or /diːˈteɪl/ (v.); *contrast* has a verbal form /ˈkɒntrɑːst/ in addition to the more usual form given above. The verb *survey* may have the same accentual pattern as the noun in the particular sense of 'to carry out a survey'. In all these cases the noun form is tending to supersede the verbal pattern (but note /dɪsˈpjuɪt/, mentioned in §10.4(2) above, where the verb form has been generalised).

Some words containing more than two syllables also exhibit distinctive patterns (in some cases the distinction lies only in the reduced or full vowel in the last syllable):

	Noun/Adjective	*Verb*
associate	/əˈsəʊsjət, -siət, -ʃət/	/əˈsəʊsieɪt, əˈsəʊʃieɪt/
attribute	/ˈatrɪbjuːt/	/əˈtrɪbjuːt/
compliment	/ˈkɒmplɪmənt/	/kɒmplɪˈment/
		/ˈkɒmplɪment/
envelope/envelop	/ˈenvələʊp/	/ɪnˈveləp/
estimate	/ˈestɪmət/	/ˈestɪmeɪt/
interchange	/ˈɪntəʧeɪndʒ/	/ɪntəˈʧeɪndʒ/
prophecy/prophesy	/ˈprɒfəsi/	/ˈprɒfɪsaɪ/
reprimand	/ˈreprɪmɑːnd/	/reprɪˈmɑːnd/
supplement	/ˈsʌplɪmənt/	/sʌplɪˈment/
		/ˈsʌplɪment/

A small number of adjectives and verbs show a similar relationship in accentual pattern (again with some pairs having only a difference in the last full or reduced vowel):

	Adjective	*Verb*
abstract	/ˈabstrakt/	/abˈstrakt/
absent	/ˈabsənt/	/abˈsent/
frequent	/ˈfriːkwənt/	/friːˈkwent/
alternate	/ɔːlˈtɜːnət/	/ˈɔːltəneɪt/
intimate	/ˈɪntɪmət/	/ˈɪntɪmeɪt/
separate	/ˈsepərət/	/ˈsepəreɪt/

There is alternation between noun and adjective between *compact* /ˈkɒmpakt/ (n.) and *compact* /kəmˈpakt/ (adj.) and between *minute* /ˈmɪnɪt/ (n.) and *minute* /maɪˈnjuːt/ (adj.)

10.6 Acquisition of word accent by native learners

This area appears in general not to be a problem for native learners and, because of the complexities involved, it must be assumed that the accentual patterns of words are learnt individually as they are heard (unlike most foreign learners, young children hear rather than see such new words). This may even apply to morphologically complex words. Children generally place the primary accent on the correct syllable of words. However, they frequently omit unaccented syllables before the primary accent, e.g. *banana* [ˈnɑːnə], *guitar* [tɑː], *elastic* [ˈlati], or, alternatively, all such syllables may be reduced to a single shape, e.g. [rɪˈnɑːnə], [rɪˈtɑː], [rɪˈlati].

10.7 Word accent—advice to foreign learners

Many learners come from language backgrounds where word accent is regular, on the first syllable in Finnish and German, on the penultimate syllable in Polish and Spanish and on the final syllable in French and Turkish. But in English there is no such regular pattern and the differing accentual patterns of words are as important to their recognition as is the sequence of phonemes.

Although the accentual patterns are not as regular as in many other languages, there are nevertheless tendencies and the foreign learner can definitely be helped by learning some of these tendencies. In particular he should pay attention to the influence of suffixes on the placement of primary accent (§10.3.2), noting whether the suffix leaves the accent on the stem unchanged (as with the inflexional suffixes, with adjectival *-y*, with adverbial *-ly* and with *-er* and *-ish*), whether it takes the accent itself (as with *-ation*) or whether it moves the accent on the stem (as with *-ate* and *-ity*).

Learners should also pay particular attention to the role of accentual contrast in those cases where word classes are distinguished by a shift of accent (§10.5),

at the same time making appropriate reduction of unaccented vowels. They should not, however, extend such variation of accentual patterns indiscriminately to all disyllables, e.g. *report*, *delay*, *select*, *reserve*, *account*, which have the same pattern in both verb and noun/adjective functions.

10.8 Elision and epenthesis

Since OE, it has always been a feature of the structure of English words that the weakly accented syllables have undergone a process of reduction, including loss of vowels and consonants (see §6.3). The same process of reduction, with resultant contraction, may be observed in operation in GB. It is important, however, to distinguish between cases of ELISION which have been established in the language for some time (although the spelling may still reflect an earlier, fuller form) and those which have become current only recently. In these latter cases, the forms exhibiting elision are typical of rapid and casual speech, whereas slower, more careful speech tends to retain the fuller form under the preservative influence of the spelling. The examples of elided word forms in casual speech which are given below are independent of the type of reduction affecting unaccented words and syllables in connected speech (see §12.4.6).

(1) *Vowel elision*[10]

(a) *Historical*—Loss of weakly accented vowels in words has regularly occurred in the history of English and often shows up in discrepancies between spelling and pronunciation, e.g. in *Gloucester* /glɒstə/, *forehead* /ˈfɒrɪd/, *gooseberry* /ˈgʊzbri/.

(b) *Present*—In GB elision is likely to take place in a sequence of unaccented syllables, particularly where /ə/ and /ɪ/ are involved. Thus, in positions after the primary accent, particularly in the sequence consonant + /ə/ + /r/ + reduced vowel, the /ə/ between the C and the /r/ is regularly lost, e.g. in *preferable* /ˈprefrəbl/; similar reductions occur in *repertory*, *comparable*, *territory*, *lavatory*, *anniversary*, *vicarage*, *category*, *factory*, *robbery*, *murderer* /ˈmɜːdrə/, *customary*, *camera*, *honourable*, *satisfactory* /sasˈfaktri/, *suffering*, *beverage*, *rhinoceros*, *nursery*, *Nazareth*, *fisheries*, *treasury*, *natural* /ˈnaʧrəl/, *dangerous*, *utterance*, *history*, *ordinary*. Though generally a feature of casual speech, these elisions often occur regularly within the speech of an individual, the fuller version not forming a part of his idiolect. A more recent development[11] concerns the sequence /r/ + weak vowel + C, in which the weak vowel may be elided, leaving a preconsonantal (possibly syllabic) /r/ (even though /r/ does not normally occur before a consonant in GB), e.g. *barracking* /ˈbarkɪŋ/, *borrowing* /ˈbɒrwɪŋ/, *Dorothy* /ˈdɒrθi/, *barrier* /ˈbarjə/.

In the same way, there may be an elision of a weak vowel following a consonant and preceding /l/, or the reduction of syllabic [ɬ] to syllable-marginal /l/, in words

like *grappling*, *doubling*, *fatalist*, *paddling*, *bachelor*, *specialist*, *usually*, *insolent*, *easily*, *carefully*, *buffalo*, *novelist*, *family*, *panelling*, *particular*, *chancellor*. Note, too, frequent loss of post-primary /ə/ or /ɪ/ in *university* /juːnɪˈvɜːsti/, *probably* /ˈprɒbbli/, *difficult* /ˈdɪfklt/, *national* /ˈnaʃnl/, *fashionable* /ˈfaʃnəbl/, *reasonably* /ˈriːznəbli/, *parliament* /ˈpɑːlmənt/. A similar process may apply with the loss of syllabicity in the present participles of verbs such as *flavour*, *lighten* and *thicken* where the /ə/ may be elided or the syllabic consonant [n̩] replaced by a non-syllabic consonant marginal to the syllable. Thus /ˈfleɪvrɪŋ/, /ˈlaɪtnɪŋ/ and /ˈθɪknɪŋ/ in place of /ˈfleɪvərɪŋ/, /ˈlaɪtənɪŋ/ and /ˈθɪkənɪŋ/ respectively. It may be noted that some speakers make a regular distinction between the participle with three syllables and the noun of two syllables exhibiting elision, e.g. *lightning* /ˈlaɪtnɪŋ/ and *lightening* /ˈlaɪtənɪŋ/.

In pre-primary positions, /ə/ or /ɪ/ of the weak syllable preceding the primary accent is apt to be lost in rapid speech, especially when the syllable with primary accent has initial /l/ or /r/,[12] e.g. in *police*, *parade*, *terrific*, *correct*, *collision*, *believe*, *balloon*, *barometer*, *direction*, *delightful*, *gorilla*, *government* /ˈgʌvmənt/, *ferocious*, *philology*, *veranda*, *voluptuous*, *saloon*, *solicitor*, *syringe*, *charade*; also, with a continuant consonant preceding and a consonant other than /l/ or /r/ following, e.g. in *phonetics*, *photography*, *thermometer*, *supporter*, *suppose*, *satirical*, *circumference*. Note, too, the elision of /ə/ in *perhaps* /pˈhaps/ and of /ɪ/ in *geometry* /ˈʤɒmətri/, *geography* /ˈʤɒgrəfi/.

(2) *Consonant elision*

(a) *Historical*—The reduction of many consonant clusters has long been established, e.g. initial /w,k,g,/ in *write*, *know*, *gnaw*; medial /t/ + /n/ or /l/ in *fasten*, *listen*, *often*, *thistle*, *castle*; post-vocalic /h/ in *brought*, *night*; post-vocalic [ɬ] in *baulk*, *talk*, *walk*; and final /b,m/ in *lamb*, *tomb*, *hymn*.

(b) *Present*—In GB /t,d/ may be lost when medial in a cluster of three consonants, although retention of /t,d/ is characteristic of careful speech, e.g. *handsome*, *windmill*, *handbag*, *friendship*, *kindness*, *landlord*, *landscape*, *lastly*, *restless*, *wristwatch*, *Westminster*, *coastguard*, *dustman*, *mostly*, *perfectly*, *exactly*, *facts*. /θ/ is normally elided from *asthma* and *isthmus* and may sometimes be omitted from *months*, *twelfths*, *fifths*, as is /ð/ from *clothes*; and in rapid speech elision of /k/ in *asked* and /l/ in *only* may occur. [ɬ] is apt to be lost when preceded by /ɔː/ (which has a resonance similar to that of [ɬ]), e.g. *always* /ˈɔːwɪz/, *already* /ɔːˈredi/, *although*, /ɔːˈðəʊ/, *all right* /ɔːˈraɪt/, *almanac* /ˈɔːmənak/.

/p/ may be lost in clusters where its position is homorganic with that of a preceding plosive, e.g. *glimpse* /glɪms/. In words like *attempts* and *prompts*, both /p/ and /t/ may be elided, e.g. /əˈtems/, /prɒms/. Elision is less common in the sequence /ŋks/ in *inks*.

Where there are two /r/s in a word, one of them in an unaccented syllable may be elided, e.g. *pronunciation* /pəˈnʌnsieɪʃn/, *programme* /ˈpəʊgram/, *secretary* /ˈsekətri/, *extraordinary* /ɪkˈstrɔːdni/. In some words whole syllables may be elided, e.g. *literary* /ˈlɪtri/, *February* /ˈfebri/, *library* /ˈlaɪbri/, *temporarily* /ˈtemprəli/, *primarily* /ˈpraɪmrəli/. Whole syllables may even be elided where there is only one /r/ in the full form, e.g. *temperature* /ˈtemʧə/,

(3) *Epenthesis*[13]
The elision of /t/ in words like *vents* is sometimes counterbalanced by a type of EPENTHESIS whereby a /t/ in inserted in words like *dance, fence, sense, bounce*, so that *tents* and *tense* may sound the same as either /tens/ or /tents/. Epenthetic /t/ may also occur before /θ,ʃ/ as in *anthem* /ˈan(t)θəm/, *pension* /ˈpen(t)ʃən/, (but in the latter there is no coalescence to /ʧ/—see §9.3). Such alternation does not apply following /l/, so that *else* and *melts* have distinct final clusters.

While epenthetic /t/ occurs between an /n/ and /θ,s,ʃ/, similarly an epenthetic /p/ or /k/ may occur between an /m,ŋ/ and a following fricative as in *triumphs* /traɪʌm(p)fs/, *warmth* /wɔːm(p)θ/, *confuse* /kəm(p)ˈfjuːz/, *Kingston* /ˈkɪŋ(k)stən/.

Epenthesis is less common before a voiced fricative, e.g. in *lambs* /lam(b)z/, *rings* /rɪŋ(g)z/, so *wins* is rarely pronounced the same as *winds* /wɪn(d)z/. If there is epenthesis in *king-size*, note that it is a /g/ that is inserted, i.e. /ˈkɪŋ(g)saɪz/, suggesting that *king* has a different base form from *Kingston* /ˈkɪŋ(k)stən/.

10.9 Variability in the phonemic structure of words

In connected speech English words exhibit variations of accentual pattern and changes of a phonemic or phonetic kind, involving assimilation and elision, especially at word boundaries (see Chapter 12). There is also often a remarkable latitude in the choice of phonemes used in words when said in isolation by GB speakers. Even with the exclusion of cases of differing phonemic inventories —e.g. the choice between using /hw/ or /w/ for *wh* words or /ɔː/ or /ɔə/ in words of the *bore* type—there remains a high degree of variability within the same variety of pronunciation. The permissible variations concern mainly vowels but a few cases of a choice of consonant also occur. The following are examples within GB:

(1) *Vowels*
/iː/~/ɪ/ *acetylene, economy*; ~/e/ *economics, premature, paracetamol*; ~/eɪ/ *deity*; ~/aɪ/ *Argentine, iodine*
/ɪ,i/~/e/ *alphabet, orchestra*; ~/aɪ/ *privacy, dynasty*; ~/eɪ/ *magistrate, holiday*; ~/ə/ *believe, system, adequate*
/e/~/eɪ/ *again, maintain*; ~/ə/ *accent*; ~/a/ *extraordinarily* /-erili, arili/.
/a/~/ɑː/ *graph, translate*; ~/eɪ/ *patriot, apical*; ~/ə/ *agnostic*

/ɒ/~/ɒ/ *constable, combat*; ~/ə/ *bankrupt*
/ɔ/~/ɔɪ/ *salt, wrath, Australia*; ~/ə/ *obscure, obligatory*
/ɔə/~/ʊə/ *sure, poor*
/ʊ/~/uː/ *room, groom*
/uː/~/juː/ *suit, supreme*
/eɪ/~/ɑː/ *data, esplanade*
/əʊ/~/ə/ *allocate, phonetics*

(2) *Consonants*
/t/~/tj/~/ʧ/ *amateur*; /tj/~/ʧ/ *actual, Christian*; /dj/~/ʤ/ *educate, grandeur*; /dʒ/~/ʒ/ *garage*; /g/~/ʤ/ *pedagogic*; /nʧ/~/nʃ/ *French, branch*; /nʤ/~/nʒ/ *revenge, strange*; /k/~/kw/ *quoits*; /ŋk/~/ŋ/ *anxious*; /ŋg/~/ŋ/ *English, language, linguistic*; /sj/~/sɪ/~/ʃɪ/ *associate*; /sj/~/ʃ/ *issue, sexual*; /zj/~/ʒ/ *usual, azure*; /ʃ/~/ʒ/ *Asia*; /s/~/z/ *usage, unison*; /f/~/p/ *diphthong, naphtha*

10.10 Phonotactics

PHONOTACTICS, or the way that phonemes combine, shows that English does not exploit all the possible combinations of its phonemes in syllables and words. For instance, long vowels and diphthongs do not precede final /ŋ/;[14] /e,a,ʌ,ɒ/ do not occur finally; and the consonant clusters permitted are subject to constraints in both initial and final positions. Initially, /ŋ/ does not occur; no combinations are possible with /ʧ,ʤ,ð,z/; /r,j,w/ can occur in clusters only as the non-initial element; such initial sequences as /fs,mh,stl,spw/ are unknown. Finally, only /l/ may occur before non-syllabic /m,n/; /h,r,j,w/ do not occur in the type of phonemic analysis here used (see §§8.2, 8.5); and terminal sequences such as /kf,ʃp,lð,ʒbd/ are not used.

Although the general pattern of word-initial and word-final phoneme sequences is plain, there are certain problems:

(1) Some sequences are exemplified only by single words which are themselves of rare occurrence, e.g. /smj-/ *smew*, /gj-/ *gules*. Nevertheless such sequences are generally included in the statements of potential clusters given in Table 15.
(2) Some sequences are exemplified only by their use in certain proper names, e.g. /gw-/ *Gwen* (and various other names of Welsh origin). Again, such sequences are generally included in Table 15.
(3) Some sequences are exemplified only in recently imported foreign words, often themselves proper names, e.g. a number of words, including *schnapps* and *Schweppes*, involving initial clusters beginning with /ʃ/. If such words are judged to be in common use, the clusters they exemplify are included, but marked as such, in the statements in Table 15.
(4) Sometimes a word or a group of words have more than one accepted pronunciation, one of which provides a unique sequence of phonemes. Thus *width, breadth, hundredth* have variants with /tθ/ or /dθ/; only the

more common /tθ/ is included in Table 16, since /dθ/ is the less common pronunciation, and /tθ/ follows a common pattern whereby all final clusters involving plosives, fricatives and affricates are either wholly voiceless or wholly voiced. Words like *French*, *range* can be pronounced with /nʃ,ntʃ/ or /nʃ,nʒ/; both possibilities are common and have been included here. Though many speakers do not distinguish the final clusters of *prince* and *prints* (see §10.8(3) above), the possibility is sufficiently widespread for both /-ns/ and /-nts/ to be considered as possible final clusters.

(5) An attempt to include sequences of consonant plus syllabic nasal or lateral would unnecessarily complicate the statement of word-final clusters; such sequences are therefore taken as a variant of /ə/ plus nasal or lateral.

(6) The greater complexity of final consonant clusters is largely accounted for by the fact that final /t,d,s,z/ frequently represent a suffixed morpheme (e.g. possessive <-s> or past tense <-ed>). However, because there are a few monomorphemic words like *axe* /aks/, *text* /tekst/, the statement of word-final clustering possibilities would not be significantly simplified by excluding such suffixes. It would, however, be simplified if /t,d,s,z,θ/ were treated as appendices or 'extrametrical' to the basic syllable structure (particularly since the sonority hierarchy is often violated—see §§5.5.1–5.5.3). Such treatment of /s/ as an appendix could be extended to its occurrence in word-initial position, which would eliminate all three-member clusters in that position. But, in the interests of keeping as near as possible to a statement of actually occurring sequences, these simplifications are not applied here.

10.10.1 Word-initial phoneme sequences

(1) *V*

The following ten vowels constitute monosyllabic words /iː/ the letter <e>, /ə/ *a*, /ɑː/ *are*, /ɔː/ *or*, /ɜː/ *err*, /eɪ/ the name of the letter <a>, /aɪ/ the name of the letter <i>, /əʊ/ *owe* and the name of the letter <o>, /ɪə/ *ear*, /ɛː/ *air*. In addition, /i/ occurs as a weak form of *he*, /u/ as a weak form form of *who*, /uː/ for the the exclamation *ooh* and /ɔɪ/ may occur in the exclamation *oy!*

(2) *Initial V*

All vowels occur initially. /ʊ/ and /ʊə/ occur only in such foreign proper names as *Uppsala*, /ʊpˈsɑːlə/ and *Urdu* /ˈʊədu/

(3) *Initial CV*

/ŋ/ does not occur initially. /ʒ/ occurs initially before /ə/, /ɪ/, /iː/, /a/, /ɒ/ and /ɑː/ in such foreign words as *Genet*, *gigolo*, *Zhivago*, *gigue*, *gite*, *jabot*, *genre* and *gendarme*. The other consonants generally occur before all vowels, though marked deficiencies are evident before /ʊə,ʊ,ɔɪ/.

(4) *Initial CC(V)*

Initial CC(V) are shown in Table 15.

Table 15 Initial CC(V) clusters in GB.

	l	r	j	w	p	t	k	m	n	f	v
p+	●	●	●	○							
b+	●	●	●	○							
t+		●	●	●							
d+		●	●	●							
k+	●	●	●	●							
g+	●	●	●	●							
f+			●	○							
v+			●	○							
θ+			●								
ð+			●								
s+	●	●	●								
z+	○	○	●	○							
ʃ+		●	●	●							
h+	●	○	●	●	●	●	●	●	●	○	○
tʃ+	○	●		○	○	○		○	○		
dʒ+			●								

● occurs freely ○ occurs in recent imports

(1) /C/ occurs almost only before /uː,ʊə/, e.g. *cute*, *cure*; it also occurs before /ɔː/ in words when /ɔː/ is preferred as an alternative to /ʊə/, e.g. *moor*, *poor*, *sure*. /mj-/ occurs in *music*, *museum*, *mutiny*.

(2) /Cw/ clusters are heard in a number of recent imports from French, e.g. *puissance* /ˈpwiːsəns/, *boîte* /bwat/, *moi* and *moire* both /mwɑː/, *(bête) noire* /nwɑː/, *voyeur* /vwaˈɜː/. Initial /tw,dw,gw/ only occur before a restricted set of vowels. /hw/ is no longer current as an initial GB sequence (though it persists in some other accents, e.g. Scottish).

(3) /vl-/ and /vr-/ occur in *Vladivostok* and *vroom*, /sr-/, /sf/ and /sv-/ in *Sri Lanka*, *sphinx* and *svelte*, and /ʃl-, ʃw-, ʃp-, ʃt-, ʃm-, ʃn-/ in a number of imports mainly from German and Yiddish, e.g. *Schlesinger*, *schwa*, *spiel*, *shtook*, *schmalz*, *schnapps*.

(5) *Initial CCC(V)*

/s/ is the essential first element of CCC clusters; the second element is a voiceless stop; the third element must be one of /l,r,j,w/. Of the 12 potential CCC sequences, /spw-, stl-, stw-/ do not occur. /CCj/ occurs only before /uː/ or /ʊə/, e.g. *scuba*, *skewer*; /skl-/ occurs only before /ə/, though the items *sclerosis*, *sclerotic* admit the variants /skle-, sklɪ-, sklɪə-/. The name of the bird *smew* provides a single example of the initial sequence /smj-/.

10.10.2 Word-final phoneme sequences

(1) *Final V*

No short vowels apart from /i,u/ occur in final position.

(2) *Final (V)C*

/r,h,j,w/ do not occur finally in the present phonemic analysis of GB (see note to §8.2). /ʒ/ occurs finally only after /iː,ɑː,uː,eɪ/ in words of recent French origin, like *liege*, *camouflage*, *rouge* and *beige*. /ŋ/ occurs only after /ɪ,a,ʌ,ɒ/.

(3) *Final (V)CC*

These are shown in Table 16.

Table 16 Final (V)CC clusters in GB.

	p	b	t	d	k	ʧ	ʤ	m	n	f	v	θ	s	z	ʃ	ʒ
p+																
t+																
k+																
b+																
d+																
g+																
ʧ+																
ʤ+																
m+																
n+																
ŋ+																
l+																
f+																
v+																
θ+																
ð+																
s+																
z+																
ʃ+																
ʒ+																

Final CC clusters fall into two groups:
(i) Nasal, lateral, or /s/ plus another consonant, e.g. *jump, bend, dent, think; quilt, bulk; whist, cask, cusp*
(ii) A plosive or fricative plus one of the apicals /t,d,s,z,θ/. The majority of such clusters arise from suffixation of /t,d/ or /s,z/, e.g. *laughed, behaved, cat's* or *cats, dog's* or *dogs, hits, leads*. Such clusters also arise from ordinal and noun marking /θ/, e.g. *fifth, depth*. There are a small number of monomorphemic words of these sorts, e.g. *act, axe, adze, convict, corpse, fact, gift, lapse, ox, product, quartz, sect*

/g,ŋ/ do not occupy the second position in a final CC cluster. /θ/ is of limited occurrence in this position: /-pθ/ occurs only in *depth*, /-mθ/ only in *warmth*, and /-fθ/ only in *fifth* and *twelfth*. /-lm, -lnd/ occur only in *elm, film, helm, kiln* and *realm*, /-lʃ/ only in *Welsh* and possible in *squelch* and *belch* (both of which may also have /-ltʃ/).

(4) *Final (V)CCC*
These are shown in Table 17.

(5) *Final (V)CCCC*
Final CCCC clusters occur only rarely, as a result of the suffixation to CCC of a /t/ or /s/ morpheme, e.g. /-mpts/ *prompts, exempts*; /-mpst/ *glimpsed*; /-lkts/ *mulcts*; /-lpts/ *sculpts*; /-lfθs/ *twelfths*; /-ntθs/ *thousandths*. Such clusters are regularly reduced from CCCC to CCC by omission of the third element of the cluster. In cases like /-ksts/ *texts*, /-ksθs/ *sixths* there is less likelihood of reduction though even these may become [teksːs], [sɪksːs] with a double length representing /ss/.

(6) Final clusters involving /t,d,s,z,θ/, as well as initial clusters beginning with /s/, violate the sonority hierarchy (see §5.5.1 above) and a much simpler

Table 17 Final (V)CCC clusters in GB.

			ts									θs	st
												θs	st
													st
			ts										st,sθ
											fs		
	pt,ps		tθ,ts	dz		ʃt	ʤd					θs	st,zd
					kt,kθ,ks				nd				st
	pt,ps	bz	ts	dz	kt,ks	ʃt	ʤd	mz	nz	fθ,fs	vd,vz	θs	st
			ts									θs	
	pt,ps		ts		kt,ks								

Final CCC clusters fall into two groups:
(i) Those which involve a combination of the two types of CC clusters, i.e. /m,n,ŋ,l,s/ plus C plus /t,d,s,z,θ/. These nearly all involve suffixes, e.g. *jumps, cults, lists* but there are a few monomorphemic words, e.g. *mulct, calx*.
(ii) Those which involve the double application of /t,d,s,z,θ/; the majority again involve suffixes, e.g. *fifths* /fɪfθs/, *products* /ˈprɒdʌkts/, *acts* /akts/. These are all commonly reduced to /fɪfs/, /ˈprɒdʌks/, /aks/). There are two common monomorphemic words, *text* and *next* pronounced /tekst/, /nekst/ also commonly reduced to /teks/ and /neks/.

CCC clusters predominantly follow short vowels. 10 of the 49 CCC final clusters occur after only one vowel: 4 after /ɪ/ as in *midst, sixth, kilns, fifths*, 4 after /e/ as in *depths, lensed, length, twelfth*, 1 after /ʌ/ as in *bulged*, 1 after /ə/ *thousandth*; many of these can with elision be reduced to two consonants.

statement about English phonotactics (particularly that part concerning final clusters) can clearly be made if such consonants, which are all apical obstruents, are treated as appendices and excluded from the basic statement.

(7) With a vowel inventory of 20 items and the possible initial and final consonant clusters given above, it is clear that a large number of potential combinations are not utilised. Thus, such unused monosyllabic words as the following conform to an already existing pattern: /faʊd, saɪʤ, mɒmp, bruːʧ, pliːk, splʌk, streʤ/. If, in addition, gaps were filled on the grounds of general patterning, it would be possible to construct words of an English phonological character with, for instance, initial /ʧʊ-, rɜː-, glɔɪ-, skɪə-, sprəʊ-/ or final /-ɔːg, -aɪʃ, -uːnt, -ɑːnʤ, -ʌkst/, etc.

10.10.3 Word-medial syllable division

Word-medial consonant sequences are of course longer than those in initial and final positions since they combine syllable-coda and syllable-onset positions. While word-initial naturally equates with syllable-onset and word-final with syllable-coda, any word-medial sequence has to be divided between coda and onset. (In this section syllable division is marked by a stop, e.g. /əˈrəʊ.mə/.) Some of the criteria for dividing such sequences have already been discussed in §5.5.3. The three basic criteria are morphemic (syllable boundaries should

correspond with morpheme boundaries); phonotactic (syllable division should accord with what we know about syllable onsets and codas from word-initial and word-final positions); and allophonic (syllable division should predict correct allophonic variation). These principles sometimes conflict or give no clear answer. A further principle is sometimes applied in such cases, the maximal onset principle,[16] which sets a preference for assigning consonants to onsets on the basis that onsets are more commonly complex in languages than codas. The little experimental evidence that there is also suggests a general preference for onset syllabification.[16]

The case of single medial consonants is exemplified by *motive* (with a long vowel in the accented first syllable) and by *butter* (with a short vowel in the accented first syllable). In the case of *motive*, the phonotactic principle is satisfied either way while the application of the allophonic principle is uncertain (there is no instrumental evidence about possible shortening before /t/ although it is probable that this does not apply). So, using the maximal onset principle, *motive* is generally syllabified as /ˈməʊ.tɪv/, as are other similar words with a long vowel, e.g. *autumn*, *suitor*, *survey*. In the case of *butter*, words do not end in /ʌ/ so the phonotactic principle suggests /ˈbʌt.ə/, which accords with the allophonic shortening of /ʌ/ before /t/ and the same syllabification is generally applied to similar words with a short vowel, e.g. *bitter*, *supper*, *knickers*.

Medial CC sequences are exemplified in *sequel* (with a long vowel in the accented first syllable) and *petrol* (with a short vowel in the accented first syllable). In the case of *sequel*, both /siː.kwəl/ and /siːk.wəl/ are divisions which accord with the phonotactic principle. However, /ˈsiː.kwəl/ accords better with the allophonic principle whereby the /w/ following /k/ is devoiced. This syllabification applies to other cases of CC following a long vowel, e.g. *programme*, *perfume*, *awkward*. In the case of *petrol*, /pet.rəl/ accords with the phonotactic principle, but does not accord with the allophonic devoicing of /r/, whereas /pe.trəl/ correctly predicts the devoicing of /r/ (following /t/), but does not accord with the phonotactic principle (words do not end in /e/). Applying the maximal onset principle resolves the problem in favour of the latter solution. In *window* the phonotactic and allophonic principles would allow both /ˈwin.dəʊ/ and /ˈwɪnd.əʊ/; the maximal onset principle decides in favour of /ˈwɪn.dəʊ/. The phonotactic principle would give us /ˈplas.tɪk/ but the allophonic principle suggests /ˈpla.stɪk/ because of the unaspirated /t/ and this is endorsed by the maximum onset principle as well as being in accord with the experimental evidence.[17]

The case of longer medial sequences is exemplified by *extra* /ekstrə/. The /k/ belongs in the coda of the first syllable by both phonotactic and allophonic principles and the /tr/ belongs in the onset (/r/ is devoiced). These two principles give us no solution to the assignment of /s/, which we place in the second syllable by the maximal onset principle, giving /ˈek.strə/.

All the patterns which have been dealt with so far have concerned consonantal sequences following the primary accent. Examples preceding the primary accent most frequently involve consonants containing the typical vowels of unaccented syllables /ə/ and /ɪ/ and in such examples the phonotactic principle together with

the maximal onset principle generally leads to the whole sequence being syllabified with the following syllable, e.g. /ə.ˈkwaɪə/, /rɪ.ˈkwest/, /ə.ˈpləːz/, /ə.ˈstjuːt/, /ə.ˈspærəgəs/. Similarly, in those, less frequent, cases where a full vowel precedes the primary accent, the phonotactic principle usually applies, e.g. /mem.ˈtem/, /sep.ˈtembə/ and /bap.ˈtaɪz/.

Most of the examples above have concerned disyllabic words. The general principles apply in similar fashion in longer words, with clusters before and after secondary accent behaving the same as those around a primary accent, e.g. /ɛn.saɪ.kləʊ.ˈpiː.dɪə/, /ˈal.juː.ˈmɪn.ɪəm/, /ˈkaŋ.gə.ˈruː/, /ˈmak.m.tɒʃ/. The morphemic principle applies regularly in compound words but note that inflexional /-ɪd/ and /ɪz/ regularly lead to resyllabification according to the patterns for monomorphemic words outlined above, e.g. /saɪt/ vs /ˈsaɪ.tɪd/, /vaɪs/ vs /ˈvaɪ.sɪz/.

An alternative solution to ambiguous medial sequences can be achieved with the notion of ambisyllabicity; by this means the /t/ in *butter*, the /t/ in *petrol* and the /s/ in *extra* are regarded as ambisyllabic, i.e. they straddle the syllable boundary. For plosives the compression stage could belong to the first syllable and the plosion and release to the second; for fricatives the boundary would simply be in the middle. Phonetically this seems a credible solution. Unfortunately it would considerably complicate the overall statement of permissible clusters.

10.10.4 Inflexional suffix formation

Inflexional suffixes (which do not normally affect accent) follow certain rules which affect segmental aspects of pronunciation. The following regularities may usefully be listed here.

(1) *Past tense*

For regular verbs in which the past tense is signalled by the addition of an *-ed* ending, the following rules of pronunciation apply:

(a) If the stem ends in /t/ or /d/, add /-ɪd/, e.g. *exclude* /ɪkˈskluːd, ɪkˈskluːdɪd/; *guard* /gɑːd, ˈgɑːdɪd/; *rot* /rɒt, ˈrɒtɪd/; *target* /ˈtɑːgɪt, ˈtɑːgɪtɪd/. Otherwise:

(b) If the stem ends in any voiced sound (apart from /d/), add /-d/, e.g. *buzz* /bʌz, bʌzd/; *hammer* /ˈhamə, ˈhaməd/; *kill* /kɪl, kɪld/; *listen* /ˈlɪsn, ˈlɪsnd/.

(c) If the stem ends in any voiceless consonant (apart from /t/), add /-t/, e.g. *arch* /ɑːʧ, ɑːʧt/; *immerse* /ɪˈmɜːs, ɪˈmɜːst/; *kick* /kɪk, kɪkt/; *sniff* /snɪf, snɪft/.

(2) *Plural/possessive/third person singular present tense*

(a) If the stem ends in a sibilant (/s,z,ʃ,ʒ,ʧ,ʤ/), add /-ɪz/, e.g. *address* /əˈdres, əˈdresɪz/; *arch* /ɑːʧ, ˈɑːʧɪz/; *graze* /greɪz,ˈgreɪzɪz/; *judge* /ʤʌʤ, ˈʤʌʤɪz/; *rush* /rʌʃ, ˈrʌʃɪz/. Exceptionally, the voicing of the fricative in *house* changes: /haʊs, ˈhaʊzɪz/. Otherwise:

(b) If the stem ends in any non-sibilant voiced sound, add /-z/, e.g. *blow* /bləʊ, bləʊz/; *pattern* /ˈpatn, ˈpatnz/; *regard* /rɪˈgɑːd, rɪgˈɑːdz/; *thrill* /θrɪl, θrɪlz/.

(c) If the stem ends in any non-sibilant voiceless consonant, add /s/, e.g. *laugh* /lɑːf, lɑːfs/; *pick* /pɪk, pɪks/; *resort* /rɪˈzɔːt, rɪˈzɔːts/.

(3) *Present participle*
In all cases, add /-ɪŋ/, e.g. *kill* /kɪl, ˈkɪlɪŋ/; *laugh* /lɑːf, ˈlɑːfɪŋ/; *sing* /sɪŋ, ˈsɪŋɪŋ/; *trim* /trɪm, ˈtrɪmɪŋ/. For cases where the stem ends in /ɛː,ɑː,ɔː,ɜː,ɪə,ʊə/, see (6) below. For stems ending in syllabic [n] or [l] the syllabic nature of the nasal or lateral is frequently retained, e.g. *handle* [ˈhandl, ˈhandlɪŋ]; *widen* [ˈwaɪdn, ˈwaɪdnɪŋ]. However, some speakers may insert a /ə/, retaining the same number of syllables, thus /ˈhandəlɪŋ, ˈwaɪdənɪŋ/; while for others the nasal or lateral may lose its syllabic function, thus [ˈhandl, ˈhandlɪŋ]. It should be noted that in such cases, the quality of the /l/ is usually altered, the dark, syllabic [l] of [handɫ] being replaced by a non-syllabic, clear [l]. (See also §10.8(1)(b).)

(4) *Comparison of adjectives*
For those adjectives whose comparative and superlative degrees are formed by the suffixing of *-er* and *-est* respectively, the pronunciation of the stem remains unchanged except in the case of stems ending in /ŋ/ or /r/ (see (5) and (6) below). Thus /ə/ and /ɪst/ are regularly added, as in *easy* /ˈɪzɪ, ˈiːzɪə/ (or ˈiːzɪə or ˈiːzjə), ˈiːzɪɪst (or ˈiːzjɪst), *great* /greɪt, ˈgreɪtə, ˈgreɪtɪst/; *big* /bɪg, ˈbɪgə, ˈbɪgɪst/. In all the superlative forms /ə/ is as common as /ɪ/, e.g. /ˈbɪgəst/.

(5) *Stems ending in* /ŋ/
When the comparative and superlative suffixes are added to stems ending in /ŋ/, a /g/ is inserted, e.g. *long* /lɒŋ, ˈlɒŋgə, ˈlɒŋgɪst/, *strong* /strɒŋ, ˈstrɒŋgə, ˈstrɒŋgəst/. In all other cases, the /ŋ/ is followed immediately by the suffix, e.g. participle *-ing* in *longing* /ˈlɒŋɪŋ/, adjectival modifier *-ish* in *longish* /ˈlɒŋɪʃ/, or agentive *-er* in *hanger* /ˈhaŋə/, *singer* /ˈsɪŋə/. It should be noted that monomorphemic words (not formed of a stem and affix) exhibit the sequence /-ŋg-/ intervocalically, e.g. *anger* /ˈaŋgə/, *finger* /ˈfɪŋgə/.

(6) */r/-links in suffix formation*
In the case of words which end in /ɛː,ɑː,ɔː,ɜː,ə,ɪə,ʊə/ (usually corresponding to an <r> in the spelling), an /r/-link is regularly inserted between the final vowel of the stem and any initial vowel of the suffix, e.g. present participles *blur* /blɜː, ˈblɜːrɪŋ/; *secure* /sɪˈkjʊə, sɪˈkjʊərɪŋ/; *stare* /stɛː, ˈstɛːrɪŋ/; *store* /stɔː, ˈstɔːrɪŋ/; comparative and superlative adjectives (stem + /ə,ɪst/) *clear* /klɪə, ˈklɪərə, ˈklɪərɪst/. This process applies to derivational as well as to inflexional suffixes, e.g. adjectival *-y*, e.g. *star* /stɑː, ˈstɑːri/; agentive noun *-er*, e.g. *murder* /ˈmɜːdə, ˈmɜːdərə/; verb-forming *-ise*, e.g. *familiar* /fəˈmɪlɪə, fəˈmɪlɪəraɪz/. /r/-linking before inflexions where there is no orthographic <r> in the stem is unacceptable to some native speakers who have prescriptive opinions about the language, e.g. in *drawing*, *gnawing* /ˈdrɔːrɪŋ, ˈnɔːrɪŋ/ (see further in §§12.4.7(1), 12.5(3)).

10.10.5 Acquisition of phonotactics by native learners

Children often have special problems with the acquisition of consonant clusters in syllable-initial positions, even after they have acquired the individual members of the clusters. With two-term clusters consisting of fricative + C (most commonly /s/) and C + /l,r,w,j/, there is often a reduction to the single C, e.g. *smoke* → [məʊk], *spin* → [pɪn], *please* → [piːz], *queen* → [kiːn]. Clusters of /s/ + /l,r,w,j/ may be reduced to either element, e.g. *slow* → [səʊ] or [ləʊ]. In the case of the fricative plus C type, a possible, somewhat later, development (which may at first glance look like a regression) involves a feature merger, whereby a single consonant replaces the two consonants of the adult cluster, the single consonant taking at least one feature from each of the two consonants, e.g. *spin* → [fɪn], *fling* → [ɬɪŋ], *sleep* → [liːp], *smoke* → [ɱəʊk]. When the two elements of the cluster are used, there may still be a difficulty in timing the relationship between the two elements: for example, a short intrusive, or EPENTHETIC, vowel (typically /ə/) may be inserted, or one of the elements may be improperly lengthened, e.g. *sport* [sᵊpɔːt] or [sːpɔːt], *slow* [sᵊləʊ] or [sːləʊ].[18] Some sequences give particular problems: /st/ sometimes occurs with metathesis as /ts/ (perhaps because it is a homorganic sequence); clusters with /r/ are often very late acquisitions because /r/ as a single consonant is a late acquisition.

The course of development of syllable final clusters is less well known because the interval of time between the development of single consonants and clusters is shorter and because the development of word-final clusters is often partly a question of the learning of inflexions.

10.10.6 Phonotactics—advice to foreign learners

Foreign learners may introduce epenthetic vowels into English consonantal clusters: so a word like *sport* may be pronounced as /səˈpɔːt/ (and hence homonymous with *support*) or as /eˈspɔːt/ or /əˈspɔːt/ (and hence homonymous with *a sport*). Difficult clusters can sometimes be acquired by pronouncing a sequence of consonants across a word boundary and then dropping the earlier part of the first word: thus /st/ may be acquired by practising first with a phrase like *bus stop* or even medially in a bimorphemic word, e.g. *mistake* and then reducing these to *stop* and *steak*.

Many languages have only open syllables, e.g. Hindi, Italian and Bantu languages. Speakers of such languages should be careful not to introduce a final vowel, e.g. by adding an [ə] to *bit* making it sound like *bitter*. A similar sort of problem can apply to those languages, like French, which tend to more regularly explode their final plosives.

10.11 Consonant harmony in the word structure of native learners

Many of the common variations in the structure of words as they are acquired by children have been mentioned under the various sections dealing with individual phonemes, word accent and phonotactics. However, one type of change which occurs in child language but which is generally unknown among historical changes in English and among foreign learners is the phenomenon which is usually called CONSONANT HARMONY (and which is really a type of assimilation, although within words as opposed to those assimilations occurring at word boundaries which are mentioned in §12.4.5). Such consonant harmony occurs during the period when children are using only one-word utterances. It involves the assimilation of one consonant to another across an intervening vowel. Most frequently the process involves de-alveolarisation (i.e. an alveolar sound is changed to something else) and is regressive (i.e. a later-occurring sound influences an earlier sound), e.g. *supper* → [ˈpʌpə], *duck* → [gʌk], *dog* → [gɒg], although occasionally the process can be progressive (i.e. in a forward direction), e.g. *cushion* → [ˈkʊkən], *bottom* → [ˈbɒpəm].

Notes

1 With certain exceptions, determined by the larger rhythmic pattern of the total context (see §10.4).
2 See particularly Kingdon (1958b) and Fudge (1984). For an alternative formulation involving heavy syllable as VC and extrametrical final consonants, see Giegerich (1992).
3 See Fudge (1984: 31).
4 But see §7.12.4 for use of full vowels in Northern English.
5 For a recent survey of the various factors which can be involved in the definition of English compounds, see Plag (2006).
6 These remarks apply mainly to GB and to the patterns of isolate words rather than those variants occurring in connected speech (see §12.3); they do not take into account patterns used in other dialects, e.g. in Scottish English, *enquiry* /ˈeŋkwɪri/, *realise* /rɪəˈlaɪz/, *advertisement* /advərˈtaɪzmənt/. Where there is a preferred 'correct' pattern, it is marked here with * in the transcription, usually based on Wells (2008) where informant tests are reported on some of the items.
7 The small number of disyllables involved in such accentual oppositions is shown in Guierre (1979). Out of a corpus of more than 10,000 disyllabic words, only 85 exhibited changes between verbal, nominal or adjectival functions by means of a shift of accented syllable.
8 Also with /traːn-/.
9 The noun and verb forms of *refuse* differ also in the final consonant and the resulting variation of vowel length of /uː/.
10 For absorption of the second element of a diphthong before another vowel (smoothing), see §8.11.
11 Windsor Lewis (1979).
12 Such elisions in word-initial syllables are more likely when the preceding word ends in a vowel, e.g. *the police* /ðə ˈpliːs/, *I believe* /aɪ ˈbliːv/, but *local police* /ləʊkl pəˈliːs/, *can't believe* /kɑːm bəˈliːv/.

13 See Fourakis & Port (1986) and Blankenship (1992). Yoo & Blankenship (2003) find epenthetic /t/ occurring in final position but not in medial position in American English; they also find epenthetic /t/ of shorter duration than 'underlying' /t/.
14 Such combinations do occur as a result of assimilation. See §12.4.5.
15 See Selkirk (1982).
16 For experimental information on syllable division word-medially, see Fallows (1981), Treiman & Danis (1988) and Treiman *et al.* (1992). Such experimentation is based principally on speakers being asked to divide up nonsense words.
17 Treiman *et al.* (1992) confirmed /s/ in the onset in such sequences but found /f/ in the coda in sequences like /fl/ in *afflict.*
18 See Gilbert & Purves (1977).