MAKING NEW WORDS

Morphological Derivation in English

R. M. W. DIXON

Making New Words

Making New Words

Morphological Derivation in English

R. M. W. Dixon

Language and Culture Research Centre
James Cook University

OXFORD

UNIVERSITY PRESS

For my pre-eminent multi-talent-ed
ultra-percep-tive sasha-esque book-str-ess

Contents

Preface

This book tells a story. It recounts the character of each of the two hundred or so affixes which serve to make new words in present-day English—where they come from, how they have developed, what they mean, and the manner in which they are used. We examine those affixes which go back to Old English or to some other Germanic language, those which come from a Romance language—generally Latin and/or French—and those which are of Greek origin, taken into English either directly or through a Romance conduit. Attention is paid to how and when each attained the status of a bona fide derivational affix. For every affix, there is a study of its meaning, or range of meanings. And an account of which sorts of words it may be attached to, what sort of words it creates, and the syntactic effect (if any). We note that some affixes feature in many derivations but are no longer used to make new ones, some have a degree of productivity, and others are highly productive.

There is focus throughout on subtle contrasts of form and of meaning. Why do we say *un-distinguished* but *in-distinguish-able* (not **un-distinguish-able*), why *gold-en* but *silver-y* (not **silver-en*), why *happi-ness* but *jealous-y* (not **jealous-ness*). Derivational affixes may have meanings which are similar but not quite identical. We contrast *child-less* and *child-free*, *dis-place* and *mis-place*, *grac-ious* and *grace-ful*, *defend-er* and *defend-ant*.

What is being described here is the grammar of Standard British English, at the beginning of the twenty-first century. This is a dialect which has lost /r/ from the end of a syllable. Thus, for instance, *inter-urban* is pronounced /ˌintə-ˈəːbən/ whereas in other dialects (predominantly in Scotland and the USA) it could be /ˌintər-ˈəːrbən /, where the /r/ has one of a number of phonetic realizations.

I have consulted very many sources, and made copious use of the best of them. Otto Jespersen's linguistic achievements were outstanding. Part VI, *Morphology* (1942) of *A Modern English grammar, on historical principles*, included the first comprehensive account of derivational affixes (arranged by phonological form). The work was extended by Hans Marchand's meticulous volume (second edition, 1969), *The categories and types of present-day English word-formation* (where the arrangement of affixes is alphabetical).

Substantial assistance was also afforded by the early account of Sweet (1891), Bauer and Huddleston's long chapter on 'Lexical word formation' in the Huddleston and Pullum grammar (2002), the large grammar by Quirk, Greenbaum, Leech, and Svartvik (1985), volumes by Kruisinga (1932), Barnhart (1988), Adams (1973, 2001), Bauer (1983, 2001), Plag (1999), Bauer, Lieber, and Plag (2013), and very many more. I delved fruitfully into the treasure trove of both normal and nonce uses in H. L. Mencken's epochal volumes *The American language, an inquiry into the development of English in the United States* (1936, 1945).

Continuous use has been made of what is now called the *Oxford English dictionary* (*OED*) but was originally published, under the main editorship of James A. H. Murray, as *A new English dictionary on historical principles, founded mainly on materials collected by the Philological Society* (1888–1933). The on-line version is an easily-accessible resource, with invaluable historical information and citations (although sometimes a little low on linguistic acumen). Reference has also been made to various smaller Oxford dictionaries, to *A dictionary of the English language* by Samuel Johnson (1755), to the second edition of *The Random House dictionary of the English language*, unabridged (Flexner 1987), to *Collins Cobuild English dictionary for advanced learners* (Sinclair 2001), and to a number of others.

Conventional dictionaries can be a great help in the study of prefixes. When examining suffixes I have gladly utilized Gustav Muthmann's outstanding piece of scholarship, his *Reverse English dictionary, based on phonological and morphological principles* (1999).

I have also made judicious use of various corpus collections, including the International Computer Archive of Modern English, *ICAME collection of English language corpora* (Bergen: Norwegian Computing Centre for the Humanities), plus the Australian corpus of English (ACE), the Lancaster-Oslo-Bergen (LOB) corpus and the Brown corpus of American texts. I have been circumspect in use of information from *Google*.

As always, Alexandra Aikhenvald has been a fount of inspiration. During meals and elsewhen, over a period of several years, we have discussed matters affix by affix. And she has provided perceptive comments on the draft typescript. Laurie Bauer and Kate Burridge gave useful feedback on early drafts of several chapters. Hannah Sarvasy checked the final typescript, and made a number of most worthwhile suggestions.

Time Frame, Abbreviations, and Conventions

OE stands for **Old English** (also known as Anglo-Saxon), spoken from the fifth to the twelfth century. This was the language of the Angles and Saxons, who took up residence in Celtic England during the latter part of the fifth century AD; the first manuscript records are from the sixth century. OE was a Germanic language, and it took in loans from another Germanic tongue, Old Norse, which was spoken by Viking invaders in the north of England. Christianity made its appearance in the seventh century, bringing with it ecclesiastical loans from Latin, such as *deacon* and *hymn*.

ME stands for **Middle English**, the historical stage of the language which was spoken from the twelfth to the end of the fifteenth century. After the Norman conquest, in 1066, French was used for all official purposes although ME was spoken by the population at large. It is estimated that around 10,000 French words were borrowed into ME, about three-quarters of which are still in use today (Harley 2006: 257). The use of French diminished after the King of England lost his French possessions, at the beginning of the thirteenth century, and by the end of the fourteenth century, English had become the official language of government. There were also a considerable number of loans from Low Dutch during this period; for example, *pickle*.

After 1500 we had **Modern English**; the period from 1500 to 1700 is sometimes distinguished as 'early Modern English'. French was still considered a language of prestige, and it continued to supply loans, most originating in Latin. However, some learned terms were taken directly from Latin. There were also a number taken directly from Greek, in addition to Greek words which made their way into Latin, thence into French, and then English. In more modern times English took in loans from European languages such as Spanish and Italian, and from the languages of peoples whose lands had been absorbed into the British Empire. For example, *pyjamas* from Urdu, and *boomerang* from Dharuk (around Sydney in New South Wales).

In many places, we quote the date of the first citation for a given word from the *OED*. It should be borne in mind that this is the earliest written

attestation of that word. It is likely to have been in use for some time before this date.

The historical stages of French are rather different from those of English: Old French from the ninth until about the middle of the fourteenth century, then Middle French from the middle of the fourteenth until the beginning of the seventeenth century. There was also Anglo-Norman, the variety spoken in England from the eleventh to the fourteenth century. In this book the actual stage or variety of French from which a loan came into English is only occasionally specified.

In tables showing the origins of derivational affixes, the following abbreviations are used:

Gmc   Germanic, covering all Germanic sources, including Old English, Old Norse, other Scandinavian variates, and Dutch
Rom   Romance, covering all Romance languages
Lat   Latin
Fr   French
Gk   Greek

Other abbreviations

A single letter is used for each of the three major word classes:

N   noun
A   adjective
V   verb

The regular abbreviation NP indicates noun phrase.

Core syntactic functions are accorded the standard abbreviations:

S   intransitive subject   CS   copula subject
A   transitive subject   CC   copula complement
O   transitive object

(The context will always make clear which sense of 'A' is intended.)

The phonological form of a word is enclosed within slant brackets, as /ˈʌpə/ for *upper*. Primary stress is indicated by ˈ and secondary stress by ˌ.

An asterisk, *, indicates a form which is not acceptable. For instance: 'One says *in-frequent-ly* rather than *un-frequent-ly'. In Chapter 11, '√' indicates a root.

Conventions for hyphenation

All forms recognized as derivational affixes are separated off by a hyphen in quoted examples; for example *un-kind*, *joy-ous*.

It is not always the case that the orthographic form of a derived word includes all segments of the constituent forms. The following conventions are employed:

(1) A 'silent e' at the end of a root is discarded. For example, *sterile* /'sterail/ plus *-ize* /-aiz/ is written as *steril-ize* /'steriˌl-aiz/.

(2) If the vowel at the end of a root retains its value, then the hyphen is written after this. From *mummy* /'mʌmi/ and *-ify* /-ifai/ we get *mummi-fy* /'mʌmi-fai/.

(3) If the vowel at the end of a word is replaced by the initial vowel of the suffix, then the hyphen precedes the latter. For example, *memory* /'meməri/ and *-ize* /-aiz/ give *memor-ize* /'memər-aiz/, *justify* (/'dʒʌstifai/ and *-ication* /-ikeiʃən/ give *justif-ication* /ˌdʒʌstif-i'keiʃən/.

Note that endings which are not recognized as derivational affixes, according to the criteria set out in Chapter 3, do not receive a hyphen. For instance, *ock* in *hillock* (not *hill-ock); see 4.1c.

List of Tables

1

Preliminaries

1.1 Terminology

1.1a Spoken **discourse** typically consists—unless it is a monologue—of a number of **utterances**. John says this, Mary responds with that, Jane butts in with something, and then John makes a further comment. The utterances may occur in sequence, but they often overlap. Each utterance is made up of a string of **sentences** (generally determined by speakers' pauses and intonation). Some of the sentences may be well-formed (especially in more measured discourse) while others may be part-formed (although still fully understandable to the others involved). For every one of the latter, if its speaker were given a transcript they would amend it to be well-formed.

A written **text**—be it a book, a newspaper article, a letter, or anything else—is likely to be made up of **paragraphs**, and each paragraph of a number of **sentences**. (What is a paragraph and what is a sentence is to some extent at the whim of the writer—where they commence a new line, and where they use a full stop, or period.)

A sentence is made up of one **main clause** and, optionally, a number of **subordinate clauses**. For instance:

> [The ex-gangster glorified his misdeeds]_{MAIN.CLAUSE},
>
> [when he was drunk]_{SUBORDINATE.CLAUSE}

A clause consists of a **predicate** and a number of **arguments** (more on this in 1.2). The predicate is realized by a **verb phrase**. This is *glorified* in the main

clause just given, but it could be much longer, for example *had been glorify-ing*. Each argument is realized by a **noun phrase**; in the main clause here the subject argument is shown by noun phrase *the ex-gangster*, and the object argument by noun phrase *his misdeeds*.

Each noun phrase has a **head**, which can be a pronoun or a lexical word, and may have one or more modifiers (such as grammatical forms *the* and *his* here, or adjectives, or a demonstrative). The heads of the noun phrases here are lexical words: *ex-gangster* and *misdeeds*.

What we focus on in this book are lexical words and their composition. Each of these words can be analysed into a number of **morphemes**, with morpheme boundaries shown by hyphens. Thus:

> ex-gang-ster   mis-deed-s   glori-fi-ed

A morpheme is the **minimal unit of meaning** of the language. Each of the prefixes *ex-* and *mis-*, suffixes *-ster*, *-s*, *-(i)fi*, and *-ed*, and roots *gang*, *deed*, and *glory*, has a meaning. (The fact that *glory* is a minimal bit of meaning is shown by the fact that there is no meaning attached to syllables within it—*glo* and *ry*.)

1.1b There are three types of morpheme:

- **Lexical roots** (also called **lexemes**): *gang*, *deed*, and *glory* here. These are what get entered in the dictionary.
- **Derivational affixes**: *ex-*, *mis-*, and *-fi* here. Each of these is added to a root and forms a **stem**.
- **Inflectional affixes**: *-s* and *-ed* here. These are added to a stem and form a finished word.

A word is built up as follows:

(a) **Choose a root**, which belongs to a particular word class. For instance, *gang*, or *deed*, or *glory*, which are all basically nouns. (Like many other nouns, all three also have secondary function as verbs.)

(b) Optionally, **apply a derivational affix**, which **forms a stem**. This may belong to the same word class as the original root:

> root *deed*, which is here a noun
> add derivational prefix *mis-*, forming stem *misdeed*, which is also a
>   noun

or it may belong to a different class:

root *glory*, which is here a noun
add derivational suffix -*(i)fy*, forming stem *glori-fy*, which is a verb

There can be more than one derivational affix:

root *gang*, which is here a noun
add derivational suffix -*ster*, forming stem *gang-ster*, which is also a
    noun
add derivational prefix *ex*-, forming stem *ex-gang-ster*, which is also a
    noun

(c) Obligatorily, **apply an inflectional affix** which is appropriate to the word
    class of the stem, thus creating a word.

Thus *gang-ster* and *mis-deed*, which are count nouns, must inflect for num-
ber: either plural, shown by -*s*, as in *mis-deed-s*, or singular, shown by zero
suffix, as in *ex-gang-ster*. *Mis-deed-s* and *ex-gang-ster* are now finished
nouns, which can each function as the head of a noun phrase.

And *glori-fy*, which is a verb, must take a verbal inflection, here past tense
-*ed* (the alternatives would be -*ing*, -*s*, or zero). *Glori-fi-ed* is now a finished
verb, which can occur as the head of a verb phrase.

The term 'base' is sometimes used for the form (root or stem) to which a derivational
affix is added.

1.1c To be recognized as a morpheme, a form must either (1) occur as a free
form, making up a complete word, or (2) occur, with the same meaning, in
more than one word. For example, *glory* can occur as a free form, and also
in *glori-fy*, *glori-ous*. Suffix -*(i)fy* recurs in scores of words, such as *beauti-fy*,
pur-ify, *solid-ify*.

Consider *mollify* and *deify*. *Moll* and *de(i)* do not occur outside these
words and so cannot be recognized as morphemes. That is, *mollify and deify*
have the status of unanalysable roots. They do end in *ify* but it is not in this
instance a derivational suffix since there is no lexical root for it to be applied
to. What happened is that English borrowed from French *glory* and *glori-fy*,
beauty and *beaut-ify*, *pure* and *pur-ify*—enabling the recognition of -*(i)fy* as
a morpheme here. It also borrowed *mollify* and *deify* but not the underlying
roots. (See the further discussion in 2.5h–k.)

Some linguists consider forms like *moll* and *de(i)-* to be morphemes of a special kind, often called 'cran' morphemes after the first part of *cranberry*, or 'unique morphemes' (Hockett 1958: 127–8). Under such an analysis there would be a profusion of 'cran' morphemes in English: *fash* in *fashion*, *tremend* in *tremendous*, and hundreds more. In fact, such elements do not have any independent significance. Meaning attaches to the whole word—*mollify*, *deify*, *fashion*, *tremendous*—not to just one part of it. If one allowed 'cran' forms to have the status of morphemes, this would weaken the value and explanatory power of morphological analysis.

Cran /kran/ was discussed by Gleason (1955: 76–7) on the basis of a passing mention in Bloomfield (1933: 234–5). Ironically, *cran* is not in fact an example of a 'cran'-morpheme. Krueger (1963) points out that 'cranberries grow in swamps, low-lying bogs and marshes' and 'this is a favorite habitat of the long-legged crane'. From *crane* /krein/ plus *berry* /ˈberi/ came *cranberry* /ˈkranbəri/, joining other words which reduce diphthong /ei/ in a monosyllable to vowel /a/ when the word is lengthened; these include *sane/sanity*, *chaste/chastity*, *shade/shadow, grain/granary*.

A better example of a 'cran morpheme' would be *rasp* as in *raspberry*. In the sixteenth century this fruit was known as *raspis* or *raspis berry* or *rasp* or *raspberry*. The name then became conventionalized as *raspberry*, with *rasp* not occurring outside this word. (Recently, a plural form *rasps* has re-emerged as a colloquial shortening of *raspberries*.)

1.1d There may be **no derivational affixes** at all, in which case the root makes up the stem all on its own. Or there can be **one or two or many derivations** involved, as in the classic long word *anti-dis-establish-ment-arian-ism*.

Sometimes derivations must occur **in a fixed order**. One goes from *gang* to *gang-ster* to *ex-gang-ster*, not from *gang* to **ex-gang* to *ex-gang-ster*, because there is no word **ex-gang*. But at other times **the order does not matter**. Consider *un-tru-th-ful*. Each of three orders of application for derivational affixes is equally good:

root: *true*	root: *true*	root*: true*
add *un-*: *un-true*	add *-th*: *tru-th*	add *-th*: *tru-th*
add *-th*: *un-tru-th*	add *un-*: *un-tru-th*	add *-ful*: *tru-th-ful*
add *-ful: un-tru-th-ful*	add *-ful*: *un-tru-th-ful*	add *un-*: *un-tru-th-ful*

The derivational suffixes must be added in the order in which they occur (that nearest the root first, and so on), but—for *un-tru-th-ful*—the *un-* prefix could be added at any stage, since all intermediate words are acceptable. Contrast this with *un-faith-ful* which must be derived *faith → faith-ful → un-faith-ful*, rather than *faith → *un-faith → un-faith-ful*, simply because **un-faith* is not a word in English.

1.1e Some languages have multiple inflectional systems. In Latin, for instance, each noun stem must inflect for number and case, each adjective stem for gender, number, and case, and each verb stem for voice, mood, and tense-aspect, plus person and number of the subject argument.

English has rather meagre **inflections**. They are:

- For a count noun, a number system with two choices: singular, shown by zero ending, or plural, shown by orthographic *-s*. (A mass noun—referring to something which would not normally be counted, such as *mud* or *rice*—takes no inflection.)
- A possessive noun phrase, within a larger noun phrase, is marked by the genitive inflection, orthographic *-s*, suffixed to its final word. For instance: [[*The King of Scotland*]_{NP}-*'s hat*]_{NP} *blew off*.
- For an adjective, either plain form, with no ending, or comparative with *-er*, or superlative with *-est*. Alternatives to *-er* and *-est* are pre-head forms *more* and *most*. (See Dixon 2005b for details on the phonological conditioning for these alternatives.)
- For a regular verb, the choice is between past suffix which is *-ed*, or present, which is *-s* for a 3rd person singular subject (*he/she laughs*) and zero otherwise (*I/you/we/they laugh*). There is also suffix *-ing*, which can be used with the auxiliary verb *be* (*they are laughing*) and has a variety of other grammatical uses. Irregular verbs also use *-en* in passive formation: compare regular verb *had kick-ed* with irregular *had tak-en*.

In contrast to the paucity of inflections (all of which are suffixes), English has a profusion of derivational affixes—many suffixes and also many prefixes. We shall attempt in the pages which follow to discuss these in turn, for each one describing its origin, development, present-day meanings, use, and productivity.

1.1f The description just given of how a word is built up only mentioned one **morphological process**—affixation. This is indeed the main means of morphological derivation in English. But there are other ways of operating on a root or stem. For example, irregular (or 'strong') verbs in English may form past tense just by changing the vowel: present form *take* /teik/ and past *took* /tuk/. Or present *sing* /siŋ/, past *sang* /saŋ/, and passive form *sung* /sʌŋ/.

And shifting the position of stress may, in a few instances, convert a noun or adjective into a verb (or vice versa), as for noun *import* /ˈimpɔːt/, and verb *import* /imˈpɔːt/, adjective *frequent* /ˈfriːkwənt/ and verb *frequent* /friˈkwent/.

Morphological processes in other languages include changing tone, internal change involving vowels and consonants, subtraction, and reduplication. (See Sapir 1921: 51–81, Dixon 2010a: 138–49).

1.1g This book attempts a **synchronic study** of derivational affixes in the standard English of today. We examine the historical origin of each prefix and suffix, to see how this explains their patterns of present-day usage. But we do not take account of historical connections between roots which can no longer be regarded as derivations in the modern language.

For instance, noun *deed* goes back to *dǽd* or *déd* in Old English and was undoubtedly related to verb *dón*, which has become today's *do*. But *deed* and *do* must be regarded as distinct lexemes in Modern English, and accorded separate dictionary entries. They have different meanings—for instance, the first thing I 'do' in the morning is shave, but I would not describe this as a 'deed'. This is in contrast with, for instance, noun *grow-th*, whose meaning is fully inferable from the meanings of verb *grow* and nominalizing suffix *-th*.

1.1h There is one way of forming new words which is the opposite to that described above. Old English (OE) had an adjective *grǣdig* which developed into our modern *greedy*. By analogy with noun *speed* and adjective *speed-y*, noun *guilt* and adjective *guilt-y*, and the like, the noun *greed* was created (around 1600). This is called **back-formation**. In essence, *greedy* was ana-lysed as *greed-y*; that is, as being an adjective derived from noun *greed* by adding *-y* (see 8.2.8).

Another instance commences with noun *editor*, borrowed from French in the middle of the seventeenth century. By analogy with verb *conquer* and noun *conquer-or*, verb *investigate* and noun *investigat-or*, together with other such pairs, the verb *edit* was back-formed from *editor* (now analysed as *edit-or*) at the end of the eighteenth century.

1.2 A little bit of syntax

1.2a There are two major clause types, according to the arguments which their predicates require:

- a **transitive clause** has a transitive predicate which takes two core arguments:

transitive subject, abbreviated as '**A**'

transitive object, abbreviated as '**O**'

- an **intransitive clause** has an intransitive predicate which takes one core argument:

intransitive subject, abbreviated as '**S**'

It is useful to show the function of an NP in its clause through an appropriate subscript. For example:

[The ex-gangster]$_A$ [glorified]$_{TRANSITIVE.PREDICATE}$ [his misdeeds]$_O$

[The dog]$_S$ [barked]$_{INTRANSITIVE.PREDICATE}$

A, O, and S are core arguments, which must be stated, or else understood from the context. There may also be optional NPs, indicating time, place, beneficiary, etc. For instance, *The dog barked for its master in the tavern late in the evening*.

1.2b Some verbs are strictly transitive, which means that they only occur in transitive clauses, requiring both A and O core arguments. For instance *like*, *promote*, *recognize*, *inform*. Others are strictly intransitive, occurring in just intransitive clauses which have a single core argument in S function. These include *arrive*, *chat*, *matter*.

In addition to these, there are quite a number of verbs which may be used in both intransitive and transitive clauses. It is important to distinguish two varieties of such ambitransitives:

- **S = O ambitransitives**, where the S argument of the intransitive use corresponds to the O argument of the transitive use. For example, [*The bomb*]$_S$ *exploded* and [*The expert*]$_A$ *exploded* [*the bomb*]$_O$.
- **S = A ambitransitives**, where the S argument of the intransitive use corresponds to the A argument of the transitive use. For example [*The dog*]$_S$ *is drinking* and [*The dog*]$_A$ *is drinking* [*water*]$_O$.

1.2c There is also a minor clause type, **copula clauses**. Here the predicate consists just of a copula verb—typically *be* or *become*—and there are two core arguments: **copula subject (CS)** and **copula complement (CC)**. For example:

[*My son*]$_{CS}$ [*is*]$_{COPULA.PREDICATE}$ [*a doctor*]$_{CC}$

Whereas the predicate of a transitive or intransitive clause has referential meaning, the predicate of a copula clause marks a relation between CS and CC arguments. When the CC is *a doctor* there is a relation of identity. Alternatively, the CC could be an adjective and the relation would be attribution—as in [*My son*]$_{CS}$ *is* [*tall*]$_{CC}$— or it could be a phrase indicating place—as in [*My son*]$_{CS}$ *is* [*in the garden*]$_{CC}$—and the relation would be location. And so on.

Sometimes the term 'predicate' is used for a combination of copula predicate and copula complement; for example, *is a doctor* would be termed the 'nominal predicate' of the clause. This is unhelpful. The CC is an argument, just like a CS, A, O, or S constituent.

1.3 Phonemic form and English orthography

Parallel to the morpheme as the 'minimal unit of meaning', there is the **phoneme** as the 'basic unit of sound distinction'. If one phoneme of a word is replaced by another, a new word is created. For example *din* and *tin* are different words, showing that *d* and *t* are contrastive phonemes in English.

An ideal alphabet will have one letter for each phoneme. The orthography used for English is far from ideal. In many ways, the Roman alphabet, which is used to write English, is inappropriate for the language as it is spoken today. To properly describe Modern English, it is essential that relevant phonemic forms be quoted, rather than just their orthographic representations. Phonemic representations are enclosed within slant brackets, for example /plau/ for *plough*.

Throughout this volume I have used the *Everyman's English pronouncing dictionary* of Daniel Jones (DJ), generally preferring the editions wholly prepared by Daniel Jones (e.g. Jones 1956), but sometimes—especially concerning the nature of stress—using later editions, revised by A. C. Gimson (e.g. Jones 1977).

The aim here is a phonemic representation, not a narrow phonetic one. A separate letter is used for each phoneme. In the case of some vowel phonemes, I employ easier-to-type symbols: /a/ for a short low vowel, where DJ has /æ/; and /a:/ for a long low vowel, where DJ has /ɑ:/. Similarly for diphthongs; I use /eə/ where DJ has /ɛə/.

1.3a English orthography uses five vowel symbols, reflecting the five-vowel system in Latin. But every dialect of English has a larger number. I follow Daniel Jones in recognizing the following system of **vowel phonemes** for Standard British English:

	SHORT VOWELS		LONG VOWELS
/i/	as in *sit*	/i:/	as in *seat*
/e/	as in *get*		
/a/	as in *sat*	/a:/	as in *father*
/ɔ/	as in *hot*	/ɔ:/	as in *saw*
/u/	as in *put*	/u:/	as in *too*
/ʌ/	as in *up*		
/ə/	as at the end of *China*	/ə:/	as in *burn*

and the following **diphthongs**:

/ei/	as in *day*	/ai/	as in *fly*
/ou/	as in *go*	/au/	as in *how*
/ɔi/	as in *boy*	/iə/	as in *here*
/eə/	as in *there*	/uə/	as in *poor*

1.3b The **consonant** symbols used to write English are also inadequate (although not quite so much so as the vowels). Letter *g* sometimes represents /g/ (as in *girl*, /gə:l/), other times /dʒ/ (as in *gin*, /dʒin/). Letter *s* is used for /s/ (as in *basis*, /ˈbeisis/), and for /z/, (as in *design* /diˈzain/). and also for /ʒ/ (as in *decision*, /diˈsiʒən/). Diagraph *th* is used both for voiced /ð/ (as in *this*, /ðis/) and for voiceless /θ/ (as in *thin*, /θin/). And so on.

Some of the consonants of standard orthography do represent phonemes: *p, b, t, d, k, m, n, l, r, f, v, s, z, h, w*. The following phonemic symbols are used for the remainder:

/g/ is always a dorso-velar voiced stop, as in *gun*, /gʌn/
/ð/, as in *they*, /ðei/   /θ/, as in *thick*, /θik/
/ʃ/, as in *ship*, /ʃip/   /tʃ/, as in *chip*, /tʃip/
/ʒ/, as in *leisure*, /ˈleʒə/   /dʒ/, as in *jam*, /dʒam/
/ŋ/, as in *sing*, /siŋ/   /y/ (rather than DJ's /j/) as in *yet*, /yet/

1.3c Lateral /l/ and nasal /n/ may function (rather like a vowel) as the nucleus of a syllable. This is shown by a short vertical line below the letter, as in *bottle* /ˈbɔtl̩/ and *cotton* /ˈkɔtn̩/.

1.3d Although not shown in the orthography, **stress placement** is an important feature of English phonology. Derivational processes may involve shift of stress.

Each word has a **primary stress**, and the syllable on which it occurs must be marked if the word is of more than a single syllable. It is shown by writing superscript ' just before the first segment of the syllable—thus *lateral* /'latərəl/. There may also be a secondary stress, shown by subscript ˌ, as in *hotdog* /ˌhɔt'dɔg/.

A few derivational affixes bear primary stress; for example, prefix *counter-* and suffix *-ese*, while a number take secondary stress, including *mis-* and *-esque*. Others—such as *-ous* and *-ian*—affect the placement of primary stress within the stem to which they are attached. Most derivational affixes do not themselves take stress, nor do they affect stress in the base.

1.3e Many accounts of English grammar operate almost entirely in terms of the established orthography. However, the spoken register is the major mode for any living language and phonemic form should be described in the discussion of individual affixes, as I do in Chapters 5–10.

The **inadequacy of orthographic representation** is shown by the fact that a single letter of the alphabet may represent different sounds. Consonantal instances were mentioned in 1.3b. In the examples in 1.3a, vowel symbol *u* is used for /u/ in *put*, and for /ʌ/ in *up*, and for /əː/ in *burn*. Two words with quite different pronunciations and meanings are both written *tear*—verb /teə(r)/ 'pull apart' and noun /tiə(r)/ 'drops of liquid that come from the eye when one weeps'. There are scores of similar examples.

And, contrarywise, a given sound may have varying orthographic representation. To quote one of many instances, in British English /eə(r)/ is variously represented by *ear*, *are*, and *ai* (as in *wear*, *stare*, and *stair*).

One semi-regular alternation is that between orthographic *y* at the end of a word and *i* in the middle, for /i/. Compare, for example: g*lory* /'glɔri/, *glori-fy* /'glɔrifai/ and *glori-fi-ed* /'glɔrifaid/.

I follow Daniel Jones in writing '(r)' to indicate that—in Standard British English— the /r/ is pronounced when followed by a word beginning with a vowel (under certain grammatical conditions). Some dialects pronounce this /r/ in all circumstances.

2

How to make new words

2.1 What this book is about

2.1a English has three large open word classes (sometimes called 'parts of speech')—noun, verb, adjective—and one smaller one—adverb. And it has about 200 derivational affixes (90 or so prefixes and around 110 suffixes). Each of these produces new words. For example:

- Adding -*ness* to an adjective may create an abstract noun; for example, *sad-ness*.
- Adding -*ize* to a noun may create a verb; for example, *victim-ize*.
- Adding -*ive* to a verb may create an adjective; for example, *attract-ive*.
- Adding -*ly* to an adjective may create an adverb; for example, *clever-ly*.
- Adding *inter-* to a verb, adjective, or noun may produce a new word of the same class; for example, verb *inter-connect*, adjective *inter-national*, and noun *inter-action*.

Table 2.1 illustrates derivational affixes in English, both those that change word class and those which make a new word—with different meaning—belonging to the same class. (Note that new words are not created from adverb roots.)

Table 2.1 Sample of derivational affixes

AFFIX APPLIES TO WORD CLASS	AFFIX FORMS A STEM OF WORD CLASS			
	NOUN	VERB	ADJECTIVE	ADVERB
NOUN	mother-hood orphan-age art-ist	hospital-ize person-ify en-slave	father-ly fool-ish greed-y	sky-wards clock-wise edge-ways
VERB	happen-ing depend-ence dismiss-al	counter-attack out-bid re-write	harm-less use-ful accept-able	—
ADJECTIVE	honest-y eager-ness similar-ity	light-en solid-ify popular-ize	ultra-light post-modern old-ish	deep-ly five-fold

2.1b There is another way of making new words—by compounding; that is, simply combining two roots. The roots can be of the same class—nouns *hen* and *house* form the compound noun *hen-house*. Or they can belong to different word classes—*colour* (noun) plus *blind* (adjective) creates a compound adjective *colour-blind*, and *hover* (verb) plus *craft* (noun) gives the noun *hovercraft*. The meanings of the compounds just mentioned can more-or-less be inferred from the meanings of their parts: 'house for hens', 'blind with regard to (some) colours', 'craft which hovers'. Other compounds have more idiosyncratic meanings. For example the verb *cold-shoulder* (from adjective *cold* and noun *shoulder*) means 'act in an unfriendly way towards, ignore', and adjective *heavy-handed* is 'be overbearing (e.g. speak over-forcefully to), do something to too great a degree (e.g. put too much cinnamon on the trifle)'.

Each compound is a lexical word, with an individual meaning, and requires its own dictionary entry. Compounds are essentially ad hoc. Only a limited number of principles can be recognized for the formation of compounds. In contrast, derivational affixes are in most cases productive, with regular meanings. Once a speaker of English is familiar with adjective *sad* and suffix *-ness*, they know what *sad-ness* means. There is no need for *sad-ness* to be entered in the dictionary.

Some (but by no means all) dictionaries and grammars follow the *OED* in recognizing a set of 'combining forms'. The *OED* used the label from the 1880s but did not provide criteria for recognition. Indeed, the only characterization it quotes is from Bloch and Trager (1942: 66): 'In Latin and other languages, many words have a special combining form which appears only in compounds (or only in compounds and derivatives). . . . The foreign-learned part of the English vocabulary also shows a number of special

combining forms; cf. *electro-*, combining form of *electric*, in such compounds as *electro-magnetic*.' Despite this, of the 2,234 combining forms given in the *OED*, quite a number are not of foreign origin (including *half-*, *back-*, *-legger* and *-gate*). Matthews (2007: 63–4) states: 'Combining form: A form of a word, or a form related to or in meaning like a word, used only as an element in compounds: e.g. *Anglo-* in *Anglo-American* or *socio-* in *socio-economic* . . .' What is identified as a combining form varies immensely between sources; some are treated in this volume as affixes, some as analogic adaptations (see 4.2), others as parts of compounds. For the purposes of the present study, I have not found it necessary to recognize a category of 'combining forms'.

2.1c The study of compounds falls outside the scope of the present book (although Chapter 3 does discuss criteria for distinguishing between a root-plus-root compound and a root-plus-affix derivation). Here we deal with prefixes and suffixes which create new words. Each of these derivational affixes is discussed in some detail. Using information provided here, the reader should be able to employ this whole array of prefixes and suffixes in making new words.

2.2 Things to explain

English has a rich array of derivational affixes. Sometimes, there can be two affixes with similar meaning but different form, and one wonders why one is used in certain words, and the other in another set of words.

2.2a Negative prefixes *un-* and *in-* have similar meaning. Why is *un-* used in a certain word but *in-* with another that involves the same stem? For instance, why do we say *in-determin-ate* but *un-determin-ed*, and why *in-cess-ant* but *un-ceas-ing*?

   The brief reason is that *in-* tends to be used with words which include a derivational suffix that comes from a Romance language (here, *-ate* and *-ant*), while *un-* tends to be used when there is no such suffix. There is fuller discussion in 5.4−5.

2.2b Why can suffix *-en* be added to *wood*, forming adjective *wood-en*, but *-en* may not be added to *metal*?

   This *-en* suffix is used only with roots that are closed monosyllables (monosyllables ending with a consonant). Thus we get *wood-en*, *lead-en*, and *gold-en* but not **metal-en* (*metall-ic* is used instead) or **silver-en*, or **timber-en*, See 8.2.10 and 8.2.17.

2.2c Why do we say *heaven-ly* and *hell-ish*, rather than **heaven-ish* and **hell-ly*?

For a combination of reasons. Suffix *-ly* typically indicates a positive quality associated with the noun to which it is attached, an *-ish* a negative one. Also, most examples of *-ish* are with monosyllables, and *-ly* cannot be added to a root ending in *-l*. See 8.2.2, 8.2.4, and 8.2.6.

2.2d Prefaces *mono-*, *uni-*, and *one-* have essentially the same meaning. Why does one say *mono-syllabic*, *uni-lateral*, and *one-sided* (but not **mono-lateral*, **mono-sided*, **uni-syllabic*, **uni-sided*, **one-syllabic* or **one-lateral*)?

The reason lies in the historical origin of prefixes and of roots. *Syllabic* goes back to Greek, and takes Greek prefix *mono-*, while *lateral* is from Latin and takes Romance prefix *uni-*, and Germanic prefix (or 'semi-prefix', see 3.3) *one-* is used with Germanic root *side*. See 6.2.

2.2e Why does one say *de-nazi-fy* and *de-stalin-ize*, but not **de-nazi-ze* or **de-stalin-ify*? Also, why is it the custom to say *central-ize*, with *-ize*, but *glori-fy*, with *-(i)fy*? The verb to describe making something German in character or language is *German-ize*, but with respect to French it is *French-ify*. Why?

The major verbalizing suffixes in English are *-(i)fy* and *-ize*, of Romance and Greek origin respectively. Their use is phonologically conditioned. We find *-ize* with (inter alia) disyllabic nouns and adjectives ending in *-n* (for example, *Stalin*, *German*), and in *-l* (*central*). Suffix *-(i)fy* is used with disyllabic forms ending in a vowel (*Nazi*, *glory*) and with monosyllables (*French*). This is just a part of the picture; a full account is in Chapter 7.

There are many further conundrums, which will be aired and resolved in the chapters that follow.

2.3 Meanings

Which derivational affix may be attached to which root or stem depends on a number of factors, the main ones being:

(1) The meanings of affix and of root or stem.
(2) The historical origin of each—whether a Germanic form, inherited from Old English, or a form borrowed from a Romance language

(Latin and/or French), or from Greek, or both. (There are just a few affixes borrowed from another source; for example, *-nik* from Yiddish.)

(3) The phonological form of the root or stem.

(4) Conventions of usage which have grown up during the centuries of evolution of Modern English. (See for example, the discussion of negative prefixes *un* and *in-* in 5.4−5.)

Each derivational affix has a meaning. It can carry a single sense, or there may be a fair semantic range. We can illustrate with a sample of derivational affixes which show variable swathes of meaning.

2.3a The prefix *uni-* always means 'just one of', as in *uni-cellular* 'consisting of a single cell', *uni-dimensional* 'having just one dimension', *uni-directional* 'in just one direction', and *uni-cycle* 'cycle with only one wheel'. (See 6.2.)

2.3b Nominalizing suffix *-er* has three main meanings (see 9.3.1):

(1) Describing the agent of an action described by the underlying root, as *writ-er* 'someone who writes', *bak-er* 'someone who bakes'.

(2) For an implement used in the action, as *strain-er* 'a dish with perforations used to strain solid matter from a liquid', and *mow-er* 'machine with sharp blades used to mow a lawn'.

(3) For a place where an activity (relating to the underlying verb) takes place. A *din-er* is 'a place where one dines' and a *lock-er* is 'a small cupboard in which things can be locked, for safekeeping'.

2.3c Suffix *-ment* forms noun stems from verbs. These have a variety of kinds of reference (see 9.4.1−5, 9.4.8).

(1) An activity or unit of activity: an *arrange-ment* is 'things arranged in a particular way', *entertain-ment* is 'activities aimed at entertaining', and *commence-ment* is 'the act of commencing some undertaking'.

(2) An attribute: *bewilder-ment* is 'the state of mind of someone who is bewildered', and *enjoy-ment* is 'the pleasure a person experiences when enjoying something'.

(3) The result of an activity: a *judge-ment* is the result of someone judging a matter; when someone is imprisoned they serve a term of *imprison-ment*.

(4) The referent of the syntactic object of a verb: *measure-ment* is 'the dimensions of an object obtained by measuring it'. (It can also be 'the activity of measuring'.) A *pay-ment* is 'that which is paid (usually, but not always, a sum of money) for certain goods or services'. (It can also be 'the activity of paying'.)

(5) A place where some activity happens. A *settle-ment* is 'a place where people have settled, and built homes', and an *encamp-ment* is 'a location where people—often a group of soldiers, or gypsies—have set up a (generally, temporary) camp'. (A *settle-ment* can also be 'an agreement to settle a disagreement'.)

2.3d Suffix *-(e)ry* is generally added to a noun and creates another noun with a different meaning. The meanings include (a fuller account is in 9.5.9):

(1) Describing an attribute typically shown by the referent of the root noun. For example, *devil-ry* 'wicked behaviour, such as one would expect from a devil', and *knave-ry* 'dishonest and crafty behaviour, characteristic of a knave'.

(2) Describing the occupation of a person described by the root noon— *dentist-ry* is 'the profession of being a dentist' and *cook-ery* is 'the practice of being a cook'.

(3) For a collection of people or of things referred to by the root noun. These include *yeoman-ry* 'a body of yeomen', *machin-ery* 'a collection of machines'. *Jewell-ery* is essentially 'a collection of ornaments made by a jeweller, from jewels or imitation jewels' and *a piece of jewell-ery* is used for a single necklace, bracelet, or pair of earrings, etc.

(4) A place associated with the root noun. A *pigg-ery* is 'an enclosure in which pigs are kept'. *Bak-ery* is 'a place where baking takes place, a baker's establishment', and *brew-ery* 'a place where brewing takes place, a brewer's establishment'. These could be taken as related to verbs *bake* and *brew*, and/or to agentive nouns *bak-er* and *brew-er*.

(5) The result of the activity described by the root (which is here a verb): a *forg-ery* is 'a document which has been forged' and *robb-ery* 'the activity of robbing'.

2.3e For each affix, it is necessary to investigate which types of words it may be attached to, and what kind of words it creates.

- Prefix *uni-* may be added to a noun (*uni-cycle*) or, more often, to an adjective (*uni-dimensional*); it does not change word class.
- Suffix *-er* always derives a noun. It is generally added to a verb (for example, *writ-er*) but just occasionally to an adjective (*northern-er* 'someone who comes from the northern parts of a land') or to a noun (*hatt-er* 'someone who makes or sells hats').
- Suffix *-ment* also derives a noun. It is generally added to a verb (such as *enjoy-ment*). We also find *odd-ment(s)* 'a collection of odd and unimportant objects', from adjective *odd*, and *better-ment* 'the act of making something better', which is based on the comparative form of adjective *good*. Looking just at the modern language, it might appear that *merriment* 'the activity of being merry' is based on adjective *merry*; in fact it probably comes from the cognate verb *to merry* (now fallen into disuse).
- Suffix *-(e)ry* is almost always added to a noun and derives a noun with a different meaning. There are a few instances of its being added to a verb, including *forg-ery* and *robb-ery*, just mentioned, and to an adjective, such as *brav-ery* and *gallant-ry*.

2.3f It is important to distinguish between one derivational affix which has a range of related meanings and function, and two homonymous affixes which have the same form but quite different meanings and functions. For example:

- There are two distinct suffixes with the form *-en* (both are of Germanic origin). One is added to monosyllabic nouns which describe some material, and derives an adjective 'made of —, resembling —'; for example *gold-en*, *wooll-en*, *ash-en*. The other is added to adjectives and derives verbs; for instance, *short-en*, *black-en*. (Its possibilities of occurrence relate to the final segment of the adjective, and the semantic type it belongs to. See 2.6e, 7.3.2, and 8.2.10.).
- There are two negative suffixes *un-*. The first, which we can call *un-1*, was very common in OE and means 'lacking a (valued) property'; it is used with adjectives, for example *un-clean*. The second prefix, *un-2*, goes back to OE *and- ~ und-*. It carries the meaning 'reverse process or state' with some transitive verbs (and adjectives derived from them), such as *un-tie*. (There is fuller discussion in 5.2 and 5.14−15.)

In the development of a language, what were originally distinct affixes—from different genetic sources—can merge. The present-day prefix *mis-* is a

blending of OE *mis-*, as in *mis-lead* and *mis-time*, and French *mes-*, which has given rise to *mis-adventure* and *mis-chance*.

In similar fashion, suffix *un-1*, from OE, and *in-* ~ *im-* ~ *il-* ~ *ir-*, from Latin and Old French, have almost identical meanings. Today, some words take one of these—*un-certain* rather than *in-certain—while another set of words take the other—*in-curable* rather than *un-curable. And some roots occur with both prefixes, showing a difference of meaning. For instance, *in-evitable* 'bound to happen, nothing could stop it happening', and *un-avoidable* 'will happen in these circumstances, but if some other course of action had earlier been followed, it might not have had to happen'. See the discussion in 5.4−5.

2.4 Origins

Affixes come from two sources—local and foreign. A local affix is of Germanic origin. It was there, as an affix, in OE, and has percolated through to the modern language.

2.4a In OE, many adjectives formed abstract nouns with *-ness*, having the meaning 'state of'. Alongside (casting OE words into modern spelling) *bright*, *idle*, *thick*, and *drunken* we had *bright-ness*, *idle-ness*, *thick-ness*, and *drunken-ness*, among many others. Further derivations were added in ME and later times, including *sad-ness*, *happi-ness*, and *fit-ness*. From the fourteenth century, *-ness* began to be added to adjectives borrowed from French, such as *gentle-ness*, *eager-ness*, and *rude-ness*. However, the majority of *-ness* derivations today are still with Germanic forms. (Many adjectives of Romance origin retain suffix *-(i)ty*, which is of Romance origin and has a similar meaning to *-ness*; for example, *stupid-ity*, *modern-ity*, *similar-ity*.) See 9.2.5−7.

2.4b Suffix *-ish* 'having the characteristic of' derives adjectives from common nouns and from proper names relating to nations and ethnic groups. OE included *heathen-ish* and *churl-ish* (OE form *ceorl-isc* from *ceorl* 'man of low degree'; the root has almost dropped out of use but its *-ish* derivation remains strong). The suffix was added to further Germanic roots in ME and later times, including *woman-ish*, *elf-ish* (or *elv-ish*), *fiend-ish*, and *hell-ish*. It was also used with roots taken over from French. *Fool* was a borrowing

from Old French into ME in the thirteenth century, and it soon acquired Germanic suffix *-ish*. Later came *devil-ish*, *styl-ish*, and others.

From early times, *-ish* has been used with proper names, OE had *Wahl* 'Wales' and derived adjective *We-lisc*, which is today's *Welsh*. Other early forms were *Scott-ish*, *Brit-ish*, and *Dan-ish*; to these were added—as the centuries advanced—*Swed-ish*, *Jew-ish*, *Finn-ish*, and many more. See 8.2.4, 8.3.2, and also 8.4.17.

2.4c A quite different story appertains for derivational affixes of foreign origin. These are not borrowed as affixes. What happens is that a number of roots are borrowed in bare form, and also with a particular affix attached. The latter form is then analysed within English, and the affix is identified within the borrowing language.

2.4d Prefix *re-* 'do again', which is predominantly added to a transitive verb, came down from Latin into French. ME borrowed words like *relieve*, *rebel*, and *rehearse*, for which no bare root was taken over. But there were also pairs such as *charge* and *re-charge*, *cover* and *re-cover*, *figure* and *re-figure*. It was on the basis of the latter that prefix *re-* was recognized in English, and came to be applied to Germanic as well as Romance roots—*re-live*, *re-build*, *re-set*, and dozens more. This prefix is now fully productive. See 6.9.

2.4e The semantic effects of nominalizing suffix *-ment* were summarized in 2.3c. Roots without and with *-ment* were borrowed from Old French into ME, including *achieve* and *achieve-ment*, *judge* and *judg-ment*, *commence* and *commence-ment*. By the fourteenth century, *-ment* was functioning as a suffix in English, being added to native roots as in *amaze-ment*, *settle-ment*, and *merri-ment*. This suffix's application has burgeoned over the years. See 9.4.8.

2.4f Adjective-deriving suffix *-ous* (with variant forms *-ious* and *-eous*) 'characterized by' has its basis in Latin and came into ME from Old French through forms such as *danger-ous*, *fam-ous*, and *riot-ous* alongside plain root forms *danger*, *fame*, and *riot*. It was used a great deal from the fourteenth century, mainly added to further roots of Romance origin (for example *poison-ous*). Suffix *-ous* has also been applied to some Germanic roots, including *thunder-ous*, *wondr-ous*, and *murder-ous*. Although there are scores of *-ous* derivations in general use, the suffix is not being utilized widely today to create new ones. See 8.2.14.

2.4g Most language development takes place surreptitiously. People just use language, while going about their daily lives, without thinking too much about what they are doing linguistically. This is how *-ness* and *-ish*, *re-* and *-ment* and *-ous* naturally became attached to new roots. But sometimes a different scenario pertains—a new affix is consciously brought into play, and placed with relish upon root after root.

Mega- (relating to a Greek form meaning 'great') is an example of such an affix. It did not enter English though the normal channel of borrowing a number of affix-plus root/bare root pairs. Instead, words commencing with *mega-* were consciously created, in two rather different surges.

Commencing in the 1870s (and continuing today), scientists add *mega-* to established nouns to describe something unusually big; for example *meg-allantoid* 'an animal with a large allantois (foetal membrane)'. *Mega-* is sometimes employed specifically for 'a million' (alongside *kilo-*, also of Greek origin, for 'a thousand'), as in *mega-dyne* 'a million dynes (units of force)', and *mega-byte* 'a million bytes (units of computer storage)'.

Then *mega-* underwent a second birth, coming into general parlance to indicate something of stupendous size (and, therefore, importance). From *mega-city* in 1967, there was an outpouring of *mega-*'s in the 1970s and 1980s (after which the craze may have slackened a little). One heard of *mega-bank*, *mega-deal*, *mega-event*, *mega-mall*, even *mega-resort*. And the prefix indicates an attenuated characteristic in *mega-bitch* (from 1985), glossed by the *OED* as 'an extremely malicious or treacherous woman'.

2.4h English is a Germanic language since its pronouns, demonstratives, inflections, and most frequent lexemes (including all the irregular—so-called 'strong'—verbs) are Germanic. But much more than half of the less-frequent lexemes are of Romance origin. And of the 200 or so derivational affixes discussed in this book, around 43 per cent come from a Romance source (with a further 18 per cent being from Greek).

2.5 Form and fusion

2.5a Some derivational affixes maintain a constant form and do not affect the form of a root or stem to which they are attached. For example, suffix *-ness* /-nəs/ (or /-nis/) is simply added to a root, the stress remaining on the root. Thus *clever* /ˈklevə/ plus *-ness* /-nəs/ gives *clever-ness* /ˈklevə-nəs/, and *lazy* /ˈleizi/ plus *-ness* /-nəs/ gives *lazi-ness* /ˈleizi-nəs/.

2.5b Prefix *un-1* /ʌn-/, applying to adjectives, is also of this type. For example, *un-* /ʌn-/, plus *clean* /kliːn/ gives *un-clean* /ʌn-ˈkliːn/.

Interestingly, there are some instances where the plain root has almost dropped out of use from Standard English (although it may continue in some regional dialects) but the *un-* form is still prevalent. For example, *un-wieldy* 'not easily handleable'; the base form *wieldy* 'easily handleable' was common until the seventeenth century. And *un-kempt* 'untidy, not cared for', which is much used today, comes from the archaic adjective *kempt* '(hair or wool) combed', which was itself derived from the ME verb *to kemb* 'to disentangle hair by running a comb through it'.

2.5c Suffix *-ish* is of the same character. Thus *-ish* /-iʃ/ added to *hell*, /hel/ simply gives *hell-ish* /ˈhel-iʃ/.

Again, there are instances where the original root is scarcely used (or not used at all) today while the derivation thrives. *Mawkish* 'nauseating, overly sentimental' emanated from an old noun *mawk* 'grub, maggot'. *Raffish* 'attractive, in a vulgar way' comes from an old form *raff* 'worthless (people)'. This was in turn a shortening of *rif and raf* 'every particle; things or people of small value', a borrowing into OE from French (and this has given rise to present-day *riff-raff* 'people who are of no consequence'). A further example is *churlish*, mentioned in 2.4b.

If *mawk* and *raff* do not exist in the modern language outside *mawkish* and *raffish*, then they fail the criterion to be considered a morpheme, set out in 1.1c. Today, *mawk* and *raff* do not have independent significance. Meaning attaches just to the complete words, *mawkish* and *raffish*, which are thus to be treated as unanalysable roots.

2.5d Prefix *re-* (which is of Romance origin) has form /ˌriː-/. It is simply added to a root; the root retains primary stress, a secondary stress falling on /ˌriː-/. Thus *re-* /ˌriː/ plus *float* /flout/ gives *refloat* /ˌriːˈflout/.

There are many words in Modern English which begin with *re* but for which the form without the first syllable does not occur; for example, *register*, *refrain*, *remember*. The initial *re* in such words does go back to a prefix *re-* in Latin or French but it cannot be recognized as a prefix in present-day English. This *re* is an integral part of the root—it has the form /re/ and bears stress in *register* /ˈredʒistə/; it has the form /ri/ and is unstressed in *refrain* /riˈfrein/, and it has the form /rə/ and is again unstressed in *remember* /rəmˈembə/.

Two words *recover* are written in the same way but have different form and meaning. Alongside unanalysable root *recover* /riˈkʌvə/ 'regain normal state

after illness or upset', there is prefix *re-* /ˌriː-/ plus root *cover* /ˈkʌvə/ giving *recover* /ˌriːˈkʌvə/ 'cover again'. (Similar doublets include *recount/re-count* and *reform/re-form*.)

2.5e In contrast to the three affixes just discussed, there are a number which engender a change in form for some of the roots to which they are attached. Adjective-forming suffix *-ous* /-əs/ is of this type.

(1) With some roots, *-ous* is simply added to the root (as happens with *un-1*, *-ish* and *re-*). For example *fame* /feim/ plus *-ous* /-əs/ produces *fam-ous* /ˈfeim-əs/. Similarly for *glori-ous* /ˈglɔːri-əs/ and *venom-ous* /ˈvenəm-əs/.

(2) With a number of others, stress moves to the syllable preceding *-ous* (with concomitant change in vowel values). When *-ous* is attached to *courage* /ˈkʌridʒ/ we get *courage-ous* /kəˈreidʒ-əs/.

(3) With a further set, an unstressed vowel is omitted when *-ous* is added. For example, from *monster* /ˈmɔnstə(r)/ we get *monstr-ous* /ˈmɔnstr-əs/.

(4) Or a final /i/ drops, as when from *adultery* /əˈdʌltəri/ we get *adulter-ous* /əˈdʌltər-əs/.

(5) Or a final /f/ may be voiced before *-ous*, as in *mischiev-ous* /ˈmistʃiv-əs/ from *mischief* /ˈmistʃif/.

2.5f There are thus two techniques. For *un-2*, *-ish*, *re-*, and set (1) of roots with *-ous*, there is simply the **addition** of affix form to root form. For (2−5) with *-ous*, root and affix are essentially **fused**, to create a new word whose form could not be predicted (within the grammar of Modern English) from knowing the forms of root and affix.

The nature of each instance of fusion may reflect the grammatical structure and phonological rules in the language from which affix and root were borrowed; or it may reflect an earlier stage of English. For example, the alternation between /f/ and /v/ in *mischief* /ˈmistʃif/ and *mischiev-ous* /ˈmistʃiv-əs/ goes back to an earlier situation in which [f] and [v] were variants of a single consonant, [v] occurring word-medially and [f] elsewhere.

2.5g A common suffix used to derive nouns from verbs is orthographically *-ation*, *-ion*, *-ication*, *-tion*, or *-ition*, and phonologically /-eiʃən/, /-ʃən/, /-ikeiʃən/, or /-iʃən/. It never involves simply addition, always some variety

of fusion. A sample of the extensive possibilities is (see 9.4.7 for a full account):

(a) The nearest thing to simple addition is where the suffix just engenders stress shift. This happens with a form ending in *-ize*, /aiz/; for example, *organize* /'ɔ:gənaiz/ giving *organiz-ation* /ɔ:gənai'z-eiʃən/.

(b) For a form ending in *-ate* /eit/, the final /t/ is replaced by /ʃən/, as in *nominate* /'nɔmineit/, *nomin-ation* /'nɔminei-ʃən/.

(c) For a form ending in *-ify* /-ifai/, the final /ai/ is replaced by /-ikeiʃən/ and stress is shifted from first to third syllable, as in *qualify* /'kwɔlifai/, *qualification* /kwɔlif-i'keiʃən/.

2.5h For the examples of *-ous* and *-((a)t)ion* derivations just quoted, the unaffixed form does occur in present-day English.

But this is not always so. English borrowed from French pairs of words with and without suffix *-ous*, such as *glory* and *glorious*, *courage* and *courageous*. It also borrowed French forms ending in *-ous* without also taking over the plain root. Within English, words such as *tremendous* and *precious* are not analysable. The criterion for being a morpheme, given in 1.1c, requires occurrence as a free form (making up a word on its own), or occurrence within at least two words. *Tremend* and *prec* occur each only in one word, *tremendous* and *precious*, and so cannot be recognized as morphemes.

A similar scenario applies for the *-((a)t)ion* suffix. *Organiz-ation* and *qualification* can be analysed into root-plus-affix since we have plain forms *organize* and *qualify*. But this does not hold for *region* and *fashion*. *Reg* and *fash* do not occur outside these words which are, as a consequence, unanalysable.

So far so good. But now consider the following paradigm:

(1)

ABSTRACT NOUN	ADJECTIVE
ambit-ion	ambit-ious
nutrit-ion	nutrit-ious
relig-ion	relig-ious
superstit-ion	superstit-ious

This is not an exhaustive list. Other pairs include: *contagion/s*, *sedition/s*, and *faction/s*.

What has happened here is that English has borrowed two (sometimes more) French forms based on the same root, although it has not borrowed the

root. *Ambit-* occurs in more than one word and thus satisfies the criterion for being recognized as a morpheme. Since *ambit-* does not occur as a free form, we can call it a **bound root**, a type of root which only occurs with an affix. As a consequence, *ambit-ion* and *ambit-ious* are analysable into bound-root-plus-suffix. And similarly for bound roots *nutrit-*, *relig-*, and *superst-*. An important point is that *-ous* and *-((a)t)ion* had already been established as bona fide affixes, occurring with free roots.

2.5j A number of similar paradigms can be constructed, where bound roots may be recognized on the basis of occurrence in two or more words, each with an established affix. For example:

(2) | VERB | CONCRETE NOUN | ABSTRACT NOUN |
|---|---|---|
| stimul-ate | stimul-ant | stimul-ation |
| particip-ate | particip-ant | particip-ation |
| lubric-ate | lubric-ant | lubric-ation |
| emigr-ate | emigr-ant | emigr-ation |

Suffixes *-ate*, *-ant*, and *-((a)t)ion* each occur with free nouns (as in *alien-ate*, *inhabit-ant*, *inform-ation*) and on this basis we can recognize *stimul-*, *particip-*, *lubric-*, and *emigr-* as bound roots.

The same suffixes occur in *radi-ate/radi-ant/radi-ation* and *domin-ate/domin-ant/domin-ation*, where the *-ant* form is an adjective. Bound roots *radi-* and *domin-* may thus be recognized.

Now consider:

(3) | ABSTRACT NOUN | CONCRETE NOUN | VERB |
|---|---|---|
| exorc-ism | exorc-ist | exorc-ize |
| antagon-ism | antagon-ist | antagon-ize |
| hypnot-ism | hypnot-ist | hypnot-ize |
| bapt-ism | bapt-ist | bapt-ize |
| optim-ism | optim-ist | optim-ize |
| sad-ism | sad-ist | — |

Suffixes *-ism*, *-ist*, and *-ize* are well-established, all occurring with free roots (for example, *heathen-ism*, *balloon-ist*, *symbol-ize*) and thus *exorc-*, *antagon-*, *hypnot-*, *bapt-*, *optim-*, and *sad-* should be recognized as bound roots.

Other bound roots that occur just with *-ism* and *-ist* include *pessim-*, *fasc-*, *soph-*, *hedon-*, *pragmat-*, *nepot-*, *athe-*, *monothe-*, *panthe-*, and *polythe-*.

Plagiar-ism/plagiar-ist/plagiar-ize is an interesting set. The abstract noun was originally *plagiary*, from which *plagiar-ist* and *plagiar-ize* were naturally derived. In an unusual development, *plagiary* was replaced by *plagiar-ism*, entailing the recognition of *plagiar-* as a bound noun.

Another paradigm on similar lines is:

(4)	ADJECTIVE	ABSTRACT NOUN
	enorm-ous	enorm-ity
	audac-ious	audac-ity
	feroc-ious	feroc-ity
	sagac-ious	sagac-ity

Suffixes *-ous* and *-ity* are well-attested with free roots (for example, *poison-ous*, *modern-ity*) and we can thus recognize *enorm-*, *audac-*, *feroc-*, and *sagac-* as bound roots.

Other examples occurring in this paradigm include: *anonym-*, *anxi-*, *frivol-*, *loquaci-*, *magnanim-*, *mendaci-*, *precoci-*, *pugnaci-*, *pusillanim-*, *salaci-*, *unanim-*, and *voraci-*.

2.5k In paradigms (1−4), each column involves a regular suffix. We can now examine the following:

(5)	CONCRETE NOUN	ABSTRACT NOUN
	diplomat	diplom-acy
	democrat	democr-acy
	aristocrat	aristocr-acy
	plutocrat	plutocr-acy
	autocrat	autocr-acy

We could say that the first part is, in each instance, a bound root. But what of the last part? Suffix *-acy* is attested with free roots (for example, *conspiracy*, see 9.2.3). But there is no suffix *-at* with free roots. Yet *-at* does occur in the five words of the left-hand column, with similar semantic import in each. If it is to be recognized as a suffix, it is one which is limited to occurrence with bound roots.

A more extreme paradigm is:

(6)	ADJECTIVE	ABSTRACT NOUN
	splendid	splendour
	squalid	squalor
	candid	candour
	pallid	pallor

One could suggest analysis into bound roots *splend-*, *squal-*, *cand-*, and *pall-* plus suffixes *-id*, and *-our* or *-or* (both pronounced as /-ə(r)/. The difficulty is that neither *-id* nor *-o(u)r* is a suffix occurring with free roots. For this analysis, two special suffixes, which only occur with bound roots, would have to be recognized.

As at many places in linguistic analysis, it is hard to know when to draw the line. One possibility, which I rather favour, is to add a further criterion to that given in 1.1c—a form may only be recognized as an affix if it occurs with some free nouns. This would maintain the morphological analysis of paradigms (1−4), and the *-acy* column in (5), involving bound roots plus bona fide suffixes, but would lead to the words in paradigm (6), and in the *-at* column of (5), being considered not to be morphologically analysable.

Decisions on such matters are very much a matter of opinion. (There is no definitive 'right' or 'wrong'.)

Other pairs of similar form include: *fervid/fervour* and *torpid/torpor*.
Note that we get *horrid*, *horror*, and also *horrify*—this derived verb does include a suffix, *-ify*, which occurs with free roots. And also *terror* and *terrify* (but there is no adjective **terrid*).

2.5m Only a handful of derivational affixes take primary stress: Romance suffixes *-aire* (9.3.12a), *-arium*, and *-orium* (9.6.1), *-eer* (9.3.2), and *-ese* (8.3.7, 9.3.7), Greek suffixes *-ology* (9.5.8), *-itis* (9.5.10b), and *-ometer* (9.7c), and Romance prefixes *counter-* and *contra-* (5.25−27).

There is a special circumstance in which a derivational affix may take a primary stress (in addition to the primary stress within the stem). In 2.4g, two recent phases of use for prefix *mega-* were described. In its scientific sense, *mega-* is a subsidiary part of the word, and takes secondary stress. Thus *megabyte* /ˌmegaˈbait/ is about bytes with *mega-* acting as a numerical quantifier (there are a million bytes). Then there is the sense of *mega-* introduced in the 1960s, when it was deliberately employed to indicate outstanding size and importance. Suppose that several enterprises are being combined, and the word *mega-business* is used to describe the new colossus. It is *mega-* that is being focused upon (listeners know that businesses are being discussed), and here the prefix is likely to be accorded primary stress (in addition to the primary stress on the root), /ˈmega-ˈbiznis/.

2.5n Some derivational prefixes (predominantly disyllabics) may take secondary stress. This was illustrated in 2.4d with *re-* /ˌriː-/; for example *re-seal* /ˌriːˈsiːl/. Another example is *anti-* /ˌanti-/, as in *anti-aircraft* /ˌantiˈeəkraːft/.

There are fewer examples of secondary stress among suffixes. They include many of Germanic origin, including *-like* (8.2.1), *-free* (8.2.29), *-proof* (8.2.40, 8.4.18), *-most* (8.2.42), *-monger* (9.3.13a), and *-maker* (9.3.13d).

2.5p If fusion is involved, a derivational suffix may affect the placement of primary stress within the stem to which it is attached. For example, we saw in 2.5e that *courage* /ˈkʌridʒ/ bears initial stress, but when *-ous* /-əs/ is suffixed to it, stress moves to the second syllable, whose vowel is strengthened: *courage-ous* /kəˈreidʒ-əs/.

The *-((a)t)ion* suffix has a complex phonology. As shown in 2.5g, it has the form /-eiʃən/ with *organize* /ˈɔ:gənaiz/ and here stress shifts to the fourth syllable, which is made up of /z/ from the root and the initial /ei/ of the suffix: *organiz-ation* /ɔ:gənaiˈz-eiʃən/. The important point is that stress never goes on the main part of the suffix, /-ʃən/ (that which is shared by all the variant forms of the suffix). Indeed, it could not, for a syllable whose vowel is a short schwa /ə/ never takes primary stress.

It seems that the suffixes which affect stress in the base are all of Romance origin. Besides *-ous* (8.2.14) and *-((a)t)ion* (9.4.7), they are *-ary* (8.2.39, 9.6.1), *-al/-ial* (8.2.19), *-(at)ory* (8.4.14), *-i* (8.3.6), *-ity* and *-ability* (9.2.1), *-ic* (8.2.16, 8.3.3, 8.4.2b), *-ian* (8.3.9, 9.3.7), *-icide* (9.5.10a), and *-(i)ana* (9.7a).

2.6 Productivity

2.6a A derivational affix can be termed 'productive' if it is, from time to time, used with a new form to create a stem not previously encountered. This must happen naturally, in the regular course of language use, without any particular thought being given to the matter. The new usage may begin with just one speaker, or perhaps with several people each producing the new stem separately and at more-or-less the same time. This new employment of an established affix must then gradually and imperceptibly come into general use, as an accepted item in the inventory of the language.

If just one person uses a derivational affix in a novel way—whether deliberately or naturally—this is simply anecdotal, not any sort of general development in the language.

Suffix *-en* makes verbs out of adjectives. It is only used with adjectives from a certain semantic set, which includes the three main colour terms. And it is only added to roots ending in /p/, /t/, /k/, /f/, /s/, /ʃ/, /θ/ or /d/.

One can say *whit-en*, *black-en*, and *redd-en* but not **yellow-en* or **blu-en* or **grey-en* or **scarlet-en*. (See 2.6e and 7.3.2.) Samuel Beckett often took artistic liberties with language. In his novel *Watt* (Beckett 1963: 36), one reads:

Watt saw, in the grate, of the range, the ashes grey. But they turned pale red, when he covered the lamp, with his hat. . . . So Watt busied himself a little while, covering the lamp, less and less, more and more, with his hat, watching the ashes greyen, redden, greyen, redden, in the grate, of the range.

Becket was deliberately creating *greyen*, by analogy with *redden*. This produces an intriguing literary effect, but it does not make *greyen* into an acceptable word for everyday use.

Now consider a new form being created not deliberately, as Beckett did, but naturally. A couple of years ago, entirely without thinking, I used *appropriacy* as the abstract noun corresponding to adjective *appropriate*, presumably by analogy with such pairs as *accur-ate/accur-acy* and *intim-ate/intim-acy*. Then friends told me that *appropriacy* is not a word in English. But surely it must be—*appropriate*, like *accur-ate* and *intim-ate*—is a Romance root, and *-acy* is a Romance suffix. I consulted the standard dictionaries and found, to my surprise, that there was no mention of *appropriacy*. The abstract noun is *appropriate-ness*, with Germanic suffix *-ness*. No other competent speaker employed *appropriacy*. I could have continued using it. If others had naturally (by unconscious imitation) joined me in this, it would have been the first new use of the *-acy* suffix (nowadays considered to be unproductive) for a couple of centuries. But such a happening would have been most unlikely. Instead, I conformed, and shamefacedly substituted *appropriate-ness* for each *appropriacy* in the draft I was writing. (And see 2.6h.)

2.6b The productivity of a derivational affix depends on the combination of a number of factors:

(1) Its meaning, and the extent to which speakers feel a need to utilize that meaning.
(2) Inherent semantic restrictions—some derivational affixes are restricted to use only with forms from certain semantic types.
(3) Phonological restrictions—there are quite often constraints relating to the phonological nature of a root or stem which can accept a certain affix.

(4) Whether the affix is of Germanic or Romance (or some other) origin, and whether it is mainly confined to use with roots of the same origin, or has been—to a greater or lesser extent—generalized for use with roots of all sorts.

(5) How well an affix fares in competition with other affix(es) which have similar function and meaning. It sometimes happens that one of a series of 'rival' affixes may be, as it were, in fashion for a while, with there being a preference for using it rather than the other(s). Then, a century or two later, habits may change, with a competitor now moving into favour.

We can provide preliminary exemplification for these points. Many further examples are included in the chapters that follow.

2.6c To illustrate factor (1), consider two negative prefixes, both of Romance origin: *non-* and *counter-*.

Speakers of English have a great deal of cause for employing *non-* 'not a member of a specified class'. Suppose that a new word comes into use, *sub-prime-monger*, referring to people who sell sub-prime mortgages. One can immediately add *non-* and insist that a reputable bank manager is a *non-sub-prime-monger*. *Non-* is highly productive because there is considerable demand for it.

Counter- 'do the opposite of, be the opposite to' is also productive, being available to create new words. For instance, a flurry of new forms came into circulation around the 1960s, including *counter-terrorism*, *counter-coup*, *counter-intuitive*, and *counter-example*. But it is much less used than *non-*, simply because it is not needed anything like so much.

2.6d Derivational suffixes *-er* and *-ee* are, to a certain extent, complementary. Among its other uses (see 2.3b), *-er* indicates someone who controls an activity, such as *publish-er*, *employ-er*, *danc-er*, *swindl-er*. The main function of *-ee* is to indicate someone affected by an action, such as *employ-ee*, *appoint-ee*, *detain-ee*; or someone exiting from a situation, such as *escap-ee*, *divorc-ee*, *retir-ee*, *absent-ee*.

Why is it then that, on a dictionary count, agentive *-er* words are about twenty times as common as *-ee* words? One reason is that one often wants to describe someone as habitually doing something, much less often as having something habitually done to them. Someone who often swindles people is

a *swindl-er*. But it is likely to be a different person they swindle each time. One is unlikely to encounter someone who habitually gets swindled (and who might be called a **swindl-ee*). A *murder-er* shows a propensity for killing people. But since a person can die only once, the idea of a **murder-ee* is nonsensical. (One could of course use it in a science fiction story about a race who have many lives.)

Another factor is that many *-er* agentive derivations refer to actions which have non-human patients. For example: *found-er* (of a city or a business), *hoard-er* (of things), *forg-er*, *fish-er*, and dozens of others.

All this illustrates factor (1) from 2.6b. Factor (2) also comes into play here. Suffix *-er* is of Germanic origin but is now highly productive and has been generalized to apply to forms of any genetic origin; for example *observ-er* (onto a Romance form). In contrast, suffix *-ee* emanates from a participial ending in French and is largely used with roots or stems of Romance origin.

2.6e As mentioned in 2.6a—when commenting on Samuel Beckett's nonce use of *greyen*—application of the verbalizing suffix *-en* relates to factor (1), meanings of forms to which it is attached, and also factor (3), their phonological endings.

First, *-en* is used with adjectives from the DIMENSION and PHYSICAL PROPERTY semantic types (see 2.9 and the Appendix)—*wid-en*, *deep-en*, *hard-en*, *light-en*. It is seldom employed with HUMAN PROPENSITY adjectives (there is no **proud-en*, **stupid-en*, *or* **honest-en*). The suffix is used with the three COLOUR adjectives at the top of Berlin and Kay's (1969) hierarchy—*whit-en*, *black-en*, *redd-en*—but not usually with those lower down—there is no attestation for **scarlet-en* or **violet-en*, although *pink-en* has come into occasional use during the last century or so.

Secondly, as stated in 2.6a, *-en* is restricted to use with roots ending in /p/, /t/, /k/, /f/, /s/, /ʃ/, /θ/, or /d/. *Greyen* is excluded (save as a literary affectation) on phonological and on semantic grounds. (There is a fuller discussion of this in 7.3.2.)

2.6f There are two productive derivational suffixes for deriving verbs, both of Romance origin. In 2.2e, we enquired why some forms take only *-ify* (*fals-ify* not **fals-ize*, *ugli-fy* not **ugl-ize*) and others only *-ize* (*legal-ize* not **legal-ify*; *patron-ize* not **patron-ify*). Here factor (3) comes into play—the reason is almost entirely phonological.