Words, Meaning and Vocabulary

An introduction to modern English lexicology

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continuum

4 Word formation

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This chapter covers:

- the reasons for studying word formation processes
- the various processes for forming new words in English
- inflection and derivation – two of the most general and most predictable processes of combining morphemes to form words
- compounds – stems consisting of two or more roots
- other word formation processes such as conversion, blends, and shortenings.

4.1 Why study word-formation processes?

By 'word-formation processes' we mean the different devices which are used in English to build new words from existing ones. Each word-formation process will result in the production of a specific type of word. Consequently, an understanding of these processes is one way of studying the different types of word that exist in English. In other words, if we know how complex lexical items are made by the association of different constituent morphemes, then we can also analyse any complex word into its various constituents. For example, if we know how the plural morpheme {-s} is added to singular nouns to make them plural, then we can also analyse any complex noun which is already inflected for plural into its constituent parts. Similarly, if we know how the comparative suffix {-er} and the superlative {-est} are added to adjectives, then given any inflected adjective, we can also analyse it into its constituent morphemes.

To give another example, if we know that *disturbance* and *payment* are made by the addition of the suffixes *-ance* and *-ment* to the verbs *disturb* and *pay* respectively, then we can also analyse any complex noun inflected by any of these suffixes into its constituent parts. However, not all instances of *-ance* and *-ment* are suffixes in English, for example *dance* and *comment*. As indicated in 3.1.3, what is left after the removal of a supposed affix must also be identifiable as a morpheme.

In our discussion of word-formation processes, we shall use the terminology already introduced in Chapters 1 and 3. It will be recalled that *free* forms are forms that occur alone; *bound* forms are those that cannot occur alone. *Stems* are forms that carry the basic meaning of the word; *affixes* add meaning to the stem. If a stem consists of a single morpheme it is also called a *root* or *base*. Roots constitute the innermost core of words and carry their basic meaning. Stems and roots may be bound or free but affixes are always bound. The affixes may be

further classified as *prefix*, *suffix* or *suprafix*, depending on whether they occur before, after, or simultaneously with the stem.

We shall now turn to our next question: 'What is the difference between inflection and derivation?'

EXERCISE 4/1

Analyse the following words into their constituent morphemes. Remember, only analyse if all the parts of the word can be accounted for.

beadiness, coagulative, deactivators, forbearingly, half-deafened, left-handedness, noncombatant, readability, temporarily, weedkiller

4.2 Inflection and derivation

Inflection is a general grammatical process which combines words and affixes (always suffixes in English) to produce alternative grammatical forms of words. For example, the plural morpheme is an inflectional morpheme. This implies that the plural form *roses*, for instance, does not represent a lexical item fundamentally different from the singular form *rose*, it is simply an inflectional variant of the same word. Similarly, the addition of the comparative inflection {-er} to the adjective *cold* gives *colder*, which is not a different lexical item, but an inflectional variant of the same word.

On the other hand, derivation is a lexical process which actually forms a new word out of an existing one by the addition of a derivational affix. For instance, the suffixes *-ation* and *-ure* may be added to the verbs *resign* and *depart* respectively to derive the nouns *resignation* and *departure*, which are different words. Similarly, the suffixes *-dom* and *-ful* may be added to the adjective *free* and the noun *hope* respectively to derive the noun *freedom* and the adjective *hopeful*, which again are different words. Following Jackson (1985: 34), it may be said that 'strictly speaking, the term "derivation" refers to the creation of a new word by means of the addition of an affix to a stem'.

The above definitions and examples show that the distinction between inflection and derivation is mainly morphological. While the application of inflection leads to the formation of alternative grammatical forms of the same word, that of derivation creates new vocabulary items. This is the basic difference between inflection and

derivation. However, each process does have additional characteristics which we shall now examine.

4.3 Inflectional affixes

We shall first define and give appropriate examples of inflectional affixes in 4.3.1, before discussing their characteristics in 4.3.2.

4.3.1 Definition and examples

Inflectional affixes may be described as 'relational markers' that fit words for use in syntax. This means that once the inflection or relational marker is added to a stem, that stem does not change classes, but its distribution is then limited in the syntactic structure. For example, the addition of the possessive suffix fits the inflected noun for use in syntax as noun modifier (i.e. like an adjective). The noun with the possessive marker can only be used as a modifier of another noun, never as a head or main element in a given structure. Thus, *John* + possessive becomes *John's* as in *John's book*. However, the word class of the noun has not changed. Note that although *John's* does function like an adjective, it is still not an adjective: it cannot take the affixes {-er} 'comparative' and {-est} 'superlative' which are characteristic of many monosyllabic members of that class.

Similarly, when the plural inflection is added to *dog* to form *dogs*, both *dog* and *dogs* are nouns and the addition of the plural inflection does not change the grammatical class of the word, but they do not have the same distribution in syntactic structures. Hence we say 'The *dog is* barking' but 'The *dogs are* barking'. To give another example, suffixing the past participle morpheme to the verb *speak* gives us *spoken*, which is still a verb; but both verbs cannot always occur in the same linguistic context. For instance, if we have the structure 'John could have spoken' we cannot replace the inflected verb form *spoken* by the corresponding uninflected form *speak*. Hence, '*John could have speak' is ungrammatical, i.e. not built according to the rules of English syntax.

4.3.2 Characteristics of inflectional affixes

One of the most important characteristics of inflectional suffixes is that they tend to lend themselves to paradigms which apply to the language as a whole. The paradigm of a major word class consists of a single stem of that class with the inflectional suffixes which the stem may take. The paradigm may be used as a suitable way of defining the word

class in the sense that if a word belongs to that class it must take at least some of the suffixes characteristic of that set as opposed to suffixes characterizing other paradigms. However, to belong to a class, a word need not take every inflectional suffix in the paradigm. Inflectional suffixes of nouns, adjectives, and verbs may be tabulated and illustrated as follows (see Cook 1969: 122–3):

Nouns show the following inflectional contrasts:

Base form	*stem + plural*	*stem + possessive*	*stem + plural + possessive*
boy	boys	boy's	boys'
child	children	child's	children's
student	students	student's	students'

Adjectives (that are gradable and mono- or di-syllabic) show the following inflectional contrasts:

Base form	*stem + comparative*	*stem + superlative*
cold	colder	coldest
happy	happier	happiest
sad	sadder	saddest

Verbs (except the verb *be* and modals) show the following inflectional contrasts:

Base form	*stem + 3rd person singular*	*stem + past tense*	*stem + past participle*	*stem + present participle*
eat	eats	ate	eaten	eating
sing	sings	sang	sung	singing
work	works	worked	worked	working

Note that in some verbs, including all those formed regularly with *-ed*, the five-part paradigm has four parts only, because the past tense and the past participle inflections are identical in form. However, the past tense and the past participle inflections may be recognized as different morphemes which happen to have identical shape in such cases (they are homonyms).

English *pronouns* and *auxiliary verbs* may also be characterized by the noun and verb inflectional paradigms respectively, while some *adverbs* may be characterized by the adjective paradigm as shown in the following sub-sections.

Pronouns constitute a class of function words (1.3.4). They do not

add suffixes which are inflections, but their respective forms fit the noun inflectional paradigm as shown below:

child	children	child's	children's
I, me	we, us	mine	ours
you	you	yours	yours
he, him }		his }	
she, her }	they, them	hers }	theirs
it, it }		its }	

The alternatives listed in each cell of the paradigm are mutually exclusive in the sense that where one occurs the other one does not occur (i.e. they are in complementary distribution). For example, *I* occurs before verbs (as grammatical subject), as in '*I* wrote a letter' whereas *me* occurs immediately after verbs (as grammatical object or indirect object), as in 'John wrote *me* a letter' or as the complement of a preposition as in 'John wrote a letter to *me*'. Similarly, *mine* replaces the whole structure consisting of '*my + noun*'. Thus *mine* could stand for 'my letter', 'my book', as in 'This book is mine.'

Auxiliaries constitute a closed sub-class of verbs. They can take certain forms of the verb paradigm but not all. While most verbs have five or four forms, the modal auxiliaries only have two. The English auxiliary *be* is the most polymorphic of all verbs, with eight different forms, while the modal auxiliary *must* only has one form whether it is used in the past or present tense (see paradigm below).

eat	eats	ate	eaten	eating
be	am/are/is	was/were	been	being
can	could			
may	might			
must				
shall	should			
will	would			

Note that although *must* has just one form, it is still considered to be a modal auxiliary verb.

Adverbs (some, and not usually *-ly* adverbs like *quickly*) of one or two syllables show the following inflectional contrasts:

Base form	*stem + comparative*	*stem + superlative*
fast	faster	fastest
soon	sooner	soonest

Since most adverbs consist of more than two syllables, this paradigm cannot be used as a definition of the class of adverbs in English.

Finally, under inflections, the distinction between 'regular' and

'irregular' inflections needs to be pointed out. Regular inflections are those that are formed according to a common pattern, e.g. *-s* for the plural of nouns, *-ed* for the past tense and past participle of verbs, *-er* for the comparative of adjectives. Irregular inflections are those that do not follow this pattern and which usually apply to only one or a small number of members of the word class concerned. For example, the following nouns form their plurals irregularly: child – children, man – men, mouse – mice, sheep – sheep, tooth – teeth. The number of verbs that form their past tense and past participle irregularly is much greater, e.g. begin – began – begun, buy – bought, give – gave – given, go – went – gone, hold – held, sing – sang – sung, split – split, throw – threw – thrown, write – wrote – written. Even the regular inflections may show some variation in spelling (e.g. dropping of *e* from *-ed: moved*; or the addition of *e* to *-s: masses*) and more usually in prounciation: compare the pronuciation of plural *-(e)s* in *cats, dogs, horses*; and of the past tense *-ed* in *walked, jogged, glided.*

> *EXERCISE 4/2*
>
> Give all the possible inflections for the following words:
>
> bring, cow, forget, guest, have, high, stop, tall, tooth, weary

4.4 Derivational affixes

After a brief definition and a discussion of the main characteristics of derivational affixes in 4.4.1, we shall deal with the different types of derivational affixes in 4.4.2, before giving a recapitulatory table of English derivational affixes in 4.4.3.

4.4.1 Definition and examples

English has over sixty common derivational affixes, and there is no theoretical limit to their number. Derivations have a 'low functional load', in the sense that each single derivation occurs rarely and is limited to a few specific combinations with particular stems. In other words, they tend not to be paradigms which apply to sets of words as a whole. Even though derivational affixes do have characteristics which may enable us to distinguish them from inflectional suffixes, it should be noted that the distinction between the two types of affixes is not always clear-cut, e.g. the 'past participle' suffix *-ed* is used to form adjectives of the *red-haired* type.

Derivational affixes can change the word class of the item they are added to and establish words as members of the various word classes. They are inner with respect to inflections, so that if derivations and inflections co-occur, derivations are inner, closer to the stem, and inflections are outer, furthest from the stem, as shown in the table below.

Example	*Base form*	*+ Derivation*	*+ Inflection*
frightened	fright	-en	-ed
activating	active	-ate	-ing
payments	pay	-ment	-s
resignations	resign	-ation	-s

As a final observation, it must be said that derivational affixes do not always cause a change in grammatical class. The derivational affix *re-*, for example, derives *reconsider* from *consider*, yet both are verbs. Also, compare *populate/depopulate, intelligent/unintelligent, probable/improbable.* Furthermore, a shift in grammatical class is not always signalled by an overt marker. Thus, *staff* and *star* are basically nouns, but they can also be used as verbs, with no affix as in the sentence 'The manager did not *staff* the restaurant properly' and 'I don't think Susan is the best actor to *star* in that new film'. A change in word class without the addition of an affix is known as 'conversion'. Sometimes a word consisting of two or more syllables may undergo a change of word class, with the only indicator being a change in the stress pattern. For example, in the following lists, stress distinguishes the nouns on the left from the verbs on the right. ('Stress' as used here means the impression of more energy in the articulation of the stressed syllable, which usually results in its sounding louder and longer than other syllables in the same word. The symbol (') occurs in front of the stressed syllable.) We shall regard 'stress' as a derivational affix (suprafix, see 4.1).

Nouns	*Verbs*
'contract	con'tract
'defect	de'fect
'import	im'port
'permit	per'mit
'present	pre'sent
'reject	re'ject

One exception to this rule is the word *effect* which is both a noun and a verb without any corresponding change in stress pattern.

4.4.2 Types of derivational affix

Derivational affixes are of two kinds: class-changing and class-maintaining. Class-changing derivational affixes change the word class of the word to which they are added. Thus, *resign*, a verb + *-ation* gives *resignation*, a noun. Class-maintaining derivational affixes do not change the word class of the word but change the meaning of the derivative (i.e. the word which results from the derivation). Thus *child*, a noun + *-hood* gives *childhood*, still a noun, but now an 'abstract' rather than a 'concrete' noun.

Class-changing derivational affixes, once added to a stem, form a derivative which is automatically marked by that affix as noun, verb, adjective or adverb. The derivations are said to determine or govern the word class of the stem. We shall discuss in turn noun, verb, adjective and adverb derivational affixes. Each of them has two distinct patterns of derivation depending on the word class with which the affix is associated.

For example, nouns may be derived from either verbs or adjectives; verbs from either nouns or adjectives; adjectives from either nouns or verbs; and adverbs from either adjectives or nouns. As will be shown below, English class-changing derivations are mainly suffixes.

Noun derivational affixes are also called 'nominalizers', e.g.

Verb	+	*Affix*	*Noun*
Leak		-age	leakage
Argu(e)		-ment	argument
Betray		-al	betrayal
Resign		-ation	resignation
Defen(d)		-ce	defence
Disturb		-ance	disturbance
Refer		-ee	referee
Depart		-ure	departure
Consult		-ant	consultant
Farm		-er	farmer
Enquir(e)		-y	enquiry
Brag		-art	braggart
Conclud(e)		-ion	conclusion
Im'port		(stress)	'import

Adjective	+	*Affix*	*Noun*
Accurat(e)		-y	accuracy
Social		-ist	socialist
Electric		-ity	electricity
Free		-dom	freedom
Good		-ness	goodness
Tru(e)		-th	truth
Social		-ite	socialite

Verb derivational affixes, also known as 'verbalizers', are used to form verbs from other stems. When compared with other derivational affixes, they are rather rare. This may be accounted for by the fact that verbs are the most basic forms in English: while they are used to derive other words, they themselves are not readily derived from other forms. Most English verbalizers are characterized by the fact that they are causatives.

Noun	+	*Affix*	*Verb*
Fright		-en	frighten
Pressur(e)		-ize	pressurize
Friend		be-	befriend
Glory		-fy	glorify
Title		en-	entitle

Adjective	+	*Affix*	*Verb*
Soft		-en	soften
Able		en-	enable
Pur(e)		-ify	purify
Legal		-ize	legalize

Adjective derivational affixes or 'adjectivizers' are used to form adjectives when added to a given stem. In English, adjectives are generally formed from nouns, more rarely from verbs.

Noun	+	*Affix*	*Adjective*
Season		-al	seasonal
Wretch		-ed	wretched
Care		-less	careless
Suburb		-an	suburban
Gold		-en	golden
Life		-like	lifelike
Hope		-ful	hopeful
Day		-ly	daily
Station		-ary	stationary
Fam(e)		-ous	famous
Passion		-ate	passionate
Child		-ish	childish
Cream		-y	creamy

Verb	+	*Affix*	*Adjective*
Argu(e)		-able	arguable
Creat(e)		-ive	creative
Depend		-ent	dependent
Sens(e)		-ory	sensory
Tire		-some	tiresome

Adverb derivational affixes or 'adverbializers' are affixes which form adverbs when added to a given stem. Adverbs, in English, are generally formed from adjectives, sometimes from nouns. Once it is formed, the adverb can no longer be used to form words of other classes such as nouns, verbs, or adjectives.

Adjectives	+	*Affix*	*Adverb*
Consistent		-ly	consistently
Slow		-ly	slowly
Obvious		-ly	obviously

-ly is the most productive of all derivational affixes.

Noun	+	*Affix*	*Adverb*
Home		-ward	homeward
Sky		-wards	skywards
Clock		-wise	clockwise
Shore		a-	ashore

Class-maintaining derivations refer to those derivations which do not change the word class of the stem to which they are added although they do change its meaning. Unlike class-changing derivations, which are mainly suffixes, English class-maintaining derivations are mainly prefixes.

Noun patterns:

Noun	+	*Affix*	*Noun*
Malaria		anti-	anti-malaria
Chief		-dom	chiefdom
Scholar		-ship	scholarship
Priest		ex-	ex-priest
Child		-hood	childhood
Duke		-y	duchy

Verb patterns:

Verb	+	*Affix*	*Verb*
Join		ad-	adjoin
Agree		dis-	disagree
Open		re-	reopen
Locate		col-	collocate
Judge		pre-	prejudge
Tie		un-	untie
Claim		pro-	proclaim

Adjective patterns:

Adjective	+	*Affix*	*Adjective*
Social		anti-	anti-social
Kind		-ly	kindly
Possible		im-	impossible
Green		-ish	greenish

As already pointed out, English adverbs are not used to derive words of other classes; consequently, we cannot speak of English adverb patterns to parallel the noun, verb and adjective patterns discussed above.

4.4.3 Chart of English derivational affixes (adapted from Cook 1969: 129)

For the purpose of this chart, the symbols *n*, *v*, *aj*, and *av* correspond to nouns, verbs, adjectives, and adverbs respectively. The derivational affixes are marked as input → output. Thus, D.n-n means a noun becoming a noun; D.v-aj, a verb becoming an adjective, and so on. In class-maintaining derivations both input and output consist of the same symbol (D.n-n, D.v-v, D.aj-aj).

Once formed, the derivative is treated as the simplest member of the same word class, both in syntax and in the addition of inflectional suffixes. Thus, *dog*, *argument*, and *childhood* behave similarly as shown below.

Stem class	→Noun	→Verb	→Adjective	→Adverb
1. Noun	D.n-n childhood	D.n-v pressurize	D.n-aj hopeful	D.n-av clockwise
2. Verb	D.v-n argument	D.v-v prejudge	D.v-aj creative	D.v-av no case

3. Adjective	D.aj-n socialism	D.aj-v soften	D.aj-aj unreal	D.aj-av hardly

dog	dogs	dog's
argument	arguments	argument's
childhood	childhoods	childhood's

The {dog / argument / childhood} is ... but The {dogs / arguments / childhoods} are ...

EXERCISE 4/3

Identify the derivational affixes used in the following words. Give a meaning/function for each one, e.g. *-ment*: has the function of deriving a noun from a verb; *re-* means 'again'.

covariance, enactable, ungracious, preconnection, depressive, incriminatory, proconsulship, officialdom, declassify, troublesome.

4.5 Compounds

After a brief definition of compounds in 4.5.1, we shall discuss the distinction between compounds and phrases in 4.5.2 before studying the parts of a compound in 4.5.3 and the classification of compounds in 4.5.4; finally, in 4.5.5 we shall give a recapitulatory chart of English compounds.

4.5.1 Definition

Compounds may be defined as stems consisting of more than one root. For example, *bedside*, *black market*, *car-wash*, *waste paper basket*. Note that the orthographic treatment of compounds is by no means consistent. Some are written as one word (with or without a hyphen between two roots), while others are written as two or more words. This observation tends to suggest that compounds have an intermediary status between phrases and words consisting of a single root. Note also that although most compounds consist of roots that are simply juxtaposed, in some cases, one of the roots of a compound may be modified by an inflection as in 'bird's-eye', 'driving-licence', and 'homing pigeon'.

4.5.2 Distinction between compounds and phrases

In English, compounds may be distinguished from phrases on phonological, syntactic, and semantic grounds.

In English, words are characterized by a single primary stress, so that compounds are often recognized by stress pattern and lack of juncture. (Juncture refers to the transition which characterizes adjacent syllables belonging to contiguous words.) For example, *'black 'board* potentially has primary stress on each word and a juncture between the two words. On the other hand, *'black-board*, the compound, has one primary stress and no juncture. The same observation applies to contrasts such as *'black 'bird* versus *'blackbird*; *'hard 'cover* versus *'hardcover*.

Compounds may also be distinguished from phrases in that they have specific syntactic features. But it must be added that the grammatical relations between the constituents of the compound are sometimes obscure. We shall consider in turn 'word order', 'interruptibility', 'modification', and 'inflectibility' of compounds.

Word order refers to the position of the different constituents of a compound in relation to one another. Some compounds are characterized by the fact that they use what may be considered ungrammatical or at least unusual word order in English. For example, the structure 'Noun + Adjective' is not the most usual phrase pattern in English but it occurs in compounds such as *sea-sick*. Similarly, the structure 'Verb + Preposition' is regular for verbs and unusual for nouns, but it does occur in the case of the compound *splashdown* which is a noun. Objects usually follow their verbs in sentence structure, but not necessarily in compounds, e.g. *knee-jerk*.

All compounds are non-interruptible in the sense that in normal use their constituent parts are not interrupted by extraneous elements, which confirms the assumption that compounds are indeed single lexical units. For example, the compound *dare-devil* cannot be used as 'dare *the* devil', which is a phrase. In general, once an extraneous element is inserted between the roots of a compound (see the insertion of *the* in *dare-devil* above), it destroys the stability of the whole structure to such an extent that the latter is no longer recognizable as a compound in English.

Modification refers to the use of other words to modify the meaning of a compound. Since the compound is a single unit, its constituent elements cannot be modified independently; however, the compound as a whole may indeed be modified by other words. For example, *air-sick* may occur neither as '*hot* air-sick', with *hot* modifying *air*, nor as 'air-*very* sick' with *very* modifying *sick*. However, if

we say 'John was seriously air-sick', *seriously* modifies the whole compound, not just the first element.

Inflectibility refers to the use of inflections to modify the grammatical function of compounds. As a lexical unit, the compound may be inflected according to its grammatical class; however, its constituent elements may not be inflected. For example, *bottle-neck*, which is a noun, may not occur as *'bottle*s*-necks' with *bottle* inflected for plural. Instead, the form *bottle-necks* must be used to show the plural form of the compound. Similarly, we have *ash-trays*, *dish-washers*, *finger-prints*, *waste paper baskets*, *textbooks*. To give another example, consider *downgrade* as a verb: the corresponding past tense is not *downed grade* but *downgraded*. Similarly, we have *baby-sat* for *baby-sit*, *sweet-talked* for *sweet-talk*.

Compounds are characterized semantically by the fact that they tend to acquire specialized meanings, thus becoming very much like idioms. Only in rare cases is the meaning of a compound derived from that of its constituents in the literal sense. In most cases, the meaning of at least one of the constituents is somehow obscured. For example, a *dustbin* is not restricted to the collection of dust alone; a *blackboard* may be green and may be made of material other than wood.

To close this discussion of the distinction between compounds and phrases, it should be said that the phonological, syntactic and semantic features discussed above operate simultaneously and give the compound a strong binding force, thus making it quite distinct from the phrase.

4.5.3 Parts of a compound

We shall discuss in turn compounds consisting of two roots, and compounds in which one of the elements is complex.

Compounds consisting of two roots are the simplest type of compound. They also tend to be the most numerous in the language. To give an idea of the extent to which this type of compound dominates in English we have listed some of the initial roots. It is possible to verify them from any dictionary and see the vast number of compounds that may be formed from each initial root.

Nouns as initial elements: air, arm, ash, beach, bird, book, bull, car, cat, cow, door, duck, ear, eye, farm, foot, hair, hand, heart, house, lamp, lip, moon, mouth, rail, rain, rose, shoe, snow, suit, star, steam, sun, table, tea, time, wall, wind, wrist.

Verbs as initial elements: break, carry, cast, come, count, drive, drop, fall, feed, go, kick, line, pick, play, pull, push, print, read, run, set, shoot, show, sit, splash, stand, stick, swim, take, turn.

Adjectives as initial elements: big, black, blue, brief, cold, fair, far, green, grey, high, hot, left, long, low, near, quick, red, right, short, slow, small, south, straight, tight, white, yellow.

Adverbs as initial elements: about, after, back, by, down, fore, front, hind, in, off, on, out, over, under, up.

There is a rather special type of two-part compound which is not formed by the combination of two free root morphemes, but by the combination of two bound root morphemes. These are the so-called 'neo-classical' compounds, such as *astronaut*, *bibliography*, *xenophobia*. They are formed from Greek and Latin roots (*astro*, 'star', *naut*, 'sailor'; *biblio*, 'book', *graphy*, 'writing'; *xeno*, 'foreigner', *phobia*, 'fear'), which do not, for the most part, occur as simple words in English, and whose combinations are not generally compounds in classical Greek and Latin. They are 'learned' vocabulary and form much of the international vocabulary of science, medicine and technology. They are considered to be compounds because their parts are clearly roots rather than affixes, but they are unlike the usual compounds in English because their roots are not free morphemes.

As already pointed out in 4.5.1, the first element of a compound may be inflected, as in 'bird'*s*-eye', 'driv*ing*-licence', and 'hom*ing* pigeon'. The second element of the compound may also be complex. In such cases, the pattern of the compound and its underlying form are determined by the type of suffix associated with the second element of the compound. Note that we are interested here in cases where one of the roots of the compound must always occur with a suffix; not in cases such as *ash-tray(s)* and *textbook(s)* where the suffix is optional. We shall discuss the cases where the second element is suffixed by either *-er* or *-ed*.

Forms in *-er* that occur as second root function in the compound as simple forms. The construction should be analysed as Noun + Noun (*-er*). For example, *book-keeper*, *coat-hanger*, *dish-washer*, *house-keeper*, *left-winger*, are all analysable in terms of Noun + Noun compounds. The second noun is a derived form with the structure 'verb root + derivation'.

Forms in *-ed* which occur as second root are phrase derivatives, with *-ed* governing the whole phrase. Consequently, such constructions should be analysed as (Adjective + Noun) + *-ed*. For example, in *left-handed*, *left* modifies *hand* and the whole phrase is in turn governed by *-ed*. The same analysis also applies to *kind-hearted*, *red-haired*, *well-intentioned*.

4.5.4 Classification of compounds

It will be recalled that compounds must consist of more than one root, but the different roots need not belong to the same word class. When the two constituents of the compound belong to the same class (e.g. noun + noun, verb + verb), it may be assumed that the resulting compound also belongs to the same word class and functions as the simplest member of that class. But when the two constituents of the compound belong to different word classes, the classification of the resulting compound cannot be taken for granted.

We shall consider the classification of compounds according to the word class, and the syntactic relationship between the roots. Classification by word class is independent of the syntactic relation existing between the two roots and resembles an algebraic equation. As a general rule, the word class of the last element of the compound determines the class of the compound. We shall consider in turn noun, verb, adjective, and adverb compounds.

Noun compounds: Any root + noun = noun compound
The second root must be a noun while the first root may be a noun, a verb, an adjective or an adverb. Examples of noun compounds are as follows:
N + N (modifier-head): ash-tray, arm-chair, text-book
V + N (verb-object): dare-devil, pick-pocket
Aj + N (modifier-head): black-bird, blue-collar, hard-cover
Av + N (not syntactic): after-thought, back-talk, down-grade.

Verb compounds: Any root + verb = verb compound
The second root must be a verb and the first root may be a noun, a verb, an adjective, or an adverb.
N + V (object-verb): baby-sit, brain-wash, house-keep
V + V (co-ordinate): dive-bomb, drop-kick
Aj + V (not syntactic): dry-clean, sweet-talk, white-wash
Av + V (modifier-head): down-grade, over-do.

Adjective compounds: Any root (except verbs) + adjective = adjective compound
The second root must be an adjective and the first root may be a noun, an adjective, or an adverb. Verbs do not combine with adjectives in English.
N + Aj (not syntactic): earth-bound, ox-eyed, sea-sick
Aj + Aj (co-ordinate): blue-green, metallic-green, south-west
Av + Aj (modifier-head): near-sighted, off-white.

Adverb compounds: Adverb + adverb = adverb compound
Av + Av (co-ordinate): in-to, through-out.

Special noun compounds: Verb + adverb = noun compound
The first root is a verb and the second root is an adverb. The compound may be distinguished from the 'verb + particle = phrasal verb' construction only by the context in which it occurs.
V + Av (derivation): blast-off, drive-in. This class of compounds is the only type which does not follow the general rule in English; that is, it is the only one composed of two roots in which the compound is not a member of the same class as the second root. So, *blast-off* and *drive-in* are not adverbs but nouns.

The type of syntactic relationship existing between the two roots of a compound is a reliable criterion for the classification of compounds into sub-groups. The first, which includes most compounds and is therefore the most important, consists of compounds in which the constituents are put together according to syntactic rules that also operate elsewhere in English phrase structures. The second, by far the smaller, consists of compounds in which the association of roots violates syntactic rules. We shall discuss the first sub-group under the label 'syntactic compounds' and the second under 'non-syntactic compounds'.

To parallel the different types of phrase that may be identified in English, syntactic compounds may be classified as follows:

Endocentric: one or both roots is the 'head' of the compound
co-ordinate: two head roots, e.g. *boyfriend*, i.e. a boy who is a friend, a friend who is a boy
subordinate: only one head root; this is a modification structure, e.g. *armchair*, i.e. a chair with arms
Exocentric: neither root is the 'head'
e.g. *pick-pocket*, i.e. one who picks pockets.

Since non-syntactic compounds do not follow the rules of syntax, they cannot be classified systematically like syntactic compounds. They include structures such as:

'Noun + Adjective' and 'Adverb + Noun' instead of the more common structures 'Adjective + Noun' and 'Noun + Adverb' respectively:
Noun + Adjective: *air-sick*, i.e. sick because of travelling by air
Adverb + Noun: *back-talk*, i.e. rude talk in reply to someone (derived from 'to talk back').

Both syntactic and non-syntactic compounds may be characterized by the fact that the relationship between the constituents is highly condensed. Compounds are thus interpreted as short-cuts for longer and more elaborate phrase structures. If the elaborate phrase structure is perceived, then the meaning of the compound becomes more explicit. For example, in noun compounds consisting of the structure 'noun + noun', we may postulate the existence of relational words (e.g. prepositions) in the structure, as follows: *ash-tray* = tray *for* ashes; *armchair* = chair *with* arms; *sea-shore* = shore *of* the sea; *sun-light* = light *from* the sun; *gas-mask* = mask *against* gases.

4.5.5 Chart of English compounds

English compounds consisting of two roots may be represented conveniently in the chart shown below. As already stated above, it should be noted that the grammatical class of the compound is the same as that of the last element in its structure. The only exception is the 'verb + adverb' construction in which the resulting compound is not an adverb, but a noun.

Compound	+ Noun	+ Verb	+ Adjective	+ Adverb
1. Noun	N + N moon-light	V + V drop-kick	N + Aj sea-sick	N + Av No case
2. Verb	V + N pick-pocket	V + V dive-bomb	V + Aj No case	V + Av = N lift-off
3. Adjective	Aj + N black-board	Aj + V dry-clean	Aj + Aj blue-green	Aj + Av No case
4. Adverb	Av + N back-talk	Av + V over-do	Av + Aj off-white	Av + Av in-to

To close this discussion of English compounds, it must be said that although a number of regularities can be observed, the process of compound formation does not lend itself readily to general rules. All the various regularities which may be formulated are coupled with many important exceptions. Consider, for instance, English compounds consisting of an adjective and a noun. The following seem quite regular: *dirty-work, Englishman, long jump, madman, wildlife*. They can all be paraphrased by an expression of the form 'NOUN that is ADJECTIVE'. Thus, *dirty-work* is a *work* that is *dirty*; *wildlife* is *life* that is *wild*, and so on. This is a recurrent pattern of compound formation in English; in other words, given the existence of an expression of the form 'NOUN that is ADJECTIVE' a corresponding adjective-noun compound can be formed.

However, a person learning English must learn more than this general rule of compound formation. They must at the same time learn a wealth of unpredictable, arbitrary facts about compounds of this type; otherwise, they will end up with compounds built according to the general rule suggested. For example, while *dirty-work* is an English compound, *clean work* is not a compound, neither are *dry work* and *wet work*. Why do we have *madman* but neither *saneman* nor *deafman*?

Furthermore, many compounds that are superficially of this type do not mean what we could predict on the basis of the regular pattern. Hence a *highbrow* is not a 'brow' that is 'high', but an 'intellectual'. A *blackboard* is not necessarily a *board* that is *black*. Other examples of this kind are *dumbbell, red-coat, sourpuss, tenderfoot*. Similar observations could be made for compounds other than those consisting of an adjective and a noun.

As shown in the above discussion, compounds have phonological, syntactic, and semantic features which account for their status as single words; on the other hand, since the meaning of a compound cannot always be predicted from that of its constituents, compounds also have features in common with an intermediary structure between simple lexical items on the one hand and idioms and phrases on the other. Note, however, that a discussion of English phrases has its place in the study of syntax, not in that of lexicology. As for the discussion of idioms, it comes under 'multiword lexemes', since each idiom consists of at least two words in a specific collocation (see 3.5).

> *EXERCISE 4/4*
>
> Return to the list of compound-initial elements in 4.5.3 and choose two elements from each of the noun, verb, adjective and adverb lists. Create as many compounds as you can think of, and then check your lists against a dictionary.

4.6 Other word-formation processes

In addition to inflection, derivation and compounding, there are other word-formation processes in English. We shall discuss in turn conversion, blends and shortenings.

4.6.1 Conversion

Conversion may be defined as a process by which a word belonging to one word class is transferred to another word class without any concomitant change of form, either in pronunciation or spelling. It is a highly prolific source for the production of new words since there is no restriction on the form that can undergo conversion in English. In fact, this word-formation process occurs so regularly that many scholars prefer to consider it as a matter of syntactic usage rather than as word-formation (see Bauer 1983: 227). Pyles and Algeo (1993: 281) use the term 'functional shift' to refer to the same process and to highlight the fact that in such cases, words are converted from one grammatical function to another without any change in form.

Conversion may involve a change within the same word class as in the change from one type of noun to another or one type of verb to another, for example, the use of uncountable nouns as countable and vice-versa. Thus, in 'some beer/coffee/sugar/tea', the nouns are uncountable; whereas in 'two beers/coffees/sugars/teas', the nouns are countable. As a general rule, if the context is carefully chosen, it is possible to use almost any noun in either way. Even proper names can be easily used as common nouns as in 'Which Hilary do you mean?'. Similarly, intransitive verbs are often used as transitive verbs. Compare for instance the members of the following pair:

How long can a pigeon *fly* non-stop?
Can this little boy *fly* a kite?

The first is intransitive and the second transitive.

Conversion most often involves a change from one word class to another. The major kinds of conversion are noun → verb, verb → noun, adjective → noun, and adjective → verb. For example:

Noun → verb: to bottle, to commission, to data-bank, to network.
Verb → noun: a call, a command, a guess, a spy.
Adjective → verb: to better, to dirty, to empty, to wrong.
Adjective → noun: Such conversions are relatively rare and restricted in their syntactic occurrences; e.g. the poor, the rich (no plural), a convertible, a daily, a double.

Adverbs, prepositions, conjunctions, interjections and even affixes can all act as bases for conversion as in *to up* prices (preposition → verb), the *hereafter* (adverb → noun). Furthermore, many of these word classes can undergo conversion into more than one other word class, e.g. to go *down* (adverb particle), to *down* a beer (verb), to have a *down* on someone (noun). Finally, it should be noted that even a whole

phrase may undergo conversion and act as a noun, e.g. a *forget-me-not*, a *has been*, a *don't know*; it may also act as an adjective as in a *Monday morning* feeling, a *not-to-be-missed* opportunity.

To close this brief discussion of conversion, we wish to point out that contrary to the position adopted by some scholars (e.g. Bauer 1983: 228–9), we do not recognize a class of 'marginal cases of conversion'. From the point of view adopted in this book, if there is any change in either spelling or pronunciation, as a word is transferred from one word class to another, we cannot speak of conversion (see 4.4.1).

4.6.2 Blends

A blend may be defined as a new lexeme built from parts of two (or possibly more) words in such a way that the constituent parts are usually easily identifiable, though in some instances, only one of the elements may be identifiable. Blends may also be referred to as 'telescope' or 'portemanteau' words (see Gramley and Pätzold 1992: 26). For example:

breakfast	+	*lunch*	→	brunch
channel	+	*tunnel*	→	chunnel
dove	+	*hawk*	→	dawk
motor	+	*hotel*	→	motel
sheep	+	*goat*	→	shoat
slang	+	*language*	→	slanguage.

These examples show that in the formation of blends, the first part of the first element is added to the second part of the second element. The resulting items are generally nouns, while a few are adjectives such as *glitzy* (glitter + ritzy), and verbs such as *gues(s)timate* (guess + estimate) and *skyjack* (sky + hijack).

Blends tend to be more frequent in informal style in the registers of journalism, advertising and technical fields. They give rise either to new morphemes or to folk etymology. In most cases, blending results in the creation of new morphemes or in the addition of new meanings to old ones. For example, *automobile*, taken from French, was originally a combination of Greek *autos*, 'self' and Latin *mobilis*, 'movable'. The element *auto* became productive as evidenced by the words *autobiography*, *autodidact*, *autograph*, *autocar* and *autobus*. The second element of *automobile* also acquired a combining function as in *bookmobile*, 'library on wheels' and *bloodmobile*, 'blood bank on wheels'. Similarly, *hamburger* was blended so often with other words (e.g. cheeseburger, steakburger, chickenburger, and vegeburger) that the form *burger* acquired the status of an independent word.

Folk etymology (see 1.1.3) is viewed here as a minor kind of blending. It is a naive misunderstanding of a relatively esoteric word which gives it a new, but false, etymology. Pyles and Algeo (1993: 280) give interesting examples of such folk etymology: a certain ballet jump called '*saut de basque*' ('Basque leap') which was interpreted by American students as *soda box*, a lady who interpreted *chest of drawers* as *Chester drawers*, or a child too young to read who interpreted 'artificial snow' as 'Archie Fisher snow' because he knew a man called Archie Fisher, who displayed it in his shop window. However, it should be pointed out that we speak of folk etymology only when this sort of misunderstanding of words becomes sufficiently widespread, thus leading to the acquisition of a new item in the English vocabulary.

4.6.3 Shortenings

We have already discussed some of the processes used in the creation of new English words in 2.5. We shall now turn to the processes which come under the heading of shortening, viz. clipping, backformation, initialism and aphetic forms. Clipping involves the type of word-formation device in which only part of the stem is retained. The beginning may be retained as in *lab* (from laboratory), the end as in *plane* and *phone* (from aeroplane and telephone respectively), the middle as in *flu* (from influenza). Very often, the clipped form completely supplants the original full form. Thus, *bra*, *bus*, *car* and *mob* supplanted *brassière*, *omnibus*, *motorcar* and *mobile vulgus* respectively.

Backformation is the making of a new word from an older word which is mistakenly assumed to be its derivative. Backderivation is characterized by the fact that it involves the shortening of a longer word by the substraction of a morpheme. For example, it may be said that the verbs *peddle* and *televise* are derived from the corresponding nouns *peddler* and *television* by the subtraction of the suffixes *-er* and *-ion* respectively. But following Strang (1969: 231), backformation can better be interpreted as a means of completing a proportion. According to this interpretation, verbs such as *peddle* and *televise* arise from completing the proportions writer: write :: peddler: ?; revision : revise :: television :?. In other words, *write* is to *writer* as *peddle* is to *peddler*. Similarly, *revise* is to *revision* as *televise* is to *television*.

Initialisms constitute an extreme kind of clipping since only the initial letters of words, or sometimes initial syllables, are put together and used as words. Usually, the motivation for initialism 'is either brevity or catchiness, though sometimes euphemism may be involved,

as with BO and VD for "body odour" and "Venereal Disease" respectively' (Pyles and Algeo 1993: 273).

When initialisms are pronounced with the names of the letters of the alphabet, they may be called *alphabetisms* or abbreviations. But when they are pronounced like individual lexical items, they are *acronyms*: from Greek *akros*, 'tip' and *onyma*, 'name', by analogy with *homonym*. Examples of alphabetisms are: AI (amnesty *I*nternational; artificial *I*ntelligence); ATV (*a*ll *t*errain *v*ehicle in AmE; associated *T*ele*v*ision in BrE); BP (*b*eautiful *p*eople, AmE; *B*ritish *P*etroleum; *b*lood *p*ressure, BrE); VIP (*v*ery *i*mportant *p*erson). Examples of acronyms are: *laser* (*l*ight wave *a*mplification by *s*timulated *e*mission of *r*adiation), *scuba* (*s*elf-*c*ontained *u*nder water *b*reathing *a*pparatus), AIDS (*a*cquired *i*mmune *d*eficiency *s*yndrome), RAM (*r*andom *a*ccess *m*emory); ROM (*r*ead *o*nly *m*emory), NATO (*N*orth *A*tlantic *T*reaty *O*rganization), UNESCO (*U*nited *N*ations *E*ducation *S*cientific and *C*ultural *O*rganization).

There are also cases where alphabetisms are mixed with acronyms and the two systems of pronunciation are combined: e.g. VP (for *V*ice-*P*resident) pronounced like *veep* and ROTC (for *R*eserve *O*fficers *T*raining *C*orps) pronounced like *rotcy*.

Aphetic forms are a special kind of shortening characterized by the omission of the initial unstressed syllable as in *'scuse me* and *'cause* for *excuse me* and *because* respectively. This phenomenon has often resulted in the introduction of two different words in the language, as illustrated by the following pairs: fender–defender, fence–defence, cute–acute and sport–disport. The first member of each pair is said to be an aphetic form of the second.

To illustrate the difference between aphesis on the one hand, ellipsis and clipping on the other, consider the word *professor*. When pronounced casually, the first, unstressed syllable may be omitted, shortening the word to *'fessor* and giving an aphetic form. But when the word is shortened to *Prof*, it is an instance of clipping.

EXERCISE 4/5

During one day keep a notebook to hand and write down from your newspaper reading and listening to the broadcast media all the word formations that strike you as new or unusual. Attempt to make an analysis of them in terms of derivation, compounding and other processes.

4.7 Summary

In this chapter, we have examined English word-formation processes. In the main, we have focused our attention on derivation and compounding, two of the most general and most predictable processes of combining morphemes to form new words. Before discussing these major processes, it was necessary not only to define word-formation processes, but also to answer the question 'Why study word-formation processes?' Finally, we dealt with other word-formation processes such as conversion, blends and shortenings.