several syllables realize a single morpheme, is equally possible. Thus, the trisyllabic and quadrisyllabic word-forms elephant and asparagus both realize just a single morpheme.

The nature of the relationship between sounds and morphemes is intriguing. At first sight, it might look reasonable to assume that morphemes are made up of PHONEMES. We might be tempted to think that cat, the English morpheme with the meaning is made up of the phonemes /kæt/. But we have several kinds of evidence showing that this is not the case.

First, if morphemes were made up of phonemes, a given morpheme would be uniquely associated with a given phonological representation. In reality, the same morpheme can be realized by different morphs (i.e, sounds or written forms). Morphs which realize the same morpheme are referred to as ALLOMORPHS of that morpheme.

The INDEFINITE ARTICLE is a good example of a morpheme with more than one allomorph. It is realized by the two forms $a$ and $a n$. The sound at the beginning of the following word determines the allomorph that is selected. If the word following the indefinite article begins with a consonant, the allomorph $a$ is selected, but if it begins with a vowel the allomorph an is used instead:

| a $\quad$ a dictionary | b | an island |
| :---: | :--- | :--- |
| a boat | an evening |  |
| a pineapple | an opinion |  |
| a leg | an eye |  |
| a big (mat) | an old (mat) |  |
| a dull (song) | an exciting (finish) |  |

Hence the incorrectness of the sentence marked with an asterisk in [3.7]
13.71
a. I spent an evening with them. $\neq \mathrm{I}$ spent $a$ evening with them. I spent the evening with them.

Allomorphs of the same morpheme are said to be in COMPLEMENTARY DISTRIBUTION. This means that they do not occur in identical contexts and therefore they cannot be used to distinguish meanings. In other words, it is impossible to have two otherwise identical utterances that differ in their meanings depending on the allomorph of a morpheme that is selected. So, because a and an both realize the same indefinite article morpheme, it is impossible to have two sentences like those in 3.7 a above which are identical in all ways, except in the choice of a or an, but mean different things.

Complementary distribution presupposes the more basic notion of DISTRIBUTION. Distribution is to do with establishing facts about the occurrence of allomorphs of a particular morpheme. It is concerned with establishing the contexts in which the morpheme which we are investigating occurs and the allomorphs by which it is realized in those different contexts. In other words, by distribution we mean the total set of distinct linguistic contexts in which a given form appears, perhaps in different guises. For instance, the indefinite article has the distribution: a before consonants (eg. a tree) and an before vowels (e.g. an eagle). As mentioned already, such functionally related forms which all represent the same morpheme in different environments are called allomorphs of that morpheme. Another way of putting it is

We cannot find two otherwise identical sentences which differ in meaning simply because the word cats pronounced as [kæt-s] and $*[k æ t-\mathrm{z} \mid$ respectively. Likewise, it is not possible to have two otherwise identical sentences with different meanings where the word dogs is pronounced as [dgz] and $*[\mathrm{dgs}]$. In other words, the difference between the allomorphs [s] and [z] of the plural morpheme cannot be used to distinguish meanings.

### 3.3.2

## Contrast

Different morphemes CONTRAST meanings but different allomorphs do not. If a difference in meaning is attributable to the fact that one minimal meaningful unit has been replaced by another, we identify the morphs involved as manifestations of distinct morphemes. So, in [3.7] on p. 36 the indefinite article realized by $a$ or $a n$ Is a distinct morpheme from the definite article realized by the since a semantic difference is detectable when $a$ or $a n$ is replaced with the.

A further example of contrast is given in [3.10]:
$\begin{array}{lll}\text { a. I unlocked the door. } & \text { b. She is untidy. } \\ \text { Ire-locked the door }\end{array}$
The two sentences in [3.10a) mean are very different things. Since they are identical except for the fact that where one has un- the other has re-, the difference in meaning between these two sentences is due to the difference in meaning between the morphemes realized by re- (meaning "do again") and un- (meaning reverse the action).

Now, contrast the un- of unlocked with the un- of untidy. In both cases we have the same morph un- (which is spelt and pronounced in exactly the same way). But it is obvious that unrepresents different morphemes in these two word-forms. In I unlocked the door the morph unfound in unlocked realizes a reversive morpheme which is attached to verbs-it reverses the action of locking. But in untidy it realizes a negative morpheme attached to adjectives- untidy means 'not tidy'. (If a person is untidy, it does not mean that at some earlier point they were tidy and someone has reversed or undone their tidiness.)

If morphemes were made up of phonemes a simple correlation of morphs with morphemes is what we would find. But, in fact, it is quite common for the same phonological form (i.e. morph) to represent more than one morpheme. It is from the context that we can tell which morpheme it represents. This is the second piece of evidence against the assumption that morphemes are composed of phonemes. The complex relationship between morphemes and the allomorphs that represent them gives us a window through which we can glimpse one of the most fascinating aspects of language: the relationship between FORM and FUNCTION. In linguistics we explore the form of various elements of language structure, e.g; words and sentences, because it is important to know how they are constructed. However, form is not everything. We are also interested in knowing what linguistic elements are used for, what function they serve.

Just consider for a moment this non-linguistic analogy. Imagine a friend returns from a foreign vacation with two beautiful ornamental glass containers with a globular shape and gives one to you as a present and keeps the other for herself. She does not tell you what your present is used for. She uses hers as a vessel for containing wine at the table--she got the idea of buying these containers when she was served wine in a similar container in a fancy restaurant. You do not know this. You look at your present and decide to put it on the

It could be a bat with which you play cricket or a small, flying mammal. This is a case of LEXICAL AMBIGUITY. We have in this sentence a word-form that represents more than one lexeme with a meaning that is quite plausible. It is not possible to determine the right interpretation of the sentence without looking at the wider context in which it appears

We have established that the relationship between a word-form and the meaning that it represents is a complex one. This is exploited not only in literature and word-play as we saw above but also in the language of advertising. For instance, a recent British Gas newspaper advertisement for gas heating said:
[12.15]
You will warm to our credit. It's free.
This advertisement exploits the lexical ambiguity that is due to the fact that warm (to) can 'become enthusiastic or 'experience a rise in temperature'. Next time you look at an advertisement, see whether it exploits any of the relationships between lexemes and word-forms that we have examined.

### 2.2.3

## Grammatical words

Finally, let us consider the word from a grammatical perspective. Words play a key role in syntax. So, some of their properties are assigned taking into account syntactic factors. Often words are required to have certain properties if they serve certain syntactic purposes. Thus, although in [2.16a] we have the same sense of the same lexeme (play) realized by the same word-form (played), we know that this word does at least two quite different grammatical jobs in the sentence of which it is a part:
a. She played the flute.
b, She took the flute.
She has played the flute
She has taken the flute.

If you compare the sentences in [2.16] above, you will see that in [2.16a] the verb play is realized by the word-form played regardless of whether it simply indicates that the action happened in the past as in the first example or that an action was (recently) completed as in the second example. Contrast this with the situation in $[2.16 \mathrm{~b}]$ where these two grammatical meanings are signaled by two different forms. Took indicates that the action happened in the past while taken (after has/had) indicates that the action is complete. In She played the flute and She took the flute the words played and took are described grammatically as the 'past tense forms of the verbs play and take. By contrast, in She has played the flute and She has taken the flute we describe played and taken as the 'past participle' of play and take

Linguists use the term SYNCRETISM to describe situations such as that exemplified by played where the same word-form of a lexeme 1 s used to realize two (or more) distinct grammatical words that are represented separately in the grammatical representations of words belonging to some other comparable lexemes, The phenomenon of syncretism is one good reason tor distinguishing between word-forms and grammatical words. It enables us to show that words belonging to the same lexeme and having the same form in speech and writing can still differ.

A further example should make the ideas of grammatical words and syncretism even clearer. Consider the verbs in the following sentences:
a. We put all the big___ on the table.
b. We put all the big splets on the table.

The study of word-formation and word-structure is called MORPHOLOGY. Morphological theory provides a general theory of word-structure in all the languages of the world. Its task is to characterize the kinds of things that speakers need to know about the structure of the words of their language in order to be able to use them to produce and to understand speech.

We will see that in order to use language, speakers need to have two types of morphological knowledge. First, they need to be able to analyze existing words (e.g. they must be able to tell that frogs contains frog plus -s for plural). Usually, if we know the meanings of the elements that a word contains, it is possible to determine the meaning of the entire word once we have worked out how the various elements relate to each other. For instance, if we examine a word like nutcracker we find that it is made up of two words, namely the noun nut and the noun cracker. Furthermore, we see that the latter word, cracker is divisible into the verb crack and another meaningful element -er (roughly meaning 'an instrument used to do X '), which, however, is not a word in its own right. Numerous other words are formed using this pattern of combining words (and smaller meaningful elements) as seen in [1.3]:
[1.3]
[tea]Noun--strain-er]]Noun
[lawn]Noun--mow-er ]Noun
[can]Noun-[open-er]Noun

Given the frame [[_____]Noun-[ $\qquad$ er]] Noun, we can fill in different words with the appropriate properties and get another compound word i.e. a word containing at least two words). Try this frame out yourself. Find two more similar examples of compound words formed using this pattern. Second, speakers need to be able to work out the meanings of novel words constructed using the word-building elements and standard word-construction rules of the language. Probably we all know and use more words than are listed in dictionaries. We can construct and analyze the structure and meaning of old Words as well as new ones. So, although many words must be listed in the dictionary and memorized, listing every word in the dictionary is not necessary. If a word is formed following general principles, it may be more efficient to reconstitute it from its constituent elements as the need arises rather than permanently commit it to memory. When people make up new words using existing words and word forming elements, we understand them with ease providing we know what the elements they use to form those words mean and providing the word-forming rules that they employ are familiar. This ability is one of the things explored in morphological investigations.

In an average week, we are likely to encounter a couple of unfamiliar words. We might reach for a dictionary and look them up. Some of them may be listed but others might be too new or too ephemeral to have found their way into any dictionary. In such an event, we rely on our morphological knowledge to tease out their meanings. If you heard someone describe their partner as 'a great list maker and a ticker-off', you would instantly know what sort of person the partner was although you almost certainly have never encountered the word ticker-off before. And it is certainly not listed in any dictionary. The -er ending here has

Many complex words that contain multiple affixes have internal structure. When a base that contains one or more affixes is used as an input to a process that attaches more affixes, certain morphemes go more closely together than others and form a sub grouping

### 4.4.1

## Affixation: prefixes and suffixes

Probably the commonest method of forming words (in the sense of lexical terms) is by AFFIXATION. Affixes have already been introduced in section (4.2.2). We will now briefly examine their characteristics and return to them in more detail in Chapter 6.

The meanings of many affixes are not altogether transparent. It may be necessary sometimes to look them up in an etymological dictionary (like the $O E D$ or Skeat 1982). This of course raises questions about what we are doing when we divide words up into morphemes. To what extent is the morphological segmentation of words a historical exercise? In this chapter we will concentrate on the identification of morphemes and leave this awkward question to one side until section (6.6).

It is possible to group together affixes in different ways depending on one's purposes. For instance, we can classify affixes on the basis of their meaning. We can recognize a class of negative prefixes, e.g. im- (im-possible), un- (un-necessary), dis- (dis-approve), non- (noncombatant) etc. However, that will not be our approach. We will instead group affixes together on the basis of their phonological properties. It has been found very useful to classify affixes on the basis of their phonological behavior, in particular on the basis of their effects (if any) on stress in the base to which they are attached. It has been shown that affixes fall into two major classes: some are NEUTRAL while others are NON-NEUTRAL in their effects.

Normally, prefixes are stress neutral. Thus, in 14.9] stress falls on the same syllable in the word regardless of their presence or absence. When determining which syllable is going to be the most prominent in the word, these prefixes are not taken into account. It is as though they were invisible.

[^0]Those morphemes that are allowed to occur on their own in sentences as words are called FREEMORPHEMES while those morphemes that must occur in the company of some other morphemes are called BOUND MORPHEMES. In [3.12] the bound morphemes are italicized.

| Pest | pest(i)-cide |
| :--- | :--- |
| Modern | post-modern-ist |
| Child | child-ish |
| pack | pre-packe-ed |
| laugh | laugh-ing |

The free morphemes in [3.12] can all be manipulated by syntactic rules; they can stand on their own as words. By contrast, it 1 S impossible to use the forms -cide, post-, -is, -Ish, pre-, -ed or -ing, independently.

So far, all the examples of free morphemes that function as roots that we have encountered have been content words (see p. 14). However, not all free morphemes are content words. Some are employed to indicate grammatical functions and logical relationship rather than to convey lexical or cognitive meaning in a sentence. Hence such words are called FUNCTION WORDS. They include words such as the following:
[3.13]
articles: a/an, the
demonstratives: e.g. this, that, these and these
pronouns: e.g. you, We, hey, my, your, his, hers, who elc.
prepositions e.g. in, into, on to, at, on, etc
conjunctions: e.g. and, or, but, because, if, etc
In ordinary language use such words are extremely common. But on their own they would not convey a lot of information. If you received a telegram like But it my on to the in you might suspect that the sender either had a strange sense of humor or was not mentally sound

## 3.5

## SOUND SYMBOLISM: PHONAESTHEMES AND ONOMATOPOEIA

In the vast majority of words, the relationship between sound and meaning is arbitrary (see p. 2). There is no reason why a particular sound, or group of sounds, should be used to represent a particular word, with a particular meaning. If someone asked you what [b] in bed or [str) in strange meant, you would think they were asking a very odd question. As a rule, sounds qua sounds do not mean anything. However, the general principle that says that the link between sound and meaning in words is arbitrary is occasionally dented. This happens in two sets of circumstances. First, certain individual sounds, or groups of sounds, which do not represent a specific enough meaning to be called morphs nevertheless appear to be vaguely associated with some kind of meaning. Such sounds are Called PHONAESTHEMES.

As our first example of a phonaestheme, let us take the RP vowel [ ] (which is historically descended from [U], the vowel that is still used in words like dull and hut in the north of England). This phonaestheme is found in words associated with various kinds of dullness or indistinctness, e.g. dull, thud, thunder, dusk,
[2.10]
of REALISATION or REPRESENTATION or MANIFESTATION. If we take the lexeme write which is entered in the dictionary, for example, we can see that it may be realized by any one of the word-forms write, writes, writing, wrote and written which belong to it. These are the actual forms that are used in speech or appear on paper. When you see the orthographic words written and wrote on the page, you know that although they are spelt differently they are manifestations of the same vocabulary item WRITE.

The distinction between word-forms and lexemes which I have just made is not abstruse. It is a distinction that we are intuitively aware of from an early age. It is the distinction on which word-play in puns and in intentional ambiguity in everyday life depends. At a certain period in our childhood we were fascinated by words. We loved jokes--even awful ones like [2.10]

The humor, of course, lies in recognizing that the word-form shrimp can belong to two separate lexemes whose very different and unrelated meanings are none the less pertinent here. It can mean either 'an edible, long, slender crustacean' or a tiny person (in colloquial English). Also, the word serve has two possible interpretations. It can mean 'to wait upon a person at table' or 'to dish up food'. Thus, word-play exploits the lexical ambiguity arising from the fact that the same word-form represents two distinct lexemes with very distinct meanings.

In real-life communication, where potential ambiguity occurs we generally manage to come to just one interpretation without too much difficulty by selecting the most appropriate and RELEVANT interpretation in the situation. Suppose a 20 -stone super heavyweight boxer went to Joe's Vegetarian Restaurant and asked the waiter tor a nice shrimp curry and the water said in reply. 'We don't serve shrimps', it would be obvious that it was shrimps in the sense of crustaceans that was intended. If, on the other hand, a little man, barely 5 feet tall and weighing a mere 7 stone, went to a fish restaurant and saw almost everyone at the tables around him tucking into a plateful of succulent shrimps, and thought that he would quite fancy some himself, he would be rightly offended if the waiter said 'We do not serve shrimps'. It is obvious in this situation that shrimps are on the menu and are dished up for consumption. What is not done is serve up food to people deemed to DE puny.

Puns are not restricted to jokes. Many advertisements like that for Standens rely on puns for their effect. Given the context, it is obvious that sound is meant to be read in more than one sense here.

Serious 1iterature also uses this device. For instance, the First World War poet Siegfried Sassoon gives the title 'Base details' to the poem in which he parodies cowardly generals who stay away at the base, at a safe distance from the action, and gladly speed young soldiers to their death at the front. The word-form base in the title represents two distinct lexemes here whose meanings are both relevant: (i) Base details are details of what is happening at the base (Noun) (meaning 'military encampment'), and (ii) Base details are particulars of something that is base $_{(\text {adjective })}$ (meaning 'reprehensibly cowardly, mean etc'.).

The term HOMONYM is used to denote word-forms belonging to distinct lexemes that are written and pronounced in the same way. There are separate dictionary entries for such words. Shrimp and base are examples of homonyms. But perhaps they are not so obvious. Better examples ot homonyms are shown in [2.11].
[2.11].
a. bat: bat ${ }_{\text {(Noun) }}$ 'a small lying mammal'
bat (Noun) 'a wooden implement for hitting a ball in cricket'
b. bar: bar (Noun) 'the profession of barrister'
bar (Noun) 'a vertical line across a stave used to mark metrical accent in music'
bar (Verb) 'to obstruct'
word knows that these four morphemes must appear in the order in [3.5a). Any other order is strictly forbidden:
[13.5]

| a. | un-govern-abil-ity |
| :--- | :--- |
| b. | *govern-abil-un-ity |
| c. | *ity-un-abil-govern |
| d. | *abil-un-ity-govern |
| e. | *un-govern-ity-abil etc. |

Clearly, knowing a word means not just knowing the morphemes it contains, but also the rigid order in which they are allowed to appear. We will return to this point in section (4.4).

To sum up the discussion so far, words are built using morphemes. If we know how morphemes are used to form words, we do not need to be unduly flustered when we come across a strange word. Usually it is possible to work out the meaning of a strange word if it contains familiar morphemes.

## 3.3

## MORPHEMES AND THEIR DISGUISES

The identification of morphemes is not altogether straightforward. This is because there is no simple one-to-one correspondence between morphemes and the speech sounds that represent them. In this section we will attempt to unravel the complexities of the relationship between morphemes and the actual forms (sounds of groups of sounds) by which they are manifested in speech.

### 3.3.1

## Allomorphs: morph families

Any physical form that represents a morpheme is called a MORPH. The forms-ish, -less, $-e r$, -ed, -s, re-, un- and $e x$ - in [3.4] on p. 31 are all morphs. Morphological analysis begins with the identification of morphs, i.e. forms that carry some meaning or are associated with some grammatical function. In asparagus there is just one morph but in all the words in [3.4] there are two.

It is important not to confuse morphs with SYLLABLES. When we talk of morphs we have in mind sounds that can be related to a particular meaning or grammatical function (e.g. plural or past tense). However, when we talk of syllables all we have in mind are chunks into which words can be divided for the purposes of pronunciation.

This is not an abstruse distinction. We are not being pedantic. It is a distinction that matters to ordinary people because human languages are organized in such a way that the construction of units that are meaningful is normally in principle separate from the construction of strings that are pronounceable. Thus, for rhythmical effect, nursery rhymes often use nonsense syllables like Deedle, deedle' in 'Deedle deedle dumpling my son John which do not represent anything meaningful.

Alternatively, a sound representing a morpheme may not be a syllable in its own right, e.g. by itself, the $-s$ which represents the plural morpheme is not a syllable. The word cats has two morphemes, cat and $-s$, but it is all just one syllable. The single syllable cats realizes two morphemes. The converse situation, where

| 'acrobat | a' nnoying | ca' hoots |
| :--- | :--- | :--- |
| 'kingfisher | de'molish | gaber'dine |
| 'patriarchate | Chau'cerian | hullaba'loo |

Main stress can fall on only one syllable in a word. The location of main stress is part of the make-up of a word and is not changed capriciously by individual speakers. You cannot decide to stress hullabaloo on the penultimate syllable on a Monday (hulla'baloo), on the antepenultimate syllable on a Tuesday (hu'llabaloo), on the initial syllable on a Wednesday ('hullabaloo) and on the final syllable for the rest of the week (hullaba'loo).

However, in some cases, if we wish to contrast two related words, we can shift stress from its normal position to a new position. This can be seen in 'vendor and ven'dee which normally are stressed on the first and second syllable respectively. But if the speaker wants to contrast these two words both words might be stressed on the final syllable as I heard an estate agent do in a radio interview.

It 1s ven'dor, not the ven'dee who pays that tax.

This example illustrates well the point that a word is allowed just one stress. Stress can be shifted from one syllable to another, but a word cannot have two main stresses. We could not have *ven'dor and *ven'dee where the two syllables received equal stress. Stress has to do with relative prominence. The syllable that receives main stress is somewhat more prominent than the rest, some of which may be unstressed or weakly stressed. By contrast, function words are normally unstressed. We can say Nelly went to town with no stress, on to unless we wish to highlight to for contrastive purposes, eg. Nelly went to town and not far a way from town).

It is easy to see how stress can function as a valuable clue in determining whether two content words are a single compound word or two separate words. The nouns street and lamp are both stressed when they Occur in isolation. But if they appear in the compound street-lamp, only the first is stressed. The stress on lamp is suppressed.

Stress is not the only phonological clue. In addition to stress, there are rules regulating the positions in which various sounds may occur in a word and the combinations of sounds that are permissible. These rules are called PHONOTACTIC RULES. They can help us to know whether we are at the beginning, in the middle or at the end of a word. A phonological word must satisfy the requirements for words of the spoken language. For instance, while any vowel can begin a word, and most consonants can appear alone at the beginning of a word, the consonant [ ] is subject to certain restrictions. (This consonant is spelled $n g$ as in long (see the Key to symbols used on p. xix). In English words [ ] is not allowed to occur initially although it can occur in other positions. Thus, [ ] is allowed internally and at the end of a word as in [I I] longing and [I ge] longer. But you could not have an English word like ngether, *[ ee] with [ ] as its first sound. However, in other languages this sound may be found word-initially as in the Chinese name Nga [ a] and the Zimbabwean name Nkomo [komo].

There are also phonotactic restrictions on the combination of consonants in various positions in a word in the spoken language. As everyone knows, English spelling is not always a perfect mirror of pronunciation. So when considering words in the spoken language it is important to separate spelling from pronunciation (cf. Chapter 7). You know that He is knockkneed is pronounced /hl lz nk ni:d/ and not */he Is knk kni:d/. A particular combination of letters can be associated with very different pronunciations in different words or

# Chapter 1 <br> Introduction 

## 1.1 <br> WHY STUDY WORDS?

Imagine a life without words! Trappist monks opt for it. But most of us would not give up words for anything. Every day we utter thousands and thousands of words. Communicating Our joys, fears, opinions, fantasies, wishes, requests, demands, feelings-and the occasional threat or insult-is a very important aspect of being human. The air is always thick with our verbal emissions. There are so many things we want to tell the world. Some of them are important, some of them are not. But we talk anyway even when we know that what we are saying is totally unimportant. We love chitchat and find silent encounters awkward, or even oppressive. A life without words would be a horrendous privation.

It is a cliché to say that words and language are probably humankind\&\#39;s most valuable single possession. It is language that sets us apart from our biologically close relatives, the great primates. (I would imagine that many a chimp or gorilla would give an arm and a leg for a few words-but we will probably never know because they cannot tell us.) Yet, surprisingly, most of us take words (and more generally language) for granted. We cannot discuss words with anything like the competence with which we can discuss fashion, films or football.

We should not take words for granted. They are too important. This book is intended to make explicit some of the things that we know subconsciously about words. It is a linguistic introduction to the nature and structure of English words. It addresses the question what sorts of things do people need to know about English words in order to use them in speech? It is intended to increase the degree of sophistication with which you think about words. It is designed to give you a theoretical grasp of English word-formation, the sources of English vocabulary and the way in which we store and retrieve words from the mind.

I hope a desirable side effect of working through English Words will be the enrichment of your vocabulary. This book will help to increase, in a very practical way, your awareness of the relationship between words. You will be equipped with the tools you need to work out the meanings of unfamiliar words and to see in a new light the underlying structural patterns in many familiar words which you have not previously stopped to think about analytically.

For the student of language, words are a very rewarding object of study. An understanding of the nature of words provides us with a key that opens the door to an understanding of important aspects of the nature of language in general. Words give us a panoramic view of the entire field of linguistics because they impinge on every aspect of language structure. This book stresses the ramifications of the fact that words are complex and multi-faceted entities whose structure and use interacts with the other modules of the grammar
that allomorphs are forms that are phonologically distinguishable which, none the less, are not functionally distinct. In other words, although they are physically distinct morphs with different pronunciations, allomorphs do share the same function in the language.

An analogy might help to clarify this point. Let us compare allomorphs to workers who share the same job. Imagine a job share situation where Mrs. Jones teaches maths to form 2DY on Monday afternoons, Mr. Kato on Thursday mornings and Ms Smith on Tuesdays and Fridays. Obviously, these teachers are different individuals. But they all share the role of 'maths teacher' for the class and each teacher only performs that role on particular days. Likewise, all allomorphs share the same function but one allomorph cannot occupy position that is already occupied by another allomorph of the same morpheme. To summarize, we say that allomorphs of a morpheme are in complementary distribution. This means that they cannot substitute for each other. Hence, we cannot replace one allomorph of a morpheme by another allomorph of that morpheme and change meaning.

For our next example of allomorphs we will turn to the plural morpheme. The idea of 'more than one' is expressed by the plural morpheme using a variety of allomorphs including the following:
[3.8]

|  | Singular | Plural |
| :---: | :--- | :--- |
| a. | rad-ius | radi-i |
|  | cactus | cact-i |
| b. | dat-um | dat-a |
|  | strat-um | strat-a |
| c. | analys-is | analys-es |
|  | ax-is | ax-es |
| d. | skirt | skirt-s |
|  | road | road-s |
|  | branch | branc-es |

Going by the orthography, we can identify the allomorphs $-i,-a$, $-e s$ and $-s$. The last is by far the commonest: see section (7.3).

Try and say the batch of words in [3.8d] aloud. You will observe that the pronunciation of the plural allomorph in these words is variable. It is [s] in skirts, [z] in roads and [lz] (or for some speakers [ez]) in branches. What is interesting about these words is that the selection of the allomorph that represents the plural is determined by the last sound in the noun to which the plural morpheme is appended. We will return to this in more depth in section (5.2).

We have already seen, that because allomorphs cannot substitute for each other, we never have two sentences with different meanings which solely differ in that one sentence has allomorph X in a slot where another sentence has allomorph Y. Compare the two sentences in [3.9].
[3.9]
a. They have two cats
[el hæv tu: Kæt-s
*[el haæv tu: kaet-z]
b. They have two dogs
[el hæv tu: dg-z]
*[el hæv tu: dg-s]

# Chapter 4 <br> Building words 

## 4.1 <br> WORDS AND JIGSAWS

In this chapter we shall group morphemes into four broad categories on the basis of how they function in word-building. Just as anyone putting together a jigsaw must realize that the different pieces go in positions where their shape fits, anyone putting together words must also realize that the various morphemes available in a language can only be used in certain places where they fit.

## KNOW THE PIECES OF THE JIGSAW

We established in Chapter 3 that words have internal structure. What we shall do in this section is to consider in some detail the various elements used to create that structure. We will begin with a discussion of roots and affixes. This will be followed by conversion and compounding.

### 4.2.1

Roots are the core

A ROOT is a morpheme which forms the core of a word. It is the unit to which other morphemes may be added, or looked at from another angle, it is what remains when all the affixes are peeled away. All roots belong to one of the LEXICAL CATEGORIES, i.e. they belong to the word classes of noun, verb, adverb or adjective. Here are some examples:
[4.1]

| Noune | Adjective | Verb | Adverb |
| :--- | :--- | :--- | :--- |
| bell <br> chiled | big | black | bring |
|  | eat | now |  |
| tree | love | good |  |
| lamb | clean | high | sit |

Whereas inflection is driven by the requirement to form a word with the appropriate form in a particular grammatical context, derivation 1 s motivated by the desire to create new lexical items using pre-existing morphemes and words. When you need a new word (in the sense of vocabulary item), you do not usually need to make it up from scratch. It is possible to create new lexical items by recycling pre-existing material This is derivation. It takes one of three forms: AFFIXATION, CONVERSION or COMPOUNDING. Derivation enables us to add new lexical items to the OPEN WORD-CLASSES of noun, adjective, verb and adverb. These are the classes that contain the so-called content words (cf. section 2.2 .1 ). We are extremely unlikely to create new words belonging to classes like pronouns, articles or prepositions, Hence these classes are said to be CLOSED. It is extremely unlikely that one fine morning you will wake up with the inspired idea that English needs some new articles - the same boring the, a/an have been around too long and coin a dozen fresh articles as a public service.

Not everyone would characterize derivation in the way that I have, contrasting derivation which produces new lexical items with inflection which produces grammatical words. Many linguists restrict the term derivation to the creation of new lexical items by adding affixes (including 'zero' ones: see below p. 94). They explicitly distinguish it from compounding which combines two bases containing root morphemes to form a new lexical item.

I prefer a two-way distinction between inflection on the one hand, and a broadly defined category of derivation on the other, because it highlights clearly the fact that essentially all wordformation boils down to one of two things: either the creation of lexical items, the province of derivation, or the creation of grammatical words, the province of inflection. It should be pointed out, however, that there are other (marginal) methods of forming lexical items that fall outside derivation (cf. Chapter 9).

## 4.4

## DERIVATION: FABRICATING WORDS

Most of the words you use in a day have been part of the English language for a long time. But that does not necessarily mean that you have memorized all of them. In many cases, and to varying degrees, we can reconstitute words we encounter as the need arises, or even occasionally coin new ones. What makes this possible is our mastery of the rules of wordformation. Confronted with a complex word, you will often be able to deconstruct it using your knowledge of word structure.

How can knowledge of word-structure be represented? We can represent the structure of a complex word such as teachers, Americanisation, governmental and ungovernability in two ways. We can use LABELLED BRACKETS as in |4.7] or a TREE DIAGRAM as in [4.8]. Either way, we want to show which morphemes in the word go together, and what string of morphemes forms the input to each word-formation process. Further we need to Know the word-class to which the resulting word belongs.

Labelled brackets
$[\text { teach],er] }]_{\mathrm{N}}$ ] [Americ(a)) $\left.]_{\mathrm{Nan}}\right]_{\text {ADJ }}$ is $\left.]_{\text {vation }}\right]_{\mathrm{N}}$
$\left.\left.[\text { [govern }]_{Y m e n t}\right]_{\mathrm{Nal}}\right]_{\text {ADJ }}$
c. fair: fair (Adjetive) 'beautiful, attractive'
fair $_{\text {(Noun) }}$ 'holiday'

By contrast, word-forms may have the same pronunciation but different spellings and meanings. Such forms are called HOMOPHONES. See this example from a joke book:

Why does the pony cough?
Because he's a little hoarse
(Young and Young 1981:57)

The joke is a pun on $\mathrm{h}: \mathrm{s} /$, the pronunciation of the two lexemes represented in writing by horse and hoarse. Other examples of homophones include tail $\sim$ tale, sail - sale, weather $\sim$ whether, see $\sim$ sea, read $\sim$ reed, reel $\sim$ real, seen $\sim$ scene, need $\sim$ knead .

Conversely, it is also possible to have several closely related meanings that are realized by the same word-form. The name for this is POLYSEMY. Often you find several senses listed under a single heading in a dictionary. For instance, under the entry for the noun force, the OED lists over ten senses. I have reproduced the first six below:

1. Physical strength. Rarely in pl. (=Fr. forces-1818.)
2. Strength, impetus, violence, or intensity of effect ME.
3. Power or might: esp. military power ME. b. In early use, the strength (of a defensive work etc.). Subseq., the fighting strength of a ship. 1577.
4. A body of armed men., an army. In pl. the troops or soldiers composing the fighting strength of a kingdom or a commander ME. b. A body of police; often absol. the force=policemen collectively. 1851.
5. Physical strength or power exerted on an object, esp. Violence or physical coercion. ME.

6 Mental or moral strength. Now only, power of effective action, or of overcoming resistance. ME

The line that separates polysemy from homonymy is somewhat blurred because it is not altogether clear how far meanings need to diverge before we should treat words representing them as belonging to distinct lexemes. In [2.13]. it is not entirely clear that the sixth sense of the noun force is not sufficiently removed from the other meanings to merit an entry of its own. The other meanings all show a reasonably strong family resemblance. But mental or moral strength shows a somewhat weaker relationship. In the OED, there is a separate entry for the lexeme force, the verb. It is considered a different lexeme because it has a different meaning and belongs to a different word-class, being a verb and not a noun. Belonging to different word-classes is an important consideration in determining whether separate dictionary entries are needed.

In real-life communication, the lack of a one-to-one match between lexemes and word-forms does not necessarily cause ambiguity. In context, the relevant meaning is normally easy to determine. But there are cases where it is not. For instance, the homonymy of bat in [2.14] can cause semantic confusion:
[2.14]
I saw a bat under the tree.

| a. | Case | Singular | Plural | b. | Singular | Plural |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | Dative | m nsae | m ns s |  | fl ri | fl ribus |
|  | Ablative | m nsa | m ns s |  | fl re | fl ribus |

We could say that mens means 'table' and that $f l s$ - and $f l r$ - mean 'flower' and the rest marks case and number of the noun. There is a general and historical rule in Latin that gets $/ \mathrm{s} /$ pronounced as [r] when it occurs between vowels. That is why instead of $f l s$ we get $f l r$ everywhere except in the nominative Singular. But what of the rest? In each case the ending realizes two morphemes simultaneously: number and case. For instance, -as in $m$ nsas marks both accusative and plural and -em in $f l$ rem marks accusative caseand singular number. The same kind of analysis applies to the other endings.
That it would be futile to try and separate the morphs representing different morphemes is even clearer in the Latin verb. Take mon re 'to advise', for example, which has forms that include:

| a. mone 'I advise' | b. | moneor 'I am being advised' <br> mon s 'you advise' |
| :--- | :--- | :--- |
| mon ris 'you are being advised' |  |  |
| mon 'we advised' |  | mon mur 'we are being advised' |

Let us attempt to isolate morphs and morphemes. Having separated out mon as the part representing the morpheme advise we might identify the underlined part of the word, $-o,-s$, mus, -or, -mur etc. as representing number, person (1. you etc.) as well as voice, i.e. active in [3.18a) and passive in [3.18b]. Segmentation would not work. The mapping of morphemes on to morphs is not one-to-one as in Swahili. We have in each case just one form $-o$, $-s$ etc. representing several morphemes all at once. Morphs which simultaneously realize two or more morphemes are called PORTMANTEAU MORPHS (i.e. 'suitcase morphs'). For example, -mur in mon mur is a portmanteau morph since it signals first person, plural. Present tense and passive.

|  | Portmanteau morph: |  |  | mur |
| :--- | :--- | :--- | :--- | :--- |
| Morphemes | first person | plural | present tense | passive |

In a language of this type the superior analysis, and one that is traditionally preferred, is one where no attempt is made to chop up the word into morphemes and line them up one-to-one with morphs. Instead all the morphological and syntactic properties of the grammatical word should be noted and a statement should be made along these lines: mon mur is the first person, plural. present tense, passive verb form of the lexical item mon re. In modern linguistics this model is called WORD-AND-PARADIGM or WP for short (cf. Matthews 1991).

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[^0]:    [4.9]
    Stress-neutral prefixes
    be- (forming derivative verbs with the general meaning of 'around')
    beset, besmear, becloud
    co-/con-/com- 'together'
    co-operate, co-habit, co-appear, co-opt, combine, conspire
    ex- 'former'
    ex-miner, ex-wife, ex-leader, ex-director, ex-pupil, ex-pilot
    mis- 'wrongly, badly'
    mis-understand, mis-manage, mis-read, mis-take, misinform, mis-allocate
    $\operatorname{mal}(\mathrm{e})$. 'bad(ly)'
    malcontent, malpractice, maladjusted, malefactor, malevolent

