

**ROOTS, STEMS, AND BASES THROUGH
AFFIXATION PROCESSES IN *THE HIKE* SHORT
STORY**

REFERENCES

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MODERN LINGUISTICS

MORPHOLOGY

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using the term **lexeme**. The forms *pockling*, *pockle*, *pockles* and *pockled* are different **realisations** (or representations or manifestations) of the lexeme **POCKLE** (lexemes will be written in capital letters). They all share a core meaning although they are spelled and pronounced differently. Lexemes are the vocabulary items that are listed in the dictionary (cf. Di Sciullo and Williams, 1987).

Which ones of the words in [2.2] below belong to the same lexeme?

[2.2]	see	catches	taller	boy	catching	sees
	sleeps	woman	catch	saw	tallest	sleeping
	boys	sleep	seen	tall	jumped	caught
	seeing	jump	women	slept	jumps	jumping

We should all agree that:

The physical word-forms
see, sees, seeing, saw, seen
sleeps, sleeping, slept
catch, catches, catching, caught

are realisations of

the lexeme
SEE
SLEEP
CATCH

The physical word-forms
jump, jumps, jumped, jumping
tall, taller, tallest
boy, boys
woman, women

are realisations of

the lexeme
JUMP
TALL
BOY
WOMAN

2.1.2 Word-form

As we have just seen above, sometimes, when we use the term 'word', it is not the abstract vocabulary item with a common core of meaning, the lexeme, that we want to refer to. Rather, we may use the term 'word' to refer to a particular physical realisation of that lexeme in speech or writing, i.e. a particular **word-form**. Thus, we can refer to *see*, *sees*, *seeing*, *saw* and *seen* as five different words. In this sense, three different occurrences of any one of these word-forms would count as three words. We can also say that the word-form *see* has three letters and the word-form *seeing* has six. And, if we were counting the number of words in a passage, we would gladly count *see*, *sees*, *seeing*, *saw* and *seen* as five different word-forms (belonging to the same lexeme).

So, for example, the morphemes in *de-nation-al-ise* must appear in that order. Rearranging the affixes produces ill-formed strings like **ise-nation-de-al-* or **al-ise-nation-de*. The main problem and interest, as we will see in section (6.2.1), is determining the order of derivational affixes where several of them occur in a word.

3.4 COMPOUNDING

As we briefly saw in (3.1.3), a **compound word** contains at least two bases which are both words, or at any rate, root morphemes.

Analyse the following compounds into their constituent elements: *teapot*, *week-end*, *hairdresser*, *kind-hearted*.

I expect you to have worked out an answer close to the following:

- [3.25] a. [tea]_N [pot]_N → [teapot]_N
 [week]_N [end]_N → [week-end]_N
 b. [hair]_N [[dress]_V -er]_N → [hairdresser]_N
 [kind]_A [[heart]_N -ed]_A → [open-ended]_A

Compounding is a very important way of adding to the word stock of English as we will see. Sometimes it is bare roots that are combined in compounds as in [3.25a], and sometimes an input base contains an affixed form as in [3.25b]. We will discuss compounds again in a preliminary way in the next chapter and return to them in more detail in Chapter 12.

3.5 CONVERSION

We have seen that complex words may be formed either by compounding or by affixation, or by a combination of the two. We are going to see now that there is an alternative word-formation strategy which is commonly used in English. Words may be formed without modifying the form of the input word that serves as the base. Thus *head* can be a noun or verb. This is called **conversion**.

In the foregoing I have proposed that some of the general properties of morphemes and lexical items should be shown in the lexicon. However, traditionally the lexicon was not regarded as a place where regularities were captured. Rather, it was viewed as the repository of exceptions, in the form of a list. We read in Bloomfield (1933: 274) that 'The lexicon is really an appendix to the grammar, a list of basic irregularities.'

This view is colourfully caricatured by di Sciullo and Williams (1987: 3) as being one where the lexicon is conceived of as a prison which 'contains only the lawless, and the only thing that its inmates have in common is lawlessness'. And the lawless are a disparate bunch including words (e.g. *work*), morphemes (e.g. *-ed*) and idioms (e.g. '*eat one's words*').

Nonetheless, it is the case that the lexicon in a generative grammar must list various kinds of information about words (and morphemes and idioms) which have to be memorised. For example, speakers of English who know the word *aardvark* need to memorise at least this information:

- (i) Meaning: it refers to a Southern-African insectivorous quadruped mammal.
- (ii) Phonological properties: its pronunciation /ɑ:dva:k/.
- (iii) Grammatical properties: e.g. it is a count noun (you can have one *aardvark*, two *aadvarks*).

Admittedly, what needs to be listed in speakers' mental lexicons may vary. While for most people *aardvark* needs to be memorised, some erudite speakers know that this word is a compound borrowed from Afrikaans and is composed of *aarde* 'forest' and *vark* 'pig'.

Today most generative linguists reject the view that the lexicon is merely a list of irregularities. If there is a need for lists in a grammar – and there clearly is, since we need to list basic morphemes – then the lists belong to the lexicon. But, this does not mean that the lexicon consists just of lists. There are many extensive and far-reaching lexical regularities resulting from the operation of general principles.

Normally, the relationship between the meaning and form of a morpheme or word is completely arbitrary and idiosyncratic (notable exceptions being cases of onomatopoeia, e.g. *cuckoo* and *miaou*), but many other properties are not. There are numerous pervasive regularities in the phonological and syntactic behaviour of words.

In the next part of the book we are going to explore the organisation of the lexicon, concentrating on the representation of word-formation regularities that relate to the phonology. In the last part of the book we will come back to the lexicon and consider regularities that relate to the syntactic and semantic properties of words.

[-mɪs-]. Any word-form that displays the [mit] ~ [mɪs] alternation in the contexts in [3.4] contains the latinate root morpheme *-mit*.

3.1.2 Affixes

An **affix** is a morpheme which only occurs when attached to some other morpheme or morphemes such as a root or stem or base. (The latter two terms are explained in (3.1.3) below.) Obviously, by definition **affixes** are bound morphemes. No word may contain only an affix standing on its own, like **-s* or **-ed* or **-al* or even a number of affixes strung together like **-al-s*.

There are three types of affixes. We will consider them in turn.

(i) Prefixes

A **prefix** is an affix attached *before* a root or stem or base like *re-*, *un-* and *in-*:

[3.5] re-make un-kind in-decent
re-read un-tidy in-accurate

(ii) Suffixes

A **suffix** is an affix attached *after* a root (or stem or base) like *-ly*, *-er*, *-ist*, *-s*, *-ing* and *-ed*.

[3.6] kind-ly wait-er book-s walk-ed
quick-ly play-er mat-s jump-ed

(iii) Infixes

An **infix** is an affix inserted into the root itself. Infixes are very common in Semitic languages like Arabic and Hebrew as we will see in section (3.6) below and in more detail in Chapter 9. But infixing is somewhat rare in English. Sloat and Taylor (1978) suggest that the only infix that occurs in English morphology is /-n-/ which is inserted before the last consonant of the root in a few words of Latin origin, on what appears to be an arbitrary basis. This infix undergoes place of articulation assimilation. Thus, the root *-cub-* meaning 'lie in, on or upon' occurs without [m] before the [b] in some words containing that root, e.g. *incubate*, *incubus*, *concupine* and *succubus*. But [m] is infixed before that same root in some other words like *incumbent*, *succumb*, and *decumbent*. This infix is a frozen historical relic from Latin.

In fact, infixation of sorts still happens in contemporary English. Consider the examples in [3.7a] which are gleaned from Zwicky and Pullum (1987) and those in [3.7b] taken from Bauer (1983):

10 Inflectional Morphology

10.1 INTRODUCTION

The main aim of this portion of the book is to examine the interaction between morphology and syntax. A question that will recur at several points is whether there is a clear difference between the structure of words, which is the domain of morphology, and the structure of sentences, which is the domain of syntax. Are the rules that regulate sentence structure different in kind from the rules that govern the internal structure of words? In answering this question we will see that, although morphology interacts with other components of the grammar (in particular syntax) and shares some of their rules, it nevertheless has a degree of internal coherence which makes it merit separate treatment as a distinct component of the linguistic model.

The investigations begin in this chapter with an exploration of the nature of **inflectional** morphology. First, the theoretical basis of the inflection-derivation dichotomy is scrutinised. This is followed in the second half of the chapter by a survey of phenomena marked using inflection in the languages of the world. In the next chapter we examine in detail the role of syntactic structure, at the core of which is the verb, in determining the form of words when they appear in sentences. That chapter is essentially an elaboration of the theory of how case is assigned and how it is mapped on words. The book concludes with an analysis of idioms and compounds which highlights the similarities, as well as differences, between lexical items and syntactic phrases.

10.2 INFLECTION AND DERIVATION

What is inflection? The standard intuition among linguists is that inflectional morphology is concerned with syntactically driven word-formation. Inflectional morphology deals with syntactically determined affixation processes while derivational morphology is used to create new lexical items (cf. section (3.2)).

In practice, however, there is not always unanimity in the classification of processes as inflectional or derivational. Grammarians working on the same language may not agree as to which processes are to be treated as inflectional and which ones are to be regarded as derivational. Across languages there can be even greater confusion. As we shall see shortly, a process classified as inflectional in one language may be analogous to a

- [3.7] a. Kalamazoo (place name) → Kalama-goddam-zoo
 instantiate (verb) → in-fuckin-stantiate
- b. kangaroo → kanga-bloody-roo
 impossible → in-fuckin-possible
 guarantee → guaran-friggin-tee
- (Recall that the arrow → means 'becomes' or is 're-written as'.)

As you can see, in present-day English infixation, not of an affix morpheme but of an entire word (which may have more than one morpheme, e.g. *blood-y*, *fuck-ing*) is actively used to form words. Curiously, this infixation is virtually restricted to inserting expletives into words in expressive language that one would probably not use in polite company.

3.1.3 Roots, Stems and Bases

The stem is that part of a word that is in existence before any *inflectional* affixes (i.e. those affixes whose presence is required by the syntax such as markers of singular and plural number in nouns, tense in verbs etc.) have been added. Inflection is discussed in section (3.2). For the moment a few examples should suffice:

[3.8]	<u>Noun stem</u>	<u>Plural</u>
	cat	-s
	worker	-s

In the word-form *cats*, the plural inflectional suffix *-s* is attached to the simple stem *cat*, which is a bare root, i.e. the irreducible core of the word. In *workers* the same inflectional *-s* suffix comes after a slightly more complex stem consisting of the root *work* plus the suffix *-er* which is used to form nouns from verbs (with the meaning 'someone who does the action designated by the verb (e.g. *worker*)'). Here *work* is the root, but *worker* is the stem to which *-s* is attached.

Finally, a **base** is any unit whatsoever to which affixes of any kind can be added. The affixes attached to a base may be **inflectional affixes** selected for syntactic reasons or **derivational affixes** which alter the meaning or grammatical category of the base (see sections (3.2) and (10.2)). An unadorned root like *boy* can be a base since it can have attached to it inflectional affixes like *-s* to form the plural *boys* or derivational affixes like *-ish* to turn the noun *boy* into the adjective *boyish*. In other words, all **roots** are **bases**. Bases are called **stems** only in the context of inflectional morphology.

Now compare the Luganda forms in [2.10] with those in [2.7] above.

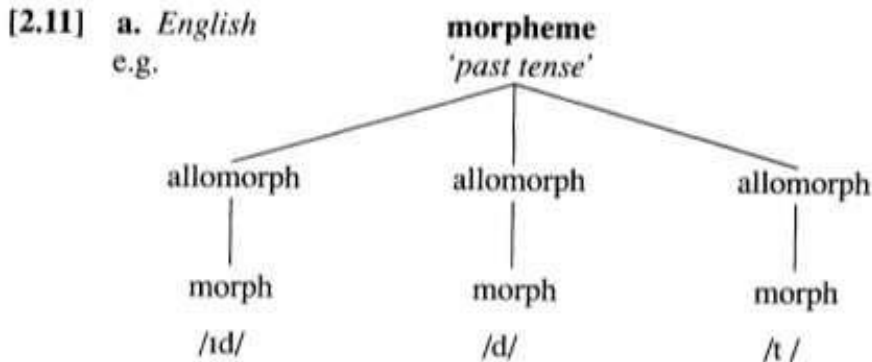
[2.10]	twaalaba	kitabo	'we saw a book'
	twaagula	bitabo	'we bought books'
	twaatunda	kitabo	'we sold a book'

The first person plural is represented by the form *tu-* in [2.7] and by *tw-* in [2.10]. What determines the selection of *tu* vs *tw-*?

Observe that here again the difference in form is not associated with a difference in meaning. The morphs *tu-* and *tw-* both represent the first person plural in different contexts. *Tu-* is used if the next morpheme is realised by a form beginning with a consonant and *tw-* is selected if the next morpheme is realised by a form that begins with a vowel.

If different morphs represent the same morpheme, they are grouped together and they are called **allomorphs** of that morpheme. So, *tu-* and *tw-* are allomorphs of the 'first person plural' morpheme. (For simplicity's sake, for our present purposes, we are regarding 'first person plural' as a single unanalysable concept.) On the same grounds, /ɪd/, /d/ and /t/ are grouped together as allomorphs of the past tense morpheme in English.

The relationship between morphemes, allomorphs and morphs can be represented using a diagram in the following way:



plays is attributable to the difference in lexical meaning between /bɔɪ/ and /gɜ:ɪ/. Likewise, the difference in grammatical function between *play-s* (present tense) and *play-ed* (past tense) is responsible for the difference in meaning between *The girl plays* and *The girl played*.

DEFINITION: The **morpheme** is the smallest difference in the shape of a word that correlates with the smallest difference in word or sentence meaning or in grammatical structure.

The analysis of words into morphemes begins with the isolation of **morphs**. A morph is a physical form representing some morpheme in a language. It is a recurrent distinctive sound (phoneme) or sequence of sounds (phonemes).

Study the data in [2.6] and identify the morphs:

- | | | | | |
|-------|----|--------------------|----|---------------------|
| [2.6] | a. | I parked the car. | e. | She parked the car. |
| | b. | We parked the car. | f. | She parks the car. |
| | c. | I park the car. | g. | We park the car. |
| | d. | He parks the car. | h. | He parked the car. |

The morphs are:

<u>Morph</u>	<u>Rekurs in</u>
/aɪ/ 'I'	[2.6a] and [2.6c]
/ʃi:/ 'she'	[2.6e] and [2.6f]
/hi:/ 'he'	[2.6d] and [2.6h]
/ðə/ 'the'	in all the examples
/kɑ:/ 'car'	in all the examples
/pɑ:rk/ 'park'	<i>park</i> is found in all the examples, sometimes with an <i>-ed</i> suffix, sometimes with an <i>-s</i> suffix and sometimes on its own
/t/ '-ed'	suffixed to park in [2.6b, e, h]
/s/ '-s'	suffixed to park in [2.6d, f]

For our next example, we shall perform an analysis similar to the one we have just done for English on data from a less familiar language. Now study the data in [2.7] which are taken from Luganda and list all the morphs. (Although Luganda is a tone language, tone is omitted for simplicity's sake as it is not relevant here.)

grammatical information or logical relations in a sentence. Typical function words include the following:

[3.2] Function words

articles:	a the
demonstratives:	this that these those
pronouns:	I you we they them; my your his hers; who whom which whose, etc.
conjunctions:	and yet if but however or, etc.

Distinguishing between lexical and grammatical morphemes is normally both useful and straightforward. However, there are cases where this distinction is blurred. This is because there are free morphemes (i.e. simple words) which do not fit neatly into either category. For example, a conjunction like *though* signals a logical relationship and at the same time appears to have considerably more 'descriptive semantic content' than, say, the article *the*.

While only roots can be free morphemes, not all roots are free. Many roots are incapable of occurring in isolation. They always occur with some other word-building element attached to them. Such roots are called **bound morphemes**. Examples of bound morphemes are given below:

- [3.3] a. -mit as in permit, remit, commit, admit
 b. -ceive as in perceive, receive, conceive
 c. pred- as in predator, predatory, predation, depredate
 d. sed- as in sedan, sedate, sedent, sedentary, sediment

The bound roots *-mit*, *-ceive*, *-pred* and *sed-* co-occur with forms like *de-*, *re-*, *-ate*, *-ment* which recur in numerous other words as prefixes or suffixes. None of these roots could occur as an independent word.

Roots tend to have a core meaning which is in some way modified by the affix. But determining meaning is sometimes tricky. Perhaps you are able to recognise the meaning 'prey' that runs through the root *pred-* in the various words in [3.3c] and perhaps you are also able to identify the meaning 'sit' in all the forms in [3.3d] which contain *sed-*.

These roots are **linate**, i.e. they came into English from Latin (normally via French). I suspect that, unless you have studied Latin, you are unable to say that *-mit* means 'send, do' and *-ceive* means 'take' without looking up *-mit* and *-ceive* in an etymological dictionary. In present-day English none of these meanings is recognisable. These formatives cannot be assigned a clear, constant meaning on their own.

In the last chapter the morpheme was defined as the smallest unit of meaning or grammatical function. In the light of the foregoing discussion,

3 Types of Morphemes

3.1 ROOTS, AFFIXES, STEMS AND BASES

In the last chapter we saw that words have internal structure. This chapter introduces you to a wide range of word-building elements used to create that structure. We will start by considering roots and affixes.

3.1.1 Roots

A root is the irreducible core of a word, with absolutely nothing else attached to it. It is the part that is always present, possibly with some modification, in the various manifestations of a lexeme. For example, *walk* is a root and it appears in the set of word-forms that instantiate the lexeme WALK such as *walk*, *walks*, *walking* and *walked*.

The only situation where this is not true is when suppletion takes place (see section (2.2.3)). In that case, word-forms that represent the same morpheme do not share a common root morpheme. Thus, although both the word-forms *good* and *better* realise the lexeme GOOD, only *good* is phonetically similar to GOOD.

Many words contain a root standing on its own. Roots which are capable of standing independently are called **free morphemes**, for example:

[3.1] Free morphemes

man	book	tea	sweet	cook
bet	very	aardvark	pain	walk

Single words like those in [3.1] are the smallest free morphemes capable of occurring in isolation.

The free morphemes in [3.1] are examples of **lexical morphemes**. They are nouns, adjectives, verbs, prepositions or adverbs. Such morphemes carry most of the 'semantic content' of utterances – loosely defined to cover notions like referring to individuals (e.g. the nouns *John*, *mother*), attributing properties (e.g. the adjectives *kind*, *clever*), describing actions, process or states (e.g. the verbs *hit*, *write*, *rest*) etc., expressing relations (e.g. the prepositions *in*, *on*, *under*) and describing circumstances like manner (e.g. *kindly*).

Many other free morphemes are **function words**. These differ from lexical morphemes in that while the lexical morphemes carry most of the 'semantic content', the function words mainly (but not exclusively) signal



But very many English words are morphologically complex. They can be broken down into smaller units that are meaningful. This is true of words like *desk-s* and *boot-s*, for instance, where *desk* refers to one piece of furniture and *boot* refers to one item of footwear, while in both cases the *-s* serves the grammatical function of indicating plurality.

The term **morpheme** is used to refer to the smallest, indivisible units of semantic content or grammatical function which words are made up of. By definition, a morpheme cannot be decomposed into smaller units which are either meaningful by themselves or mark a grammatical function like singular or plural number in the noun. If we divided up the word *fee* [fi:] (which contains just one morpheme) into, say, [f] and [i:], it would be impossible to say what each of the sounds [f] and [i:] means by itself since sounds in themselves do not have meaning.

How do we know when to recognise a single sound or a group of sounds as representing a morpheme? Whether a particular sound or string of sounds is to be regarded as a manifestation of a morpheme depends on the word in which it appears. So, while *un-* represents a negative morpheme and has a meaning that can roughly be glossed as 'not' in words such as *unjust* and *un-tidy*, it has no claim to morpheme status when it occurs in *uncle* or in *under*, since in these latter words it does not have any identifiable grammatical or semantic value, because *-cle* and *-der* on their own do not mean anything. (Morphemes will be separated with a hyphen in the examples.)

Lego provides a useful analogy. Morphemes can be compared to pieces of lego that can be used again and again as building blocks to form different words. Recurrent parts of words that have the same meaning are isolated and recognised as manifestations of the same morpheme. Thus, the negative morpheme *un-* occurs in an indefinitely large number of words, besides those listed above. We find it in *unwell*, *unsafe*, *unclean*, *unhappy*, *unfit*, *uneven*, etc.

However, recurrence in a large number of words is not an essential property of morphemes. Sometimes a morpheme may be restricted to relatively few words. This is true of the morpheme *-dom*, meaning 'condition, state, dignity', which is found in words like *martyrdom*, *kingdom*, *chiefdom*, etc. (My glosses, here and elsewhere in the book, are based on definitions in the *Oxford English Dictionary*.)

It has been argued that, in an extreme case, a morpheme may occur in a single word. Lightner (1975: 633) has claimed that the morpheme *-ric* meaning 'diocese' is only found in the word *bishopric*. But this claim is disputed by Bauer (1983: 93) who suggests instead that perhaps *-ric* is not a distinct morpheme and that *bishopric* should be listed in the dictionary as an unanalysable word. We will leave this controversy at that and instead see how morphemes are identified in less problematic cases.

2.1.3 The Grammatical Word

The 'word' can also be seen as a representation of a lexeme that is associated with certain **morpho-syntactic properties** (i.e. partly morphological and partly syntactic properties) such as noun, adjective, verb, tense, gender, number, etc. We shall use the term **grammatical word** to refer to the 'word' in this sense.

Show why *cut* should be regarded as representing two distinct grammatical words in the following:

- [2.3] a. Usually I cut the bread on the table.
b. Yesterday I cut the bread in the sink.

The same word-form *cut*, belonging to the verbal lexeme CUT, can represent two different grammatical words. In [2.3a], *cut* represents the grammatical word *cut*_[verb, present, non 3rd person], i.e. the present tense, non-third person form of the verb CUT. But in [2.3b] it represents the grammatical word *cut*_[verb, past] which realises the past tense of CUT.

Besides the two grammatical words realised by the word-form *cut* which we have mentioned above, there is a third one which you can observe in *Jane has a cut on her finger*. This grammatical word is *cut*_[noun, singular]. It belongs to a separate lexeme CUT, the noun. Obviously, CUT, the noun, is related in meaning to CUT, the verb. However, CUT, the noun, is a separate lexeme from CUT, the verb, because it belongs to a different word-class (see section 3.5 below).

The nature of the grammatical word is important in the discussion of the relationship between words and sentences and the boundary between morphology and syntax.

2.2 MORPHEMES: THE SMALLEST UNITS OF MEANING

Morphology is the study of word structure. The claim that words have structure might come as a surprise because normally speakers think of words as indivisible units of meaning. This is probably due to the fact that many words are morphologically simple. For example, *the*, *fierce*, *desk*, *eat*, *boot*, *at*, *fee*, *mosquito*, etc., cannot be segmented (i.e. divided up) into smaller units that are themselves meaningful. It is impossible to say what the *-quito* part of *mosquito* or the *-erce* part of *fierce* means.

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5.6 The Functions of Morphology

Morphology can be said to perform two functions in language.

Derivation: Derivation expands the stock of words in the language by forming new words from old; thus it is often also called **word formation**. Here is an example of derivation. Given that *identify* is an existing word of English, a derivational process that is part of English morphology can generate a new word, namely *identifiable*. From this, a further derivational process can generate *unidentifiable*, and from this yet another process creates *unidentifiability*.

Compounding is sometimes considered as a form of derivation, though it is not always described in this way.²

Inflection: Inflectional morphology is grammatical morphology; the morphology that renders words *syntactically appropriate to their context*. Inflection can often be detected because the choice of inflectional category can be shown to be dependent on other words in the same sentence: thus, *She sings*, with the third person singular inflectional suffix, but *They sing*, without.

Here follows a brief list of some of the kinds of inflectional morphology. In English, we find:

- **Tense** on verbs (present *jumps*, past *jumped*)
- **Aspect** on verbs (*sings* vs. *is singing*)
- **Number** on nouns (singular *cow*, plural *cows*)
- a small amount of **person and number agreement** in verbs (*She sings*, vs. *They sing*.)
- **Case** in pronouns (subjective *I* vs. objective *me*)

Many languages have much richer inflectional systems than English. The richness consists sometimes of having more inflectional categories, such as **gender** (masculine, feminine, neuter, others), **evidential status** (events known directly vs. by hearsay), and **degree of respect** (formal vs. informal, often applied to verbs). Another source of richness is having a greater number of possibilities within a category, for example **dual or trial number** in addition to singular and plural number; **remote vs. recent past** in a tense system; **inclusive vs. exclusive** forms of the first person plural, distinguishing whether or not the hearer is included; and **multiple cases** in nouns, each indicating the syntactic role of the noun in the sentence (nominative, accusative, dative, genitive, etc.).

² The main rival theory is to suppose that compounding is part of the syntax; such approaches develop alternative explanations for the fact that compounds cannot be interrupted by modifiers, as in **desk bright lamp*. In the traditional view adopted here, this is because words are the units from which sentences are formed.

5.2 Formal Types of Morphemes

Most words can be analyzed as having a central morpheme, to which the remaining morphemes are attached. This central morpheme is called the **root**. For example, the root of the word *unidentifiability* is *ident-* and the root of *jumping* is *jump*. The root of the word *jump* is *jump* itself.

Roots can be classified as **bound** vs. **free**. A free root, like *jump*, can stand alone; bound roots, like *ident-*, are those which occur only in the presence of another morpheme. **Prefixes** and **suffixes** are also bound morphemes. When linguists refer to prefixes and suffixes as a class, they use the term **affix**. This term also covers a few additional morpheme types to be mentioned below.

When an affix is attached to something, that thing is called the **base** of attachment.¹ Thus, in *unidentifiable*, the base of attachment for the prefix *un-* is *identifiable*. In *jumping*, the base of attachment for the suffix *-ing* is *jump*. As can be seen, the base sometimes is a root, but sometimes it is a root to which affixes have already been attached. Using this term, we can define a prefix as an affix that precedes its base and a suffix as an affix that follows its base.

An **infix** is an affix that is inserted within its base. Consider the following data from Bontoc (Austronesian, Philippines):

[fikas]	'strong'	[fumikas]	'he is becoming strong'
[kilad]	'red'	[kumilad]	'it is becoming red'
[bato]	'stone'	[bumato]	'it is becoming a stone'
[fusul]	'enemy'	[fumusul]	'he is becoming an enemy'

The affix that means "is becoming" is an infix, *-um-*, which is inserted immediately after the first consonant of the base.

Zero affixation or **conversion** is the use of a word in a different part of speech from its base form, without any affix or other change. Conversion of nouns to verbs in English is common (left column below); and conversion from verbs to nouns (right column) is also found.

<i>to telephone one's mother</i>	<i>a close look</i>
<i>to fan oneself</i>	<i>a three-mile run</i>
<i>to Kleenex the floor</i>	<i>an expensive co-pay</i>

For the first set of examples, most speakers would feel that the noun is somehow "basic" and that the verb is a derived form: we more often speak of *a telephone*,

¹ Another term that is often used to mean "base" is **stem**. However, this term has a number of different usages, and one must be careful to check what an author means by it when it is used.

5 Morphology

5.1 Basics of Morphology

Morphology is the branch of linguistics that studies the structure of words. There are many interactions, often complex, between phonological form and morphological structure, covered in chapters 6–8. The purpose of this chapter is to cover enough morphology to provide the groundwork for later material.

In studying the structure of words there are two basic goals: to isolate the component parts of words, and to determine the rules by which words are formed. For the first task, it is useful to make use of the term **morpheme**, defined as the smallest linguistic unit that bears a meaning. One can often break up a word into its component morphemes by peeling off one morpheme at a time, like this:

<i>unidentifiability</i>	= unidentifiable + ity	'the quality of being unidentifiable'
<i>unidentifiable</i>	= un + identifiable	'not identifiable'
<i>identifiable</i>	= identify + able	'able to be identified'
<i>identify</i>	= ident + ify	'to associate with an identity' (?)

Result: un + ident + ify + able + ity

The stages of decomposition seen above can all be justified by appealing to other words that have the same pattern, for example the division of *unidentifiability* into *unidentifiable* + *ity* is supported by parallel examples like *obscur-ity*, *pur-ity*, and *obes-ity*, and similarly for the other stages (*un-clear*, *un-willing*; *sell-able*, *visit-able*; *class-ify*, *person-ify*).

Morphemes are not the same as phonemes. A phoneme is the smallest linguistic unit that can *distinguish* meaning, whereas a morpheme is the smallest linguistic unit that *has* a meaning. This is illustrated in the following example:

	<i>tacking</i>	<i>tagging</i>
Allophones:	[t ^h ækɪŋ]	[t ^h ægɪŋ]
Phonemes:	/tækɪŋ/	/tægɪŋ/
Morphemes:	/tæk/ + /ɪŋ/	/tæg/ + /ɪŋ/

**An Introduction to
English Morphology:
Words and Their
Structure**

Andrew Carstairs-McCarthy

Edinburgh University Press

To Jeremy

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3 A word and its parts: roots, affixes and their shapes

3.1 Taking words apart

We saw in Chapter 2 that there are many words that need not be listed in dictionaries, because their meanings are completely predictable (such as *dioeciously*), and many which cannot be listed, simply because they may never have been used (such as *un-Clintonish* and *antirehabilitationist*). These are all words which are not lexical items. But what is the basis of their semantic predictability? It must be that these unlisted and unlistable words are composed of identifiable smaller parts (at least two), put together in a systematic fashion so that the meaning of the whole word can be reliably determined. In *un-Clintonish* these smaller parts are clearly *un-*, *Clinton* and *-ish*; in *dioeciously* these parts include *dioecious* and *-ly*, with further smaller components being perhaps discernible within *dioecious*. In this chapter we will focus on these smaller parts of words, generally called **morphemes**. (The area of grammar concerned with the structure of words and with relationships between words involving the morphemes that compose them is technically called **morphology**, from the Greek word *morphe* 'form, shape'; and morphemes can be thought of as the minimal units of morphology.) In Sections 3.2 and 3.3 we will be concerned with two important distinctions between different kinds of morpheme, and in Section 3.4 we will consider ways in which a morpheme can vary in shape.

Before we embark on those issues, however, there is an important point to be made concerning the distinction between words that are lexical items and words that are not. As we have seen, words that are not lexical items must be complex, in the sense that they are composed of two or more morphemes. But those are not the only words that are complex; lexical-item words can be complex too – in fact, we encountered many such examples in the exercises to Chapter 2. To put it another way: words that are lexical items do not have to be **monomorphemic** (consisting of just one morpheme). This is hardly surpris-

they are the parts out of which words are composed, they do not have to be of any particular length. Some relatively long words, such as *catamaran* and *knickerbocker*, may consist of just one morpheme; on the other hand, a single-syllable word, such as *tenths*, may contain as many as three morphemes (*ten*, *-th*, *-s*). What this shows is that the morphological structure of words is largely independent of their **phonological** structure (their division into sounds, syllables and rhythmic units). This reflects a striking difference between human speech and all animal communication systems: only speech (so far as we know) is analysable in two parallel ways, into units that contribute to meaning (morphemes, words, phrases etc.) and units that are individually meaningless (sounds, syllables etc.). The implications of this property of human language (its so-called **duality of patterning**) go way beyond the scope of this book. What matters here is just that you should avoid a mistake that beginners sometimes make, that of confusing morphemes with phonological units such as syllables.

3.2 Kinds of morpheme: bound versus free

The morphemes in the word *helpfulness*, just discussed, do not all have the same status. *Help*, *-ful* and *-ness* are not simply strung together like beads on a string. Rather, the core, or starting-point, for the formation of this word is *help*; the morpheme *-ful* is then added to form *helpful*, which in turn is the basis for the formation of *helpfulness*. In using the word 'then' here, I am not referring to the historical sequence in which the words *help*, *helpful* and *helpfulness* came into use; I am talking rather about the structure of the word in contemporary English – a structure that is part of the implicit linguistic knowledge of all English speakers, whether or not they know anything about the history of the English language.

There are two reasons for calling *help* the core of this word. One is that *help* supplies the most precise and concrete element in its meaning, shared by a family of related words like *helper*, *helpless*, *helplessness* and *unhelpful* that differ from one another in more abstract ways. (This is an aspect of word structure that we will look at in more detail in Chapter 5.) Another reason is that, of the three morphemes in *helpfulness*, only *help* can stand on its own – that is, only *help* can, in an appropriate context, constitute an utterance by itself. That is clearly not true of *-ness*, nor is it true of *-ful*. (Historically *-ful* is indeed related to the word *full*, but their divergence in modern English is evident if one compares words like *helpful* and *cheerful* with other words that really do contain *full*, such as *half-full* and *chock-full*.) In self-explanatory fashion, morphemes that can stand on their own are called **free**, and ones that cannot are **bound**.

morphemes is **cranberry morpheme**. Cranberry morphemes are more than just a curiosity, because they reinforce the difficulty of tying morphemes tightly to meaning. What does *cran-* mean? Arguably, nothing at all; it is only the entire word *cranberry* that can be said to be meaningful, and it is certainly the entire word, not *cran-* by itself, that is in any dictionary. (You may have noticed, too, that although blackberries are indeed blackish, strawberries have nothing obvious to do with straw; so, even if *straw-* in *strawberry* is not a cranberry morpheme, it does not by itself make any predictable semantic contribution in this word.)

3.3 Kinds of morpheme: root, affix, combining form

In Section 3.2 I have used the term 'core of a word' in a rather vague way, to denote the morpheme that makes the most precise and concrete contribution to the word's meaning. I have also refrained so far from using two terms that may be already familiar to you: prefix and suffix. It is time now to bring those two terms into the discussion, and also introduce the term **root** for what I have been calling the 'core'.

From Section 3.2 it emerged that, in the native Germanic portion of the vocabulary, the root of a complex word is usually free. Of the non-root morphemes in the words that we have looked at so far, those that precede the root (like *en-* in *enlarge*) are called **prefixes**, while those that follow it are called **suffixes** (like *-ance* in *performance*, *-ness* in *whiteness*, and *-able* in *readable*). We have encountered far more suffixes than prefixes, and that is not an accident: there are indeed more suffixes than prefixes in English. An umbrella term for prefixes and suffixes (broadly speaking, for all morphemes that are not roots) is **affix**.

Only root morphemes can be free, so affixes are necessarily bound. We have already noticed that the morphemes *-ful* and *-ness* of *helpfulness* cannot stand on their own. It is easy for anyone who is a native speaker of English to check that the same is true of all the morphemes that I have identified as prefixes and suffixes in (1a) – that is, all the morphemes in these words other than the roots.

At this point, it may seem to some readers that terminology is proliferating unnecessarily. If affixes are always bound, do not 'bound morpheme' and 'affix' mean essentially the same thing? Likewise, if roots are usually free, do we really need both the terms 'root' and 'free morpheme'? The answer lies in the word 'usually' in the previous sentence. Affixes are indeed always bound, but it is not the case that roots are always free. In fact, all the words in (1b) have roots that are bound. The fact of being bound may make a bound root harder to identify and isolate as a morpheme than a free root is; but for most of the examples in (1b) it

2 Words, sentences and dictionaries

2.1 Words as meaningful building-blocks of language

We think of words as the basic units of language. When a baby begins to speak, the way the excited mother reports what has happened is: 'Sally (or Tommy) has said her (or his) first word!' We would be surprised at a mother who described little Tommy's or Sally's first utterance as a sentence. Sentences come later, we are inclined to feel, when words are strung together meaningfully. That is not to say that a sentence must always consist of more than one word. One-word commands such as 'Go!' or 'Sit!', although they crop up relatively seldom in everyday conversation or reading, are not in any way odd or un-English. Nevertheless, learning to talk in early childhood seems to be a matter of putting words together, not of taking sentences apart.

There is a clear sense, then, in which words seem to be the building-blocks of language. Even as adults, there are quite a few circumstances in which we use single words outside the context of any actual or reconstructable sentence. Here are some examples:

- warning shouts, such as 'Fire!'
- conventional commands, such as 'Lights!', 'Camera!', 'Action!'
- items on shopping lists, such as 'carrots', 'cheese', 'eggs'.

It is clear also that words on their own, outside sentences, can be sorted and classified in various ways. A comprehensive classification of English words according to meaning is a thesaurus, such as *Roget's Thesaurus*. But the kind of conventional classification that we are likely to refer to most often is a dictionary, in which words are listed according to their spelling in alphabetical order.

Given that English spelling is so erratic, a common reason for looking up a word in an English dictionary is to check how to spell it. But another very common reason is to check what it means. In fact, that is what a dictionary entry basically consists of: an association of a word, alphabetically listed, with a definition of what it means, and perhaps also some

6 Compound words, blends and phrasal words

6.1 Compounds versus phrases

In the last chapter, we looked at words (that is, lexemes, not word forms) formed from other words, mainly by means of affixes. In this chapter we will look at **compounds**, that is words formed by combining roots, and the much smaller category of **phrasal words**, that is items that have the internal structure of phrases but function syntactically as words. As we will see, some types of compound are much commoner than others. There are also some styles of writing (for example, newspaper headlines) in which compounds are especially frequent. But first we must deal with an issue that has not arisen so far, because until now all the complex words that we have looked at have contained at least one bound morpheme. Roots in English are mostly free rather than bound. How can we tell, then, whether a pair of such roots constitutes a compound word or a phrase, that is a unit of sentence structure rather than a complex word?

A definite answer is not always possible, but there are enough clear cases to show that the distinction between compounds and phrases is valid. Consider the expressions *a green house*, with its literal meaning, and *a greenhouse*, meaning a glass structure (not usually green in colour!) where delicate plants are reared. There is a difference in sound corresponding to the difference in meaning: in the first expression the main stress is on *house*, while in the second the main stress is on *green*. This pattern of semantic contrast between expressions stressed in different places is quite common, as in the following examples:

- | | |
|---|--|
| (1) <i>black board</i>
'board that is black' | <i>blackboard</i>
'board for writing on' |
| (2) <i>silk worm</i>
'worm made of silk (e.g. a soft toy)' | <i>silkworm</i>
'caterpillar that spins silk' |
| (3) <i>hair net</i>
'net made of hair' | <i>hairnet</i>
'net for covering hair' |

MORPHOLOGICAL ANALYSIS OF AFFIXES USED IN BBC NEWS

SKRIPSI

*Submitted in Partial Fulfillment of the Requirements
For Degree of Sarjana Pendidikan (S.pd)
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By:

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**FACULTY OF THE TEACHER TRAINING AND EDUCATION
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2. Description of Morphology

Morphology is the arrangement and relationships of the smallest meaningful units in a language. So what does this really mean? Every human language depends on sounds. When specific sounds are put together in a specific way, words, phrases, and finally sentences can be created. This is how messages are sent and received. In order to understand morphology, you need to know the term morpheme, which is the smallest unit of a word with meaning. That meaning is how language conveys messages. Morphemes are more than just letters. When a number of letters are put together into a word part that now has meaning, then you have a morpheme. Morphology studies how these units of meaning, or word parts, can be arranged in a language.

Morphology is the system of categories and rules involved in word formation. Matthews (1991:3) states that morphology, therefore, is the simply a term for that branch of linguistics which is concerned with the form of words in different uses and contraction. As Mark Aronoff and Kristen Fedeman (2011 :12) stated that morphology is a field of linguistic focused on the study of the forms and formation of word in a language.

Morphology is the branch of linguistic studying how word are structured and how they are put together from smaller parts (Zainuddin, 2012:3). Morphology deals with word form , the forming process of word and also its changing is forms that creates the difference in function and meaning. Based on the statment above, the word is the result of morphological process.

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able to construct these different forms of the lexeme WALK by applying the relevant rules. These rules for computing the different forms of lexemes are called rules of **inflection**.

This example shows that dictionaries presuppose knowledge of relations between words. It is the task of linguists to characterize the kind of knowledge on which the awareness of the relation between the word forms *walk*, *walks*, *walked*, and *walking* is based. Knowledge of a language includes knowledge of the systematicity in the relationship between the form and meaning of words. The words *walk*, *walks*, *walked*, and *walking* show a relationship in form and meaning of a systematic nature, since similar patterns occur for thousands of other verbs of English. The subdiscipline of linguistics that deals with such patterns is called **morphology**. The existence of such patterns also implies that word may have an internal constituent structure. For instance, *walking* can be divided into the constituents *walk* and *-ing*. Therefore, morphology deals with the internal constituent structure of words as well.

Dictionary makers assume that these forms of the lexeme WALK are formed according to rules, and therefore need not be specified individually in the dictionary. The same assumption plays a role in the case of nouns and adjectives. For English nouns, the plural form does not need to be specified in the dictionary if it is regular, and neither does the adverbial *-ly* form in the case of adjectives. For example, my English–Dutch dictionary (Martin and Tops 1984) does not mention the adverbs *correctly* and *economically* in addition to *correct* and *economical*. On the other hand, it does specify the adverb *hardly*. Why is that so? Is it due to inconsistency or sloppiness on behalf of the dictionary makers, or is there a principled reason behind this choice? There is indeed a reason: the meaning of *hardly* cannot be predicted from that of *hard* and *-ly*.

This kind of knowledge is also relevant when searching for information on the internet and in other digital data resources such as corpora of actual language use and electronic dictionaries. Suppose you want to collect information on tax. You might find it helpful if the search engine is programmed in such a way that it will not only recognize documents with the word *tax*, but also documents with the words *taxation*, *taxable*, and *taxability* as relevant. In fact, for many search engines this is not the case. The words *taxation* and *taxable* are both derived from the verb *to tax* which is related to the noun *tax*. The word *taxability* in its turn is derived from *taxable*. Hence, we may qualify this set of related words as a **word family**.

is no morphological constituent *fr-* that occurs in other word pairs as well. The words *fressen* and *essen* are in fact related historically (*fr-* derives from the early Germanic word *fra*), but *fressen* is no longer a complex word. So words can lose their status of complex word.

The existence of related words with a systematic form–meaning difference is crucial in assigning morphological structure to a word. The following Dutch words for different kinds of fish all end in *-ing*:

(2) bokking “bloater”, haring “herring”, paling “eel”, wijting “whiting”

Yet, we do not consider this *-ing* a morphological constituent with the meaning “fish” because there are no corresponding Dutch words *bok*, *haar*, *paal*, and *wijt* with a meaning related to the corresponding words ending in *-ing* (these words do exist, but with a completely unrelated meaning).

The two sets of words given in (1) form **paradigms**. The term ‘paradigm’ is used here in a general sense to denote a set of linguistic elements with a common property. All words in (1a) are verbs, and thus form a paradigm. The same applies to the words in (1b) which are all nouns ending in *-er*. In our definition of morphology as given above we see two different perspectives. When we speak about morphology as the study of the systematic form–meaning correspondences between the words of a language, we take a paradigmatic perspective, since we take properties of classes of words as the starting point of morphological analysis. When morphology is defined as the study of the internal constituent structure of words, we take a syntagmatic perspective.

We distinguish these two different perspectives on language because language units exhibit **syntagmatic** and **paradigmatic relationships**. They have a syntagmatic relationship when they are combined into a larger linguistic unit. For instance, the words *the* and *book* have a syntagmatic relationship in the phrase *the book*. In contrast, the determiners *a* and *the* are paradigmatically related: they belong to the set of determiners of English, and can both occur at the beginning of a noun phrase, but never together: **the a book*. Hence, they belong to the paradigm of determiners of English.

A clear instantiation of a primarily syntagmatic approach to morphology is **morpheme-based morphology**. In this approach, focus is on the analysis of words into their constituent morphemes. That is, morphology is conceived of as the syntax of morphemes, as the set of principles for combining morphemes into words. **Morphemes**, the morphological building blocks of words, are defined as the minimal linguistic units with a lexical or

a grammatical meaning. For instance, the noun *buyer* consists of two morphemes, *buy* and *-er*. The verbal morpheme *buy* is called a **free** or **lexical morpheme**, because it can occur as a word by itself, whereas *-er* is an **affix** (hence a **bound morpheme** that cannot function as a word on its own). This is indicated by the hyphen preceding this morpheme: it requires another morpheme to appear before it in a word. Each of these morphemes is listed in the morpheme list of English: *eat* as a morpheme of the category Verb (V), and *-er* as an affixal morpheme of the category Noun (N) that is specified as occurring after verbs: [V —]. This specification of the affix *-er* assigns it to the subcategory of affixes that combine with verbs, and hence we call it a **subcategorization** property of this affix. The morphological structure of *eater* might be represented as follows:

(3) [[eat]_V [er]_{N-aff}]_N

This complex word can be created by the general mechanism of **concatenation**, the combination of elements into a linear sequence. This word is well formed because the requirement that *-er* occur after a verb is met. The fact that this combination of morphemes is a noun, and not a verb, follows from the generalization that English suffixes determine the category of the complex words that they create: since *-er* is an affixal noun, the whole word is a noun.

Thus, the language user is able to coin new **polymorphemic** words (words consisting of more than one morpheme) through the concatenation of morphemes, and of morphemes with words that are themselves polymorphemic. An example of the latter is the formation of the verb *tranquillize*, itself derived from *tranquil* through the addition of *-ize*. The formation of *tranquillizer* is not a matter of concatenating three morphemes. Instead, it is a two-steps operation. First, the bound morpheme *-ize* has been added to the simplex adjective *tranquil*, resulting in the verb *tranquillize*. Subsequently, the bound morpheme *-er* has been added to this verb. The morphological structure of this word is therefore a layered one, and can be represented in the form of a string with labelled bracketing, or as a tree (Figure 1.1). In short, morphology might be seen as morpheme syntax, as the set of principles that tell you how to combine free and bound morphemes into well-formed words.

This syntagmatic approach can be contrasted to a primarily paradigmatic approach to morphology. In the latter one, the creation of new complex words is seen first and foremost as the extension of a systematic

3

Derivation

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3.1 Lexeme formation

The basic function of derivational processes is to enable the language user to make new lexemes. Lexemes belong to lexical categories such as N, V, and A and the derived lexemes may belong to a different category than their bases. The examples in (1) from Dutch illustrate the possible categorial shifts, and also cases in which the lexical category does not change (Booij 2002a: 87). Words are divided into two kinds of lexical classes: open and closed classes. In most languages, nouns, adjectives, and verbs form open classes. As illustrated in (1), these classes can be extended by means of word-formation. Function words such as determiners, conjunctions, pronouns, and adpositions (pre- and postpositions) form closed sets of words that cannot be extended by regular word-formation patterns. The base words that form inputs to word-formation are normally also words of these open classes, but there are exceptions. For instance, the Dutch diminutive suffix *-je* can be attached to the demonstratives *dit* “this” and *dat* “that”, as in *dit-je-s en dat-je-s* “odds and ends”, and to phrases such as the PP *onder ons* “between us”, with the corresponding diminutive *onderons-je* “private chat”. This extension of the input domain to function words and phrases is typical for highly productive word-formation processes.

The verbs in (3b) are given here in their citation form, the infinitive. The **citation form** is the form in which a word is mentioned when we talk about it, and the form in which it is listed in a dictionary. In many languages, the infinitive is the citation form of a verb. In languages with case, the NOM.SG form is the citation form of nouns. Each of these Polish infinitives consists of a root, followed by a verbalizing morpheme that turns the root into a stem, and is followed by the infinitival ending *-ć*. It is the stem-forms that are used when new words are derived from these verbs.

Stem-forming suffixes play an important role in many Indo-European languages. Italian verbs, for instance, have a **thematic vowel** after the root morpheme, and this thematic vowel recurs in words derived from these verbs:

- (4) larg-o “wide” al-larg-a-re “to widen”
 profond-o “deep” ap-profond-i-re “to deepen”
 al-larg-a-ment-o “widening”
 ap-profond-i-ment-o “deepening”

The thematic vowel is not a part of the root, as it does not occur in the roots *larg* and *profond*. On the other hand, it cannot be seen as part of the infinitival suffix, because we do not want to miss the generalization that all infinitives end in *-re*. Hence, the vowels preceding the ending *-re* must be assigned a morphological status of their own. Consequently, the noun *allargamento* contains five morphemes: a prefix *al-*, a root *larg*, a thematic vowel *-a-*, the derivational morpheme *-ment*, and the inflectional ending *-o*. So this word has five morphological atoms, which cannot be decomposed further into smaller morphological constituents. Each of these five atoms has a different name because they have different functions in the make-up of this word.

The general term for bound morphemes that are added to roots and stems is affix. If an affix appears before the root/stem, it is a **prefix**, if it appears after the root/stem, it is a **suffix**. So *al-* and *ap-* are prefixes, whereas *-a*, *-ment*, and *-o* are suffixes. Two other types of affixation are illustrated in (5):

- (5) **infix** (within a root): Khmu (Laos) *s-m-ka:t* “roughen” < *ska:t* “rough”; Alabama (Stump 2001: 131) *ho-chi-fna* “smell, 2SG” < *hofna* “to smell”, *chifip-as-ka* “poke, 2PL” < *chifipka* “to poke”;
circumfix (combination of prefix and suffix): Dutch *ge-fiets-t* “cycled, PAST PARTICIPLE” < *fiets* “to cycle”; German *Ge-sing-e* “singing” < *sing* “to sing”

be concluded from the fact that the participle prefix *ge-* does not appear before the particle, but in between the particle and the verb. The relevant participles of the verbs mentioned above are *stof-ge-zog-en*, *bier-ge-brouw-en* and *piano-ge-speel-d* respectively.

Phrasal patterns with a word-like function such as these separable complex verbs can be qualified as constructional idioms. The constructional idiom 'bare Noun + V' in Hungarian and Dutch has the specific meaning "to be engaged in a particular institutionalized activity" (such as writing letters or playing the piano). Such constructional idioms may serve the same function as morphological patterns: expanding the set of lexical units of a language. Recall that the concept of constructional idiom is also applicable to the cases of apparent compounds in French discussed above. These are syntactic patterns such as *N de N*, with open positions for the nouns, and a fixed preposition *de*, patterns that can be used to coin new expressions to designate classes of entities.

4.3 Compounds and derived words www.IELTS4U.blogfa.com

The crucial distinction between compounds and derived words is that in compounds each of the constituents is a form of a lexeme, whereas derivation involves affixes, that is, non-lexemic morphemes. However, the distinction is not always so clear-cut, because a lexeme may develop into a derivational morpheme. An example is the Dutch noun *boer* "farmer" that occurs in complex words such as the following:

- (15) *groente-boer* "lit. greens farmer, green-grocer"
melk-boer "lit. milk farmer, dairy man"
sigaren-boer "lit. cigars farmer, cigar seller"
tijdschriften-boer "lit. magazines farmer, magazine seller"

In the first two examples, the original meaning of "farmer" still makes some sense since farmers may sell their produce such as greens and dairy. However, these words are nowadays used to refer to persons who sell vegetables or dairy without producing these goods themselves. The last two examples show even more clearly that the morpheme *boer* has developed into a morpheme with the meaning "seller", but only in combination with another noun. Hence, we may conclude that *boer* has developed into a suffix. In fact, many affixes derive from lexemes. An example of a prefix that



Bound roots are foreign in origin and most of them are Latinate. These cannot stand alone unless they are attached to other elements. For example:

- 1) -mit = submit, transmit, commit
- 2) -ceive = receive, perceive, conceive
- 3) Pred- = predator, predatory, predation
- 4) Sed- = sedentary., sedent, sediment

(b) Affixes

An affix is a morpheme that only occurs when attached to some other morpheme or morphemes such as roots or stems or bases. Prefix-is an affix attached before the root, base or stem like re-, un-, in-, as in, re-write, un-kind, in-accurate. Suffix -is an affix attached after the a root (or stem or base) like -ly, -er, -ist, -ing, -s, etc. as in kind-ly, teach-er, typ-ist, etc.

Infixes – infixes are not common in English language. They are common in infixing languages like Semitic language like Arabic and Hebrew. In Semitic languages the major word formation process is infixation. A morpheme or an element is inserted in the root itself. Infixation still happens in contemporary English though rarely.⁴

⁴ Katamba, Francis. 2006. *Morphology: Modern linguistics Series*. Virginia: Macmillan Education Australia p. 162



ENGLISH MORPHOLOGY

Bound Morphemes

Affixes

Derivational

1. Morphemes that create new words are called derivational morphemes. They can change the meaning of a word or its grammatical function. For example, the suffix -ness in "happiness" creates a new noun from the adjective "happy".

The function of affixes is to create new words with a specific meaning. They are used to form nouns, verbs, adjectives, and adverbs. For example, the suffix -ly in "quickly" creates an adverb from the adjective "quick".

Inflectional

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Chapter I

Word, Word-Form, and Lexemes

1. Definition Morphology

The term morphology is Greek and is a makeup of morph- meaning 'shape, form', and -logy which means 'the study of something'. Morphology as a sub-discipline of linguistics was named for the first time in 1859 by the German linguist August Schleicher who used the term for the study of the form of words.

Morphology has been defined differently by various scholars. According to O'Grady, morphology is as the study of analysis of word structure. Also as the system of categories and rules involved in word formation and interpretation. That means the study of word structure.¹ Hence, it can be conclude that morphology studies the patterns of formation of words by the combination of sounds into minimal distinctive units of meaning called morphemes. Generally Morphology is all about syntax of words. It is focused on the relative arrangement of mor-

¹ O'Grady, W., (1997). *Contemporary Linguistics: An Introduction*. London: Longman

Chapter II

Morphemes and Allomorphs

1. Morphemes

A. The Definition Of Morphemes

A morpheme is the smallest unit of meaning we have – that is, the smallest piece of a word that contributes meaning to a word. Example The word *trainings* has 3 morphemes in it: *train-ing-s*.

To break a word into morphemes, try starting at the beginning of the word and seeing how far into the word you need to go to find a sub-part of the word that has some meaning. For example, in the word *unbreakable*, the first two letters *un-* are independently meaningful in a way that just the first letter, *u-*, is not – *un-* means something like ‘not (whatever)’, and changes the meaning of the word it attaches to in a predictable way; sub-parts of *un-*, like *u-* or *-n-*, don’t have this property. This means that *un-* is a morpheme.⁶

Morphemes are segments of the grammatical word which represent choices from a set of options forming a

⁶ Professor Oiry, *Morphology*, 2009, page. 3.

may be grammatical (such as {PLU} = plural as in boys, girls, and cats).

Bound morphemes are also referred to as affixes, among which there are prefixes, infixes, and suffixes.¹²

Bound Morphemes are the opposites of Free Morphemes. They are morphemes that cannot stand alone, that is, they cannot exist independently without being joined or added to another morpheme. Examples include: -ish, -ness, -ation, -tion, -ism, -al, -er, -s, -en, -ed, etc. When you look at the following words, they are combinations of both free and bound morphemes: foolish**ness**, book**ish**, naturalisat**ion**, farmer, does, bags, taken, expected, etc.

Bound Morphemes are called Affixes in English. Affixes are also Bound Morphemes. The word 'undressed' has two affixes, 'un' and 'ed' joined to the free morpheme 'dress'. The same thing goes for the word 'carelessness' which has two affixes, 'less' and 'ness' attached to the base or root word 'care'.¹³

2. Allomorphs

1. Definition

An allomorph is a linguistics term for a variant form of a morpheme. The concept occurs when a unit of

¹² Abdullah, *Loc. Cit.*

¹³ Usman, *Loc. Cit.*

2. Free and Bound Morpheme

a) Free Morpheme

According to Yule (2006) free morpheme that can stand by themselves as single words, whereas bound morpheme are those forms that cannot normally stand alone and are typically attached to another form. The free morphemes can generally be identified as the set of separate English wordforms such as basic nouns, adjectives, verbs, etc.²⁰

Free morpheme is a morpheme which can stand on own as a word. Examples of words which are free morphemes are: *walk sorry book course watch*. The morpheme in the word *helpfulness* in this morpheme the word that can stand alone is by itself is just *help* while *full* and *ness* is bound morpheme. According to Andrew Carstairs in his book said that in self-explanatory fashion, morphemes that can stand on their own are called free, and ones that cannot are bound.²¹

Based on the definition of morpheme above we can conclude that free morpheme is a morpheme that can stand alone by itself as a single word.

²⁰Yule, George. *The Study of Language*. (New York, Cambridge University Press, 2006) page 63

²¹McCarthy, Andrew Carstairs. *An Introduction to English Morphology: Words and Their Structure*. (England, Edinburgh University Press, 2002) page 18

Chapter III

Roots, Bases, and Affixes

1. Roots

A root morpheme is the basic form to which other morphemes are attached. Roots are considered the foundation of the word. Every word has a root at its core. The root usually conveys the main meaning of the word. The root of un-believ-able, for example, is believe.¹⁶ It provides the basic meaning of the word. The morpheme {saw} is the root of sawers. The root of a word as the morpheme left over when all the derivational and inflectional morphemes have been removed. For example, in immovability, {im-}, {-abil}, and {-ity} are all derivational morphemes, and when we remove them we are left with {move}, which cannot be further divided into meaningful pieces, and so must be the word's root.

Root is the irreducible core of a word, with absolutely nothing else attached to it. Roots can be free morpheme or a word element which the other new words grow, usually through addition prefixes and suffixes. *root* is

¹⁶ Marianne Mithun, *What's In A Word*, Vpugazhenthi, California, 2003
page 56

meaning can vary in sound (phonologically) without changing meaning. It is used in linguistics to explain the comprehension of variations in sound for a specific morpheme.

Allomorphs frequently happen that a particular morpheme is not represented everywhere by the same morph, but by different morphs in different environments. The alternative phonological manifestations or representations of such a morpheme are called allomorphs, or ‘morpheme alternates’ or ‘morpheme variants’. Gleason defines allomorphs as, “a variant of a morpheme which occurs in certain definable. The version of a morpheme as actually realized in speech or writing, e.g. –s,-es, and –en are all allomorphs (in writing) of the plural morpheme.

2. Allomorphs Varian

Allomorph has different in pronunciation and spelling according to their condition. It means that allomorph will have different sound, pronunciation or spelling in different condition. Examples:

	Allomorph	Root/ stem	Meaning
A teacher An egg	A An	Teacher Egg	Countable noun Countable noun
Mengejar Memberi Menulis	Meng- Mem- Men-	Kejar Beri Tulis	Doing action Doing action Doing action

Un-	Forgive	Able	Unforgiveable
-----	---------	------	---------------

2. Bases

Base is any unit whatsoever to which affixes of any kind can be added. The part of the word that cannot be broken down is called a base word¹⁷. The affixes attached to a base may be inflectional affixes selected for syntactic reasons or derivational affixes which alter the meaning or grammatical category of the base. An unadorned root like boy can be a base since it can have attached to it inflectional affixes like -s to form the plural boys or derivational affixes like -ish to turn the noun boy into the adjective boyish.

All roots are bases. Bases are called stems only in the context of inflectional morphology. A base is any unit whatsoever to which affixes of any kind can be added. The affixes attached to a base may be inflectional affixes selected for syntactic reasons or derivational affixes which alter the meaning or grammatical category of the base.

Example :

¹⁷Gary R. Gruber, *The Most Effective Way To Learn The Most Important SAT Vocabulary Word*, Sourcebooks Inc, USA, 2009 page 31.



(c) Stems

A stem is a part of a word that exists before any inflectional affix. It is a right candidate with a possibility of receiving inflectional affixes. Stems can be best captured within the field of Inflectional Morphology. E.g. teacher-teachers, play-playing.

(d) Bases

A base is any unit to which all kinds of affixes can be added. i.e. Bases can accept derivational and inflectional Morphemes. That's why it is said that all roots are bases but all bases are not roots. The reasons for such a claim are:

- 1) A root by nature can accept either inflectional or derivational morphemes.
- 2) Some bases can be segmented further into smaller meaningful units (unlike roots)

Examples:

- 1) Careful = -root, -stem, +base
- 2) Read = +root, +stem, +base
- 3) Worker = -root, +stem, +base
- 4) Dog = +root, +stem, +base
- 5) Faith = +root +/-stem, +base



Teach +er = teacher

V=teach N=teacher

There are affixes that do not change the word class, but they simply encode different grammatical functions like tense, number etc. These are called *Inflectional Morphemes/ Affixes*

Tall+er = Taller

Adj= tall adj= taller

Katamba (1993, 2006) has come with a complementary view of categorizing morphemes. According to him Morphemes must be in 4 categories.

(a) Roots

A root is a core part of a word, the word which must be lexical in nature. A root must exist independent of affixes. A root cannot be segmented further into smaller meaningful units. A root must always be a lexical category. In most cases the root must be a word.

A root therefore is an irreducible core part of a word with absolutely nothing else attached to it. A traditional thinking is that all roots are free morphemes but currently all roots are not necessarily free morphemes, there are also bound roots.



- d. Morpheme is a smallest linguistic unit that can have a meaning or grammatical function. Stewart and Vaillet (2001)

Traditionally, there are two types of Morphemes

1) Free Morphemes

These have a tendency of standing alone and they are of two categories.

a) Lexical Morphemes

These do carry most of the semantic content of the utterance. E.g. Nouns, Verbs, Adjectives, and Adverbs.

b) Functional Morphemes

These do signal grammatical information in a sentence. They also perform a logical function. E.g. Articles, Conjunctions, Pronouns, Demonstratives, Prepositions etc

2) Bound Morphemes

Bound morphemes –in nature –cannot stand alone. They must be attached to root, stem or bases. In most cases bound morphemes are affixes (prefixes, infixes, and suffixes)

There are affixes that can change the word class of a particular word together with its meaning. These are termed as Derivational Affixes/Morphemes

Eg work+er = worker

5. Lexeme

A lexeme /'lɛksɪ:m/ is a unit of lexical meaning that exists regardless of the number of inflectional endings it may have or the number of words it may contain. It is a basic abstract unit of meaning.⁵ Put more technically, a lexeme is an abstract unit of morphological analysis in linguistics, that roughly corresponds to a set of forms taken by a single word. For example, in English, run, runs, ran and running are forms of the same lexeme, which we may represent as run. A related concept is the lemma (or citation form), which is a particular form of a lexeme that is chosen by convention to represent a canonical form of a lexeme. Lemmas, being a subset of lexemes, are likewise used in dictionaries as the headwords, and other forms of a lexeme are often listed later in the entry if they are not common conjugations of that word.

A lexeme belongs to a particular syntactic category, has a certain meaning (semantic value), and in inflecting languages, has a corresponding inflectional paradigm; that is, a lexeme in many languages will have many different forms. For example, the lexeme RUN has a present third person singular form runs, a present non-third person singular form run (which also functions as the past parti-

⁵ The Cambridge Encyclopedia of The English Language. Ed. David Crystal. Cambridge: Cambridge University Press, 1995. p. 118.



- a) They are happy.
- b) They are not happy
- c) Are they happy?

The verb and the subject have exchanged the positions. Basically there are two types of words. Words are divided into some kinds:

a. Simple Words

These are made up of a single morpheme which cannot be segmented further into smaller meaningful units. I.e. simple words are not decomposable e.g. tree, car, house, go, etc.

b. Complex Words

These are made up of two or more morphemes which can be segmented further into smaller meaningful units. E.g. inter-nation-al-ly. = internationally. A word can be viewed as:

1) A Lexeme

A lexeme is an abstract vocabulary item listed in a dictionary. Why abstract? Because, it is not in the context. A lexeme exists in different forms which do not share the same syntactic context in a syntactic structure. That means these forms are mutually exclusive. For example, where one occurs the other cannot occur. (Lexemes are written in capital letters). Example:

JUMP- jump

phemes in a word plus the principles and rule which determine such an arrangement.

2. Word

Word is the smallest free form found in a language. This contrasts deeply with a morpheme, which is the smallest unit of meaning but will not necessarily stand on its own. A word may consist of a single morpheme (for example: oh!, rock, red, quick, run, expect), or several (rocks, redness, quickly, running, unexpected), whereas a morpheme may not be able to stand on its own as a word (in the words just mentioned, these are -s, -ness, -ly, -ing, un-, -ed).

Leonard Bloomfield introduced the concept of "Minimal Free Forms" in 1926. Words are thought of as the smallest meaningful unit of speech that can stand by themselves.² This correlates phonemes (units of sound) to lexemes (units of meaning). However, some written words are not minimal free forms as they make no sense by themselves (for example, the, and, of). Free form refers to an element that can occur in isolation and whose position in relation to the nearest elements is not entirely fixed. Why not fixed? Sentences usually have got different status e.g. negative, interrogative, positive (affirmative).

² Barton, David (1994). *Literacy: An Introduction to the Ecology of Written Language*. Blackwell Publishing. p. 96.

There are two categories. These are Lexical morphemes and Functional morphemes.

1) Lexical Morphemes

These morphemes carry 'content' of messages we convey. In other words, lexical morphemes are content words. A content word is a word that is semantically meaningful; a word that has dictionary meaning. Examples of these words are nouns, adjectives verbs and adverbs. They are words that belong to the Open Class of the Parts of Speech or Word Classes in English.

2) Functional Morphemes

These morphemes consist mainly of the functional words in the English language and they include words that belong to the Closed Class of the Parts of Speech or Word Classes in English. Examples are conjunctions, prepositions, pronouns and articles. Functional words or grammatical words do not contain meanings on their own except when used alongside content or lexical words. They have no dictionary meaning and only perform a grammatical function.

b. Bound Morphemes

Bound morphemes can occur only in combination- they are parts of a word. They may be lexical morphemes (such as {clued} as include, exclude, preclude) or they





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7

Morphology

BAMBIFICATION: The mental conversion of flesh and blood living creatures into cartoon characters possessing bourgeois Judeo-Christian attitudes and morals. **Coupland (1991)**

Throughout the preceding chapter, we approached the description of processes involved in word formation as if the unit called the 'word' was always a regular and easily identifiable form, even when it is a form such as *bambification* that we may never have seen before. This doesn't seem unreasonable when we look at a text of written English, since the 'words' in the text are, quite obviously, those sets of things marked in black with the bigger spaces separating them. Unfortunately, there are a number of problems with using this observation as the basis of an attempt to describe language in general, and individual linguistic forms in particular.

Morphology

In many languages, what appear to be single forms actually turn out to contain a large number of 'word-like' elements. For example, in Swahili (spoken throughout East Africa), the form *nitakupenda* conveys what, in English, would have to be represented as something like *I will love you*. Now, is the Swahili form a single word? If it is a 'word', then it seems to consist of a number of elements which, in English, turn up as separate 'words'. A rough correspondence can be presented in the following way:

<i>ni</i>	<i>-ta</i>	<i>-ku</i>	<i>-penda</i>
I	will	you	love

It would seem that this Swahili 'word' is rather different from what we think of as an English 'word'. Yet, there clearly is some similarity between the languages, in that similar elements of the whole message can be found in both. Perhaps a better way of looking at linguistic forms in different languages would be to use this notion of 'elements' in the message, rather than depend on identifying only 'words'.

The type of exercise we have just performed is an example of investigating basic forms in language, generally known as **morphology**. This term, which literally means 'the study of forms', was originally used in biology, but, since

'phones' as the actual phonetic realization of 'phonemes', so we can propose **morphs** as the actual forms used to realize morphemes. For example, the form *cars* consists of two morphs, *car* + *-s*, realizing a lexical morpheme and an inflectional morpheme ('plural'). The form *buses* also consists of two morphs (*bus* + *-es*), realizing a lexical morpheme and an inflectional morpheme ('plural'). So there are at least two morphs (*-s* and *-es*) used to realize the inflectional morpheme 'plural'. Just as we noted that there were 'allophones' of a particular phoneme, so we can recognize the existence of **allomorphs** of a particular morpheme. That is, when we find a group of different morphs, all versions of one morpheme, we can use the prefix 'allo-' (= one of a closely related set) and describe them as allomorphs of that morpheme.

Take the morpheme 'plural'. Note that it can be attached to a number of lexical morphemes to produce structures like 'cat + plural', 'bus + plural' 'sheep + plural' and 'man + plural'. In each of these examples, the actual forms of the morphs that result from the morpheme 'plural' are different. Yet they are all allomorphs of the one morpheme. So, in addition to *-s* and *-es*, another allomorph of 'plural' in English seems to be a zero-morph because the plural form of *sheep* is actually 'sheep + \emptyset '. When we look at 'man + plural', we have a vowel change in the word ($\text{æ} \rightarrow \text{ɛ}$) as the morph that produces the so-called 'irregular' plural form *men*.

There are a number of other morphological processes at work in a language like English, such as those involved in the range of allomorphs for the morpheme 'past tense'. These include the common pattern in 'walk + past tense' that produces *walked* and also the special pattern that takes 'go + past tense' and produces the 'irregular' past form *went*.

Other languages

When we look at the morphology of other languages, we can find other forms and patterns realizing the basic types of morphemes we have identified. The first example below is from English and the second from a language called Aztec (from Central America). In both cases, we attach a derivational morpheme to a stem, then add an inflectional morpheme.

Stem	Derivational	Inflectional	
<i>dark</i>	+ <i>en</i> ('make')	+ <i>ed</i> ('past')	= <i>darkened</i>
<i>mic</i> ('die')	+ <i>tia</i> ('cause to')	+ <i>s</i> ('future')	= <i>mictias</i> ('will kill')

Different patterns occur in other languages. In the following examples, from a range of languages originally described in Gleason (1955), we can try to work out how different forms in the languages are used to realize morphological processes and features.

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Morphology

In many languages, what appear to be single forms actually turn out to contain a large number of “word-like” elements. For example, in Swahili (spoken throughout East Africa), the form *nitakupenda* conveys what, in English, would have to be represented as something like *I will love you*. Now, is the Swahili form a single word? If it is a “word,” then it seems to consist of a number of elements which, in English, turn up as separate “words.” A rough correspondence can be presented in the following way:

<i>ni-</i>	<i>ta-</i>	<i>ku-</i>	<i>penda</i>
“I	will	you	love”

It would seem that this Swahili “word” is rather different from what we think of as an English “word.” Yet, there clearly is some similarity between the languages, in that similar elements of the whole message can be found in both. Perhaps a better way of looking at linguistic forms in different languages would be to use this notion of “elements” in the message, rather than depend on identifying only “words.”

The type of exercise we have just performed is an example of investigating basic forms in language, generally known as **morphology**. This term, which literally means “the study of forms,” was originally used in biology, but, since the middle of the nineteenth century, has also been used to describe the type of investigation that analyzes all those basic “elements” used in a language. What we have been describing as “elements” in the form of a linguistic message are technically known as “morphemes.”

Morphemes

We do not actually have to go to other languages such as Swahili to discover that “word forms” may consist of a number of elements. We can recognize that English word forms such as *talks*, *talker*, *talked* and *talking* must consist of one element *talk*, and a number of other elements such as *-s*, *-er*, *-ed* and *-ing*. All these elements are described as **morphemes**. The definition of a morpheme is “a minimal unit of meaning or grammatical function.” Units of grammatical function include forms used to indicate past tense or plural, for example.

In the sentence *The police reopened the investigation*, the word *reopened* consists of three morphemes. One minimal unit of meaning is *open*, another minimal unit of meaning is *re-* (meaning “again”) and a minimal unit of grammatical function is *-ed* (indicating past tense). The word *tourists* also contains three morphemes. There is one

Noun +	-’s, -s
Verb +	-s, -ing, -ed, -en
Adjective +	-er, -est

There is some variation in the form of these inflectional morphemes. For example, the possessive sometimes appears as -’s (*those boys’ bags*) and the past participle as -ed (*they have finished*).

Morphological description

The difference between derivational and inflectional morphemes is worth emphasizing. An inflectional morpheme never changes the grammatical category of a word. For example, both *old* and *older* are adjectives. The -er inflection here (from Old English -ra) simply creates a different version of the adjective. However, a derivational morpheme can change the grammatical category of a word. The verb *teach* becomes the noun *teacher* if we add the derivational morpheme -er (from Old English -ere). So, the suffix -er in Modern English can be an inflectional morpheme as part of an adjective and also a distinct derivational morpheme as part of a noun. Just because they look the same (-er) doesn’t mean they do the same kind of work.

Whenever there is a derivational suffix and an inflectional suffix attached to the same word, they always appear in that order. First the derivational (-er) is attached to *teach*, then the inflectional (-s) is added to produce *teachers*.

Armed with all these terms for different types of morphemes, we can now take most sentences of English apart and list all the “elements.” For example, in the sentence *The child’s wildness shocked the teachers*, we can identify eleven morphemes.

<i>The</i>	<i>child</i>	-’s	<i>wild</i>	-ness	<i>shock</i>
functional	lexical	inflectional	lexical	derivational	lexical
-ed	<i>the</i>	<i>teach</i>	-er	-s	
inflectional	functional	lexical	derivational	inflectional	

A useful way to remember all these different types of morphemes is in the following chart.

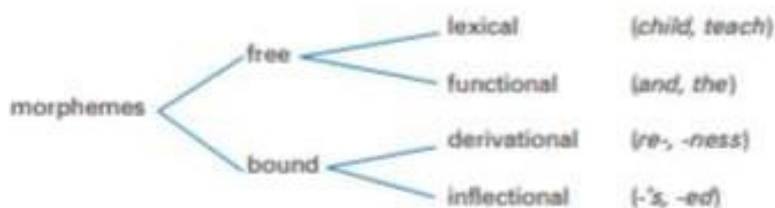


Figure 6.1

Problems in morphological description

The rather neat chart presented here conceals a number of outstanding problems in the analysis of English morphology. So far, we have only considered examples of English words in which the different morphemes are easily identifiable as separate elements. The inflectional morpheme *-s* is added to *cat* and we get the plural *cats*. What is the inflectional morpheme that makes *sheep* the plural of *sheep*, or *men* the plural of *man*? And if *-al* is the derivational suffix added to the stem *institution* to give us *institutional*, then can we take *-al* off the word *legal* to get the stem *leg*? Unfortunately, the answer is “No.”

There are other problematic cases, especially in the analysis of different languages, but the solutions to some of these problems are clearer in some instances than in others. For example, the relationship between *law* and *legal* is a reflection of the historical influence of different languages on English word forms. The modern form *law* is a result of a borrowing into Old English (*lagu*) from a Scandinavian source over 1,000 years ago. The modern word *legal* was borrowed about 500 years later from the Latin form *legalis* (“of the law”). Consequently, there is no derivational relationship between the noun *law* and the adjective *legal* in English, nor between the noun *mouth* (from Old English) and the adjective *oral* (a Latin borrowing). An extremely large number of English words owe their morphological patterning to languages like Latin and Greek. Consequently, a full description of English morphology will have to take account of both historical influences and the effect of borrowed elements.

Morphs and allomorphs

One way to treat differences in inflectional morphemes is by proposing variation in morphological realization rules. In order to do this, we draw an analogy with some processes already noted in phonology (Chapter 4). Just as we treated phones as the actual phonetic realization of phonemes, so we can propose **morphs** as the actual forms used to realize morphemes. For example, the form *cats* consists of two morphs, *cat* + *-s*, realizing a lexical morpheme and an inflectional morpheme (“plural”). The form *buses* also consists of two morphs (*bus* + *-es*), realizing a lexical morpheme and an inflectional morpheme (“plural”). So there are at least two different morphs (*-s* and *-es*, actually /s/ and /əz/) used to realize the inflectional morpheme “plural.” Just as we noted that there were “allophones” of a particular phoneme, so we can recognize the existence of **allomorphs** of a particular morpheme. That is, when we find a group of different morphs, all versions of one morpheme, we can use the prefix *allo-* (= one of a closely related set) and describe them as allomorphs of that morpheme.

minimal unit of meaning *tour*, another minimal unit of meaning *-ist* (marking “person who does something”), and a minimal unit of grammatical function *-s* (indicating plural).

Free and bound morphemes

From these examples, we can make a broad distinction between two types of morphemes. There are **free morphemes**, that is, morphemes that can stand by themselves as single words, for example, *open* and *tour*. There are also **bound morphemes**, which are those forms that cannot normally stand alone and are typically attached to another form, exemplified as *re-*, *-ist*, *-ed*, *-s*. These forms were described in Chapter 5 as affixes. So, we can say that all affixes (prefixes and suffixes) in English are bound morphemes. The free morphemes can generally be identified as the set of separate English word forms such as basic nouns, adjectives, verbs, etc. When they are used with bound morphemes attached, the basic word forms are technically known as **stems**. For example:

	<i>undressed</i>			<i>carelessness</i>		
<i>un-</i>	<i>dress</i>	<i>-ed</i>	<i>care</i>	<i>-less</i>	<i>-ness</i>	
prefix	stem	suffix	stem	suffix	suffix	
(bound)	(free)	(bound)	(free)	(bound)	(bound)	

We should note that this type of description is a partial simplification of the morphological facts of English. There are a number of English words in which the element treated as the stem is not, in fact, a free morpheme. In words such as *receive*, *reduce* and *repeat*, we can identify the bound morpheme *re-* at the beginning, but the elements *-ceive*, *-duce* and *-peat* are not separate word forms and hence cannot be free morphemes. These types of forms are sometimes described as “bound stems” to keep them distinct from “free stems” such as *dress* and *care*.

Lexical and functional morphemes

What we have described as free morphemes fall into two categories. The first category is that set of ordinary nouns, adjectives and verbs that we think of as the words that carry the “content” of the messages we convey. These free morphemes are called **lexical morphemes** and some examples are: *girl*, *man*, *house*, *tiger*, *sad*, *long*, *yellow*, *sincere*, *open*, *look*, *follow*, *break*. We can add new lexical morphemes to the language rather easily, so they are treated as an “open” class of words.

Other types of free morphemes are called **functional morphemes**. Examples are *and, but, when, because, on, near, above, in, the, that, it, them*. This set consists largely of the functional words in the language such as conjunctions, prepositions, articles and pronouns. Because we almost never add new functional morphemes to the language, they are described as a “closed” class of words.

Derivational and inflectional morphemes

The set of affixes that make up the category of bound morphemes can also be divided into two types. One type is described in Chapter 5 in terms of the derivation of words. These are the **derivational morphemes**. We use these bound morphemes to make new words or to make words of a different grammatical category from the stem. For example, the addition of the derivational morpheme *-ness* changes the adjective *good* to the noun *goodness*. The noun *care* can become the adjectives *careful* or *careless* by the addition of the derivational morphemes *-ful* or *-less*. A list of derivational morphemes will include suffixes such as the *-ish* in *foolish*, *-ly* in *quickly*, and the *-ment* in *payment*. The list will also include prefixes such as *re-*, *pre-*, *ex-*, *mis-*, *co-*, *un-* and many more.

The second set of bound morphemes contains what are called **inflectional morphemes**. These are not used to produce new words in the language, but rather to indicate aspects of the grammatical function of a word. Inflectional morphemes are used to show if a word is plural or singular, if it is past tense or not, and if it is a comparative or possessive form.

English has only eight inflectional morphemes (or “inflections”), illustrated in the following sentences.

Jim's two sisters are really different.

One likes to have fun and is always laughing.

The other liked to read as a child and has always taken things seriously.

One is the loudest person in the house and the other is quieter than a mouse.

In the first sentence, both inflections (*-s*, *-s*) are attached to nouns, one marking possessive and the other marking plural. Note that *-s* here is a possessive inflection and different from the *-s* used as an abbreviation for *is* or *has* (e.g. *she's singing*, *it's happened again*). There are four inflections attached to verbs: *-s* (3rd person singular), *-ing* (present participle), *-ed* (past tense) and *-en* (past participle). There are two inflections attached to adjectives: *-er* (comparative) and *-est* (superlative). In English, all the inflectional morphemes are suffixes.

Prefixes and suffixes

Looking more closely at the preceding group of words, we can see that some affixes have to be added to the beginning of the word (e.g. *un-*, *mis-*). These are called **prefixes**. Other affixes have to be added to the end of the word (e.g. *-less*, *-ish*) and are called **suffixes**. All English words formed by this derivational process have either prefixes or suffixes, or both. Thus, *mislead* has a prefix, *disrespectful* has both a prefix and a suffix, and *foolishness* has two suffixes.

Infixes

There is a third type of affix, not normally used in English, but found in some other languages. This is called an **infix** and, as the term suggests, it is an affix that is incorporated inside another word. It is possible to see the general principle at work in certain expressions, occasionally used in fortuitous or aggravating circumstances by emotionally aroused English speakers: *Halle**bloody**lujah!*, *Abs**goddam**lutely!* and *Un**fuckin**believable!*. In the film *Wish You Were Here*, the main character expresses her aggravation (at another character who keeps trying to contact her) by screaming *Tell him I've gone to Sing**bloody**pore!*. The expletive may even have an infixed element, as in *god**triple**dammmit!*.

Kamhmu

We could view these “inserted” forms as a special version of infixing in English. However, a much better set of examples can be provided from Kamhmu, a language spoken in South East Asia.

	Verb	Noun	
(“to drill”)	<i>see</i>	<i>srnee</i>	(“a drill”)
(“to chisel”)	<i>toh</i>	<i>trnoh</i>	(“a chisel”)
(“to eat with a spoon”)	<i>hiip</i>	<i>hrniip</i>	(“a spoon”)
(“to tie”)	<i>hoom</i>	<i>hrnoom</i>	(“a thing with which to tie”)

From these examples, we can see that there is a regular pattern whereby the infix *-rn-* is added to verbs to form corresponding nouns. If this pattern is generally found in the language and we know that the form *krnap* is the Kamhmu noun for “tongs,” then we

borrowing language. Interesting examples are the French term *gratte-ciel*, which literally translates as “scrape-sky,” the Dutch *wolkenkrabber* (“cloud scratcher”) or the German *Wolkenkratzer* (“cloud scraper”), all of which were calques for the English *skyscraper*. The English word *superman* is thought to be a loan-translation of the German *Übermensch*, and the term *loan-word* itself is believed to have come from the German *Lehnwort*. The English expression *moment of truth* is believed to be a calque from the Spanish phrase *el momento de la verdad*, though not restricted to the original use as the final thrust of the sword to end a bullfight. Nowadays, some Spanish speakers eat *perros calientes* (literally “dogs hot”) or *hot dogs*. The American concept of “boyfriend” was a borrowing, with sound modification, into Japanese as *boyifurendo*, but as a calque into Chinese as “male friend” or *nan pengyu*.

Compounding

In some of the examples we have just considered, there is a joining of two separate words to produce a single form. Thus, *Lehn* and *Wort* are combined to produce *Lehnwort* in German. This combining process, technically known as **compounding**, is very common in languages such as German and English, but much less common in languages such as French and Spanish. Common English compounds are *bookcase*, *doorknob*, *fingerprint*, *sunburn*, *textbook*, *wallpaper*, *wastebasket* and *waterbed*. All these examples are nouns, but we can also create compound adjectives (*good-looking*, *low-paid*) and compounds of adjective (*fast*) plus noun (*food*) as in *a fast-food restaurant* or *a full-time job*.

This very productive source of new terms has been well documented in English and German, but can also be found in totally unrelated languages, such as Hmong (spoken in South East Asia), which combines *hwj* (“pot”) and *kais* (“spout”) to produce *hwjkais* (“kettle”). Recent creations are *paj* (“flower”) plus *kws* (“corn”) for *pajkws* (“popcorn”) and *hnab* (“bag”) + *rau* (“put”) + *ntawv* (“paper” or “book”) for *hnabraun-tawv* (“schoolbag”).

Blending

The combination of two separate forms to produce a single new term is also present in the process called **blending**. However, blending is typically accomplished by taking only the beginning of one word and joining it to the end of the other word. In some parts of the USA, there’s a product that is used like *gasoline*, but is made from *alcohol*, so the “blended” word for referring to this product is *gasohol*. To talk about the combined

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not say that the word *hear* is morphologically structured and related to *ear*. Conceivably, *h* could mean 'use', so *h-ear* would be 'use one's ear', i.e. 'hear'. But this is the only pair of words of this kind (there is no **heye* 'use one's eye', **helbow* 'use one's elbow', etc.), and everyone agrees that the resemblances are accidental in this case.

Morphological analysis typically consists of the identification of parts of words, or, more technically, **constituents** of words. We can say that the word *nuts* consists of two constituents: the element *nut* and the element *s*. In accordance with a widespread typographical convention, we will often separate word constituents by a hyphen: *nut-s*. It is often suggested that morphological analysis primarily consists in breaking up words into their parts and establishing the rules that govern the co-occurrence of these parts. The smallest meaningful constituents of words that can be identified are called **morphemes**. In *nut-s*, both *-s* and *nut* are morphemes. Other examples of words consisting of two morphemes would be *break-ing*, *hope-less*, *re-write*, *cheese-board*; words consisting of three morphemes are *re-writ-ing*, *hope-less-ness*, *ear-plug-s*; and so on. Thus, morphology could alternatively be defined as in Definition 2.

Definition 2:

Morphology is the study of the combination of morphemes to yield words.

This definition looks simpler and more concrete than Definition 1. It would make morphology quite similar to syntax, which is usually defined as 'the study of the combination of words to yield sentences'. However, we will see later that Definition 2 does not work in all cases, so we should stick to the somewhat more abstract Definition 1 (see especially Chapters 3 and 4).

In addition to its main sense, where morphology refers to a subdiscipline of linguistics, it is also often used in a closely related sense, to denote a part of the language system. Thus, we can speak of 'the morphology of Spanish' (meaning Spanish word structures) or of 'morphology in the 1980s' (meaning a subdiscipline of linguistics). The term *morphology* shares this ambiguity with other terms such as *syntax*, *phonology* and *grammar*, which may also refer either to a part of the language or to the study of that part of the language. This book is about morphology in both senses. We hope that it will help the reader to understand morphology both as a part of the language system and as a part of linguistics.

One important limitation of the present book should be mentioned right at the beginning: it deals only with spoken languages. Sign languages of course have morphology as well, and the only justification for leaving them out of consideration here is the authors' limited competence. As more and more research is done on sign languages, it can be expected that these

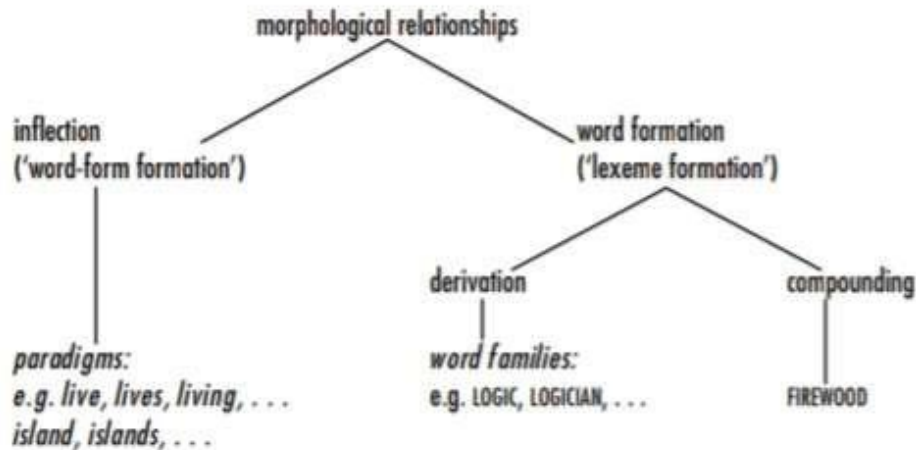


Figure 2.1 Subdivisions of morphology

2.2 Affixes, bases and roots

In both inflection and derivation, morphemes have various kinds of meanings. Some meanings are very concrete and can be described easily (e.g. the meanings of the morphemes *wash*, *logic*, *chameleon*, *un-*), but other meanings are abstract and more difficult to describe. For instance, the morpheme *-al* in *logic-al* can perhaps be said to mean ‘relating to’ (cf. *logic-al*, *mathematic-al*, *physic-al*, *natur-al*), *-able* in *read-able* can be said to mean ‘capable of undergoing a process’, and the meaning of *-ity* is ‘quality’ (e.g. *readability* is ‘the quality of being readable’). Some meanings are so abstract that they can hardly be called meanings. For example, the Latin morpheme *-m* in *insula-m* (see (2.3)) serves to mark the direct object in a sentence, but it is difficult to say what its meaning is. And English *-s* in *read-s* is required when the subject is a third person singular noun phrase, but again it is unclear whether it can be said to have meaning. In such cases, linguists are more comfortable saying that these morphemes have certain *grammatical functions*. But, since the ultimate purpose of grammatical constructions is to express meaning, we will continue to say that morphemes bear meaning, even when that meaning is very abstract and can be identified only in the larger grammatical context.

Word-forms in an inflectional paradigm generally share (at least) one longer morpheme with a concrete meaning and are distinguished from each other in that they additionally contain different shorter morphemes, called affixes. An **affix** attaches to a word or a main part of a word. It usually has an abstract meaning, and an affix cannot occur by itself. For instance, Russian nouns have different affixes in the paradigm in (2.6), which have case meaning (*-a* for nominative, *-u* for accusative, etc.), and Classical Nahuatl nouns have different affixes in the paradigm in (2.7) that indicate a possessor (*no-* for ‘my’, *mo-* for ‘your’, etc.).

Bases or stems can be complex themselves. For instance, in *activity*, *-ity* is a suffix that combines with the base *active*, which itself consists of the suffix *-ive* and the base *act*. A base that cannot be analyzed any further into constituent morphemes is called a **root**. In *readability*, *read* is the root (and the base for *readable*), and *readable* is the base for *readability*, but it is not a root. Thus, the base is a relative notion that is defined with respect to the notion 'affix'. (We will refine this definition of 'base' in the next chapter to account for words which are difficult to describe in terms of morphemes, but will keep the idea that bases are relative notions.) Affixes are similar to roots in that they cannot be further analyzed into component morphemes; they are primitive elements.

A base may or may not be able to function as a word-form. For instance, in English, *cat* is both the base of the inflected form *cats* and itself a word-form (*active* is a word-form and the base for the derived form *activity*, etc.). However, in Italian word-form *gatti* ('cats') can be broken up into the suffix *-i* ('plural') and the base *gatt-* ('cat'), but *gatt-* is not a word-form. Italian nouns must inflect for number, and even in the singular, an affix is required to express this information (e.g. *gatt-o* 'cat', *gatt-i* 'cats'). In this respect Italian differs from English. Bases that cannot also function as word-forms are called **bound stems**.

Roots and affixes can generally be distinguished quite easily, but sometimes there are problems. For example, the Salishan language Bella Coola has a number of suffix-like elements that do not seem to have an abstract meaning (see 2.8). In (2.9), we see two examples of how these elements are used.

(2.8)	<i>-us</i>	'face'	<i>-lik</i>	'body'
	<i>-an</i>	'ear'	<i>-altwa</i>	'sky, weather'
	<i>-uc</i>	'mouth'	<i>-lt</i>	'child'
	<i>-at</i>	'foot'	<i>-lst</i>	'rock'
	<i>-ak</i>	'hand'	<i>-lxs</i>	'nose'

- (2.9) a. *quc-at-ic*
 wash-foot-I.him
 'I am going to wash his foot' (lit.: 'foot-wash him')
- b. *kma-lxs-c*
 hurt-nose-I
 'my nose hurts' (lit.: 'I nose-hurt')

(Mithun 1998: 300–5)

In these cases, it is not immediately clear whether we are dealing with suffix-root combinations or with root-root combinations, i.e. compounds. The elements in (2.8) do not occur as lexemes by themselves but must always be combined with other roots. In this respect they have a property that is typical of affixes, and scholars of Salishan languages have generally regarded them as such. However, if affixes are defined as 'short morphemes with an abstract meaning', then these elements are very atypical affixes, to say the least.

British system) or even a kind of book. By contrast, the properties of word-forms are mostly predictable and hence do not need to be listed separately for each lexeme.

Thus, there are two rather different kinds of morphological relationship among words, for which two technical terms are commonly used:

(2.5) Kinds of morphological relationship

- | | |
|-------------------|--|
| inflection | (= inflectional morphology): the relationship between word-forms of a lexeme |
| derivation | (= derivational morphology): the relationship between lexemes of a word family |

Morphologists also use the corresponding verbs *inflect* and *derive*. For instance, one would say that the Latin lexeme *INSULA* is inflected (or inflects) for case and number, and that the lexeme *READER* is derived from the lexeme *READ*. A derived lexeme is also called a **derivative**.

(Note that we are making a terminological simplification here: a lexeme is an abstract entity without phonological form so, strictly speaking, one lexeme cannot be derived from another. When morphologists talk about *derived lexemes*, they mean that form *a* (e.g. *reader*), corresponding to lexeme A (*READER*), is derived from form *b* (*read*), corresponding to lexeme B (*READ*). However, since this phrasing becomes quite clumsy, morphologists commonly simplify the terminology. We will do the same in this book.)

It is not always easy to tell how word-forms are grouped into lexemes. For instance, does the word-form *nicely* belong to the lexeme *NICE*, or does it represent a lexeme of its own (*NICELY*), which is in the same word family as *NICE*? Issues of this sort will be discussed in some detail in Chapter 5. Whenever it is unclear or irrelevant whether two words are inflectionally or derivationally related, the term *word* will be used in this book instead of *lexeme* or *word-form*. And for the same reason even the most technical writings on morphology often continue to use the term *word*.

Some morphologically complex words belong to two (or more) word families simultaneously. For instance, the lexeme *FIREWOOD* belongs both in the family of *FIRE* and in the family of *WOOD*. Such relationships are called **compounding**, and lexemes like *FIREWOOD* are called **compound lexemes**, or just **compounds**, for short. Compounding is often grouped together with derivation under the category of **word formation** (i.e. lexeme formation). The various conceptual distinctions that we have seen so far are summarized in Figure 2.1.

(2.6) Russian case inflection (singular forms)

nominative	<i>ruk-a</i>	'hand'
accusative	<i>ruk-u</i>	
genitive	<i>ruk-i</i>	
dative	<i>ruk-e</i>	
locative	<i>ruk-e</i>	
instrumental	<i>ruk-oj</i>	

(2.7) Nahuatl possessor inflection

1SG	<i>no-cal</i>	'my house'
2SG	<i>mo-cal</i>	'your (SG) house'
3SG	<i>i-cal</i>	'his/her house'
1PL	<i>to-cal</i>	'our house'
2PL	<i>amo-cal</i>	'your (PL) house'
3PL	<i>in-cal</i>	'their house'

(Sullivan 1988: 26)

Morphologists often use special terms for different kinds of affixes, depending on their position within the word. Affixes that follow the main part of the word are called **suffixes** (e.g. the Russian case suffixes in (2.6)), and affixes that precede it are called **prefixes** (e.g. the Classical Nahuatl possessor prefixes in (2.7)). The part of the word that an affix is attached to is called the **base**, e.g. *ruk-* in Russian, or *-cal* in Classical Nahuatl. Affixes and bases can, of course, be identified both in inflected word-forms and in derived lexemes. For instance, in *read-er*, *read-able* and *re-read*, *read* is the base, *-er* and *-able* are suffixes, and *re-* is a prefix. A base is also sometimes called a **stem**, especially if an inflectional (as opposed to derivational) affix attaches to it.

There are still other kinds of affixes, besides prefixes and suffixes, which are briefly described and illustrated in Table 2.1.

Types of affixes		Examples
suffix:	follows the base	Russian <i>-a</i> in <i>ruk-a</i> 'hand' English <i>-ful</i> in <i>event-ful</i>
prefix:	precedes the base	Classical Nahuatl <i>no-</i> in <i>no-cal</i> 'my house' English <i>un-</i> in <i>unhappy</i>
infix:	occurs inside the base	Arabic <i>-t-</i> in <i>(i)š-t-ağala</i> 'be occupied' (base: <i>šağala</i>) Tagalog <i>-um-</i> in <i>s-um-ulat</i> 'write' (base: <i>sulat</i>)
circumfix:	occurs on both sides of the base	German <i>ge-...-en</i> , e.g. <i>ge-fahr-en</i> 'driven' (base: <i>fahr</i>)

Table 2.1 Types of affixes

be segmented into several morphemes; it is **monomorphemic**. Morphemes are the ultimate elements of morphological analysis; they are, so to speak, morphological atoms.

In this chapter we introduce some other fundamental concepts and their related terms, starting with *lexemes* and *word-forms*.

2.1 Lexemes and word-forms

The most basic concept of morphology is of course the concept 'word'. For the sake of convenience, let us assume for the moment that a word is whatever corresponds to a contiguous sequence of letters.² Thus, in one sense the first sentence of this paragraph consists of twelve words, each separated by a blank space from the neighbouring word(s). And in another sense the sentence has nine words – there are nine *different* sequences of letters separated by spaces. But when a dictionary is made, not every sequence of letters is given its own entry. For instance, the words *live*, *lives*, *lived* and *living* are pronounced differently and are different words in that sense. But a dictionary would contain only a single entry LIVE. The dictionary user is expected to know that *live*, *lives*, *lived* and *living* are different concrete instantiations of the 'same' word LIVE. Thus, there are three rather different notions of 'word'. When a word is used in some text or in speech, that occurrence of the word is sometimes referred to as a **word token**. In this sense the first sentence in the paragraph consists of twelve words. The other two senses of the term 'word' are not defined in reference to particular texts; they correspond to the 'dictionary word' and the 'concrete word'. Since this distinction is central to morphology, we need special technical terms for the two notions, *lexeme* and *word-form*, respectively.

A **lexeme** is a word in an abstract sense. LIVE is a verb lexeme. It represents the core meaning shared by forms such as *live*, *lives*, *lived* and *living*. In most languages, dictionaries are organized according to lexemes, so it is usually reasonable to think of a lexeme as a 'dictionary word'. Although we must assign names to lexemes to be able to talk about them, lexemes are abstract entities that have no phonological form of their own. LIVE is therefore just a convenient label to talk about a particular lexeme; the sequence of sounds [liv] is not the lexeme itself. Sometimes we will use the convention of writing lexemes in small capital letters.

By contrast, a **word-form** is a word in a concrete sense. It is a sequence of sounds that expresses the combination of a lexeme (e.g. LIVE) and a set

² Of course, we should really define words in terms of *sounds*, since language is primarily a spoken (not written) medium, and there are other problems with this definition as well. But it is sufficient for the present purposes. A more sophisticated approach is deferred to Chapter 9.

Lexicon

In this chapter we look more closely at morphemes, focusing on the following fundamental issue: Do speakers memorize entire complex word-forms (*readable, reads, washable*), their component morphemes (*read, wash, -able, -s*), or both? Another way to ask the same question is: What is the content of the **lexicon**? Remember that the lexicon is the linguist's term for the language user's mental dictionary. When a linguist says that something is listed in the lexicon, this means that it must be stored in speakers' memories (but linguists generally prefer the more abstract, less psychological-sounding terminology).¹

The content of the lexicon is an important issue for any theory of morphology because **lexical items** are the fundamental building blocks of morphological structure. They are the bases to which morphological rules apply. As such, our view of the lexicon affects our analysis of morphological structure in broad ways. If evidence points to the lexicon consisting primarily of morphemes, the rules that we write will operate on morpheme-based structures. And correspondingly, if evidence suggests that the lexicon consists primarily of words, the rules that we posit will be fundamentally word-based. The material in this chapter is thus complementary to the discussion in Chapter 3.

All linguists agree that the lexicon must contain at least all the information that is not predictable from general rules. For instance, an English speaker's lexicon must contain the monomorphemic English verbs *arrive, refuse, deny*, and words showing extreme semantic peculiarities (e.g. *awful*, which is not

¹ A distinction is sometimes made between a *lexicon* and a *mental lexicon*, where the *lexicon* is a purely abstract tool of linguists to describe roots and affixes that does not necessarily correspond in any way to speakers' mental knowledge. The term *mental lexicon* is then used for the more psychological concept of a speaker's mental dictionary. However, we follow the view that linguists should strive to analyze language in ways that are plausible representations of speakers' knowledge, so we will continue to talk about the lexicon in terms of a (hypothetical) speaker, and not distinguish between these terms.


In this chapter we begin by showing that words and phrases exhibit different properties, and that these can be used to identify word boundaries. In Section 9.1 we address a common area of difficulty – distinguishing compounds from phrases. We then go on to discuss a more complicated issue in Sections 9.2 and 9.3, namely, expressions that fall along the continuum between canonical affixes and canonical words. These are clitics. Lastly, we consider whether a distinction between words and phrases is important for a formal description of language structure. Fundamentally, this is a question of whether syntactic principles apply to word structure. The relationship between morphology and syntax arose already in Chapters 5 and 7. In Section 9.4 we look again at this issue in the context of something called the Lexical Integrity Hypothesis.

9.1 Compounds versus phrases

A common situation in which we might ask the question whether an expression is a single word or a syntactic phrase involves (potential) compounds. For instance, are the expressions *backboard*, *backdoor*, *back seat* compounds or phrases? In this section we discuss some properties of compounds that allow us to distinguish them from phrases.

In many cases, compounds are easy to tell apart from phrases with two content words. For instance, compounds may consist of two (or more) lexeme stems that are juxtaposed in a single word-form, and, when a language does not allow phrases consisting of two juxtaposed lexemes of those same word-classes, the combination must be a compound. For example, German *Holzhaus* [wood-house] must be a compound noun because two juxtaposed nouns cannot by themselves form a noun phrase in German. Also, Italian *segnalibri* [indicate-books] ‘bookmark’ must be a compound, because it is structurally not similar to a phrase with a similar meaning. (Italian has a phrase *segna libri* whose pronunciation is the same, but this is an imperative verb phrase and means ‘indicate books!’, so both syntactically and semantically it is clearly distinct from the compound *segnalibri*.) Occasionally compounds even have a special segmental marker. Thus, in Coast Tsimshian an *-m-* interfix between the two members indicates a compound, e.g. *gyemg-m-dziws* [light-INTF-day] ‘sun’, *güüinks-m-hoon* [dry-INTF-fish] ‘dried fish’ (Dunn 1979: 55). And we saw in (7.4) that the interfixes *-s-* and *-en-* are used in German to form compounds (*Liebe-s-brief* ‘love letter’, *Schwan-en-gesang* ‘swansong’).

However, there are also a great many cases in which compounds are quite similar to phrases with a similar meaning, and then we have to take a closer look in order to distinguish the two patterns. For example, Lango has an **inalienable possessive** construction with the order head–possessor that is expressed by simple juxtaposition (e.g. the syntactic phrases *wì rwòt* [head



Fundamentals of Linguistics

What is Morphology?

Second Edition

Mark Aronoff
and Kirsten Fudeman

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study of the form and structure of organisms, and in geology it refers to the study of the configuration and evolution of land forms. In linguistics *morphology* refers to the mental system involved in **word** formation or to the branch of linguistics that deals with words, their internal structure, and how they are formed.

■ 1.2 Morphemes

A major way in which morphologists investigate words, their internal structure, and how they are formed is through the identification and study of **morphemes**, often defined as the smallest linguistic pieces with a grammatical function. This definition is not meant to include all morphemes, but it is the usual one and a good starting point. A morpheme may consist of a word, such as *hand*, or a meaningful piece of a word, such as the *-ed* of *looked*, that cannot be divided into smaller meaningful parts. Another way in which morphemes have been defined is as a pairing between sound and meaning. We have purposely chosen not to use this definition. Some morphemes have no concrete form or no continuous form, as we will see, and some do not have meanings in the conventional sense of the term.

You may also run across the term **morph**. The term 'morph' is sometimes used to refer specifically to the phonological realization of a morpheme. For example, the English past tense morpheme that we spell *-ed* has various morphs. It is realized as [t] after the voiceless [p] of *jump* (cf. *jumped*), as [d] after the voiced [l] of *repel* (cf. *repelled*), and as [əd] after the voiceless [t] of *root* or the voiced [d] of *wed* (cf. *rooted* and *wedded*). We can also call these morphs **allomorphs** or **variants**. The appearance of one morph over another in this case is determined by voicing and the place of articulation of the final consonant of the verb stem.

Now consider the word *reconsideration*. We can break it into three morphemes: *re-*, *consider*, and *-ation*. *Consider* is called the **stem**. A stem is a base unit to which another morphological piece is attached. The stem can be **simple**, made up of only one part, or **complex**, itself made up of more than one piece. Here it is best to consider *consider* a simple stem. Although it consists historically of more than one part, most present-day speakers would treat it as an unanalyzable form. We could also call *consider* the root. A **root** is like a stem in constituting the core of the word to which other pieces attach, but the term refers only to morphologically simple units. For example, *disagree* is the stem of

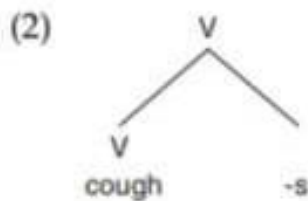
Here we present some of the reasons why what seems like a relatively simple task (we all think we know what a word is, right?) proves to be so problematic.

■ 2.1.1 Defining words syntactically

One way that people have attempted to define words is to call them the smallest unit of syntax. This seems reasonable: sentences are built by combining words according to particular patterns. But even this simple definition runs into problems. Take a sentence like the following:

(1) Harry coughs every time he steps outside.

Everyone would agree that *Harry*, *every*, and *outside* are words, and that *-s* is not. But at the same time, some people (though not all) would argue that *-s* is indeed a unit of syntax and that it occupies a particular position in a syntactic tree. The following diagram illustrates how we might break *cough* off from *-s* syntactically:



Calling words the minimal units of syntax raises the question, “What is syntax?” If we think of syntax as the component of the human grammar that governs the ordering of items, then *-s* should be a word. After all, it is subject to ordering principles. It must follow *cough*; we don’t say *s-cough*. If we respond by saying that syntax governs the ordering of not just any item, but only words, then we are back where we started. What is a word?

Another characteristic of words is that they are the smallest unit of language that can stand alone:

(3) When are you going to the store? *Tomorrow.*
 What did the emperor wear to the procession? *Nothing!*

We recognize the ability of words to stand alone by saying that they are **free forms**. Units that are incapable of standing alone, such as affixes, are correspondingly called **bound forms**. This characteristic of words

■ 2.4 Inflection vs. Derivation

Once you understand the difference between words and lexemes, you can understand the distinction made by morphologists between **inflection** and **derivation**. We discuss both of these more fully in later chapters of the book.

Inflection involves the formation of grammatical forms – past, present, future; singular, plural; masculine, feminine, neuter; and so on – of a single lexeme. The use of these grammatical forms is generally dictated by sentence structure. Thus *is*, *are*, and *being* are examples of inflected forms of the lexeme BE, which happens to be highly irregular not only in English, but in many other languages as well. Regular verb lexemes in English have a lexical stem, which is the bare form with no affixes (e.g., *select*) and three more inflected forms, one each with the suffixes *-s*, *-ed*, and *-ing* (*selects*, *selected*, and *selecting*). Noun lexemes in English have a singular and plural form. Adjectives, adverbs, prepositions, and other parts of speech typically have only one form in English.

As you can tell from the example of *select* given above, one way inflection can be realized is through affixes. Further examples of affixal realization of inflection can be found in the following box.

Examples of words + *inflectional morphemes*

Nouns: wombat + *s*
 ox + *en*
 Verbs: brainwash + *es*
 dig + *s*
 escape + *d*
 rain + *ing*

Derivation involves the creation of one lexeme from another, such as *selector* or *selection* from *select*. Compounding is a special type of derivation, since it involves the creation of one lexeme from two or more other lexemes. In the discussion of non-separability above, we had many instances of compounds (*doghouse*, *greenhouse*, *hot dog*, and *deer tick*), all of which are formed by combining two lexemes. Many processes can be involved with derivation, as we will see in chapter 4. In the box on the next page we give only examples of affixal derivation.

them as different grammatical words (discussed in 2.1.3) because each plays a distinct grammatical role within a sentence. But at some level these different words are all tokens of the same type: they mean the same thing and no one would expect a dictionary to give them four separate entries. We must be dealing with a single lexeme, but one that happens to be realized in several different forms, depending on grammatical context. This example shows you that a lexeme is not a single form, but rather a set of forms. [Exercises 6–7]

What is a lexeme?

- A lexeme is a theoretical construct that corresponds roughly to one of the common senses of the term *word*. Examples include *BOOK*, *EAT*, *DARK*, *SECRETLY*.
- It is a sign or set of signs that exists independently of any particular syntactic context.
- It has a particular meaning or grammatical function (e.g., 'a set of written or printed pages fastened along one side and encased between two covers'; 'consume, as with food').
- Some linguists restrict the class of lexemes to the major lexical categories of noun, verb, adjective/adverb.
- It is generally referred to by its citation form (e.g., *BOOK*, *EAT*), but its shape may vary systematically according to the syntactic context in which it is used (e.g., one *book*, two *books*; I am *eating* right now, I *ate* a big dinner yesterday).

We have already said that in order to talk about lexemes, morphologists give them each a name, and by convention, they put these names in small capital letters. In reality the name of a lexeme is much more than a name. In English it also happens to be the lexeme's **lexical stem**. The lexical stem is the form of the lexeme that is most often used in the creation of new words.

To illustrate what we mean by lexical stem, let's look closely at the lexeme *GO*. This lexeme has five forms, two of them irregular: *go*, *goes*, *went*, *gone*, *going*. Of these forms, *go* has a different status from the rest. Lexemes formed from *GO* most often use it as their stem, as opposed to an inflected form. You have probably heard the word *churchgoer*, but not *church-wenter*, someone who used to go to church. Likewise, there are *go-between*s but not *gone-between*s.

There are two widely accepted views of the lexicon. According to one, the lexicon is a list of the indivisible morphological units, or morphemes, in a language. This definition comes from Baudouin de Courtenay (b. 1845 in Radzymin, Poland; d. 1929 in Warsaw), who, despite his French name and his relation to the Belgian royal family, was a Polish linguist of the middle to late nineteenth century and a very influential theorist of the time.

The second view of the lexicon, due more or less to Bloomfield (1933), is a list of irregular or arbitrary forms. Because they are irregular or arbitrary, they must be memorized. For example, a speaker of French must learn that the sound sequence [aʁbʁ] refers to a tree, and a speaker of English must learn that the word *slide* refers to a small square object that we put in a slide projector to project an image onto a screen or wall.

It would be an error to assume that the first definition is equivalent to the second and that the list of irregular forms is a list of morphemes, which is to say a list of indivisible units. If we spoke a perfect language, this would be true. Every irregular form in the language would be indivisible. But where natural language is concerned, this position is too extreme. A great deal of evidence suggests that even morphologically complex forms are present in a speaker's lexicon (see chapter 8).

One morphologically complex word that must be considered to be listed in the lexicon is *representative*. If it were enough to say that *re-*, *present*, and *-ative* are stored in the lexicon, we would expect the meaning of *representative* to be a function of its parts, which it is not. A representative is always a person who represents something, but in the United States, the word most commonly refers to an elected member of a specific state or federal legislative body. Senators may represent us, and thus they are representatives, but a United States Senator is not a *Representative*. (If you doubt us, perform the simple experiment of referring to a senator as a representative in conversation, and see what happens.)

Digging deeper, we find that most words ending in *-ative* are adjectives. *Representative* can be an adjective, but in this specific sense it is a noun, again an idiosyncrasy that must be listed in the lexicon along with the special meaning it has come to have in the context of United States government. In this and many other cases, we are tempted to think that the meaning of a complex word is the sum of the meaning of its parts, because the difference between the meaning that we expect a word to have on the basis of the meanings of its parts and the meaning that it actually has is quite subtle. Still, there is no way out. If we know the meaning of the word *representative*, it must be the case that we store

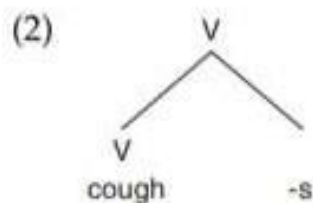
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Everyone would agree that *Harry*, *every*, and *outside* are words, and that *-s* is not. But at the same time, some people (though not all) would argue that *-s* is indeed a unit of syntax and that it occupies a particular position in a syntactic tree. The following diagram illustrates how we might break *cough* off from *-s* syntactically:



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 What did the emperor wear to the procession? *Nothing!*

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also runs into problems. Certain forms that native speakers would identify as words are not capable of standing alone and therefore do not meet this definition:

- (4) Whose book is this? **My*.

My is a word, as we would all agree. But it generally does not stand alone.¹ The reasons why *my* cannot stand on its own have more to do with syntax than with morphology: it is a determiner, and it generally appears alongside a noun. Speakers would use *mine* in this context instead. Nevertheless, this example shows that a potential diagnostic for wordhood – can it stand alone? – is not universally reliable.


Once in a while we even get a supposedly bound form appearing on its own. In the musical *Camelot*, Queen Guenevere sings the following lines:

- (5) It's May, it's May, the month of "yes, you may"
 The time for every frivolous whim, proper or *im-*
 ...
 When all the world is brimming with fun, wholesome or *un-*

The prefix *im-* is used on its own to rhyme with *whim*, and *un-* is used to rhyme with *fun*. We are dealing with a creative word play here. Both *im-* and *un-* are stressed here, which means that in some sense, the songwriter has turned them into words. We are not proposing otherwise. We present this example to help demonstrate that words are difficult to define, and that traditional notions such as bound and free are not always reliable.

■ 2.1.2 Defining words phonologically

Words tend to be important units phonologically as well as syntactically. For example, the word is typically the domain of stress assignment. In French, stress always falls on the last syllable of a word. In Cairene Arabic, stress falls on one of the three final syllables, depending on syllable weight. In Polish, main stress falls on the penultimate (next-to-last) or antepenultimate (third-to-last) syllable (Hayes 1995: 67–8). Even this generalization is not absolute. Clitics (from Classical Greek *klinein* 'to lean') are grammatical words that are unable to stand on their own phonologically and must instead 'lean' on an adjacent word – be incorporated into



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TO SENSE**

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- f. My culture is very difference from yours.
- g. His grades proof that he is a hard worker.
- h. The T-shirt that China drawing. (from a T-shirt package from China)

In general terms, briefly discuss what English language learners must learn in order to avoid such errors.

3. Some native speakers of English use forms such as *seen* instead of *saw*, *come* instead of *came*, *aks* instead of *ask*, *clumb* instead of *climbed*, *drug* instead of *dragged*, *growed* instead of *grew*. Are these errors? If they are, are they the same kinds of errors made by the non-native speakers of English listed in Exercise 2? If not, what are they?

WORDS AND MORPHEMES

In traditional grammar, words are the basic units of analysis. Grammarians classify words according to their parts of speech and identify and list the forms that words can show up in. Although the matter is really very complex, for the sake of simplicity we will begin with the assumption that we are all generally able to distinguish words from other linguistic units. It will be sufficient for our initial purposes if we assume that words are the main units used for entries in dictionaries. In a later section, we will briefly describe some of their distinctive characteristics.

Words are potentially complex units, composed of even more basic units, called morphemes. A **morpheme** is the smallest part of a word that has grammatical function or meaning (NB not the smallest unit of meaning); we will designate them in braces—{ }. For example, *sawed*, *sawn*, *sawing*, and *saws* can all be analyzed into the morphemes {saw} + {-ed}, {-n}, {-ing}, and {-s}, respectively. None of these last four can be further divided into meaningful units and each occurs in many other words, such as *looked*, *mown*, *coughing*, *bakes*.

{Saw} can occur on its own as a word; it does not have to be attached to another morpheme. It is a **free morpheme**. However, none of the other morphemes listed just above is free. Each must be **affixed** (attached) to some other unit; each can only occur as a part of a word. Morphemes that must be attached as word parts are said to be **bound**.

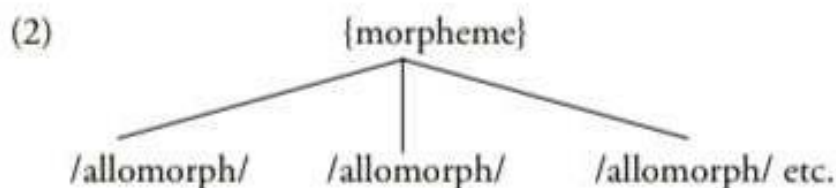
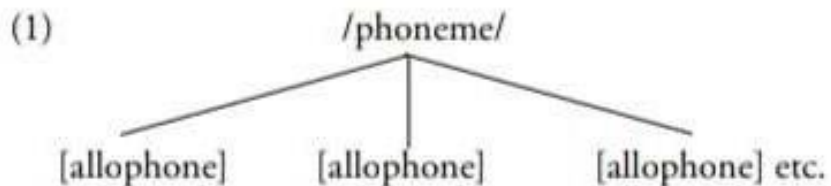
Exercise

1. Identify the free morphemes in the following words:

clearly related phonemic forms /əz/ or /ɪz/, /z/, and /s/. These three have in common not only their meaning, but also the fact that each contains an alveolar fricative phoneme, either /s/ or /z/. The three forms are in complementary distribution, because each occurs where the others cannot, and it is possible to predict just where each occurs: /ɪz/ after sibilants (/s, z, ʃ, ʒ, tʃ, dʒ/), /z/ after voiced segments, and /s/ everywhere else. Given the semantic and phonological similarities between the three forms and the fact that they are in complementary distribution, it is reasonable to view them as contextual pronunciation variants of a single entity. In parallel with phonology, we will refer to the entity of which the three are variant representations as a **morpheme**, and the variant forms of a given morpheme as its **allomorphs**. When we wish to refer to a minimal grammatical form merely as a form, we will use the term **morph**. Compare these terms and the concepts behind them with phoneme, allophone, and phone. (Hint: note the use of / /, [], and { }.)

Exercise

Consult the glossary in the chapter on Phonetics and Phonology and try to determine the meanings of the morphemes {phone}, {allo-}, and {-eme}.



WORDS

Words are notoriously difficult entities to define, both in universal and in language specific terms. Like most linguistic entities, they look in two directions—upward toward larger units of which they are parts (toward phrases), and downward toward their constituent morphemes. This, however, only helps us understand words if we already understand how they are combined into larger units or divided into smaller ones, so we will briefly discuss sev-

kissed, freedom, stronger, follow, awe, goodness, talkative, teacher, actor.

2. Use the words above (and any other words that you think are relevant) to answer the following questions:

- a. Can a morpheme be represented by a single phoneme? Give examples. By more than one phoneme? Give examples.
- b. Can a free morpheme be more than one syllable in length? Give examples. Can a bound morpheme? Give examples.
- c. Does the same letter or phoneme—or sequence of letters or phonemes—always represent the same morpheme? Why or why not? (Hint: you must refer to the definition of morpheme to be able to answer this.)
- d. Can the same morpheme be spelled differently? Give examples.
- e. Can different morphemes be pronounced identically? Give examples.
- f. A morpheme is basically the same as:
 - i. a letter
 - ii. a sound
 - iii. a group of sounds
 - iv. none of the above

3. The words *district* and *discipline* show that the sequence of letters *d-i-s* does not always constitute a morpheme. (Analogous examples are *mission, missile, begin, and retrofit.*) List five more sequences of letters that are sometimes a morpheme and sometimes not.

4. Just for fun, find some other pairs like *disgruntled / *gruntled* and *disgusted / *gusted*, where one member of the pair is an actual English word and the other should be a word, but isn't.

Affixes are classified according to whether they are attached before or after the form to which they are added. **Prefixes** are attached before and **suffixes** after. The bound morphemes listed earlier are all suffixes; the {re-} of *resaw* is a prefix. Further examples of prefixes and suffixes are presented in Appendix A at the end of this chapter.

Root, derivational, and inflectional morphemes

Besides being bound or free, morphemes can also be classified as root, derivational, or inflectional. A **root** morpheme is the basic form to which other

morphemes are attached. It provides the basic meaning of the word. The morpheme {saw} is the root of *sawyers*. **Derivational** morphemes are added to forms to create separate words: {-er} is a derivational suffix whose addition turns a verb into a noun, usually meaning the person or thing that performs the action denoted by the verb. For example, {paint}+{-er} creates *painter*, one of whose meanings is “someone who paints.”

Inflectional morphemes do not create separate words. They merely modify the word in which they occur in order to indicate grammatical properties such as plurality, as the {-s} of *magazines* does, or past tense, as the {ed} of *babecued* does. English has eight inflectional morphemes, which we will describe below.

We can regard the root of a word as the morpheme left over when all the derivational and inflectional morphemes have been removed. For example, in *immovability*, {im-}, {-abil}, and {-ity} are all derivational morphemes, and when we remove them we are left with {move}, which cannot be further divided into meaningful pieces, and so must be the word's root.

We must distinguish between a word's root and the forms to which affixes are attached. In *moveable*, {-able} is attached to {move}, which we've determined is the word's root. However, {im-} is attached to *moveable*, not to {move} (there is no word *immove*), but *moveable* is not a root. Expressions to which affixes are attached are called **bases**. While roots may be bases, bases are not always roots.

Exercise

1. Can an English word have more than one prefix? Give examples. More than one suffix? For example? More than one of each? Give examples. Divide the examples you collected into their root, derivational, and inflectional morphemes.
2. Check your dictionary to see how it deals with inflected and derived word forms. Does it list all the inflections of regular inflected words? Just irregular ones? Does it accord derived forms their own entries or include them in the entries of the forms from which they are derived?
3. Does your dictionary list bound morphemes? Which kinds?

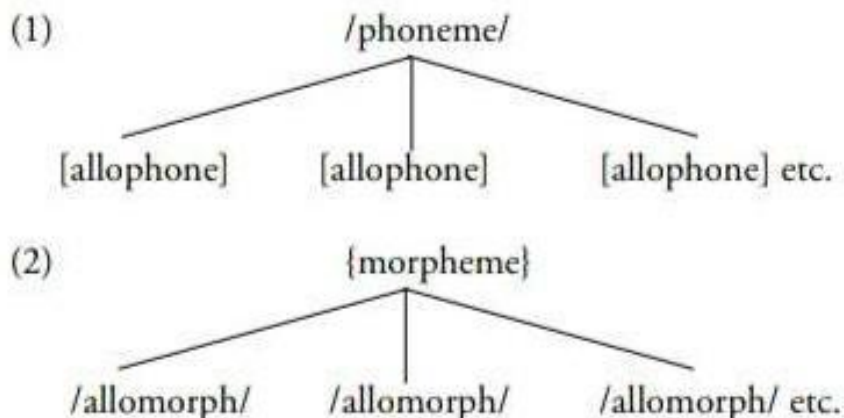
MORPHEMES, ALLOMORPHS, AND MORPHS

The English plural morpheme {-s} can be expressed by three different but

clearly related phonemic forms /əz/ or /ɪz/, /z/, and /s/. These three have in common not only their meaning, but also the fact that each contains an alveolar fricative phoneme, either /s/ or /z/. The three forms are in complementary distribution, because each occurs where the others cannot, and it is possible to predict just where each occurs: /ɪz/ after sibilants (/s, z, ʃ, ʒ, tʃ, dʒ/), /z/ after voiced segments, and /s/ everywhere else. Given the semantic and phonological similarities between the three forms and the fact that they are in complementary distribution, it is reasonable to view them as contextual pronunciation variants of a single entity. In parallel with phonology, we will refer to the entity of which the three are variant representations as a **morpheme**, and the variant forms of a given morpheme as its **allomorphs**. When we wish to refer to a minimal grammatical form merely as a form, we will use the term **morph**. Compare these terms and the concepts behind them with phoneme, allophone, and phone. (Hint: note the use of / /, [], and { }.)

Exercise

Consult the glossary in the chapter on Phonetics and Phonology and try to determine the meanings of the morphemes {phone}, {allo-}, and {-eme}.



WORDS

Words are notoriously difficult entities to define, both in universal and in language specific terms. Like most linguistic entities, they look in two directions—upward toward larger units of which they are parts (toward phrases), and downward toward their constituent morphemes. This, however, only helps us understand words if we already understand how they are combined into larger units or divided into smaller ones, so we will briefly discuss sev-

they had in their home languages; for example, we pluralize *operetta* as *operettas* rather than as *operette* as Italian does; similarly, we sing *oratorios* rather than *oratori*. [Thanks to Paula Malpezzi-Price for help with these examples.] The regular inflections are the default inflections that learners tend to use when they don't know the correct ones (for example, *growed* rather than *grew*).

nouns:	{-s}	plural	(the birds)
noun phrases:	{-s}	genitive/possessive	(the bird's song)
adjectives/adverbs:	{-er}	comparative	(faster)
	{-est}	superlative	(fastest)
verbs:	{-s}	3rd person singular present tense	(proves)
	{-ed}	past tense	(proved)
	{-ing}	progressive/present participle	(is proving)
	{-en}	past participle	(has proven) (was proven)

TABLE 1: THE EIGHT ENGLISH INFLECTIONAL MORPHEMES

[Note: the regular past participle morpheme is {-ed}, identical to the past tense form {-ed}. We use the irregular past participle form {-en} to distinguish the two.]

However, because of its long and complex history, English (like all languages) has many **irregular** forms, which may be irregular in a variety of ways. First, irregular words may use different inflections than regular ones: for example, the modern past participle inflection of a regular verb is {-ed}, but the past participle of *freeze* is *frozen* and the past participle of *break* is *broken*. Second, irregular forms may involve internal vowel changes, as in *man/men*, *woman/women*, *grow/grew*, *ring/rang/rung*. Third, some forms derive from historically unrelated forms: *went*, the past tense of *go*, historically was the past tense of a different verb, *wend*. This sort of realignment is known as **suppletion**. Other examples of suppletion include *good*, *better*, and *best*, and *bad*, *worse*, and *worst*. (As an exercise, you might look up *be*, *am*, and *is* in a dictionary that provides etymological information, such as the American Heritage.) Fourth, some words show no inflectional change: *sheep* is both singular and plural; *hit* is both present and past tense, as well as past participle. Fifth, many borrowed words, especially nouns, have irregular inflected forms: *alumnae* and *cherubim* are the plurals of *alumna* and

they modify. These expressions would be grammatically complete without the modifiers—though of course adding or removing modifiers affects the meaning and consequently the referents of the modified expressions.

Exercise

Identify the modifier(s) in each of the following expressions. For example, *[an] [excellent] wine*:

- a. expensive tastes
 - b. barely awake
 - c. drive quickly
 - d. someone special
 - e. little lame balloonman (e.e. cummings)
-

WORDS

Words are the units from which phrases are constructed. In ordinary written English they are generally separated from each other by spaces. All the items separated by spaces in this paragraph are words.

Words can be created in a number of ways. Some, like *cat*, are internally quite simple. Others are created by combining two or more words together to create another word. For example, *rainfall* is composed of *rain* and *fall*; all three are separate words. Words created in this way are called **compounds** or **compound words**.

Exercise

The following are compound words. Note that some are spelled without internal spaces, some with hyphens, and some with internal spaces, separating their constituent words. Separate them into their component words. For example, *Peace Corps* consists of *Peace* and *Corps*. (This is an extremely easy exercise. It is designed to get you accustomed to thinking about the various spelling formats for compounds words.)

boy-friend, fishing rod, holding pattern, pickpocket, kill-joy, nose-dive, make-believe, fast-food, software, now generation, put-down, drawback, son-in-law, forget-me-not, carbon-date, color-code, test-market, free-associate, double-book, overbook, overeducate, bad-mouth, childproof, leadfree, fail-safe, ready-made, over-qualified. (L. Bauer 1983 pp. 202-213).

GLOSSARY

CLAUSE: grammatical unit composed of two phrases—subject and predicate.
DIRECT OBJECT: the phrase traditionally viewed as representing the “recipient” of the action denoted by the main verb, or as representing the entity/ies directly affected by the event denoted by the main verb. Typically occurs after the main verb.

DISCOURSE: coherent, cohesive, contextualized, and purposeful communicative activity.

FORM: an expression’s observable characteristics, including actual and potential inflections, actual derivational endings, stress, potential position in grammatical structures, and potential for grammatical operations.

FUNCTION: the roles an expression plays in a sentence. Functions include Subject, Predicate, Direct Object, Indirect Object, Object of a Preposition, Complement, Adjunct, Modifier, Head.

HEAD: main element in a grammatical construction.

LETTER: graphic unit, which in an alphabet, approximately represents a phoneme.

LEXEME: the basic form of a word; the form that you would look up in a dictionary (see **WORD FORM**).

MEANING: definition of an expression or the information potentially communicated by an expression, studied in semantics and pragmatics.

MODIFIER: an expression qualifying the head of a grammatical construction.

MORPHEME: the smallest linguistic unit that has a meaning or grammatical function; composed of one or more phonemes.

PHONEME: a contrastive sound unit, more or less adequately represented by one or more letters of the alphabet.

PHRASE: a grammatical unit composed of one or more words.

RELATIONSHIP: the role or function of a word or phrase in a sentence.

SENTENCE: the largest unit to which the grammatical rules of a language apply; may be composed of one or more clauses.

TEXT: language produced during discourse; can be produced as written documents or as recordings of spoken communication.

WORD: a grammatical unit composed of one or more morphemes.

WORD FORM: an inflected form of a word (see **LEXEME**).

On the other hand, suffixes such as *-er*, *-ful*, *-ish*, *-less*, *-ly*, and *-ness* may be tacked onto a base word without affecting the pronunciation, as in *baker*, *wishful*, *boyish*, *needless*, *sanely*, and *fullness*. Moreover, affixes from the first class cannot be attached to a base containing an affix from the second class: **need + less + ity*, **moral + ize + ive*; but affixes from the second class may attach to bases with either kind of affix: *moral + iz(e) + er*, *need + less + ness*.

Inflectional Morphology



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Function words like *to*, *it*, and *be* are free morphemes. Many languages, including English, also have bound morphemes that have a strictly grammatical function. They mark properties such as tense, number, person and so forth. Such bound morphemes are called *inflectional morphemes*. Unlike derivational morphemes, they never change the grammatical-category of the stems to which they are attached. Consider the forms of the verb in the following sentences:

1. I sail the ocean blue.
2. He sails the ocean blue.
3. John sailed the ocean blue.
4. John has sailed the ocean blue.
5. John is sailing the ocean blue.

In sentence (2) the *-s* at the end of the verb is an agreement marker; it signifies that the subject of the verb is third person and is singular, and that the verb is in the present tense. It doesn't add lexical meaning. The suffix *-ed* indicates past tense, and is also required by the syntactic rules of the language when verbs are used with *have*, just as *-ing* is required when verbs are used with forms of *be*.

Inflectional morphemes represent relationships between different parts of a sentence. For example, *-s* expresses the relationship between the verb and the third person singular subject; *-ing* expresses the relationship between the time the utterance is spoken (e.g., now) and the time of the event. If you say "John is dancing," it means John is engaged in this activity while you speak. If you say "John danced," the *-ed* affix places the activity before you spoke. As we will

discuss in chapter 4, inflectional morphology is closely connected to the syntax of the sentence.

English also has other inflectional endings such as the plural suffix, which is attached to certain singular nouns, as in *boy/boys* and *cat/cats*. In contrast to Old and Middle English, which were more richly inflected languages, as we discuss in chapter 11, modern English has only eight bound inflectional affixes:

English Inflectional Morphemes		Examples
-s	third-person singular present	She wait-s at home.
-ed	past tense	She wait-ed at home.
-ing	progressive	She is eat-ing the donut.
-en	past participle	Mary has eat-en the donuts.
-s	plural	She ate the donut-s.
-’s	possessive	Disa’s hair is short.
-er	comparative	Disa has short-er hair than Karin.
-est	superlative	Disa has the short-est hair.

Inflectional morphemes in English follow the derivational morphemes in a word. Thus, to the derivationally complex word *commit + ment* one can add a plural ending to form *commit + ment + s*, but the order of affixes may not be reversed to derive the impossible *commit + s + ment = *commitment*.

Yet another distinction between inflectional and derivational morphemes is that inflectional morphemes are productive: they apply freely to nearly every appropriate base (excepting “irregular” forms such as *feet*, not **foots*): Most nouns takes an *-s* inflectional suffix to form a plural, but only some nouns take the derivational suffix *-ize* to form a verb: *idolize*, but not **picturize*.

Compared to many languages of the world, English has relatively little inflectional morphology. Some languages are highly inflected. In Swahili, which is widely spoken in eastern Africa, verbs can be inflected with multiple morphemes, as in *nimepiga* (*ni + me + pig + a*), meaning “he has hit something.” Here the verb root *pig* meaning “hit” has two inflectional prefixes: *ni* meaning “I,” and *me* meaning “completed action,” and an inflectional suffix *a*, which is an object agreement morpheme.

Even the more familiar European languages have many more inflectional endings than English. In the Romance languages (languages descended from Latin), the verb has different inflectional endings depending on the subject of the sentence. The verb is inflected to agree in person and number with the subject, as illustrated by the Italian verb *parlare* meaning “to speak”:

Io parlo	“I speak”	Noi parliamo	“We speak”
Tu parli	“You (singular) speak”	Voi parlate	“You (plural) speak”
Lui/Lei parla	“He/she speaks”	Loro parlano	“They speak”

Russian has a system of inflectional suffixes for nouns that indicates the noun’s grammatical relation—whether a subject, object, possessor, and so on—something English does with word order. For example, in English, the sentence *Maxim defends Victor* means something different from *Victor defends Maxim*. The order of the words is critical. But in Russian, all of the following sentences

mean "Maxim defends Victor" (the *č* is pronounced like the *ch* in cheese; the *s* like the *sh* in shoe; the *j* like the *y* in yet):

Maksim zašičajet Viktora.
 Maksim Viktora zašičajet.
 Viktora Maksim zašičajet.
 Viktora zašičajet Maksim.²

The inflectional suffix *-a* added to the name *Viktor* to derive *Viktora* shows that Victor, not Maxim, is defended. The suffix designates the object of the verb, irrespective of word order.

The grammatical relation of a noun in a sentence is called the case of the noun. When case is marked by inflectional morphemes, the process is referred to as case morphology. Russian has a rich case morphology, whereas English case morphology is limited to the one possessive *-s* and to its system of pronouns. Many of the grammatical relations that Russian expresses with its case morphology are expressed in English with prepositions.

Among the world's languages is a richness and variety of inflectional processes. Earlier we saw how German uses circumfixes to inflect a verb stem to produce a past participle: *lieb* to *geliebt*, similar to the *-ed* ending of English. Arabic infixes vowels for inflectional purposes: *kitāb* "book" but *kūtub* "books." Samoan (see exercise 10) uses a process of reduplication—inflecting a word through the repetition of part or all of the word: *savali* "he travels," but *savaavali* "they travel." Malay does the same with whole words: *orang* "person," but *orang orang* "people." Languages such as Finnish have an extraordinarily complex case morphology, whereas Mandarin Chinese lacks case morphology entirely.

Inflection achieves a variety of purposes. In English verbs are inflected with *-s* to show third person singular agreement. Languages like Finnish and Japanese have a dazzling array of inflectional processes for conveying everything from "temporary state of being" (Finnish nouns) to "strong negative intention" (Japanese verbs). English spoken 1,000 years ago had considerably more inflectional morphology than modern English, as we shall discuss in chapter 11.

In distinguishing inflectional from derivation morphemes we may summarize as follows:

Inflectional	Derivational
Grammatical function	Lexical function
No word class change	May cause word class change
Small or no meaning change	Some meaning change
Often required by rules of grammar	Never required by rules of grammar
Follow derivational morphemes in a word	Precede inflectional morphemes in a word
Productive	Some productive, many nonproductive

Figure 3.1 sums up our knowledge of how morphemes in English are classified.

²These Russian examples were provided by Stella de Bode.

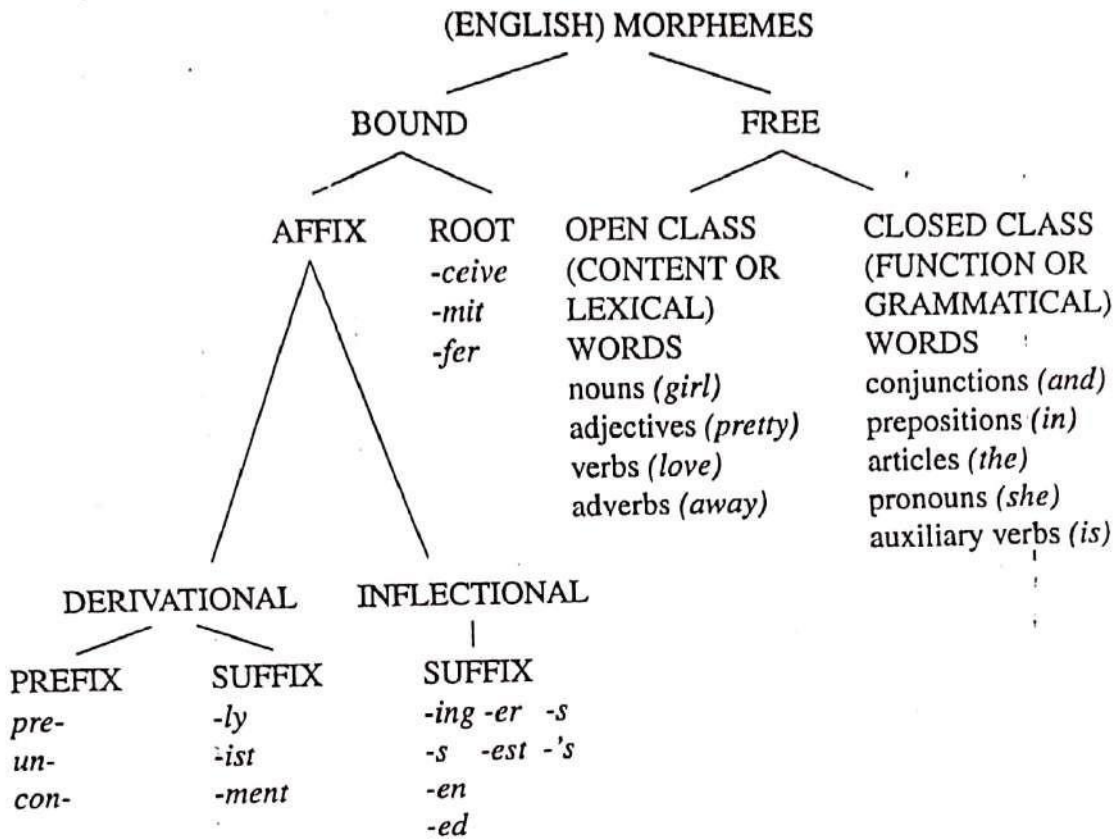
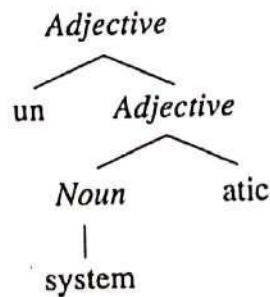


FIGURE 3.1 | Classification of English morphemes.

The Hierarchical Structure of Words

We saw earlier that morphemes are added in a fixed order. This order reflects the hierarchical structure of the word. A word is not a simple sequence of morphemes. It has an internal structure. For example, the word *unsystematic* is composed of three morphemes: *un-*, *system*, and *-atic*. The root is *system*, a noun, to which we add the suffix *-atic*, resulting in an adjective, *systematic*. To this adjective, we add the prefix *un-* forming a new adjective, *unsystematic*.

In order to represent the hierarchical organization of words (and sentences), linguists use tree diagrams. The tree diagram for *unsystematic* is as follows:



This tree represents the application of two morphological rules:

1. Noun + atic → Adjective
2. un + Adjective → Adjective

Bound and Free Morphemes

Prefixes and Suffixes



"LOOKS LIKE WE SPEND MOST OF OUR TIME INGING...
YOU KNOW, LIKE SLEEPING, EATING, RUNNING, CLIMBING..!"

"Dennis the Menace" © Hank Ketcham. Reprinted with permission of North America Syndicate.

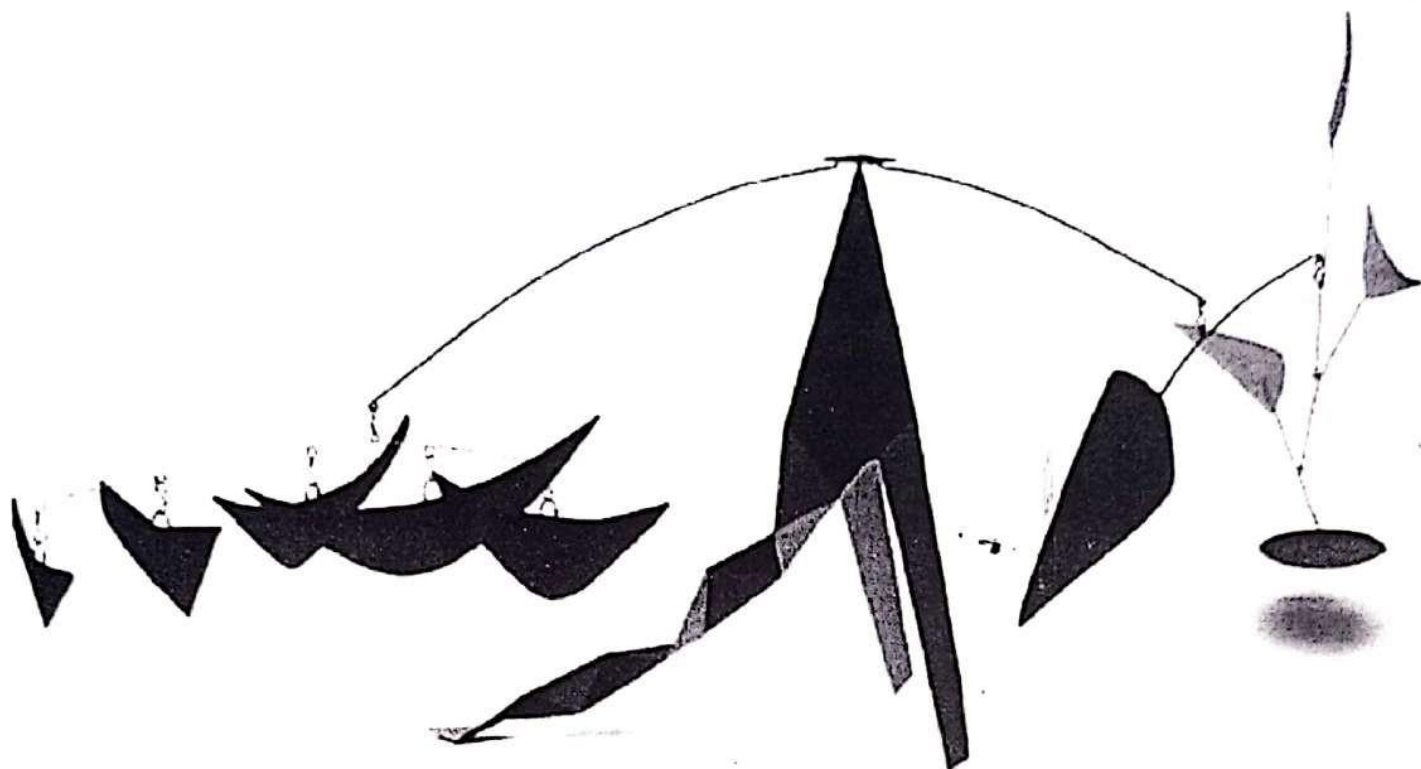
Our morphological knowledge has two components: knowledge of the individual morphemes and knowledge of the rules that combine them. One of the things we know about particular morphemes is whether they can stand alone or whether they must be attached to a base morpheme.

Some morphemes like *boy*, *desire*, *gentle*, and *man* may constitute words by themselves. These are free morphemes. Other morphemes like *-ish*, *-ness*, *-ly*, *pre-*, *trans-*, and *un-* are never words by themselves but are always parts of words. These affixes are bound morphemes. We know whether each affix precedes or follows other morphemes. Thus, *un-*, *pre-* (*premeditate*, *prejudge*), and *bi-* (*bipolar*, *bisexual*) are prefixes. They occur before other morphemes. Some morphemes occur only as suffixes, following other morphemes. English examples of suffix morphemes are *-ing* (*sleeping*, *eating*, *running*, *climbing*),

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1 2 3 4 5 6 7 13 12 11 10 09

Thousands of English adjectives begin with *un-*. If we assume that the most basic unit of meaning is the word, what do we say about parts of words like *un-*, which has a fixed meaning? In all the words in the B column, *un-* means the same thing—"not." *Undesirable* means "not desirable," *unlikely* means "not likely," and so on. All the words in column B consist of at least two meaningful units: *un + desirable*, *un + likely*, *un + inspired*, and so on.

Just as *un-* occurs with the same meaning in the previous list of words, so does *phon-* in the following words. (You may not know the meaning of some of them, but you will when you finish this book.)

phone	phonology	phoneme
phonetic	phonologist	phonemic
phonetics	phonological	allophone
phonetician	telephone	euphonious
phonic	telephonic	symphony

Phon- is a minimal form in that it can't be decomposed. *Ph* doesn't mean anything; *pho*, though it may be pronounced like *foe*, has no relation in meaning to it; and *on* is not the preposition spelled *o-n*. In all the words on the list, *phon* has the identical meaning of "pertaining to sound."

Words have internal structure, which is rule-governed. *Uneaten*, *unadmired*, and *ungrammatical* are words in English, but **eatenun*, **admiredun*, and **grammaticalun* (to mean "not eaten," "not admired," "not grammatical") are not, because we form a negative meaning of a word not by suffixing *un-* but by prefixing it.

When Samuel Goldwyn, the pioneer moviemaker, announced, "In two words: im-possible," he was reflecting the common view that words are the basic meaningful elements of a language. We have seen that this cannot be so, because some words contain several distinct units of meaning. The linguistic term for the most elemental unit of grammatical form is *morpheme*. The word is derived from the Greek word *morphe*, meaning "form." If Goldwyn had taken a linguistics course, he would have said, more correctly, "In two morphemes: im-possible."

The study of the internal structure of words, and of the rules by which words are formed, is morphology. This word itself consists of two morphemes, *morph* + *ology*. The suffix *-ology* means "science of" or "branch of knowledge concerning." Thus, the meaning of *morphology* is "the science of (word) forms."

Morphology is part of our grammatical knowledge of a language. Like most linguistic knowledge, this is generally unconscious knowledge.

A single word may be composed of one or more morphemes:

one morpheme	boy desire
	morph ("to change form")
two morphemes	boy + ish desire + able
	morph + ology
three morphemes	boy + ish + ness desire + able + ity

four morphemes	gentle + man + li + ness un + desire + able + ity
more than four	un + gentle + man + li + ness anti + dis + establish + ment + ari + an + ism

A morpheme may be represented by a single sound, such as the morpheme a meaning “without” as in *amoral* and *asexual*, or by a single syllable, such as *child* and *ish* in *child + ish*. A morpheme may also consist of more than one syllable: by two syllables, as in *camel*, *lady*, and *water*; by three syllables, as in *Hackensack* and *crocodile*; or by four or more syllables, as in *hallucinate*, *apothecary*, and *onomatopoeia*.

A morpheme—the minimal linguistic unit—is thus an arbitrary union of a sound and a meaning (or grammatical function) that cannot be further analyzed. It is often called a linguistic sign, not to be confused with the sign of sign languages. This may be too simple a definition, but it will serve our purposes for now. Every word in every language is composed of one or more morphemes.

Internet bloggers love to point out “inconsistencies” in the English language. They observe that while singers sing and flingers fling, it is not the case that fingers “fing.” However, English speakers know that *finger* is a single morpheme, or a monomorphemic word. The final *-er* syllable in *finger* is not a separate morpheme because a finger is not “something that fings.”

The meaning of a morpheme must be constant. The agentive morpheme *-er* means “one who does” in words like *singer*, *painter*, *lover*, and *worker*, but the same sounds represent the comparative morpheme, meaning “more,” in *nicer*, *prettier*, and *taller*. Thus, two different morphemes may be pronounced identically. The identical form represents two morphemes because of the different meanings. The same sounds may occur in another word and not represent a separate morpheme at all, as in *finger*. Conversely, the two morphemes *-er* and *-ster* have the same meaning, but different forms. Both *singer* and *songster* mean “one who sings.” And like *-er*, *-ster* is not a morpheme in *monster* because a monster is not something that “mons” or someone that “is mon” the way *youngster* is someone who is young. All of this follows from the concept of the morpheme as a sound plus a meaning unit.

The decomposition of words into morphemes illustrates one of the fundamental properties of human language—discreteness. In all languages, sound units combine to form morphemes, morphemes combine to form words, and words combine to form larger units—phrases and sentences.

Discreteness is an important part of linguistic creativity. We can combine morphemes in novel ways to create new words whose meaning will be apparent to other speakers of the language. If you know that “to write” to a disk or a DVD means to put information on it, you automatically understand that a *writable* DVD is one that can take information; a *rewritable* DVD is one where the original information can be written over; and an *unrewritable* DVD is one that does not allow the user to write over the original information. You know the meanings of all these words by virtue of your knowledge of the discrete morphemes *write*, *re-*, *-able*, and *un-*, and the rules for their combination.

An example of a more familiar circumfixing language is German. The past participle of regular verbs is formed by adding the prefix *ge-* and the suffix *-t* to the verb root. This circumfix added to the verb root *lieb* "love" produces *geliebt*, "loved" (or "beloved," when used as an adjective).

Roots and Stems

Morphologically complex words consist of a morpheme root and one or more affixes. Some examples of English roots are *paint* in *painter*, *read* in *reread*, *ceive* in *conceive*, and *ling* in *linguist*. A root may or may not stand alone as a word (*paint* and *read* do; *ceive* and *ling* don't). In languages that have circumfixes, the root is the form around which the circumfix attaches, for example, the Chickasaw root *chokm* in *ikchokmo* ("he isn't good"). In infixing languages the root is the form into which the infix is inserted; for example, *fikas* in the Bontoc word *fumikas* ("to be strong").

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With the addition of each new affix, a new stem and a new word are formed. Linguists sometimes use the word base to mean any root or stem to which an affix is attached. In the preceding example, *system*, *systematic*, *unsystematic*, and *unsystematical* are bases.

VICTORIA FROMKIN



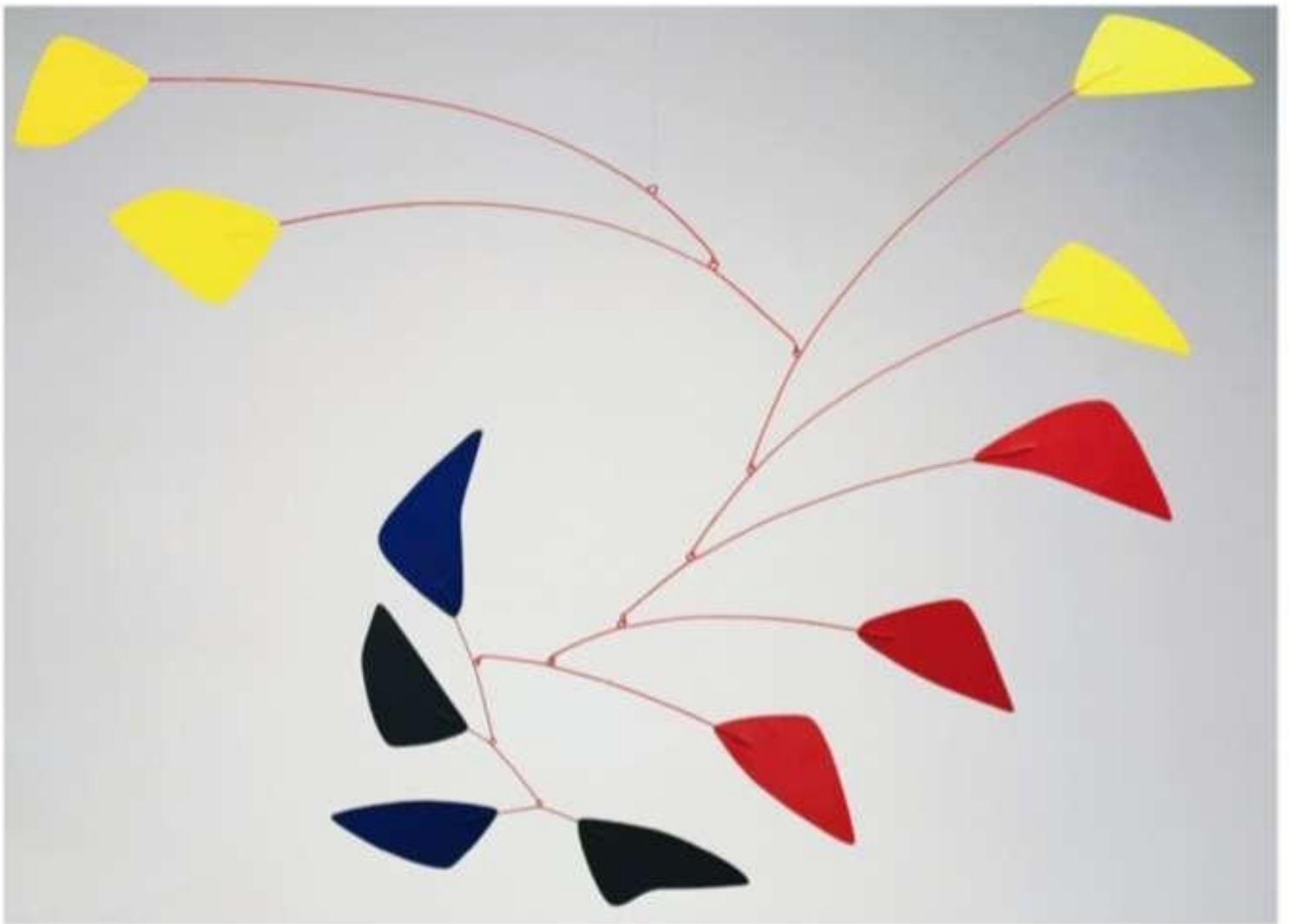
ROBERT RODMAN



NINA HYAMS

AN INTRODUCTION TO LANGUAGE

TENTH EDITION



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Bound Roots

It had been a rough day, so when I walked into the party I was very *chalant*, despite my efforts to appear *gruntled* and *consolate*. I was *furling* my *wieldy* umbrella . . . when I saw her . . . She was a *descript* person. . . Her hair was *kempt*, her clothing *shevelled*, and she moved in a *gainly* way.

JACK WINTER, "How I Met My Wife" by Jack Winter from *The New Yorker*, July 25, 1994.
Reprinted by permission of the Estate of Jack Winter.

Bound roots do not occur in isolation and they acquire meaning only in combination with other morphemes. For example, words of Latin origin such as *receive*, *conceive*, *perceive*, and *deceive* share a common root, *-ceive*; and the words *remit*, *permit*, *commit*, *submit*, *transmit*, and *admit* share the root *-mit*. For the original Latin speakers, the morphemes corresponding to *ceive* and *mit* had clear meanings, but for modern English speakers, Latinate morphemes such as *ceive* and *mit* have no independent meaning. Their meaning depends on the entire word in which they occur.

A similar class of words is composed of a prefix affixed to a bound root morpheme. Examples are *ungainly*, but no **gainly*; *discern*, but no **cern*; *nonplussed*, but no **plussed*; *downhearted* but no **hearted*, and others to be seen in this section's epigraph.

The morpheme *huckle*, when joined with *berry*, has the meaning of a berry that is small, round, and purplish blue; *luke* when combined with *warm* has the meaning 'somewhat.' Both these morphemes and others like them (*cran*, *boy-*, *sen*) are bound morphemes that convey meaning only in combination.

Rules of Word Formation

"I never heard of 'Uglification,'" Alice ventured to say. "What is it?" The Gryphon lifted up both its paws in surprise. "Never heard of uglifying!" it exclaimed. "You know what to beautify is, I suppose?" "Yes," said Alice doubtfully; "it means—to make—prettier." "Well, then," the Gryphon went on, "if you don't know what to uglify is, you are a simpleton."

LEWIS CARROLL, *Alice's Adventures in Wonderland*, 1865

When the Mock Turtle listed the branches of Arithmetic for Alice as "Ambition, Distraction, Uglification, and Derision," Alice was very confused. She wasn't really a simpleton, since *uglification* was not a common word in English until Lewis Carroll used it. Still, most English speakers would immediately know the meaning of *uglification* even if they had never heard or used the word before.

ik- and a following *-o* working together as a single negative morpheme. The final vowel of the affirmative is dropped before the negative part *-o* is added. Examples of this circumfixing are:

Affirmative		Negative	
chokma	'he is good'	ik + chokm + o	'he isn't good'
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word	un + system + atic + al + ly	prefix + noun + suffix + suffix + suffix

Maxim defends Victor means something different from *Victor defends Maxim*. The order of the words is critical. But in Russian, all of the following sentences mean ‘Maxim defends Victor’ (the *č* is pronounced like the *ch* in cheese; the *š* like the *sh* in shoe; the *j* like the *y* in yet):

Maksim zašiščajt Viktora.
 Maksim Viktora zašiščajet.
 Viktora Maksim zašiščajet.
 Viktora zašiščajet Maksim.

The inflectional suffix *-a* added to the name *Viktor* to derive *Viktora* shows that Victor, not Maxim, is defended. The suffix designates the object of the verb, irrespective of word order.

The grammatical relation of a noun in a sentence is called the **case** of the noun. When case is marked by inflectional morphemes, the process is referred to as **case morphology**. Russian has a rich case morphology, whereas English case morphology is limited to the one possessive *-s* and to its system of pronouns. Many of the grammatical relations that Russian expresses with its case morphology are expressed in English with prepositions.

Among the world’s languages is a richness and variety of inflectional processes. Earlier we saw how German uses circumfixes to inflect a verb stem to produce a past participle: *lieb* to *geliebt*, similar to the *-ed* ending of English. Arabic infixes vowels for inflectional purposes: *kitāb* ‘book’ but *kūtub* ‘books.’ Samoan (see exercise 10) uses a process of **reduplication**—inflecting a word through the repetition of part or all of the word: *savali* ‘he travels,’ but *savavali* ‘they travel.’ Malay does the same with whole words: *orang* ‘person,’ but *orang orang* ‘people.’ Languages such as Finnish have an extraordinarily complex case morphology, whereas Mandarin Chinese lacks case morphology entirely.

Inflection achieves a variety of purposes. In English verbs are inflected with *-s* to show third-person singular agreement. Languages like Finnish and Japanese have a dazzling array of inflectional processes for conveying everything from ‘temporary state of being’ (Finnish nouns) to ‘strong negative intention’ (Japanese verbs). English spoken 1,000 years ago had considerably more inflectional morphology than Modern English, as we shall discuss in chapter 8.

In distinguishing inflectional from derivational morphemes in Modern English we may summarize in the table below and the Figure (2.1) that follows it:

Inflectional	Derivational
Grammatical function	Lexical function
No word class change	May cause word class change
Small or no meaning change	Some meaning change
Often required by rules of grammar	Never required by rules of grammar
Follow derivational morphemes in a word	Precede inflectional morphemes in a word
Productive	Some productive, many nonproductive

verb is derived, as in *dark* + *en*. One may form a noun from an adjective, as in *sweet* + *ie*. Other examples are:

Noun to Adjective

boy + -ish
virtu + -ous
Elizabeth + -an
pictur + -esque
affection + -ate
health + -ful
alcohol + -ic

Verb to Noun

acquitt + -al
clear + -ance
accus + -ation
sing + -er
conform + -ist
predict + -ion

Adjective to Adverb

exact + -ly

Noun to Verb

moral + -ize
vaccin + -ate
hast + -en
im- + prison
be- + friend
en- + joy
in- + habit

Adjective to Noun

tall + -ness
specific + -ity
feudal + -ism
free + -dom

Verb to Adjective

read + -able
creat + -ive
migrat + -ory
run(n) + -y

Adjective to Verb

en + large
en + dear
en + rich

Some derivational affixes do not cause a change in grammatical class.

Noun to Noun

friend + -ship
human + -ity
king + -dom
New Jersey + -ite
vicar + -age
Paul + -ine
America + -n
libr(ary) + -arian
mono- + theism
dis- + advantage
ex- + wife
auto- + biography
un- + employment

Verb to Verb

un- + do
re- + cover
dis- + believe
auto- + destruct

Adjective to Adjective

pink + -ish
red + -like
a- + moral
il- + legal
in- + accurate
un- + happy
semi- + annual
dis- + agreeable
sub- + minimal

When a new word enters the lexicon by the application of morphological rules, other complex derivations may be **blocked**. For example, when *Commun* + *ist* entered the language, words such as *Commun* + *ite* (as in *Trotsky* + *ite*) or *Commun* + *ian* (as in *grammar* + *ian*) were not needed; their formation was blocked. Sometimes, however, alternative forms do coexist: for example, *Chomskyan* and *Chomskyst* and perhaps even *Chomskyite* (all meaning 'follower of Chomsky's

Our morphological knowledge has two components: knowledge of the individual morphemes and knowledge of the rules that combine them. One of the things we know about particular morphemes is whether they can stand alone or whether they must be attached to a base morpheme. Some morphemes like *boy*, *desire*, *gentle*, and *man* may constitute words by themselves. These are **free morphemes**. Other morphemes like *-ish*, *-ness*, *-ly*, *pre-*, *trans-*, and *un-* are never words by themselves but are always parts of words. These **affixes** are **bound morphemes** and they may attach at the beginning, the end, in the middle, or both at the beginning and end of a word. The humor in the cartoon is Brad's stumbling over the bound morpheme *un-* in a questionable attempt to free it.

Prefixes and Suffixes

We know whether an affix precedes or follows other morphemes, for example that *un-*, *pre-* (*premeditate*, *prejudge*), and *bi-* (*bipolar*, *bisexual*) are prefixes. They occur before other morphemes. Some morphemes occur only as **suffixes**, following other morphemes. English examples of suffix morphemes are *-ing* (*sleeping*, *eating*, *running*, *climbing*), *-er* (*singer*, *performer*, *reader*), *-ist* (*typist*, *pianist*, *novelist*, *linguist*), and *-ly* (*manly*, *sickly*, *friendly*), to mention only a few.

Many languages have prefixes and suffixes, but languages may differ in how they deploy these morphemes. A morpheme that is a prefix in one language may be a suffix in another and vice versa. In English the plural morphemes *-s* and *-es* are suffixes (*boys*, *lasses*). In Isthmus Zapotec, spoken in Mexico, the plural morpheme *ka-* is a prefix:

zigi	'chin'	kazigi	'chins'
zike	'shoulder'	kazike	'shoulders'
diaga	'ear'	kadiaga	'ears'

Languages may also differ in what meanings they express through affixation. In English we do not add an affix to derive a noun from a verb. We have the verb *dance* as in "I like to dance," and we have the noun *dance* as in "There's a dance or two in the old dame yet." The form is the same in both cases. In Turkish, you derive a noun from a verb with the suffix *-ak*, as in the following examples:

dur	'to stop'	durak	'stopping place'
bat	'to sink'	batak	'sinking place' or 'marsh/swamp'

To express reciprocal action in English we use the phrase *each other*, as in *understand each other*, *love each other*. In Turkish a morpheme is added to the verb:

anla	'understand'	anlash	'understand each other'
sev	'love'	sevish	'love each other'

The reciprocal suffix in these examples is pronounced *sh* after a vowel and *ish* after a consonant. This is similar to the process in English in which we use *a* as the indefinite article morpheme before a noun beginning with a consonant, as in *a dog*, and *an* before a noun beginning with a vowel, as in *an apple*. The same morpheme may have more than one slightly different form (see exercise 6, for example). We will discuss the various pronunciations of morphemes in more detail in chapter 6.



2

Morphology: The Words of Language

By words the mind is winged.

ARISTOPHANES (450 BCE–388 BCE)

A powerful agent is the right word. Whenever we come upon one of those intensely right words . . . the resulting effect is physical as well as spiritual, and electrically prompt.

MARK TWAIN

Every speaker of every language knows tens of thousands of words. Unabridged dictionaries of English contain nearly 500,000 entries, but most speakers don't know all of these words. It has been estimated that a child of six knows as many as 13,000 words and the average high school graduate about 60,000. A college graduate presumably knows many more than that, but whatever our level of education, we learn new words throughout our lives, such as the many words in this book that you will learn for the first time.

Words are an important part of linguistic knowledge and constitute a component of our mental grammars, but one can learn thousands of words in a language and still not know the language. Anyone who has tried to communicate in a foreign country by merely using a dictionary knows this is true. On the other hand, without words we would be unable to convey our thoughts through language or understand the thoughts of others.

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flavor additives to the traditional martini libation. Based on analogy with such pairs as *act/action*, *exempt/exemption*, and *revise/revision*, new words *resurrect*, *preempt*, and *televise* were formed from the existing words *resurrection*, *preemption*, and *television*.

Language purists sometimes rail against back-formations and cite *enthuse* and *liaise* (from *enthusiasm* and *liaison*) as examples of language corruption. However, language is not corrupt; it is adaptable and changeable. Don't be surprised to discover in your lifetime that *shevelled* and *chalant* have infiltrated the English language (from *disheveled* and *nonchalant*) to mean 'tidy' and 'concerned,' and if it happens do not cry "havoc" and let slip the dogs of prescriptivism; all will be well.

Compounds

[T]he Houynhnms have no Word in their Language to express any thing that is evil, except what they borrow from the Deformities or ill Qualities of the Yahoos. Thus they denote the Folly of a Servant, an Omission of a Child, a Stone that cuts their feet, a Continuance of foul or unseasonable Weather, and the like, by adding to each the Epithet of Yahoo. For instance, Hnhm Yahoo, Whnaholm Yahoo, Ynhlmnawihlma Yahoo, and an ill contrived House, Ynholmhnrohlnw Yahoo.

JONATHAN SWIFT, *Gulliver's Travels*, 1726

Two or more words may be joined to form new, compound words. English is very flexible in the kinds of combinations permitted, as the following table of compounds shows.

	Adjective	Noun	Verb
Adjective	bittersweet	poorhouse	whitewash
Noun	headstrong	homework	spoonfeed
Verb	feel-good	pickpocket	sleepwalk

Some compounds that have been introduced fairly recently into English are *Facebook*, *linkedIn*, *android apps*, *m-commerce*, and *crowdsourcing* (the practice of obtaining information from a large group of people who contribute online).

When the two words are in the same grammatical category, the compound will also be in this category: noun + noun = noun, as in *girlfriend*, *fighter-bomber*, *paper clip*, *elevator-operator*, *landlord*, *mailman*; adjective + adjective = adjective, as in *icy-cold*, *red-hot*, *worldly wise*. In English, the rightmost word in a compound is the **head** of the compound. The head is the part of a word or phrase that determines its broad meaning and grammatical category. Thus, when the two words fall into different categories, the class of the second or final word determines the grammatical category of the compound: noun + adjective = adjective, as in *headstrong*; verb + noun = noun, as in *pick-pocket*. On the other hand, compounds formed with a preposition are in the category of the nonprepositional part of the compound, such as (to) *overtake* or (the) *sundown*. This is further evidence that prepositions form a closed-class category that does not readily admit new members.

Although two-word compounds are the most common in English, it would be difficult to state an upper limit: Consider *three-time loser*, *four-dimensional*

FIFTH EDITION

LANGUAGE, CULTURE, AND SOCIETY

An Introduction to
Linguistic Anthropology

ZDENEK SALZMANN
JAMES STANLAW
NOBUKO ADACHI

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- ly, an adverbial segment meaning "in a . . . manner,"
- dis-, meaning "not, opposite of,"
- grace, meaning "propriety, decency,"
- ful, meaning "characterized by,"
- act, meaning "deed," and
- s, meaning "more than one," that is, marking the plural.

It appears that the three-word phrase consists of eight meaningful segments of English, none of which can be further subdivided without the loss of the original meaning (it cannot be claimed, for example, that the word *grace* is made up of *g-* plus *race*). Linguistic units that have a meaning but contain no smaller meaningful parts are termed **morphemes**. To put it differently, a morpheme is the smallest contrastive unit of grammar. The search for such units in a particular language is called morphemic analysis. And the study of word structure, including classification of and interrelationships among morphemes, is referred to as **morphology**.

There are many thousands of morphemes in any language. The large majority are commonly **free morphemes** because they may occur unattached to other morphemes, that is, they can stand alone as independent words—in the example above, *grace*, *shock*, and *act*. Some morphemes, but usually relatively few, are bound morphemes because they normally do not occur on their own but only in combination with another morpheme—for example, *dis-*, *-ing*, *-ly*, and *-s*. The stem is that part of the word to which inflectional affixes (such as the plural) are attached.

In English and other languages, bound morphemes occur in limited numbers. There are languages, though, in which most morphemes are bound; Eskimo is usually cited as an example of such a language. In still other languages, those noun stems that stand for objects which are typically possessed do not occur as free morphemes. This is true, for example, of Arapaho nouns referring to body parts, kinship relationships, and a few other referents. (In Arapaho, the acute accent [´] marks stressed vowels with higher pitch; long vowels are written doubly.) Examples of dependent nouns are *bétee* '(someone's) heart,' *wonotóno?* '(someone's) ear,' *notóóne* 'my daughter,' *béiteh?éi* '(someone's) friend,' and *betéi* 'louse, flea,' because there is no such thing as a heart or an ear apart from a human or an animal, a daughter without a mother or father, a friend unattached to another by affection, or a louse or flea that could survive without deriving

Introducing Morphology

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in (1) can stand alone as words: *wipe*, *head*, *bracelet*, *McDonald*. These are called **free morphemes**. The morphemes that cannot stand alone are called **bound morphemes**. In the examples above, the bound morphemes are *un-*, *-ize*, and *-ation*. Bound morphemes come in different varieties. Those in (1) are **prefixes** and **suffixes**; the former are bound morphemes that come before the base of the word, and the latter bound morphemes that come after the base. Together, prefixes and suffixes can be grouped together as **affixes**.²

New lexemes that are formed with prefixes and suffixes on a base are often referred to as **derived words**, and the process by which they are formed as **derivation**. The **base** is the semantic core of the word to which the prefixes and suffixes attach. For example, *wipe* is the base of *unwipe*, and *McDonald* is the base of *McDonaldization*. Frequently, the base is a free morpheme, as it is in these two cases. But stop a minute and consider the data in the next Challenge box.

Challenge

Divide the following words into morphemes:

- pathology
- psychopath
- dermatitis
- endoderm

Chances are that you recognize that there are two morphemes in each word. However, neither part is a free morpheme. Do we want to call these morphemes prefixes and suffixes? Would this seem odd to you?

If you said that it would be odd to consider the morphemes in our Challenge as prefixes and suffixes, you probably did so because this would imply that words like *pathology* and *psychopath* are made up of nothing but affixes!

Morphologists therefore make a distinction between affixes and **bound bases**. Bound bases are morphemes that cannot stand alone as words, but are not prefixes or suffixes. Sometimes, as is the case with the morphemes *path* or *derm*, they can occur either before or after another bound base: *path* precedes the base *ology*, but follows the base *psych(o)*; *derm* precedes another base in *dermatitis* but follows one in *endoderm*. This suggests that *path* and *derm* are not prefixes or suffixes: there is no such thing as an affix which sometimes precedes its base and sometimes follows it. But not all bound bases are as free in their placement as *path*; for example, *psych(o)* and *ology* seem to have more fixed positions, the former usually preceding another bound base, the latter following. Similarly, the base *-itis* always follows, and *endo-* always precedes another base. Why not call them respectively a prefix and a suffix, then?

One reason is that all of these morphemes seem in an intuitive way to have far more substantial meanings than the average affix does. Whereas

2. We will see in chapter 5 that there are other types of affixes as well.

a prefix like *un-* (*unhappy*, *unwise*) simply means 'not' and a suffix *-ish* (*red-dish*, *warmish*) means 'sort of'. *psych(o)* means 'having to do with the mind', *-ology* means 'the study of', *path* means 'sickness', *derm* means 'skin' and *-itis* means 'disease'. Semantically, bound bases can form the core of a word, just as free morphemes can. Figure 3.1 summarizes types of morphemes. We'll look more carefully at the meanings of affixes in section 3.3.

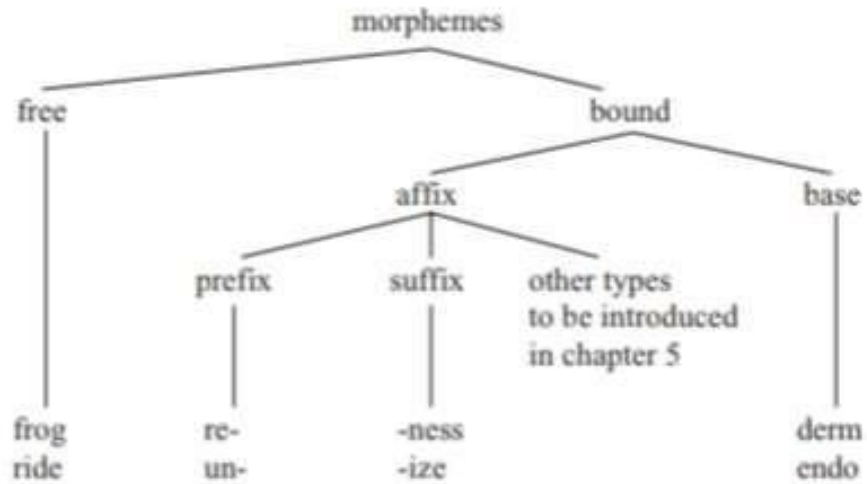


FIGURE 3.1
Types of morphemes

Another reason to believe that bound bases are different from prefixes and suffixes is that prefixes and suffixes tend to occur more freely than bound bases do. For example, any number of adjectives can be made negative by using the prefix *un-*, but there are far fewer words with the bound base *psych(o)*. This is perhaps not the best way of distinguishing between bound bases and affixes, though, as there are a few bound bases – *-ology* is one of them – that occur with great freedom, and there are some prefixes and suffixes that don't occur all that often (e.g. the *-th* in *width* or *health*). So we'll stick with the criterion of 'semantic robustness' for now. We'll return in the next chapter to the question of how freely various morphemes are used in word formation.

With regard to bases, another distinction that's sometimes useful in analyzing languages other than English is the distinction between **root** and **stem**. In languages with more inflection than English, there is often no such thing as a free base: all words need some sort of inflectional ending before they can be used. Or to put it differently, all bases are bound. Consider the data below from Latin:

(2)	<i>Latin</i>	1st sg	am + o 'I love'	pl am + a + mus	'we love'
			dic + o 'I say'	dic + i + mus	'we say'

In the singular, an ending signaling the first person ("I") can sometimes attach to the smallest bound base meaning 'love' or 'say'; this morpheme is the **root**. In the first person plural, and in most other persons and numbers, however, another morpheme must be added before the inflection goes on. This morpheme (an *a* for the verb 'love' and an *i* for the verb 'say') doesn't mean anything, but still must be added before the inflectional

9.1 Introduction

Phonology is the area of linguistics that is concerned with sound regularities in languages: what sounds exist in a language, how those sounds combine with each other into syllables and words, and how the prosody (stress, accent, tone, and so on) of a language works. Phonology interacts with morphology in a number of ways: morphemes may have two or more different phonological forms whose appearance may be completely or at least partly predictable. Some phonological rules apply when two or more morphemes are joined together. In some languages morphemes display different phonological behavior depending on whether they are native to the language or borrowed into it from some other language. In this chapter we will explore the various ways in which phonology interacts with morphology.

In this chapter we will frequently make use of phonetic transcriptions, so you may want to review the IPA before you begin reading it. We will also make use of terminology which classifies sounds by their point of articulation (labial, dental, alveolar, and so on) and by their manner of articulation (voiced vs. voiceless, stop, fricative, liquid, and so on). You can find summaries of this terminology in the charts at the beginning of the book.

9.2 Allomorphs

Allomorphs are phonologically distinct variants of the same morpheme. By phonologically distinct, we mean that they have similar but not identical sounds. And when we say that they are variants of the same morpheme, we mean that these slightly different-sounding sets of forms share the same meaning or function. For example, the negative prefix *in-* in English is often pronounced *in-* (as in *intolerable*), but it is also sometimes pronounced *im-* or *il-* (*impossible*, *illegal*), as English spelling shows. Since all of these forms still mean 'negative', and they all attach to adjectives in the same way, we say that they are allomorphs of the negative prefix. Another example you've already seen is the regular past tense in English. Although the regular past tense in English is always spelled *-ed*, it is sometimes pronounced [t] (*packed*), sometimes [d] (*bagged*), sometimes [əd] (*waited*).¹ Still all three phonological variants still designate the past tense. Similarly, the plural morpheme in Turkish sometimes appears as *-lar* and sometimes as *-ler*, so Turkish has two allomorphs of the plural morpheme.

As we will see below, in many cases, it is phonologically predictable which allomorph appears where; sometimes, however, which allomorph appears with a particular base is unpredictable. For example, we will see that it is usually possible to predict the form of the regular allomorphs of the English past tense morpheme, but there are quite a few verbs whose past tenses are irregular (for example, *sang*, *flew*, *bought*).

1. Or [ɪd] in some dialects.

as we'll see as this book progresses, those ways might be quite different from the means we use in English.

On the other hand, we sometimes use morphology even when we don't need new lexemes. For example, we saw that each lexeme can have a number of **word forms**. The lexeme *WALK* has forms like *walk*, *walks*, *walked*, *walking* that can be used in different grammatical contexts. When we change the form of a word so that it fits in a particular grammatical context, we are concerned with what linguists call **inflection**. Inflectional word formation is word formation that expresses grammatical distinctions like number (singular vs. plural); tense (present vs. past); person (first, second, or third); and case (subject, object, possessive), among others. It does not result in the creation of new lexemes, but merely changes the grammatical form of lexemes to fit into different grammatical contexts.

Interestingly, languages have wildly differing amounts of inflection. English has relatively little inflection. We create different forms of nouns according to number (*wombat*, *wombats*); we mark the possessive form of a noun with *'s* or *'* (*the wombat's eyes*). We have different forms of verbs for present and past and for present and past participles (*sing*, *sang*, *singing*, *sung*), and we use a suffix *-s* to mark the third person singular of a verb (*she sings*).

However, if you've studied Latin, Russian, ancient Greek, or even Old English, you'll know that these languages have quite a bit more inflectional morphology than English does. Even languages like French and Spanish have more inflectional forms of verbs than English does.

But some languages have much less inflection than English does. Mandarin Chinese, for example, has almost none. Rather than marking plurals by suffixes as English does, or by prefixes as the Bantu language Swahili does, Chinese does not mark plurals or past tenses with morphology at all. This is not to say that a speaker of Mandarin cannot express whether it is one giraffe, two giraffes, or many giraffes that are under discussion, or whether the sighting was yesterday or today. It simply means that to do so, a speaker of Mandarin must use a separate word like *one*, *two* or *many* or a separate word for *past* to make the distinction.

(6) Wo jian guo yi zhi chang jing lu.
I see past one CLASSIFIER giraffe⁴

(7) Wo jian guo liang zhi chang jing lu
I see past two CLASSIFIER giraffe

The word *chang jing lu* 'giraffe' has the same form regardless of how many long-necked beasts are of interest. And the verb 'to see' does not change its form for the past tense; instead, the separate word *guo* is added to express this concept. In other words, some concepts that are expressed via inflection in some languages are expressed by other means (word order, separate words) in other languages.

4. We will explain in chapter 6 what we mean by **classifier**. For now it is enough to know that classifiers are words that must be used together with numbers in Mandarin.

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way for the father to tell his children to “hurry up.” This is not to suggest that the words themselves are not meaningful, but rather that the full meaning of the statement transcends the words that it contains.

Although most semanticists capture this two-way distinction, they do so in different ways. In popular usage, the distinction between grammatical and pragmatic meaning has been captured by, respectively, the notions of denotation and connotation. Denotation relates to the dictionary sense of a word, connotation the associations a word evokes. Thus, at the level of denotation, a *politician* is an individual elected to public office (at least in one sense of the word). However, increasingly the word has developed negative connotations so that for many people, a politician is somebody who, for instance, is not to be trusted and will say anything to anyone to get elected. Lyons (1977: 50–6) argues for three types of meaning: descriptive, social, and expressive. Descriptive meaning is related to grammatical meaning; social and expressive meaning are two subtypes of pragmatic meaning. Social meaning “serves to establish and maintain social relations” (Lyons 1977: 51). Expressive meaning is more particular to the individual and characterizes the particular meaning that individuals add to language when they speak.

Descriptive meaning, Lyons (1977: 51) asserts, “has been of central concern in philosophical semantics.” For this reason, it will be the primary focus of this chapter. And while many linguists and philosophers may, as Lyons does, subcategorize pragmatic meaning, it is a separate type of meaning deserving of separate treatment, as was shown in Chapter 3.

The morpheme

All words are composed of one or more morphemes. A morpheme is considered the smallest unit of meaning. For instance, the word *dogs* contains two units that are meaningful: *dog*, which specifies a particular kind of animal, and *-s*, which indicates the notion of plurality. Although all morphemes are units of meaning, there are various kinds of morphemes.

Free and bound morphemes

Morphemes can be **free** or **bound**. If a morpheme is free, it can stand on its own; if it is bound, it must be attached to a free morpheme. In the word *walking*, the morpheme *walk* is free because it can stand alone as a word. However, *-ing* is bound because it has to be attached to a lexical verb, in this case *walk*. In the examples below, the free morphemes are in italics and the bound morphemes in boldface:

<i>force</i> -ful	dis- <i>like</i>
<i>miss</i> -ed	pre- <i>judge</i>
un- <i>like</i> -li-est	mis- <i>inform</i> -ation

As the above examples illustrate, a word will typically consist of a single free morpheme, sometimes referred to as the **base**. The base, as Plag (2003: 11) states, is “The part of a word which an affix is attached to.” However, some words may contain more than one base, and some bases are (arguably) a bound rather than a free morpheme.

instance, the *-s* morpheme on *likes* marks the tense as present and the subject as singular. The *-s* on the noun *girls* marks the noun as plural. Some free morphemes are also grammatical. While the *-s* on *child's* indicates possession, so does the preposition *of* in *the roof of the building* or *some friends of mine*. The comparative and superlative inflections are typically used on adjectives that are one or two syllables long (e.g. *happy*, *happier*, *happiest*). However, lengthier adjectives require *more* and *most* (e.g. *beautiful*, *more beautiful*, *most beautiful*). Other free grammatical morphemes include the articles (*a*, *an*, *the*), auxiliary verbs (*be*, *have*), and coordinating conjunctions (*and*, *or*, *but*).

While inflectional morphemes form a small class in English, derivational morphemes are a much larger class. Merriam-Webster's *A Dictionary of Prefixes, Suffixes, and Combining Forms*, for instance, devotes nearly sixty pages to a description of the various derivational morphemes found on English words. Derivational morphemes exhibit other differences from inflectional morphemes as well. Derivational morphemes can be either prefixes or suffixes, whereas inflectional morphemes can be only suffixes. Unlike inflectional morphemes, derivational morphemes can change the meaning of a word or its part of speech: adding *dis-* to the base *like* results in a word – *dislike* – with a completely opposite meaning; adding *-able* to *like* changes *like* from a verb to an adjective: *likeable*. Adding *-ed* to a verb such as *walk* changes neither the meaning of *walk* nor its part of speech.

A word can contain many derivational affixes, but only one inflectional affix; and if a word contains an inflectional suffix and one or more derivational suffixes, the derivational suffixes will always precede the inflectional suffixes. In the examples below, the inflectional affixes are in boldface and the derivational affixes in italics:

declassified: *de* + *class* + *ify* + **ed**

unlikeliest: *un* + *like* + *ly* + **est**

disempowering: *dis* + *em* + *power* + **ing**

reformulations: *re* + *formula* + *ate* + *ation* + **s**

As these words indicate, when affixes are combined in a word, the spelling of an individual affix will often differ from its spelling in the word in which it is included. As a later section will show, because English words can contain many different derivational affixes, **affixation** – the process of adding derivational morphemes to a word – is a major source of new words in English.

Origins of derivational affixes. Most derivational affixes were borrowed into English from either Greek or Latin. In Modern English, relatively few affixes of Germanic origin can be found. For instance, many negative prefixes, such as *il-*, *im-*, *in-*, and *non-*, were borrowed from Latin into English (the definitions and etymologies given in the lists below are based on those listed in Merriam-Webster's *Third New International Dictionary*):

INTRODUCTION TO ENGLISH MORPHOLOGY

Famala Eka Sanhadi Rahayu

This textbook exists as help for English Literature students to understand English morphology using more familiar words than the ones native made. Considering the culture and the levels of English of the students who probably read this textbook, the author tried to simplify the topic of morphology and used simpler words to introduce them to notions in morphology. It is expected to give more understanding to students which usually find difficulties in understanding linguistics from native experts.

In sum, this book is expected to be beneficial for English students especially those majoring in English Literature and Linguistic. Contributive critics and suggestions are welcomed for the development of a better version of this book.

Samarinda, September 2021

Author

CHAPTER 2

WORDS AND RELATED TERMS

Learning Objectives:

Students are expected to be able to distinguish word form, word token, and lexeme.

Indicators:

1. Define word
2. Define word form, word token and lexeme
3. Differentiate word form, word token and lexeme.

2.1 What is a Word?

Studies estimated that average speakers of a language know from 45,000 to 60,000 words. This means that the speakers must store those words in a place in our head, so-called mental lexicon. This mental lexicon is a part of our head that functions as a *warehouse* to store those words. But what exactly is it that we have stored? What do we mean when we speak of 'words'?

Words are familiar terms we hear and say in everyday language. We used the term sometimes without fully notice what is the definition of *words* or because we never think that this could be a problematic notion (Bauer, 2003). For some people, the basic definition of *words* is a group of letters that is preceded by a blank space and followed either by a blank space or a punctuation mark (Bauer, 2003) and has a meaning. Some others may say that *words*

are parts of sentences or something which build a sentence. ‘*Word*’ is difficult to define in a clear cut manner which can differentiate the definition of a word with other notions similar to it. Part of the difficulty is that, as an element of the English language, the word *word* can be used to denote things which are conceptually very different from each other, and that we need a better classification and more precise terminology is widely accepted, although there are some terms which have varying usages in a different theoretical framework. However, defining the “*word*” itself is not that simple, we need to take into account every characteristics showed by a “*word*”. These characteristics or ways to define the words are different between morphologists.

Bauer (2019) argued that the word could be defined in four other ways: in terms of sound structure (i.e. phonologically), in terms of its internal integrity, in terms of meaning (i.e. semantically), or in terms of sentence structure (i.e. syntactically). She summarized that there are four properties of words: (1) words are entities having a part of speech specification, (2) words are syntactic atoms or a “composer” syntactic in a sentence structure, (3) words (usually) have one main stress, (4) words (usually are invisible units (no intervening material possible). It should be remembered that all these properties work in terms of English words. In Indonesian words we may have problems when defining the words using these properties since the characteristics of words in Indonesian and English are slightly different especially in properties (3) which required the main stress in a word and as we

3.2 Morphemes and Allomorphs

A **morpheme** is defined as the smallest meaningful unit of morphological analysis (Bauer, Plag, Lieber, 2013). However, to be more precise and to make clear the relationship of the term 'morpheme' to that of 'morph', we need first to introduce a third term, 'allomorph'. There are many occasions on which morphs, though phonologically not identical, are functionally equivalent and are in complementary distribution. Consider the example in (1).

- (1)
- | | |
|---------|----------|
| embark | endanger |
| embed | ensnare |
| embody | entomb |
| emplane | entrain |

Bark, bed, body, plane, danger, snare, tomb, and train are potentially free morphs, and they are preceded by an obligatorily bound morph that has the same meaning in every case, which we may roughly translate as 'cause to be in'. In the examples in (1), this morph is sometimes em- and sometimes en-. The two forms have complementary distributions, and we can predict which one will occur in any given word-form: em- occurs before bilabial consonants, whereas en- occurs before alveolar consonants. These two morphs, em- and en-, are said to be allomorphs of the same morpheme. **Allomorphs**, in general, are phonologically diverse variants that exist in complementary phonological environments. Morphemes are groupings of allomorphs.

on the assumption that all words that appeared in the sentence need to be counted. But if we take a look carefully we can find that the third word “to” is the same as the eleventh word. It also happens to the sixth and fifteenth word, the word “week” appears two times. When we neglect that the sixth and fifteenth words are the same and focus on the frequency of parts of the sentence itself, we call it word tokens.

Let us say that the third and the eleventh word of the sentence at (1) are a distinct token of a single type and likewise the sixth and fifteen words. To make you easier to understand the word token here, imagine you are listening to “I Have a Dream” song on Monday and Tuesday. Does the song the same? But you listen to it twice at different times, do you? That is how tokens work, the same entity but different occurrence.

However, when we concern that each word can only count one regardless of how many frequencies it appears, it is called word-type (Carstairs-McCarthy, 2002) or word-form (Bauer et al., 2013) make it simple, for the rest of the book, we will use the term introduced by Bauer et al. (2013) that is word form.

In addition, the differentiation doesn't stop there, we can see that the word *go* and *went* are somehow coming from the same word *go* which has the same meaning but is different in grammatical function. When we collect those words into one we call it lexeme. Thus, **lexeme** is an abstraction over one or more word types that conveys the same lexical meaning (Bauer et al., 2013). While ‘word form’ refers to a phonological/orthographic

Morphology is the science and study of the smallest grammatical units of language, and of their formation into words, including inflection, derivation and composition. Geert (2005: 7) explains, "In present-day linguistics, the term 'morphology' Refers to the study of the internal structure of words, and of the systematic form-meaning correspondences between words." Further, according to Geert morphology is science studies on the internal arrangement of words and relationships form and meaning to the word.

Morphology is a level of structure between the phonological and the syntactic. It is complementary of syntax. Morphology is the grammar of words; syntax the grammar of sentences. One accounts for the internal structure , or form of words (typically as sequences of morphemes), the other describes how these words are put together in sentence. A discussion of how plurals are formed , for example, would belong to morphology, while a discussion of prepositional phrases would belongs syntax. After observing the definition of morphology above, it can be concluded that morphology is branch of linguistics which is concerned with the study of morphemes are constructed to form words.

2.1. Word

In linguistics, a word is the smallest unit of grammar that can stand alone as a complete utterance, separated by spaces in written language and potentially by pauses in speech (Crystal: 2003). This construct with a morpheme, which is the smallest unit of a meaning but will not necessarily stand its own.

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MARIO KLARER

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Flanders (1722) or Henry Fielding's *Tom Jones* (1749), which all display specific traits of this form of prose fiction. The **Bildungsroman** (novel of education), generally referred to by its German name, describes the development of a protagonist from childhood to maturity, including such examples as George Eliot's (1819–80) *Mill on the Floss* (1860), or more recently in Doris Lessing's (*1919) cycle *Children of Violence* (1952–69). Another important form is the **epistolary novel**, which uses letters as a means of first person narration, as for example Samuel Richardson's *Pamela* (1740–41) and *Clarissa* (1748–49). A further form is the **historical novel**, such as Sir Walter Scott's (1771–1832) *Waverly* (1814), whose actions take place within a realistic historical context. Related to the historical novel is a more recent trend often labeled **New Journalism**, which uses the genre of the novel to rework incidents based on real events, as exemplified by Truman Capote's (*1924) *In Cold Blood* (1966) or Norman Mailer's (*1923) *Armies of the Night* (1968). The **satirical novel**, such as Jonathan Swift's (1667–1745) *Gulliver's Travels* (1726) or Mark Twain's (1835–1910) *The Adventures of Huckleberry Finn* (1884), highlights weaknesses of society through the exaggeration of social conventions, whereas **utopian novels** or **science fiction novels** create alternative worlds with which to criticize real socio-political conditions, as in the classic *Nineteen Eighty-four* (1949) by George Orwell (1903–50) or more recently Margaret Atwood's (*1939) *The Handmaid's Tale* (1985). Very popular forms are the **gothic novel**, which includes such work as Bram Stoker's (1847–1912) *Dracula* (1897), and the **detective novel**, one of the best known of which is Agatha Christie's (1890–1976) *Murder on the Orient Express* (1934).

The **short story**, a concise form of prose fiction, has received less attention from literary scholars than the novel. As with the novel, the roots of the short story lie in antiquity and the Middle Ages. Story, myth, and fairy tale relate to the oldest types of textual manifestations, "texts" which were primarily orally transmitted. The term "tale" (from "to tell"), like the German "Sage" (from "sagen"—"to speak"), reflects this oral dimension inherent in short fiction. Even the Bible includes stories such as "Job" or "The Prodigal Son," (c. 4th–5th century BC) whose structures and narrative patterns resemble modern short stories. Other forerunners of this subgenre of fiction are ancient satire and the aforementioned romance.

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THE SHORT STORY

AN INTRODUCTION



Paul March-Russell

2 *The Short Story*

spelt. During the last years of the nineteenth century, there was much debate and confusion surrounding the nature of the short story (see Barr et al. 1897).

For many writers of the period, 'tale' and 'story' were used interchangeably, and no clear distinctions were made except by the editors of periodicals that encouraged, and thrived upon, the late nineteenth-century boom in short stories. Even though the term 'short story' implies a plotted narrative, written as opposed to recited, writers tended to regard themselves as producing the modern-day equivalent of the folktale. H. G. Wells, in particular, took delight in the variety and elasticity of the form: 'Insistence upon rigid forms and austere unities seems to me the instinctive reaction of the sterile against the fecund' (Wells 1914: vii). In other words, to understand the artistic appeal of the short story, it is important to trace, first of all, the prehistory of the form, for that was the tradition in which many early short storywriters felt they were working.

The tale can be traced back to the earliest surviving narrative, *The Epic of Gilgamesh*, written in the third millennium BCE. In the following overview, five sub-genres of tale will be considered: parable and fable, the Creation myth, novella, fairy tale and art-tale. The most notable aspect is that, despite its printed versions, the tale is a *spoken* form that, consequently, implies a speaker and a listener. The context for the tale, however, may vary widely, from a parent talking to a child to a religious speaker instructing a congregation to a teacher addressing a class to a storyteller performing to an audience to friends swapping stories. Not only is the tale oral, it is *context-sensitive* to a degree that reading is not. The context will affect the type of tale, its purpose, delivery and reception, nuances of style and presentation that are omitted from a printed account. Furthermore, there is an intimacy of address, which is lost within printed literature. I may never meet the author of the novel I am currently reading; in fact, meeting a favourite author can be a slightly eerie experience. Reading in the era of mass-production is a more alienated activity. I can describe to friends the novel I'm reading but I am unlikely to retell it (the survival of Mikhail Bulgakov's *The Master and Margarita* as an oral piece, in the context of Soviet oppression, is a rare exception). But the tale rests upon the physical encounter of speaker and listener, in which the presence of the listener shapes the tale being told. The listener participates in a

Juni Ahyar, S.Pd., M.Pd.

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BAB III

CERPEN

Pengertian Cerpen

Cerita pendek (cerpen) merupakan sebuah bentuk karya sastra berupa prosa naratif yang bersifat fiktif. Isinya tidak lebih dari 10.000 kata. Cerita pendek atau sering disingkat sebagai cerpen adalah suatu bentuk prosa naratif fiktif. Cerita pendek cenderung padat dan langsung pada tujuannya dibandingkan karya-karya fiksi yang lebih panjang, seperti *novella* (dalam pengertian modern) dan novel. Karena singkatnya, cerita-cerita pendek yang sukses mengandalkan teknik-teknik sastra seperti tokoh, plot, tema, bahasa dan *insight* secara lebih luas dibandingkan dengan fiksi yang lebih panjang. Ceritanya bisa dalam berbagai jenis.

Cerita pendek berasal dari anekdot, sebuah situasi yang digambarkan singkat yang dengan cepat tiba pada tujuannya, dengan paralel pada tradisi penceritaan lisan. Dengan munculnya novel yang realistis, cerita pendek berkembang sebagai sebuah miniatur, dengan contoh-contoh dalam cerita-cerita karya E.T.A. Hoffmann dan Anton Chekhov.

Ciri-Ciri Cerita Pendek

Cerita pendek cenderung kurang kompleks dibandingkan dengan novel. Cerita pendek biasanya memusatkan perhatian pada satu kejadian, mempunyai satu plot, *setting* yang tunggal, jumlah tokoh yang terbatas, mencakup jangka waktu yang singkat.

Dalam bentuk-bentuk fiksi yang lebih panjang, ceritanya cenderung memuat unsur-unsur inti tertentu dari struktur dramatis: eksposisi (pengantar *setting*, situasi dan tokoh utamanya), komplikasi (peristiwa di dalam cerita yang memperkenalkan konflik dan tokoh utama); komplikasi (peristiwa di dalam cerita yang memperkenalkan

THIRD EDITION

RESEARCH DESIGN

Qualitative, Quantitative, and
Mixed Methods Approaches



JOHN W. CRESWELL



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The Selection of a Research Design

Research designs are plans and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. This plan involves several decisions, and they need not be taken in the order in which they make sense to me and the order of their presentation here. The overall decision involves which design should be used to study a topic, informing this decision should be the worldview assumptions the researcher brings to the study; procedures of inquiry (called strategies); and specific methods of data collection, analysis, and interpretation. The selection of a research design is also based on the nature of the research problem or issue being addressed, the researchers' personal experiences, and the audiences for the study.

THE THREE TYPES OF DESIGNS

In this book, three types of designs are advanced: qualitative, quantitative, and mixed methods. Unquestionably, the three approaches are not as discrete as they first appear. Qualitative and quantitative approaches should not be viewed as polar opposites or dichotomies; instead, they represent different ends on a continuum (Newman & Benz, 1998). A study *tends* to be more qualitative than quantitative or vice versa. Mixed methods research resides in the middle of this continuum because it incorporates elements of both qualitative and quantitative approaches.

Often the distinction between qualitative and quantitative research is framed in terms of using words (qualitative) rather than numbers (quantitative), or using closed-ended questions (quantitative hypotheses) rather than open-ended questions (qualitative interview questions). A more complete way to view the gradations of differences between them is in the basic philosophical assumptions researchers bring to the study, the

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Data Analysis Procedures

A methods discussion in a qualitative proposal or study needs also to specify the steps in analyzing the various forms of qualitative data. In general, the intent is to make sense out of text and image data. It involves segmenting and taking apart the data (like peeling back the layers of an onion) as well as putting it back together. The discussion in your study about qualitative data analysis might begin with several general points about the overall process:

Figure 9.1 Sample Interview Protocol

- **Basic information about the interview.** This is a section of the interview where the interviewer records basic information about the interview so that the database can be well organized. It should include the time and date of the interview, where the interview took place, and the names of both the interviewer and interviewee. The project length of the interview could also be noted as well as the file name for the digital copy of the audio recording and transcription.
- **Introduction.** This section of the protocol provides the instructions to the interviewer so that useful information is not overlooked during a potentially anxious period of conducting the interview. The interviewer needs to introduce himself or herself, and to discuss the purpose of the study. This purpose can be written out in advance and simply read by the interviewer. It should also contain a prompt to the interviewer to collect a signed copy of the informed consent form (alternatively, the participant may have sent the form to the interviewer). The interviewer might also talk about the general structure of the interview (e.g., how it will begin, the number of questions, the time that it should take), and ask the interviewee if he or she has any questions before beginning the interview. Finally, before the interview begins, the interviewer may need to define some important terms that will be used in the interview.
- **Opening question.** An important first step in an interview is to set the interviewee at ease. We typically begin with an ice-breaker type of question. This is a question where we ask participants to talk about themselves in a way that will not alienate them. We might ask them about their job, their role, or even how they spent the day. We do not ask personal questions (e.g., "What is your income?"). People like talking about themselves, and this opening question should be framed to accomplish this goal.
- **Content questions.** These questions are the research sub-questions in the study, phrased in a way that seems friendly to the interviewee. They essentially parse the central phenomenon into its parts—asking about different facets of the central phenomenon. Whether the final question would be a restatement of the central question is open to debate. It is hoped that after the interviewee has answered all of the sub-questions, the qualitative researcher will have a good understanding as to how the central question has been answered.
- **Using probes.** These content questions also need to include probes. Probes are reminders to the researcher of two types: to ask for more information, or to ask for an explanation of ideas. The specific wording might be as follows (and these words could be inserted into the interview protocol as a reminder to the interviewer):
 - "Tell me more" (asking for more information)
 - "I need more detail" (asking for more information)
 - "Could you explain your response more?" (asking for an explanation)
 - "What does 'not much' mean?" (asking for an explanation)Sometimes beginning qualitative researchers are uncomfortable with a small number of questions and they fear that their interview may be quite short with only a few (5–10) questions. True, some people may have little to say for little information to provide about the central phenomenon, but by including probes in the interview, the researcher can expand the duration of the interview as well as net useful information. A useful final question might be, "Who should I contact next to learn more?" or "Is there any further information that you would like to share that we have not covered?" These follow-up questions essentially net closure on the interview and show the researcher's desire to learn more about the topic of the interview.
- **Closing instructions.** It is important to thank the interviewee for his or her time and respond to any final questions. Assure the interviewee of the confidentiality of the interview. Ask if you can follow-up with another interview if one is needed to clarify certain points. One question that may surface is how participants will learn about the results of your project. It is important to think through and provide a response to this question because it involves your time and resources. A convenient way to provide information to interviewees is to offer to send them an abstract of the final study. This brief communication of results is efficient and convenient for most researchers.

- **Simultaneous procedures.** Data analysis in qualitative research will proceed hand-in-hand with other parts of developing the qualitative study, namely, the data collection and the write-up of findings. While interviews are going on, for example, researchers may be analyzing an interview collected earlier, writing memos that may ultimately be included as a narrative in the final report, and organizing the structure of



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An Introduction to Qualitative Research

Authors

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Elizabeth Ockleford
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2. The Nature of Qualitative Research

All research, whether quantitative or qualitative, must involve an explicit (i.e. auditable), disciplined, systematic approach to finding things out, using the method most appropriate to the question being asked. Consideration should be given to these common goals, although the differences between qualitative and quantitative research have often been exaggerated in the past. The table below summarises some of the ways in which qualitative and quantitative research do differ:

Table 1

Qualitative research	Quantitative research
tends to focus on how people or groups of people can have (somewhat) different ways of looking at reality (usually social or psychological reality)	tends to focus on ways of describing and understanding reality by the discovery of general "laws"
takes account of complexity by incorporating the real-world context – can take different perspectives on board	takes account of complexity by precise definition of the focus of interest and techniques that mean that external "noise" can be discounted
studies behaviour in natural settings or uses people's accounts as data; usually no manipulation of variables	involves manipulation of some variables (independent variables) while other variables (which would be considered to be extraneous and confounding variables) are held constant
focuses on reports of experience or on data which cannot be adequately expressed numerically	uses statistical techniques that allow us to talk about how likely it is that something is "true" for a given population in an objective or measurable sense
focuses on description and interpretation and might lead to development of new concepts or theory, or to an evaluation of an organisational process	focuses on cause & effect - e.g. uses experiment to test (try to disprove) an hypothesis
employs a flexible, emergent but systematic research process	requires the research process to be defined in advance

4. Qualitative Data Collection Methods

In this section, methods of qualitative research data collection are outlined. The main methods are:

- 1) interviews
- 2) focus groups
- 3) observation
- 4) collection of documented material such as letters, diaries, photographs
- 5) collection of narrative
- 6) open ended questions in questionnaires (other aspects of are covered in the resource pack *surveys and questionnaires*)

4.1 Interviews

Interviewing can, at one extreme, be structured, with questions prepared and presented to each interviewee in an identical way using a strict predetermined order. At the other extreme, interviews can be completely unstructured, like a free-flowing conversation. Qualitative researchers usually employ "semi-structured" interviews which involve a number of open ended questions based on the topic areas that the researcher wants to cover. The open ended nature of the questions posed defines the topic under investigation but provides opportunities for both interviewer and interviewee to discuss some topics in more detail. If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can use cues or prompts to encourage the interviewee to consider the question further. In a semi structured interview the interviewer also has the freedom to probe the interviewee to elaborate on an original response or to follow a line of inquiry introduced by the interviewee. An example would be:

Interviewer: "I'd like to hear your thoughts on whether changes in government policy have changed the work of the doctor in general practice. Has your work changed at all?"

Interviewee: "Absolutely! The workload has increased for a start."

Interviewer: "Oh, how is that?"

Preparation for semi-structured interviews includes drawing up a "topic guide" which is a list of topics the interviewer wishes to discuss. The guide is not a schedule of questions and should not restrict the interview, which needs to be conducted sensitively and flexibly allowing follow up of points of interest to either interviewer or interviewee. In addition to the topic guide, the interviewer will probably want to approach the interview with written prompts to him/herself in order to make sure that the necessary preliminary ground is covered concerning such things as the information leaflet (has the interviewee understood it and got any questions?), the consent form (has it been signed?),

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A Guidebook and Resource

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Paralleling the growing interest in qualitative research in sociology has been an increased acceptance of these methods in other disciplines and applied fields. Such diverse disciplines as geography (DeLyser, Herbert, Aitken, Crang, & McDowell, 2010; Hay, 2010), political science (McNabb, 2004), and psychology (Camic, Rhodes, & Yardley, 2003; Fischer, 2005; *Qualitative Research in Psychology*) have seen the publication of edited books, texts, and journals on qualitative research methods over the past decade and a half. The American Psychological Association started publishing the journal *Qualitative Psychology* in 2014. Qualitative methods have been used for program evaluation and policy research (Bogdan & Taylor, 1990; Guba & Lincoln, 1989; M. Q. Patton 1987, 2008, 2010, 2014; Rist 1994). Journals and texts on qualitative research can be found in such diverse applied areas of inquiry as health care and nursing (Latimer, 2003; Munhall, 2012; Streubert & Carpenter, 2010; *Qualitative Health Research*), mental health, counseling, and psychotherapy (Harper & Thompson, 2011; McLeod, 2011), education (Bogdan & Biklen, 2006; *International Journal of Qualitative Studies in Education*; Lichtman, 2010; *Qualitative Research in Education*), music education (Conway, 2014), public health (Ulin, Robinson, & Tolley, 2005), business (Meyers, 2013), theology (Swinton & Mowat, 2006), disability studies (Ferguson et al., 1992), human development (Daly, 2007; Jessor, Colby, & Shweder, 1996), social work (Sherman & Reid, 1994; *Qualitative Social Work*), and special education (Stainback & Stainback, 1988).

One does not have to be a sociologist or to think sociologically to practice qualitative research. Although we identify with a sociological tradition, qualitative approaches can be used in a broad range of disciplines and fields.

Just as significant as the increasing interest in qualitative research methods has been the proliferation of theoretical perspectives rooted in the phenomenological tradition underlying this form of inquiry. We consider the relationship between theory and methodology more fully later in this chapter.

QUALITATIVE METHODOLOGY

The phrase *qualitative methodology* refers in the broadest sense to research that produces descriptive data—people’s own written or spoken words and observable behavior. As Ray Rist (1977) pointed out, qualitative methodology, like quantitative methodology, is more than a set of data-gathering techniques. It is a way of approaching the empirical world. In this section we present our notion of qualitative research.

1. *Qualitative researchers are concerned with the meaning people attach to things in their lives.* Central to the phenomenological perspective and hence qualitative research is understanding people from their own frames of reference and

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Qualitative Data Analysis

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The influence of the researcher's values is not minor (e.g., what one thinks about the fairness of arrests).

To put it another way, qualitative data are not so much about "behavior" as they are about actions (which carry with them intentions and meanings and lead to consequences). Some actions are relatively straightforward; others involve "impression management"—how people want others, including the researcher, to see them.

Furthermore, those actions always occur in specific situations within a social and historical context, which deeply influences how they are interpreted by both insiders and the researcher as outsider.

Thus the apparent simplicity of qualitative "data" masks a good deal of complexity, requiring plenty of care and self-awareness on the part of the researcher.

Strengths of Qualitative Data

What is important about well-collected qualitative data? One major feature is that they focus on *naturally occurring, ordinary events in natural settings*, so that we have a strong handle on what "real life" is like.

That confidence is buttressed by *local groundedness*, the fact that the data were collected in close proximity to a specific situation, rather than through the mail or over the phone. The emphasis is on a specific case, a focused and bounded phenomenon embedded in its context. The influences of the local context are not stripped away, but are taken into account. The possibility for understanding latent, underlying, or nonobvious issues is strong.

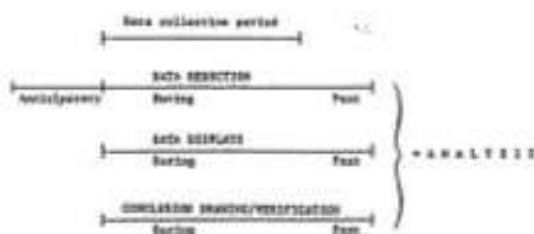
Another feature of qualitative data is their *richness and holism*, with strong potential for revealing complexity; such data provide "thick descriptions" that are vivid, nested in a real context, and have a ring of truth that has strong impact on the reader.

Furthermore, the fact that such data are typically collected over a *sustained period* makes them powerful for studying any process (including history); we can go far beyond "snapshots" of "what?" or "how many?" to just how and why things happen as they do—and even *assess causality* as it actually plays out in a particular setting. And the inherent *flexibility* of qualitative studies (data collection times and methods can be varied as a study proceeds) gives further confidence that we've really understood what has been going on.

Qualitative data, with their emphasis on people's "lived experience," are fundamentally well suited for locating the *meanings* people place on the events, processes, and structures of their lives: their "perceptions, assumptions, prejudgments, presuppositions" (van Manen, 1977) and for connecting these meanings to the *social world* around them.

We make three other claims for the power of qualitative data, to which we return during later chapters. They often

Figure 1.3
Components of Data Analysis: Flow Model



have been advocated as the best strategy for discovery, exploring a new area, *developing hypotheses*. In addition we underline their strong potential for *testing hypotheses*, seeing whether specific predictions hold up. Finally, qualitative data are useful when one needs to supplement, validate, explain, illuminate, or reinterpret *quantitative* data gathered from the same setting.

The strengths of qualitative data rest very centrally on the competence with which their analysis is carried out. What do we mean by analysis?

E. Our View of Qualitative Analysis

Our general view of qualitative analysis is outlined in Figure 1.3. We define *analysis* as consisting of three concurrent flows of activity: data reduction, data display, and conclusion drawing/verification. We explore each of these themes in more depth as we proceed through the book. For now, we make only some overall comments.

Data Reduction

Data reduction refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written-up field notes or transcriptions. As we see it, data reduction occurs continuously throughout the life of any qualitatively oriented project. Even before the data are actually collected (see Figure 1.1), anticipatory data reduction is occurring as the researcher decides (often without full awareness) which conceptual framework, which cases, which research questions, and which data collection approaches to choose. As data collection proceeds, further episodes of data reduction occur (writing summaries, coding, teasing out themes, making clusters, making partitions, writing memos). The data reduction/transforming process continues after fieldwork, until a final report is completed.

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methods encompass multifaceted approaches that combine to capitalize on strengths and reduce weaknesses that stem from using a single research design. Using this approach to gather and evaluate data may assist to increase the validity and reliability of the research. Some of the common areas in which mixed-method approaches may be used include -

- Initiating, designing, developing and expanding interventions;
- Evaluation;
- Improving research design; and
- Corroborating findings, data triangulation or convergence.

Some of the challenges of using a mixed methods approach include -

- Delineating complementary qualitative and quantitative research questions;
- Time-intensive data collection and analysis; and
- Decisions regarding which research methods to combine.

Mixed methods are useful in highlighting complex research problems such as disparities in health and can also be transformative in addressing issues for vulnerable or marginalized populations or research which involves community participation. Using a mixed-methods approach is one way to develop creative options to traditional or single design approaches to research and evaluation.

There are many ways of classifying data. A common classification is based upon who collected the data.

PRIMARY DATA

Data that has been collected from first-hand-experience is known as primary data. Primary data has not been published yet and is more reliable, authentic and objective. Primary data has not been changed or altered by human beings; therefore its validity is greater than secondary data.

Importance of Primary Data: In statistical surveys it is necessary to get information from primary sources and work on primary data. For example, the statistical records of female population in a country cannot be based on newspaper, magazine and other printed sources. A research can be conducted without secondary data but a research based on only secondary data is least reliable and may have biases because secondary data has already been manipulated by human beings. One of such sources is old and secondly they contain limited information as well as they can be misleading and biased.

Sources of Primary Data: Sources for primary data are limited and at times it becomes difficult to obtain data from primary source because of either scarcity of population or lack of cooperation. Following are some of the sources of primary data.

Experiments: Experiments require an artificial or natural setting in which to perform logical study to collect data. Experiments are more suitable for medicine, psychological studies, nutrition and for other scientific studies. In experiments the experimenter has to keep control over the influence of any extraneous variable on the results.

Survey: Survey is most commonly used method in social sciences, management, marketing and psychology to some extent. Surveys can be conducted in different methods.

Questionnaire: It is the most commonly used method in survey. Questionnaires are a list of questions either open-ended or close-ended for which the respondents give answers. Questionnaire can be conducted via telephone, mail, live in a public area, or in an institute, through electronic mail or through fax and other methods.

Interview: Interview is a face-to-face conversation with the respondent. In interview the main problem arises when the respondent deliberately hides information otherwise it is an in depth source of information. The interviewer can not only record the statements the interviewee speaks

Statistical methods are the methods of collecting, summarizing, analyzing, and interpreting variable(s) in numerical data. Statistical methods can be contrasted with deterministic methods, which are appropriate where observations are exactly reproducible or are assumed to be so. Data collection involves deciding what to observe in order to obtain information relevant to the questions whose answers are required, and then making the observations. Sampling involves choice of a sufficient number of observations representing an appropriate population. Experiments with variable outcomes should be conducted according to principles of experimental design. Data summarization is the calculation of appropriate statistics and the display of such information in the form of tables, graphs, or charts. Data may also be adjusted to make different samples more comparable, using ratios, compensating factors, etc.

Statistical analysis relates observed statistical data to theoretical models, such as probability distributions or models used in regression analysis. By estimating parameters in the proposed model and testing hypotheses about rival models, one can assess the value of the information collected and the extent to which the information can be applied to similar situations. Statistical prediction is the application of the model thought to be most appropriate, using the estimated values of the parameters. More recently, less formal methods of looking at data have been proposed, including exploratory data analysis.

9.5 METHODS OF SECONDARY DATA COLLECTION

Secondary data is the data that is collected from the primary sources which can be used in the current research study. Collecting secondary data often takes considerably less time than collecting primary data where you would have to gather every information from scratch. It is thus possible to gather more data this way.

Secondary data can be obtained from two different research strands -

- ♦ Quantitative: Census, housing, social security as well as electoral statistics and other related databases.
- ♦ Qualitative: Semi-structured and structured interviews, focus groups transcripts, field notes, observation records and other personal, research-related documents.

Secondary data is often readily available. After the expense of electronic media and internet the availability of secondary data has become much easier.

Published Printed Sources: There are varieties of published printed sources. Their credibility depends on many factors. For example, on the writer, publishing company and time and date when published. New sources are preferred and old sources should be avoided as new technology and researches bring new facts into light.

Books: Books are available today on any topic that you want to research. The use of books start before even you have selected the topic. After selection of topics books provide insight on how much work has already been done on the same topic and you can prepare your literature review. Books are secondary source but most authentic one in secondary sources.

Journals/periodicals: Journals and periodicals are becoming more important as far as data collection is concerned. The reason is that journals provide up-to-date information which at times books cannot and secondly, journals can give information on the very specific topic on which you are researching rather talking about more general topics.

Magazines/Newspapers: Magazines are also effective but not very reliable. Newspapers on the other hand are more reliable and in some cases the information can only be obtained from newspapers as in the case of some political studies.



