

CONTEMPORARY LINGUISTICS

AN INTRODUCTION

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Language: A Preview

William O'Grady

The gift of language is the single human trait that marks us all genetically, setting us apart from the rest of life.

— LEWIS THOMAS, *The Lives of a Cell*

OBJECTIVES

In this chapter, you will learn:

- that human beings are specialized for language
- that all human languages are creative, have a grammar, and change over time
- that all grammars are alike in basic ways
- that grammatical knowledge is subconscious in all native speakers of a language

Language is many things—a system of communication, a tool for thought, a medium for self-expression, a social institution, a source of ethnic pride and political controversy. All normal human beings have at least one language, and it is difficult to imagine much significant social, intellectual, or artistic activity taking place in the absence of language.

The centrality of language to virtually every aspect of human life gives each of us a reason to want to be curious about its nature and use. This book takes a first step in that direction by providing a basic introduction to **linguistics**, the study of how language works.

1 Specialization for Language

Modern *Homo sapiens* (our species) made their appearance 100,000 to 200,000 years ago, by many estimates. Early humans were anatomically just like us—they had

large brains and vocal tracts capable of producing speech. Archaeological evidence (such as tools, carvings, and cave paintings) suggests that they also had the type of intellect that could support language.

Hundreds of thousands of years of evolution created a special capacity for language in humans not found in any other species. The evidence is literally inside us. For example, our speech organs (the lungs, larynx, tongue, teeth, lips, soft palate, and nasal passages) were—and still are—directly concerned with breathing and eating. However, they have also all become highly specialized for use in language (Table 1.1). Their structure and shape is unique to our species, as is the highly developed network of neural pathways that exercises control over them during speech production.

Table 1.1 Dual functions of the speech organs

<i>Organ</i>	<i>Survival function</i>	<i>Speech function</i>
Lungs	to exchange CO ₂ and oxygen	to supply air for speech
Vocal cords	to create seal over passage to lungs	to produce vibrations for speech sounds
Tongue	to move food to teeth and back into throat	to articulate vowels and consonants
Teeth	to break up food	to provide place of articulation for consonants
Lips	to seal oral cavity	to articulate vowels and consonants
Nose	to assist in breathing	to provide nasal resonance during speech

Breathing during speech is associated with higher lung pressure and a longer exhalation time than ordinary respiration, and abdominal muscles that are not normally employed for respiration are brought into play in order to regulate the air pressure needed for speech.

Human beings are also especially equipped for the perception of speech. Newborns respond differently to human voices than to other types of sounds, and six-month-old infants are able to perceive subtle differences among sounds in languages that they have never heard before (this is discussed in more detail in Chapter 11).

Even the ability to deal with nonvocal, cognitive aspects of language—such as word formation, sentence building, the interpretation of meaning—seems to be the product of neurological specialization. Particular parts of the brain tend to be associated with specific types of linguistic phenomena (see Chapter 14 for discussion), and species with different types of brains appear to be unable to acquire or use human language (see Chapter 17).

2 A Creative System

Knowing that human beings are especially suited for language only increases the mystery that surrounds this phenomenon. What, precisely, is language? What does it mean

to know a language? To answer these questions, it is first necessary to understand the resources that a language makes available to its **native speakers**, those who have acquired it as children in a natural setting (say, a home rather than a classroom).

The breadth and diversity of human thought and experience place great demands on language. Because communication is not restricted to a fixed set of topics, language must do something more than provide a package of ready-made messages. It must enable us to produce and understand new words and sentences as the need arises. In short, human language must be creative, allowing novelty and innovation in response to new thoughts, experiences, and situations.

The **creativity** of language goes hand in hand with a second defining characteristic—the presence of systematic constraints that establish the boundaries within which innovation can occur. As a preliminary illustration of this, let us consider the process that creates verbs from nouns in English as shown in Table 1.2. (For now, you can think of verbs as words that name actions and nouns as words that name things.)

Table 1.2 Nouns used as verbs

<i>Noun use</i>	<i>Verb use</i>
pull the boat onto the <i>beach</i>	<i>beach</i> the boat
keep the airplane on the <i>ground</i>	<i>ground</i> the airplane
tie a <i>knot</i> in the string	<i>knot</i> the string
put the wine in <i>bottles</i>	<i>bottle</i> the wine
catch the fish with a <i>spear</i>	<i>spear</i> the fish
clean the floor with a <i>mop</i>	<i>mop</i> the floor

As the sentences in 1 show, there is a great deal of freedom to innovate in the formation of such verbs.

1)

- a. I *wristed* the ball over the net.
- b. He would try to *stiff-upper-lip* it through.
- c. She *Houdini'd* her way out of the locked closet.

However, there are also limits on this freedom. For instance, a new verb is rarely coined if a word with the intended meaning already exists. Although we say *jail the robber* to mean 'put the robber in jail', we do not say *prison the robber* to mean 'put the robber in prison'. This is because the well-established verb *imprison* already has the meaning that the new form would have.

There are also special constraints on the meaning and use of particular subclasses of these verbs. One such constraint involves verbs that are created from time expressions such as *summer*, *vacation*, and so on.

2)

- a. Julia *summered* in Paris.
- b. Harry *wintered* in Mexico.
- c. Bob *vacationed* in France.
- d. Harry and Julia *honeymooned* in Hawaii.

Although the sentences in 2 are all natural-sounding, not all time expressions can be used in this way. (Throughout this book an asterisk is used to indicate that an utterance is unacceptable.)

3)

- a. *Jerome *midnighted* in the streets.
- b. *Andrea *nooned* at the restaurant.
- c. *Philip *one o'clocked* at the airport.

These examples show that when a verb is created from a time expression, it must be given a very specific interpretation—roughly paraphrasable as ‘to be somewhere for the period of time X’. Thus, *to summer in Paris* is ‘to be in Paris for the summer’, *to vacation in France* is ‘to be in France for a vacation’, and so on. Since *noon* and *midnight* express *points* in time rather than extended *periods* of time, they cannot be used to create new verbs of this type.

Systematic constraints are essential to the viability of the creative process. If well-established words were constantly being replaced by new creations, a language's vocabulary would be so unstable that communication could be jeopardized. A similar danger would arise if there were no constraints on the meaning of words newly derived from other words. If *They winter in Hawaii* could mean ‘They make it snow in Hawaii’ or ‘They wish it were winter in Hawaii’ or any other arbitrary thing, the production and interpretation of new forms would be chaotic and unsystematic, undermining the usefulness of language for communication.

Some Other Examples

Systematic creativity is the hallmark of all aspects of language. For instance, consider the way in which sounds are combined to form words. Certain patterns of sounds, like the novel forms in 4, have the look of English words—we recognize that they could become part of the language and be used as names for new products or processes, for example.

4)

- a. prasp
- b. flib
- c. traf

In contrast, the forms in 5 contain combinations of sounds that English does not permit. As a result, they simply do not have the shape of English words.

5)

- a. *psapr
- b. *bfli
- c. *ftra

Still other constraints determine how new words can be created from already existing forms with the help of special endings. Imagine, for example, that the word *soleme* entered the English language (used perhaps for a newly discovered atomic particle). As a speaker of English, you would then automatically know that something with the properties of a *soleme* could be called *solemic*. You would also know that to make

something solemic is to *solemicize* it, and you would call this process *solemicization*. Further, you would know that the *c* is pronounced as *s* in *solemicize* but as *k* in *solemic*. Without hesitation, you would also recognize that *solemicize* is pronounced with the stress on the second syllable. (You would say *soLEmicize*, not *SOlemicize* or *solemiCIZE*.)

Nowhere is the ability to deal with novel utterances more obvious than in the production and comprehension of sentences. Apart from a few fixed expressions and greetings, much of what you say, hear, and read in the course of a day consists of sentences that are new to you. In conversations, lectures, newscasts, and textbooks, you are regularly exposed to novel combinations of words, unfamiliar ideas, and new information. Consider, for instance, the paragraph that you are currently reading. While each sentence is no doubt perfectly comprehensible to you, it is extremely unlikely that you have ever seen any of them before.

Not all new sentences are acceptable, however. For example, the words in 6 are all familiar, but they are simply not arranged in the right way to make a sentence of English.

6)

*Frightened dog this the cat that chased mouse a.

(cf. This dog frightened the cat that chased a mouse.)

As with other aspects of language, the ability to form and interpret sentences is subject to systematic limitations. One of the principal goals of contemporary linguistic analysis is to identify and understand these limitations.

3 Grammar and Linguistic Competence

As we have just seen, speakers of a language are able to produce and understand an unlimited number of utterances, including many that are novel and unfamiliar. At the same time, they are able to recognize that certain utterances are not acceptable and simply do not belong in their language. This ability, which is often called **linguistic competence**, constitutes the central subject matter of linguistics and of this book.

In investigating linguistic competence, linguists focus on the mental system that allows human beings to form and interpret the sounds, words, and sentences of their language. Linguists call this system a **grammar** and often break it down into the components in Table 1.3.

Table 1.3 The components of a grammar

Component	Domain
Phonetics	the articulation and perception of speech sounds
Phonology	the patterning of speech sounds
Morphology	word formation
Syntax	sentence formation
Semantics	the interpretation of words and sentences

As you can see, the term *grammar* is used in a special way within linguistics. A linguist's grammar is not a book and it is not concerned with just the form of words and sentences. Rather, it is an intricate system of knowledge that encompasses sound and meaning as well as form and structure.

The study of grammar lies at the core of our attempts to understand what language is and what it means to know a language. Five simple points should help clarify why the investigation of grammatical systems is so important to contemporary linguistic analysis.

3.1 Generality: All Languages Have a Grammar

One of the most fundamental claims of modern linguistic analysis is that all languages have a grammar. It could not be any other way. If a language is spoken, it must have a phonetic and phonological system; since it has words and sentences, it must also have a morphology and a syntax; and since these words and sentences have systematic meanings, there must obviously be semantic principles as well. In other words, each spoken language must have an intricate system of knowledge that encompasses sound and meaning as well as form and structure.

It is not unusual to hear the remark that some language—say, Puerto Rican Spanish, American Sign Language, or Swahili—has no grammar. (This is especially common in the case of languages that are not written or are not taught in schools and universities.) Unfamiliar languages sometimes appear to an untrained observer to have no grammar simply because their grammatical systems are different from those of better-known languages. In Walbiri (an indigenous language of Australia), for example, the relative ordering of words is so free that the English sentence *The two dogs now see several kangaroos* could be translated by the equivalent of any of the following sentences.

7)

- a. Dogs two now see kangaroos several.
- b. See now dogs two kangaroos several.
- c. See now kangaroos several dogs two.
- d. Kangaroos several now dogs two see.
- e. Kangaroos several now see dogs two.

Although Walbiri may not restrict the order of words in the way English does, its grammar imposes other types of requirements. For example, in the sentence types we are considering, Walbiri speakers must place the ending *lu* on the word for 'dogs' to indicate that it names the animals that do the seeing rather than the animals that are seen. In English, by contrast, this information is conveyed by placing *two dogs* in front of the verb and *several kangaroos* after it.

Rather than showing that Walbiri has no grammar, such differences simply demonstrate that it has a grammar that is unlike the grammar of English in certain respects. This point holds across the board: although no two languages have exactly the same grammar, there are no languages without a grammar.

A similar point can be made about different varieties of the same language. Appalachian English, Jamaican English, and Hawaiian English each have pronunciations,

vocabulary items, and sentence patterns that may appear unusual to outsiders. But this does not mean that they have no grammar; it just means that their grammars differ from those of more familiar varieties of English in particular ways.

3.2 Parity: All Grammars Are Equal

Contrary to popular belief, there is no such thing as a primitive language, even in places untouched by modern science and technology. Indeed, some of the most complex linguistic phenomena we know about are found in societies that have neither writing nor electricity.

Moreover, there is no such thing as a good grammar or a bad grammar. In fact, all grammars do essentially the same thing: they tell speakers how to form and interpret the words and sentences of their language. The form and meaning of those words and sentences vary from language to language and even from community to community, of course, but there is no such thing as a language that doesn't work for its speakers.

Linguists sometimes clash over this point with people who are upset about the use of nonstandard varieties of English that permit sentences such as *I seen that*, *They was there*, *He didn't do nothing*, *He ain't here*, and so forth. Depending on where you live and who you talk to, speaking in this way can have negative consequences: it may be harder to win a scholarship, to get a job, to be accepted in certain social circles, and so forth. This is an undeniable fact about the social side of language and we'll return to it in Chapter 15. From a purely linguistic point of view, however, there is absolutely nothing wrong with grammars that permit such structures. They work for their speakers, and they deserve to be studied in the same objective fashion as the varieties of English spoken by the rich and educated.

The bottom line for linguistics is that the analysis of language must reflect the way it is actually used, not someone's idealized vision of how it should be used. The linguist Steven Pinker offers the following illustration to make the same point.

Imagine that you are watching a nature documentary. The video shows the usual gorgeous footage of animals in their natural habitats. But the voiceover reports some troubling facts. Dolphins do not execute their swimming strokes properly. White-crowned sparrows carelessly debase their calls. Chickadees' nests are incorrectly constructed, pandas hold bamboo in the wrong paw, the song of the humpback whale contains several well-known errors, and the monkey's cries have been in a state of chaos and degeneration for hundreds of years. Your reaction would probably be, What on earth could it mean for the song of the humpback whale to contain an "error"? Isn't the song of the humpback whale whatever the humpback whale decides to sing? . . .

As Pinker goes on to observe, language is like the song of the humpback whale. The way to determine whether a particular sentence is permissible is to find people who speak the language and observe how they use it.

In sum, linguists don't even think of trying to rate languages as good or bad, simple or complex. Rather, they investigate language in much the same way that other scientists study snails or stars—with a view to simply figuring out how it works. This same point is sometimes made by noting that linguistics is **descriptive**, not

prescriptive. Its goal is to describe and explain the facts of languages, not to change them.

3.3 Universality: Grammars Are Alike in Basic Ways

In considering how grammars can differ from each other, it is easy to lose sight of something even more intriguing and important—the existence of principles and properties shared by all human languages.

For example, all languages use a small set of contrastive sounds that help distinguish words from each other (like the *t* and *d* sounds that allow us to recognize *to* and *do* as different words). There are differences in precisely which sounds particular languages use, but there are also fundamental similarities. For instance, all languages have more consonant sounds (*p*, *t*, *d*, etc.) than vowel sounds (*a*, *e*, *i*); any language that has an *f* sound also has an *s* sound; and all languages have a vowel that sounds like the 'ah' in *father*. (For more on this, see Chapter 8.)

There are also universal constraints on how words can be put together to form sentences. For example, no language can use the second of the sentences in 8 for a situation in which *he* refers to *Ned*.

8)

- a. Ned lost his wallet.
- b. He lost Ned's wallet.

Moreover, even when languages do differ from each other, there are often constraints on how much variation is possible. For example, some languages (like English) place question words at the beginning of the sentence.

9)

What did Mary donate to the library?

Other languages, like Mandarin, make no such changes.

10)

Mali juan shenme gei tushuguan?
Mary donate what to library

But no language uniformly places question words at the end of the sentence.

In other cases, variation is constrained by strong tendencies rather than absolute prohibitions. Take three-word sentences such as *Canadians like hockey*, for instance. There are six logically possible orders for such sentences.

11)

- a. Canadians like hockey.
- b. Canadians hockey like.
- c. Like Canadians hockey.
- d. Like hockey Canadians.
- e. Hockey like Canadians.
- f. Hockey Canadians like.

All other things being equal, we would expect to find each order employed in about one-sixth of the world's languages. In fact, though, more than 95 percent of the world's languages adopt one of the first three orders for basic statements (and the vast majority of those use one or the other of the first two orders). Only a handful of languages use any of the last three orders as basic.

These are not isolated examples. As later chapters will show, languages—like the people who use them—are fundamentally alike in important ways.

3.4 Mutability: Grammars Change over Time

The features of language that are not universal and fixed are subject to change over time. Indeed, within these limits, the grammars of all languages are constantly changing. Some of these changes are relatively minor and occur very quickly (for example, the addition of new words such as *blog*, *morphing*, *Internet*, *e-business*, and *cyberspace* to the vocabulary of English). Other changes have a more dramatic effect on the overall form of the language and typically take place over a long period of time. One such change involves the manner in which we negate sentences in English. Prior to 1200, English formed negative constructions by placing *ne* before the verb and a variant of *not* after it.

12)

- a. Ic *ne* seye *not*. ('I don't say.')
- b. He *ne* speketh *nawt*. ('He does not speak.')

By 1400 or thereabouts, *ne* was used infrequently and *not* (or *nawt*) typically occurred by itself after the verb.

13)

- a. I seye *not* the wordes.
- b. We saw *nawt* the knyghtes.

It was not until several centuries later that English adopted its current practice of allowing *not* to occur after only certain types of verbs (such as *do*, *have*, *will*, and so on).

14)

- a. I will *not* say the words. (versus *I will say not the words.)
- b. He did *not* see the knights. (versus *He saw not the knights.)

These changes illustrate the extent to which grammars can be modified over time. The structures exemplified in 13 are archaic by today's standards and those in 12 sound completely foreign to most speakers of modern English.

Through the centuries, those who believe that certain varieties of language are better than others have frequently expressed concern over what they perceive to be the deterioration of English. In 1710, for example, the writer Jonathan Swift (author of *Gulliver's Travels*) lamented "the continual Corruption of our English Tongue." Among the corruptions to which he objected were contractions such as *he's* for *he is*, although he had no objection to *'Tis* for *It is*.

In the nineteenth century, Edward S. Gould, a columnist for the *New York Evening Post*, published a book entitled *Good English; or, Popular Errors in Language*, in which he accused newspaper writers and authors of "sensation novels" of ruining the language by introducing "spurious words" like *jeopardize*, *leniency*, and *underhanded*. The tradition of prescriptive concern about the use of certain words continues to this day in the work of such popular writers as Edwin Newman and John Simon, who form a kind of self-appointed language police.

Linguists reject the view that languages attain a state of perfection at some point in their history and that subsequent changes lead to deterioration and corruption. As noted above, there are simply no grounds for claiming that one language or variety of language is somehow superior to another.

3.5 Inaccessibility: Grammatical Knowledge Is Subconscious

Knowledge of a grammar differs in important ways from knowledge of arithmetic, traffic rules, and other subjects that are taught at home or in school: it is largely subconscious and not accessible to introspection (that is, you can't figure out how it works just by thinking about it). As an example of this, consider your pronunciation of the past tense ending written as *ed* in the following words.

15)

- a. hunted
- b. slipped
- c. buzzed

You probably didn't notice it before, but the *ed* ending has a different pronunciation in each of these words. Whereas you say *id* in *hunted*, you say *t* in *slipped* and *d* in *buzzed*. Moreover, if you heard the new verb *flib*, you would form the past tense as *flibbed* and pronounce the ending as *d*. If you are a native speaker of English, you acquired the grammatical subsystem regulating this aspect of speech when you were a child and it now exists subconsciously in your mind, allowing you to automatically make the relevant contrasts.

The same is true for virtually everything else about language. Once we go beyond the most obvious things (such as whether words like *the* and *a* come before or after a noun), there is not much that the average person can say about how language works. For example, try explaining to someone who is not a native speaker of English why we can say *I went to school* but not **I went to movie*. Or try to figure out for yourself how the word *too* works. Notice that it sounds perfectly natural in sentences such as the following.

16)

- a. Mary ate a cookie, and then Johnnie ate a cookie too.
- b. Mary ate a cookie, and then she ate some cake too.

For some reason, though, it doesn't sound so natural in the following sentence.

17)

- *Mary ate a cookie, and then Johnnie ate some cake too.

You might think that that is because Mary and Johnnie didn't eat the same thing. But, if that's so, then why does *too* sound natural in the next sentence, even though Johnnie didn't have a cookie for his snack?

18)

Mary ate a cookie, and then Johnnie had a snack too.

Speakers of a language know what sounds right and what doesn't sound right, but they are not sure how they know.

Because most of what we know about our language is subconscious, the analysis of human linguistic systems requires considerable effort and ingenuity. As is the case in all science, information about facts that can be observed (the pronunciation of words, the interpretation of sentences, and so on) must be used to draw inferences about the sometimes invisible mechanisms (atoms, cells, or grammars, as the case may be) that are ultimately responsible for these phenomena. A good deal of this book is concerned with the findings of this research and with what they tell us about the nature and use of human language and how it is represented in the mind.

Summing Up

Human language is characterized by **creativity**. Speakers of a language have access to a **grammar**, a mental system that allows them to form and interpret both familiar and novel utterances. The grammar governs the articulation, perception, and patterning of speech sounds; the formation of words and sentences; and the interpretation of utterances. All languages have grammars that are equal in their expressive capacity, and all speakers of a language have (subconscious) knowledge of its grammar. The existence of such linguistic systems in humans is the product of unique anatomical and cognitive specialization not found in other species.

Key Terms

creativity	linguistics
descriptive (grammar)	native speakers
grammar	prescriptive (grammar)
linguistic competence	

For information on the sources used in this chapter, go to bedfordstmartins.com/linguistics/language and click on **Sources**.



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Morphology: The Analysis of Word Structure

William O'Grady
Videa de Guzman

Carve every word before you let it fall.

— OLIVER WENDELL HOLMES SR.

OBJECTIVES

In this chapter, you will learn:

- how we analyze the structure of words
- how we form words by adding prefixes, suffixes, and infixes
- how we form words by putting two or more existing words together
- how we mark words to show grammatical concepts such as number, case, agreement, and tense
- how we form words by less common means
- how the processes of word formation interact with phonology

Nothing is more important to language than words. Unlike phonemes and syllables, which are simply elements of sound, words carry meaning in addition to their phonological form. And unlike sentences, which are made up as needed and then discarded, words are permanently stored in a speaker's mental dictionary or **lexicon**. They are arguably the fundamental building blocks of communication.

The average high school student knows about 60,000 basic words—items such as *read*, *language*, *on*, *cold*, and *if*, whose form and meaning cannot be predicted from anything else. Countless other words can be constructed and comprehended by the application of general rules to these and other elements. For example, any speaker of English who knows the verb *fax* recognizes *faxed* as its past tense form and can construct and interpret words such as *faxable* (for things that can be faxed) and *fax machine* (for the device that sends and receives faxes).

Linguists use the term **morphology** to refer to the part of the grammar that is concerned with words and word formation. As we will see, the study of morphology offers important insights into how language works, revealing the need for different categories of words, the presence of word-internal structure, and the existence of operations that create and modify words in various ways.

1 Words and Word Structure

As speakers of English, we rarely have difficulty segmenting a stream of speech sounds into words or deciding where to leave spaces when writing a sentence. What, though, is a word?

Linguists define the **word** as the smallest **free form** found in language. A free form is simply an element that does not have to occur in a fixed position with respect to neighboring elements; in many cases, it can even appear in isolation. Consider, for instance, the following sentence.

1)

Dinosaurs are extinct.

We all share the intuition that *dinosaurs* is a word here, but that the plural marker *-s* is not. The key observation is that *-s* is not a free form since it never occurs in isolation and cannot be separated from the noun to which it belongs. (Elements that must be attached to another category are written here with a hyphen.)

2)

*Dinosaur are -s extinct.

In contrast, *dinosaurs* is a word since it can occur both in isolation, as in the following example, and in different positions within sentences.

3)

Speaker A: What creatures do children find most fascinating?

Speaker B: Dinosaurs.

4)

- a. Paleontologists study *dinosaurs*.
- b. *Dinosaurs* are studied by paleontologists.
- c. It's *dinosaurs* that paleontologists study.

Some words—like *are*—normally do not occur in isolation. However, they are still free forms because their positioning with respect to neighboring words is not entirely fixed. As shown by the following example, *are* can occur at the beginning of a sentence when a question is called for.

5)

Are dinosaurs extinct? (Compare: Dinosaurs *are* extinct.)

1.1 Morphemes

Like syllables and sentences, words have an internal structure consisting of smaller units organized with respect to each other in a particular way. The most important component of word structure is the **morpheme**, the smallest unit of language that carries information about meaning or function. The word *builder*, for example, consists of two morphemes: *build* (with the meaning of 'construct') and *-er* (which indicates that the entire word functions as a noun with the meaning 'one who builds'). Similarly, the word *houses* is made up of the morphemes *house* (with the meaning of 'dwelling') and *-s* (with the meaning 'more than one').

Some words consist of a single morpheme. For example, the word *train* cannot be divided into smaller parts (say, *tr* and *ain* or *t* and *rain*) that carry information about its meaning or function. Such words are said to be **simple words** and are distinguished from **complex words**, which contain two or more morphemes (see Table 4.1).

Table 4.1 Words consisting of one or more morphemes

One	Two	Three	More than three
and			
boy	boy-s		
hunt	hunt-er	hunt-er-s	
act	act-ive	act-iv-ate	re-act-iv-ate

Free and Bound Morphemes

A morpheme that can be a word by itself is called a **free morpheme**, whereas a morpheme that must be attached to another element is a **bound morpheme**. The morpheme *boy*, for example, is free because it can be used as a word on its own; plural *-s*, on the other hand, is bound.

Concepts that are expressed by free morphemes in English do not necessarily have the same status in other languages. For example, in Hare (an Athapaskan language spoken in Canada's Northwest Territories), morphemes that indicate body parts must always be attached to a morpheme designating a possessor, as shown in Table 4.2. (The diacritic ´ marks a high tone.)

Table 4.2 Some body part names in Hare

Without a possessor		With a possessor	
*fí	'head'	sefí	'my head'
*bé	'belly'	nebé	'your belly'
*dzé	'heart'	?edzé	'someone's heart/a heart'

In English, of course, these body part names are free morphemes and do not have to be attached to another element.

Conversely, there are also some bound forms in English whose counterparts in other languages are free. For example, the notion 'past' or 'completed' is expressed

Roots and Affixes

Complex words typically consist of a **root** morpheme and one or more **affixes**. The root constitutes the core of the word and carries the major component of its meaning. Roots typically belong to a **lexical category**, such as noun (N), verb (V), adjective (A), or preposition (P). These categories will be discussed in more detail in Chapter 5, Section 1.1. For now it suffices to note that nouns typically refer to concrete and abstract things (*tree, intelligence*), verbs tend to denote actions (*depart, teach*), adjectives usually name properties (*nice, red*), and prepositions generally encode spatial relations (*in, near*).

Unlike roots, affixes do not belong to a lexical category and are always bound morphemes. For example, the affix *-er* is a bound morpheme that combines with a verb such as *teach*, giving a noun with the meaning 'one who teaches'. The internal structure of this word can be represented in Figure 4.1. (The symbol *Af* stands for affix.)

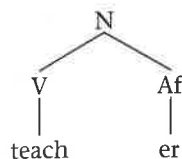


Figure 4.1 The internal structure of the word *teacher*

Figure 4.2 provides some additional examples of word structure.

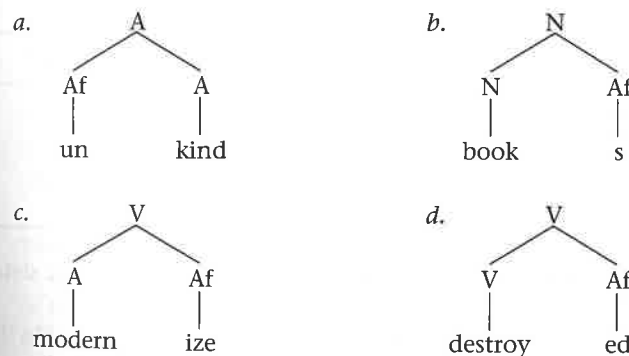


Figure 4.2 Some other words with an internal structure consisting of a root and an affix

The structural diagrams in Figures 4.1 and 4.2 are often called **trees**. The information they depict can also be represented by using labeled bracketing— $[_A [_{Af} un] [_A kind]]$ for *unkind* and $[_N [_N book] [_{Af} s]]$ for *books*. (This is somewhat harder to read, though, and we will generally use tree structures in this chapter.) Where the details of a word's structure are irrelevant to the point being considered, it is traditional to use a much simpler system of representation that indicates only the location of the morpheme boundaries: *un-kind*, *book-s*, and so on.

Bases

A **base** is the form to which an affix is added. In many cases, the base is also the root. In *books*, for example, the element to which the affix *-s* is added corresponds to the word's root. In other cases, however, the base can be larger than a root, which is always just a single morpheme. This happens in words such as *blackened*, in which the past tense affix *-ed* is added to the verbal base *blacken*—a unit consisting of the root morpheme *black* and the suffix *-en*.

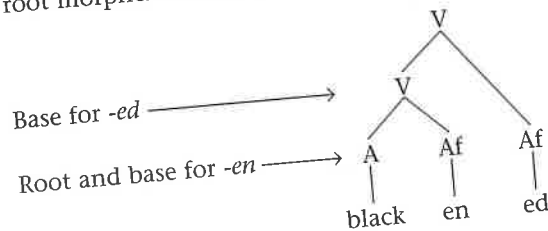


Figure 4.3 A word illustrating the difference between a root and a base

In this case, *black* is not only the root for the entire word but also the base for *-en*. The unit *blacken*, on the other hand, is simply the base for *-ed*.

Types of Affixes

An affix that is attached to the front of its base is called a **prefix**, whereas an affix that is attached to the end of its base is termed a **suffix**. Both types of affix occur in English, as shown in Table 4.3.

Table 4.3 Some English prefixes and suffixes

Prefixes	Suffixes
<i>de-activate</i>	<i>vivid-ly</i>
<i>re-play</i>	<i>govern-ment</i>
<i>il-legal</i>	<i>hunt-er</i>
<i>in-accurate</i>	<i>kind-ness</i>

We will consider the nature and properties of English affixes in more detail in Sections 2.1 and 4.1.

Far less common than prefixes and suffixes are **infixes**, a type of affix that occurs within another morpheme. The data in Table 4.4 from the Philippine language Tagalog contains examples of the infix *-in-*, which is inserted after the first consonant of the root to mark a completed event.

Table 4.4 Some Tagalog infixes

Base	Infixed form		
<i>bili</i>	'buy'	<i>b-in-ili</i>	'bought'
<i>basa</i>	'read'	<i>b-in-asa</i>	'read' (past)
<i>sulat</i>	'write'	<i>s-in-ulat</i>	'wrote'

Beginning students sometimes think that a morpheme such as *-ish* in *boy-ish-ness* is an infix since it occurs between two other morphemes (*boy* and *-ness*), but this is not right. To be an infix, an affix must occur inside another morpheme (as when *-in-* in Tagalog occurs inside *sulat* 'write'). Nothing of this sort happens in the case of *-ish*, which simply occurs between two morphemes.

A very special type of infixing system is found in Arabic, in which a typical root consists simply of three consonants. Affixes consisting of two vowels are then inserted into this root in a manner that intersperses the vowels among the consonants. (In the examples that follow, the segments of the root are written in boldface.)

9)

katab	kutib	aktub	uktab
'write'	'have been written'	'be writing'	'being written'

One way to represent the structure of such words is as follows, with the root and affix assigned to different tiers, or levels of structure, that are intercalated in the actual pronunciation of the word (see Figure 4.4).

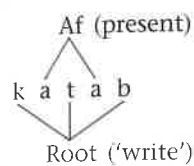


Figure 4.4 Two tiers are used to represent the structure of infixed words in Arabic

Problematic Cases

The majority of complex words in English are built from roots that are free morphemes. In the words *re-do* and *treat-ment*, for example, the root (*do* and *treat*, respectively) is a V that can appear elsewhere in the language without an affix. Because most complex words are formed from a root that can itself be a word, English morphology is said to be **word-based**.

Not all languages work this way, however. In Japanese and Spanish, for instance, verbal roots must always appear with an affix; they never stand alone as separate words.

English too has some bound roots. For example, the word *unkempt* seems to consist of the prefix *un-* (with the meaning 'not') and the root *kempt* (meaning 'groomed'), even though *kempt* cannot be used by itself. There was once a word *kempt* in English (with the meaning 'combed'), and it was to this base that the affix *un-* was originally attached. However, *kempt* later disappeared from the language, leaving behind the word *unkempt* in which an affix appears with a bound root.

Still other words with bound roots were borrowed into English as whole words. *Inept*, for instance, comes from Latin *ineptus* 'unsuited'. Its relationship to the word *apt* may have been evident at one time, but it now seems to consist of a prefix and a bound root.

Another class of words that are notoriously problematic for morphological analysis includes items such as *receive*, *deceive*, *conceive*, and *perceive*, or *permit*, *submit*, and *commit*. These items were borrowed into English from Latin (usually via French) as

whole words, and their component syllables have no identifiable meaning of their own. (The *re* of *receive*, for instance, does not have the sense of 'again' that it does in *redo*.) For this reason, we will assume that words of this type consist of a single morpheme.

An interesting fact about these forms is that although *ceive* and *mit* have no identifiable meaning, they undergo certain alternations that suggest that they have a special status in the language. For instance, the *ceive* in words like *receive* and *deceive* becomes *cept* in *receptive* and *deceptive*, while the *mit* in words like *submit* and *permit* becomes *miss* in *submissive* and *permissive*.

2 Derivation

Derivation is an affixational process that forms a word with a meaning and/or category distinct from that of its base. One of the most common derivational affixes in English is the suffix *-er*, which combines with a verb to form a noun with the meaning 'one who does X', as shown in Table 4.5. (Do not confuse this suffix with the *-er* that applies to a noun in cases such as *New Yorker* and *islander* or the *-er* that combines with an adjective in cases such as *taller* and *smarter*.)

Table 4.5 The *-er* affix

Verb base	Resulting noun
sell	sell-er
write	writ-er
teach	teach-er
sing	sing-er
discover	discover-er

Words formed by derivation exhibit the type of internal structure illustrated in Figure 4.5.

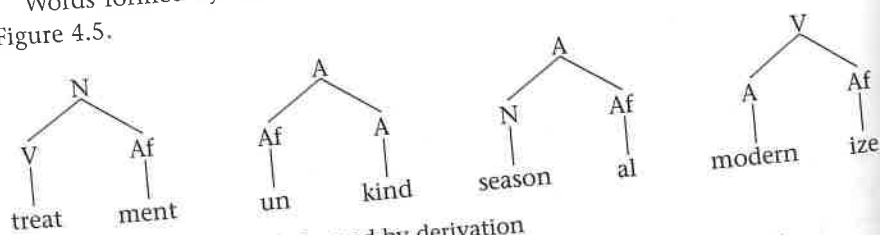


Figure 4.5 Some words formed by derivation

In each of these structures, a suffix or prefix combines with a base of a particular type to give a new word. In the case of *seller*, for instance, the suffix *-er* combines with the verb *sell* to give the noun *seller*; in the case of *unkind*, the prefix *un-* combines with the adjective *kind* to give a new adjective with a different meaning; and so on.

Once formed, derived words become independent lexical items that receive their own entry in a speaker's mental dictionary. As time goes by, they often take on special senses that are not predictable from the component morphemes. The word *writer*, for example, is often used not just for someone who can write but rather for someone who writes for a living (e.g., *He's a writer*); *comparable* (with stress on the

first syllable) means 'similar' rather than 'able to be compared'; *profession* usually denotes a career rather than the act of professing; and so on.

2.1 Some English Derivational Affixes

Table 4.6 provides a partial list of English derivational affixes, along with information about the category of their usual base (ignoring bound roots) and of the result-

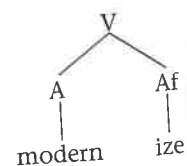
Table 4.6 Some English derivational affixes

Affix	Change	Examples
<i>Suffixes:</i>		
-able	V → A	fix-able, do-able, understand-able
-ing ₁	V → A	the sleep-ing giant, a blaz-ing fire
-ive	V → A	assert-ive, impress-ive, restrict-ive
-al	V → N	refus-al, dispos-al, recit-al
-ant	V → N	claim-ant, defend-ant
-(at)ion	V → N	realiz-ation, assert-ion, protect-ion
-er	V → N	teach-er, work-er
-ing ₂	V → N	the shoot-ing, the danc-ing
-ment	V → N	adjourn-ment, treat-ment, amaze-ment
-dom	N → N	king-dom, fief-dom
-ful	N → A	faith-ful, hope-ful, dread-ful
-(i)al	N → A	president-ial, nation-al
-(i)an	N → A	Arab-ian, Einstein-ian, Minnesot-an
-ic	N → A	cub-ic, optimist-ic, moron-ic
-less	N → A	penni-less, brain-less
-ous	N → A	poison-ous, lecher-ous
-ize ₁	N → V	hospital-ize, vapor-ize
-ish	A → A	green-ish, tall-ish
-ate	A → V	activ-ate, captiv-ate
-en	A → V	dead-en, black-en, hard-en
-ize ₂	A → V	modern-ize, national-ize
-ly	A → Adv	quiet-ly, slow-ly, careful-ly
-ity	A → N	stupid-ity, prior-ity
-ness	A → N	happi-ness, sad-ness
<i>Prefixes:</i>		
anti-	N → N	anti-hero, anti-depressant
ex-	N → N	ex-president, ex-wife, ex-friend
de-	V → V	de-activate, de-mystify
dis-	V → V	dis-continue, dis-obey
mis-	V → V	mis-identify, mis-place
re-	V → V	re-think, re-do, re-state
un ₁ -	V → V	un-tie, un-lock, un-do
in-	A → A	in-competent, in-complete
un ₂ -	A → A	un-happy, un-fair, un-intelligent

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