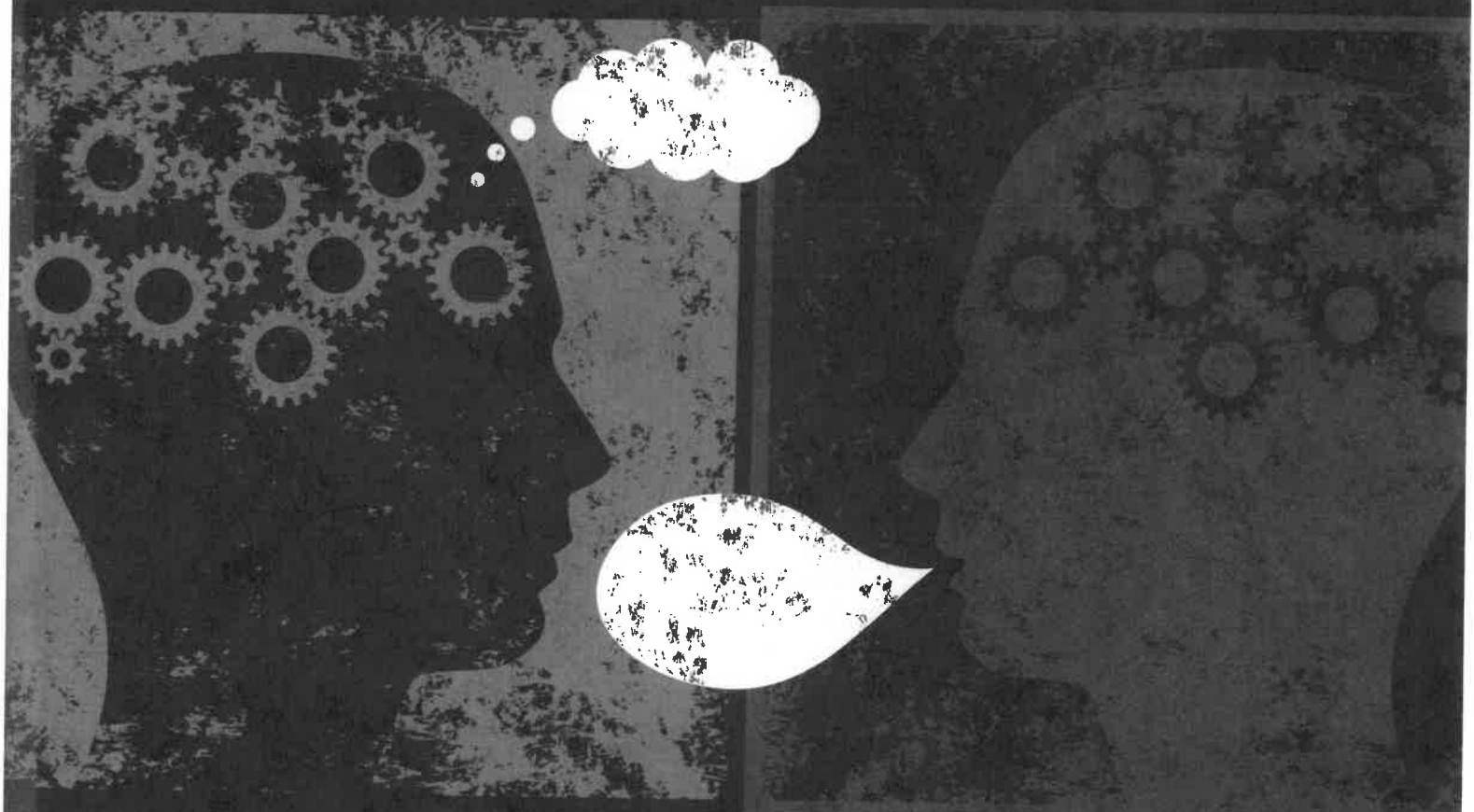
Language Files 12

TWELFTH EDITION

Materials for an Introduction to Language and Linguistics



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FILE 1.0

What Is Language?

Language touches every part of our lives: it gives words to our thoughts, voice to our ideas, and expression to our feelings. It is a rich and varied human ability—one that we can use effortlessly, that children seem to acquire automatically, and that linguists have found to be complex yet systematic and describable. In this book, language will be the object of our study.

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Introduces the study of language, discusses some facts and misconceptions about language, outlines underlying themes for the entire book, and provides information about how to get the most out of this book.

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Introduces the content of what a language user knows, outlines the communication chain and how components of linguistic structure fit into it, and introduces the idea of using descriptive generalizations to study language.

1.3 Other (Non-Essential) Aspects of Knowing a Language
Addresses writing and prescriptive rules as two aspects of language use that are common in societies but not necessary to knowing a language, and explains why they are not typically the focus of linguistic study.

1.4 Design Features of Language
Presents the particular characteristics that distinguish human language from other communication systems.

1.5 Language Modality
Introduces the differences and similarities between signed and spoken languages and discusses why studies of language and linguistics must take both modalities into account.

1.6 Practice
Provides exercises, discussion questions, activities, and further readings related to the basics of studying language.

FILE 1.1

Introducing the Study of Language

1.1.1 Why Study Language?

Language makes us uniquely human. While many species have the capacity to communicate using sounds and gestures, and a few can even acquire certain aspects of human language, no other species is comparable to humans with respect to the creativity and complexity of the systems that humans use to express thoughts and to communicate. We can manipulate elements in our language to express complex thoughts and ideas, and we can understand words and sentences that we have never spoken or heard. This capacity is shared by hearing people and deaf people, and it emerges very early in the development of children, who acquire adult linguistic competence in an astonishingly short period of time. It is the human language faculty that makes this possible. Used as a probe into the human mind, language provides us with a unique window through which we can investigate a fundamental aspect of what it is to be human.

Language also reflects one's self-identity and is indispensable for social interactions. We perform different roles at different times in different situations in society. Consciously or subconsciously, we speak differently depending on where we come from, whom we talk to, where the conversation is carried out, what purposes we have, etc. For example, southerners in America tend to speak with an accent different from, say, that of native New Yorkers; a conversation between two buddies likely would not be the same as a conversation between business associates; two lawyers would speak differently in a café than they would in a courtroom; and a middle-aged person might imitate younger speakers in order to sound younger. All languages vary, and they reflect a speaker's individual identity as well as social and cultural aspects of a society.

Not only does studying language reveal something interesting about human society, but there are also many practical applications of the study of language that can have a significant effect on people's everyday lives. For example, studying languages allows us to develop better teaching tools for language instruction, design computers that can interact with humans using language, and more effectively treat people with speech and language disorders.

1.1.2 Some Surprising but True Things about Language

You have been speaking one or more languages for most of your life, and therefore you may think that you know most of what there is to know about language. However, you will likely find some of the following facts about language surprising.

(1) Grammar is actually a much more complex phenomenon than anything that could ever be taught in school, but nevertheless every human being masters the grammar of some language.
(2) There are languages that don't have words for *right* and *left* but use words for cardinal directions (like *north* and *west*) instead (see Chapter 11).

(3) Some aspects of language appear to be innate (see Chapter 8).
(4) There are more than 7,000 languages spoken in the world, but 90% of the population speaks only 10% of them.
(5) Some languages, such as Turkish, have special verb forms used for gossip and hearsay.
(6) Many of the sentences that you hear and utter are novel; they have never been uttered before.
(7) Some languages structure sentences by putting the object first and the subject last (see Chapter 5).
(8) In some communities, such as the Al-Sayyid Bedouin tribe, all or most members of the community can use a signed language (see File 1.5).
(9) There is nothing inherent about most words that gives them their meaning; any group of speech sounds could have any meaning.
(10) There are specific structures in your brain that process language (see Chapter 9).
(11) The language you speak affects whether or not you distinguish between certain sounds.
(12) Rules like "don't split infinitives" were propagated by people in the eighteenth century who believed that English should be more like Latin.
(13) The same words in the same order don't always mean the same thing.
(14) No language is more or less logical than any other.

1.1.3 Some Common Misconceptions about Language

In addition to not knowing some of the facts in the list above, you may also have ideas about language that are not true. The following is a list of common misconceptions. It's understandable that people might have come to hold some of these beliefs, because they are often propagated throughout societies (and a few of them even have an element of truth to them); however, the scientific investigation of language has revealed them to be false.

(1) People who say *Nobody ain't done nothin'* aren't thinking logically.
(2) Swearing degrades a language.
(3) Many animals have languages that are much like human languages (see Chapter 14).
(4) Writing is more perfect than speech.
(5) The more time parents spend teaching their children a language, the better their children will speak (see Chapter 8).
(6) You can almost always recognize someone's background by the way he talks (see Chapter 10).
(7) The rules in grammar textbooks are guidelines for correct language use and should be followed whenever possible.
(8) Women tend to talk more than men (see Chapter 10).
(9) There are "primitive" languages that cannot express complex ideas effectively.
(10) People from the East Coast talk nasally (see Chapter 10).
(11) Some people can pick up a language in a couple of weeks (see Chapter 8).
(12) It's easier to learn Chinese if your ancestry is Chinese.
(13) Native Americans all speak dialects of the same language.
(14) Every language has a way to mark verbs for the past tense (see Chapter 4).
(15) Correct spelling preserves a language.

1.1.4 Underlying Themes of Linguistic Study

These two lists illustrate that there is much more to know about language than is obvious to those who use it. Human language is an enormously complex phenomenon. The task

of a **linguist** is to tease apart the patterns of various aspects of human language in order to discover how language works.

Below is a list of some very general principles of human language that will be explained and illustrated throughout this book. We present them here not because we expect you to see the full significance of each of these ideas all at once, but rather because they are underlying themes in the study of linguistics and will come up repeatedly throughout the book. During your studies, you may find it useful to refer to this list to see how these ideas interact with the topic that you are currently studying.

(1) Language is systematic in spite of its enormous complexity, and it can therefore be studied scientifically.
(2) Not only is language systematic, but it is systematic on many levels, from the system of individual sounds to the organization of entire discourses.
(3) These systematic rules allow us to express an infinite number of ideas in an infinite number of ways.
(4) Language varies systematically from person to person, region to region, and situation to situation. There is variation at every level of structure.
(5) Languages are diverse, often astonishingly so.
(6) Despite this diversity, there are a great many universal properties of languages. That is, there are characteristics shared by all languages as well as characteristics that no language has.
(7) Many properties of language are arbitrary, in the sense that they cannot be predicted from other properties or from general principles.
(8) Although a great many complex rules govern our speech, we are no more aware of them than we are of the principles that govern walking or picking up an object.
(9) Children acquire language without being taught; language acquisition is (at least partly) innate.
(10) All languages change over time, whether speakers desire change or not.

This book will introduce you to some of the properties of language and basic principles of the study of linguistics. We hope to lead you to examine your own beliefs and attitudes about language, to make you more aware of the diversity of language systems as well as their fundamental similarities, and to introduce you to some of the applications of linguistic investigation. The study of language and linguistics will not disappoint the challenge seekers, the scientific investigators, or those who are simply inquisitive.

1.1.5 How to Use This Book

Here are some helpful hints on how to use this book. Note that a guide to the general symbols used throughout the book is provided immediately after the table of contents on p. ix, and the full chart of the International Phonetic Alphabet (IPA) is given at the end of the book on p. 743, with the two preceding pages giving the IPA for Standard American English along with example words for each sound.

This book is structured as modularly as possible so that the various chapters and files can be used in different orders to best fit the needs of any individual class. Note the following about each chapter's structure: the first file is a very basic introduction to the topic of the chapter and includes an expanded table of contents. The last file in each chapter contains various practice materials for use by students and instructors: exercises, discussion questions, activities, and further readings are given, with a section of such practice materials devoted to each individual file within the chapter. A few example exercises, marked with a thumbs-up icon  , have answers provided in the Appendix found at the back of the book.

FILE 1.2

What You Know When You Know a Language

1.2.1 Linguistic Competence and Linguistic Performance

As a speaker of English (or any other language that you may be a speaker of), you know a great deal about your language. Suppose, however, that someone were to ask you to put all of that knowledge into a textbook that would be used to teach English to others. You would soon find that although you know perfectly well how to speak English, you are not consciously aware of most of that knowledge.

If you think about it, we are really unaware of many of the things we do every day. For example, most people know how to walk and do so without thinking about it. Most of us can describe walking as well: we pick up one foot and put it in front of the other. However, there are many nuances and individual motor tasks involved in walking that we don't ever think about and that only a very small set of people (kinesiologists, for example) understand: exactly how you shift your balance between steps, how speed affects your stride, and so on. You modulate these things all the time when you walk without thinking about them, and very few people know exactly how they do so. The same holds true for our knowledge of language: for the most part, it is hidden. Linguists are interested in this "hidden" knowledge, which they refer to as **linguistic competence.**

Not all of your knowledge about **language** is hidden, however. People reveal some of their knowledge through their linguistic **performance**—the way that they produce and comprehend language. You can think of linguistic competence as a person's unseen potential to speak a language, while linguistic performance is the observable realization of that potential: our performance is what we do with our linguistic competence. Put another way, your linguistic competence is stored in your mind, and your linguistic performance is revealed in your speech (though keep in mind that revealing it does not mean that we are conscious of how it works).

Consider again the case of walking. If you are able to walk, you have the ability to do so even when you are sitting down (and not actively using it). That ability is your walking competence. When you stand up and walk across the room, that's walking performance. Now, suppose that you stumble or trip on occasion. That doesn't mean that you aren't a competent walker: you still have your walking competence, but your performance was impaired. Maybe you just weren't paying attention to where you were going, or the ground was uneven, or it was dark and you couldn't see clearly, or perhaps there was nothing unusual at all but for some reason you simply lost your balance. In the same way, you may make **performance errors** when you use language, such as being unable to remember a word, mispronouncing something, or jumbling the words in a sentence. Sometimes there is an apparent reason: you may be tired or distracted, or you may be trying to produce a particularly difficult utterance. Other times, however, there is no apparent reason at all: you simply make a mistake. Nonetheless, you still have your linguistic competence.

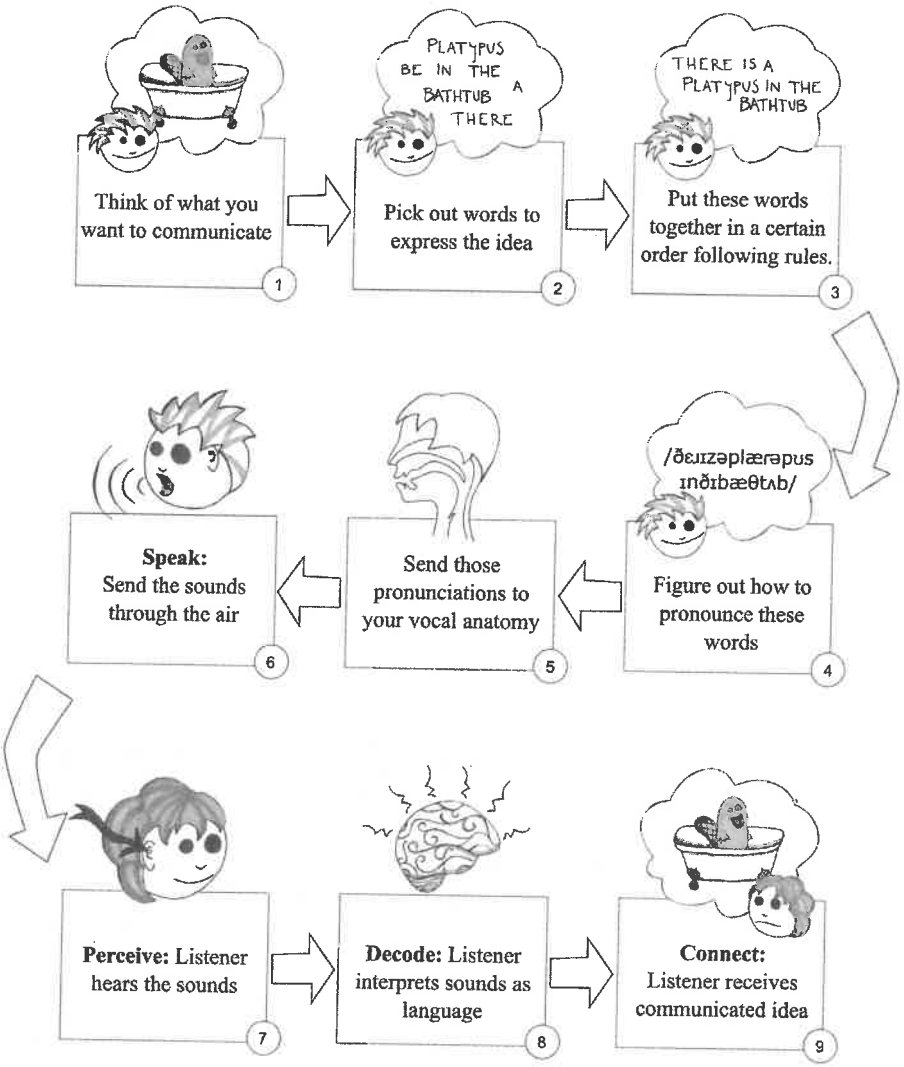
Since competence can't be observed directly, linguists must use linguistic performance as a basis for making hypotheses and drawing conclusions about what linguistic competence must be like. However, in most cases they try to disregard imperfections in perfor-

mance (the inevitable speech errors, incomplete utterances, and so on) and focus on consistent patterns in their study of linguistic competence.

1.2.2 The Speech Communication Chain

When you use language, you use it to communicate an idea from your mind to the mind of someone else. Of course, language is not the only way to do this; there are many types of communication systems, such as honking a horn on a car, drawing a picture, screaming wordlessly at the top of your lungs, or using semaphore flags. The key elements in any communication system (as outlined by Claude Shannon and Warren Weaver in 1949) are an information source, a transmitter, a signal, a receiver, and a destination. When we use language as our communication system, one person acts as the information source and the transmitter, sending a signal to another person, who acts as a receiver and the destination. In order to act either as the source and transmitter or as a receiver and destination, you must know a lot about your language. The diagram in (1) outlines the **communication chain** as it relates to language.

(1) The speech communication chain



This illustration shows the numerous steps that must be carried out in order for an idea to be communicated from one person to another. First, an idea of something to be communicated must be thought of; this is not necessarily a function of language per se, but it is certainly the first step in communicating any idea. Once the idea is there, you have to put the idea into words that have the meaning you want to communicate and that are expressed in a particular way. These steps form the backbone of much of traditional linguistic research. Note that these first four steps represent the "information source" in the communication system. Step 5 is the transmitter; in this step, the speaker actually gives physical expression to the idea of the message to be conveyed. Step 6 is the signal itself. Here, the sounds generated by the speaker travel through the air to the listener. The listener acts as the receiver in step 7, sensing the sound signal and sending it to her own brain. Step 8 in the diagram is particularly simplified, in that it really encompasses steps 2–4 in reverse. That is, to "decode" the signal that has been perceived and to interpret the signal as language, the listener must understand and break down the order of words (and parts of words) and what the words mean. Finally, step 9 represents the destination: the listener has received the communicated idea.

Note that in the diagram, the listener in fact receives exactly the same idea that the speaker tried to convey. This, as you have probably experienced, is an idealization: in real life, the listener doesn't always get the right message. All of these steps take place in a particular context that can either add to the ability of all participants to understand the communication or interfere with the success of the communication (interference in the chain is known as **noise**).

The diagram in (1) is rather simplified in terms of how it summarizes each step; the rest of this book will go into far more detail about how each part of this communication chain works with respect to language. However, the next section briefly explains each part, showing you what it is that you know when you know a language. As you read about each component, try to think about where it fits into the diagram of the speech communication chain.

1.2.3 What You Know When You Know a Language

One of the most basic things that you know when you know a language, assuming that you use spoken language, is speech sounds. (If you use a signed language, you know a great deal about speech gestures in an analogous way. For information about the difference between spoken and signed languages, refer to File 1.5.) First, you know which sounds are speech sounds and which sounds are not; if you hear a dog bark or a door slam, you will not confuse it with the sounds of language. You also know which speech sounds are sounds of your language as opposed to some other language. Not only do you hear and recognize these sounds, but you also know how to produce them, even though you may have never had to think about the mechanics of doing so. Suppose you had to explain the differences between the vowels in the words *bat, beat,* and *boot.* You have probably been producing these sounds for years without thinking twice about them, but clearly you do have competent knowledge of how to do so. All of this knowledge has to do with the area of language known as **phonetics** (discussed in Chapter 2).

You have more knowledge than this about the sounds of your language, though: you also know how these sounds work together as a system. For instance, you know which sequences of sounds are possible in different positions. In words like *pterodactyl* or *Ptolemy,* English speakers normally do not pronounce the /p/ because /pt/ is not a sound combination that can occur at the beginning of English words. There is nothing inherently difficult about the sequence; it occurs in the middle of many English words such as *captive.* And in other languages, such as Greek, /pt/ appears at the beginning of words. This language-specific knowledge about the distribution of speech sounds is part of your **phonology** (discussed in Chapter 3). Your knowledge of phonology allows you to identify that *spaff* and

blig could be possible words of English but that *fsap* and *libg* could not. Additionally, phonology allows you to recognize sounds and words spoken by different speakers, even though most people do not pronounce them in exactly the same way.

For the most part, speech consists of a continuous stream of sound; there are few if any pauses between words. Speakers of a language, however, have little trouble breaking this stream of sound down into words. For example, an English speaker can easily analyze the sequence in (2a) as containing the individual words in (2b); this is what we must do all the time when we hear speech.

(2) a. thedogisplayinginthebackyard
b. the dog is playing in the back yard

You also know how to break individual words down into smaller parts that have a particular meaning or function (how many parts are there in the word *unbelievability*?), and how to create words by combining these smaller parts. That is, you can both produce and comprehend newly composed words that you haven't heard before, for example, *ungiraffelike*. You also know which combinations are words and which ones aren't: *baker* is a word, but **erbake* is not. *Nicely* is a word, but **bookly* is not. (The * is used to mark that something is ungrammatical—in this case, it indicates that these are not possible words of English.) Your knowledge of these and other facts about word formation comprises your knowledge of **morphology** (discussed in Chapter 4).

You also know a great deal about your language's **syntax** (discussed in Chapter 5): how words combine to form phrases and sentences. This fact is evidenced by your ability to construct and use sentences that you have never heard before, and to recognize when a sentence is well-formed.

(3) a. I will pick the package up at eight o'clock.
b. At eight o'clock, I will pick up the package.
c. *Package up pick at o'clock will the eight I.
d. *I will picks the package up at eight o'clock.

In (3) above, sentences (a) and (b) are both **grammatical,** even though they have different word orders. On the other hand, (c) and (d) are **ungrammatical:** (c) is nonsense, and (d) violates a rule of verb agreement. It's possible that you have thought at some point about the fact that verbs must agree with their subjects and that random orderings of words don't make sentences. But what about the sentences in (4)?

(4) a. I have a cup of pebbles.
b. *I have a cup of pebble.
c. *I have a cup of gravels.
d. I have a cup of gravel.

Your internal knowledge of English syntax gives you the information necessary to know that (4a) and (4d) are grammatical while (4b) and (4c) are not, although it is likely (especially if you are a native speaker of English) that you have never thought explicitly about this fact.

Another part of your linguistic competence has to do with your ability to determine the meaning of sentences. When you interpret meanings, you are appealing to your knowledge of **semantics** (discussed in Chapter 6). When you hear a word, such as *platypus* or *green* or *dawdle,* you have some idea of a meaning that goes with that word. You know when two words mean the same thing—e.g., *sofa* and *couch*—and when one word has two (or more) meanings—e.g., *duck*. You also know how words combine together to form larger meanings.

(5) a. The green duck dawdled around the cactus.
b. The duck dawdled around the green cactus.

(6) a. The platypus ducked under the sofa.
b. The sofa ducked under the platypus.

Each of the two sentences in (5) contains the same words, yet they have different meanings. The same is true of the pair of sentences in (6), but here the second seems semantically anomalous, because part of your knowledge of English semantics includes the fact that a sofa is not the sort of thing that is able to duck.

Your understanding of the meaning of sentences also involves an understanding of how the context of those utterances influences their meaning. Suppose that, while you are sitting in class, your instructor says to you, "Can you close the door?" Taken quite literally, you have been asked a yes-no question about your door-closing abilities, but you would probably not even think of interpreting the question in that way; instead, you would understand it as a request to close the door. Your ability to use context in order to interpret an utterance's meaning is part of your knowledge of **pragmatics** (discussed in Chapter 7). Your knowledge of pragmatics also helps you figure out which utterances are appropriate or inappropriate in any given situation.

Each of these elements of language—phonetics, phonology, morphology, syntax, semantics, and pragmatics—is part of your linguistic competence and is therefore an integral part of the way that you communicate linguistically. These are the things that you know when you say that you know a language.

1.2.4 How Your Linguistic Competence Is Stored

Now that we have considered some of the kinds of knowledge involved in knowing a language, it is appropriate to give some thought to the question of **where** this knowledge is. This is a difficult question to answer, because although people produce language all the time, it isn't tangible. If I make a hammer, then afterwards I can pick it up and show it to you. I cannot, on the other hand, show you a sentence that I have created. That sentence exists only in my mind (and, after I have uttered it, it exists in your mind as well). Although I may write it down, the string of letters that appears on the page is only a visual representation of the sentence: it isn't the sentence itself (a concept that will be further elaborated on in File 1.3). So where does language exist? It exists only in the minds of its speakers. In some ways, you can think of your linguistic competence not only as your ability to use language but also as being language itself!

There are two parts of this knowledge. The first part is called the **lexicon**, which consists of the collection of all the words that you know: what functions they serve, what they refer to, how they are pronounced, and how they are related to other words.

The second part of your knowledge is made up of all the **rules** you know about your language, which are stored in the form of a **mental grammar**. A word of caution may be in order here: The words *grammar* and *rule* mean something rather different to a linguist than they do to most people in casual conversation (for more on the common understanding of the term *grammar,* see File 1.3). For a linguist, a **grammar** is a language system. It is the set of all the elements and rules (about phonetics, phonology, morphology, syntax, and semantics) that make up a language. A rule, then, is just a statement of some pattern that occurs in language. The rules in your mental grammar help you to produce well-formed utterances and to interpret the utterances of others.

The rules in your mental grammar are not necessarily the sorts of rules that are written down or taught anywhere; rather, they are the rules in your head that tell you how to combine sounds and words to create well-formed utterances. In the first years of their lives,

children work very hard to acquire these rules by paying attention to the language being used around them. All humans (excepting those with the most severe cases of mental retardation or significant brain damage) are capable of acquiring the language that they are exposed to as children, and they will do so naturally, without being taught. In Chapter 8, we will discuss **language acquisition** and how children go about constructing mental grammars of their native languages.

Although everyone becomes a fully competent speaker of their native language, with a complete mental grammar that allows them to communicate effectively with other people in their speech community, the details of mental grammars do vary among speakers. Variation occurs among speakers from different language and dialect groups and even among speakers of the same dialect. No two speakers have exactly the same mental grammar, and therefore no two speakers will find exactly the same set of sentences well-formed. However, our mental grammars are similar enough that we disagree very seldom and are able to understand one another most of the time. More information about **language variation** can be found in Chapter 10.

In sum, your linguistic competence is stored in a lexicon and a mental grammar, which you access in order to both produce and comprehend utterances. Though you may not be actively aware of all of the linguistic knowledge that you have stored away, you nonetheless use it all the time; it forms the backbone of the communication chain.

1.2.5 Uncovering and Describing What You Know

One of the jobs of linguists is to figure out all of the hidden knowledge that speakers have stored in their mental grammars: to objectively describe speakers' performance of language and, from their performance, to deduce the rules that form the speakers' competence. This process is analogous to a situation in which you see nurses, doctors, ambulances, and people in wheelchairs coming from a building you are unfamiliar with, and you hypothesize that the building is a hospital. You use the evidence you can see in order to draw conclusions about the internal structure of what you cannot see.

In order to discover the internal structure of language—that is, the lexicon and the mental rules—linguists must first describe language as it is used. This involves listening to spoken language, finding generalizations, and then making descriptive statements about what has been observed. For example, a linguist describing English might make the observations in (7).

(7) Examples of descriptive observations about English
   a. The vowel sound in the word *suit* is produced with rounded lips.
   b. The sequence of sounds [bɪt] is a possible word in English.
   c. The plural of many nouns is the same as the singular but with an *-s* at the end.
   d. Adjectives come before the nouns they describe: *green shirt,* not **shirt green.*
   e. The words *sofa* and *couch* mean roughly the same thing.

These generalizations and others like them describe what English speakers do. By analyzing such collections of generalizations, known as **descriptive grammars**, linguists can begin to determine what the mental grammar must consist of. That is, a mental grammar contains all of the rules that an individual speaker uses to produce and comprehend utterances, while a descriptive grammar contains the rules that someone has deduced based on observing speakers' linguistic performance.

FILE 1.3

Other (Non-Essential) Aspects of Knowing a Language

1.3.1 What Language Inherently Is and Is Not

In File 1.2, we talked about what it means to know a language: anyone who knows a language has a vast amount of mental knowledge, or competence, about how to use this language to communicate ideas. But there are a number of non-essential aspects of language common in societies that are often so closely linked with language use that they sometimes cloud the issue of what it means to say that someone knows a language.

Two of those aspects—writing and prescriptive grammar—are discussed in this file. Our goal is to help you see that, while these topics are both interesting and related to knowledge of language, they are not a fundamental or necessary part of "what you know" when you know a language, and thus are not central to the study of linguistics. For this reason they are not a primary focus of this book (though see Chapter 15 for a discussion of writing systems), and it will be useful for you as readers and students to regularly remind yourself of this, since writing and prescriptive rules often have a prominent role in other classes about language(s).

1.3.2 Writing Is Secondary to Speech (And Not Necessary for Knowledge of a Language)

Speaking and signing, on the one hand, and writing, on the other, are two different forms of communication that serve different functions, though both are related to language. Neither is superior or inferior to the other—writing is not a more perfect way of communicating through language. Language, as we saw in File 1.2, consists of the knowledge in speakers' minds; this knowledge is made up of a lexicon and a mental grammar. In order to reveal their knowledge of language, speakers must perform it in some way. While speech and writing are both expressions of linguistic competence, speech is a more immediate (and typically the primary) manifestation of language. One of the basic assumptions of modern linguistics (as opposed to linguistics before the beginning of the twentieth century), therefore, is that speech—whether spoken orally or signed manually (see File 1.5)—is the primary object of linguistic study.

Writing is the representation of language in a physical medium different from sound. Both spoken language and writing encode thought into forms that allow those thoughts to be communicated to others. At some level, one could think of speech as an immediately physically transmittable form, while writing is a physically preservable form. Modern technology has blurred this distinction, however, since one can (almost) immediately transmit writing (e.g., text messaging, email, Internet chat), and speech can easily be physically preserved through audio- and video-recording. But writing adds another step to the process of communication: a person thinks of an idea, expresses it using mental grammar, and then has to transfer it to written form. All units of writing, whether letters or characters, are based on units of speech, e.g., words, morphemes, syllables, or sounds (more on writing systems will be discussed in Chapter 15): so, for a thought to be written, it must first be processed

by the speech system and then put into writing. This last step no longer necessarily requires a person (the speaker or the transcriber) to put the ideas into writing—many people have phones and computers that can automatically transcribe speech (see Chapter 16)—but the extra step is still there, and it is usually necessary to check the results of such programs for errors and to make corrections, as we all know.

Because linguists' goal is to understand mental language competence using performed language, it makes sense to get as close to the original as possible. So when linguists study language, they typically take the spoken language as their best source of data and their object of description (except in instances of languages like Latin, for which there are no longer any native speakers and the written form **is** thus the closest they can come; see also File 16.5 on corpus linguistics). Our primary concern throughout this book is therefore with spoken language. While ideally we would prefer to give all of our examples in audio form to make this point clearer, for practical reasons we instead use conventional written transcriptions of the audio form, with the understanding that it is always the spoken form that is intended (the conventions used for specifically phonetic transcription are given in Chapter 2; other transcriptions where the phonetic details are not at issue follow standard writing or transliteration conventions for the languages involved). But do pay special attention to the icons that appear throughout the text, which often indicate that recordings of these examples are available (see File 1.1.5).

There are several additional reasons why speech is considered a more basic form of language than writing. The most important ones are the following:

a. Writing must be taught, whereas spoken language is acquired naturally. All children (except children with serious learning disabilities) naturally learn to speak the language of the community in which they are brought up. They acquire the basics of their native language before they enter school, and even if they never attend school, they become fully competent speakers. Spoken languages can even develop spontaneously in societies where a full language does not exist (see File 8.1). All writing systems must be taught explicitly.

b. Writing does not exist everywhere that spoken language does. This may seem hard to imagine in our highly literate society. But the fact is that there are still many communities in the world where a written form of language is not used. According to SIL International, among the approximately 7,100 languages in the world today, an estimated 3,535 languages (or 50%) are unwritten (*Ethnologue,* Lewis et al. 2015). Note that this estimate says nothing about literacy percentages or fluency, but only whether a writing system exists. Even in cultures that use a writing system, there are individuals who do not learn the written form of their language. In fact, the majority of human beings are illiterate, though quite capable of spoken communication. However, no naturally occurring society uses only a written language with no spoken form.

c. Neurolinguistic evidence (studies of the brain "in action" during language use) demonstrates that the processing and production of written language is overlaid on the spoken language centers in the brain. Spoken language involves several distinct areas of the brain; writing uses these areas and others as well.

d. Writing can be edited before it is shared with others in most cases, while speech is usually much more spontaneous. This is further evidence of the immediacy of speech as a communication signal, compared to the delayed nature of writing.

e. Archeological evidence indicates that writing is a later historical development than spoken language. Writing was first used in Sumer (modern-day Iraq) about 6,000 years ago. The Sumerians probably devised written characters for the purpose of maintaining inventories of livestock and merchandise. As far as physical and cultural anthropologists can tell, spoken language, by contrast, has probably been used by humans for hundreds of thousands of years.

The reason why we want to be clear on this point is that there is often a misconception that writing is more perfect than speech, or that it is more appropriate to study written language than spoken. Part of this is simply due to the fact that written language is the focus of many language classes throughout elementary, primary, and secondary education, whether language arts, grammar, composition, literature, or even foreign languages. Note, however, that the goals of these classes are quite different from those of linguistic study. In addition, writing can seem more correct and more stable, in contrast to speech, which can be careless, corrupted, and susceptible to change. Some people even go so far as to identify "language" with writing and to regard speech as a secondary form of language used imperfectly to approximate the ideals of the written language. What gives rise to the misconception that writing is more perfect than speech? There are several reasons for this misconception, some of which ironically are the same as the ones listed above:

a. Writing can be edited, and so the product of writing is usually more aptly worded and better organized, containing fewer errors, hesitations, pauses, filler words, false starts, and incomplete sentences than are found in speech. This "perfection of writing" can be explained by the fact that writing is often the result of deliberation, correction, and revision, while speech is the spontaneous and simultaneous formulation of ideas; writing is therefore less subject to the constraint of time than speech is. (Think back also to the distinction between linguistic competence and linguistic performance discussed in File 1.2.1.)

b. Writing must be taught and is therefore intimately associated with education and educated speech. Since the speech of the educated is more often than not perceived as the "standard language," writing is associated indirectly with the varieties of language that people tend to view as "correct." However, the association of writing with the standard variety is not a necessary one. Some writers attempt to transcribe faithfully the speech of their characters, as in Zora Neale Hurston's *Their Eyes Were Watching God* or Harper Lee's *To Kill a Mockingbird,* among many others. In addition, "nonstandard" language is very common in texting, Internet memes, tweeting, blog and discussion board posting and commenting, emailing, etc., which for many people make up a large proportion of the written language to which they are exposed daily.

c. Writing is more physically stable than spoken language, which consists of nothing more than sound waves traveling through the air and is therefore ephemeral and transient, if it is not captured by audio- or video-recording. Writing tends to last, because of its physical medium (characters on some surface, in its basic form) and can be preserved for a very long time. Spelling, especially in the modern era, does not seem to vary from individual to individual or from place to place as easily as pronunciation does. Thus writing has the appearance of being more stable. (Of course, spelling does vary, as exemplified by the official differences between the American ways of spelling, for example, *gray, color,* and words with the suffix *-ize,* and the British spellings *grey, colour,* and *-ise;* spelling variation is again also seen frequently in Internet-based written language.) Writing could also change if it were made to follow changes in speech. The fact that people at various times try to carry out spelling reforms amply illustrates this possibility. (For instance, *through* is sometimes spelled as *thru,* or *night* as *nite,* to reflect their modern pronunciations more closely.)

While these characteristics of writing may make it seem more polished and permanent at times, they clearly do not make it a more primary indication of a speaker's linguistic competence. It is for these reasons that linguists focus on spoken language as the object of their study and why we say that writing is a non-essential aspect of knowing a language. Even so, writing relates to language in fascinating ways, which will be discussed in Chapter 15.

1.3.3 Language Is Not Prescriptive Grammar

We said in File 1.2 that part of knowing a language is having a system of rules about phonetics, phonology, morphology, syntax, semantics, and pragmatics that tell you how to combine sounds and words into well-formed, meaningful utterances that someone else can understand. Linguists try to discover these mental rules by observing, describing, and analyzing speech as it is performed.

There are, therefore, several uses of the term *grammar* that need to be clarified. Linguists recognize at least three distinct things called "grammar": (a) what the linguist is actually trying to understand—the mental grammar, whether of an individual speaker or of a group of speakers of that language variety, (b) the linguist's description of the rules of a language as it is spoken—the descriptive grammar, and (c) the socially embedded notion of the "correct" or "proper" ways to use a language—the **prescriptive grammar.**

The first two have been described in detail in the previous file and will be explored throughout the rest of this book. But the third meaning of grammar is unfortunately the most common in everyday speech, so it is worth taking the time to explain what prescriptive grammar is, and why it is not an inherent part of language and therefore not the object of our study here.

To most people, the word *grammar* means the sort of thing they learned in English class or in other language classes, when they were taught about subjects and predicates and parts of speech and were told not to dangle participles or strand prepositions. (1) shows some examples of this sort of grammar for English.

(1) Examples of prescriptive rules

a. Do not end a sentence with a preposition.
   NO: Where do you come from?
   YES: From where do you come?

b. Do not split infinitives.
   NO: . . . to boldly go where no one has gone before
   YES: . . . to go boldly where no one has gone before

c. Do not use double negatives.
   NO: I don't have nothing.
   YES: I don't have anything. I have nothing.

As you can see from these examples, prescriptive rules tell you how you "should" speak or write, according to someone's idea of what is "good" or "bad." This is why it is called "prescriptive": it is being **prescribed** like a doctor's prescription of a medicine. Of course, there is nothing inherently good or bad about any use of language; prescriptive rules serve only to mold your spoken and written English to some norm.

Notice that prescriptive rules make value judgments about the correctness of an utterance. But the rules in any individual's mental grammar are what actually exist as the foundation of language and **cannot**—by definition—be incorrect, even if they differ in some respect from the rules of the mental grammar of some other speakers of that language variety, or from general descriptive grammatical statements about the language variety as a unified entity. Descriptive grammatical statements, in contrast to prescriptive rules, simply describe what happens in spoken language and therefore accept the patterns different speakers use, without judgment. Descriptive grammars allow for different varieties of a language; they don't ignore a construction simply because some prescriptive grammarian doesn't like it, and they don't describe what speakers "should" or "shouldn't" do—just what

they actually do. For example, some descriptive statements of English grammar would include those in (2).

(2) Examples of descriptive grammar statements
   a. Some English speakers may end sentences with prepositions.
   b. Some English speakers may split infinitives.
   c. Some English speakers use double negatives for negation.

These descriptive statements are simply descriptions of what happens, not guidelines for what ought to happen. They provide a much closer picture of the competence of a language's speakers than prescriptive rules. After all, just like writing, prescriptive rules must be taught, and they often conflict with what native speakers of a language (who are clearly competent language users) really do. Note, however, that descriptive grammars of individual speakers or groups of speakers can differ from those of other speakers. For example, a descriptive grammar of typical Ohio State University undergraduate students would note that constructions like *The room needs painted* are perfectly grammatical for some speakers (i.e., are produced by their mental grammars), while they are not grammatical for other speakers (i.e., their mental grammars would only produce constructions like *The room needs to be painted* or *The room needs painting*). In situations like this, people in the second group may not be sure of exactly what is meant upon first hearing something like *needs painted* or may think that it results from a performance error on the part of the speaker, but if those people continue to hear such constructions on a regular basis, their mental grammars will adapt to processing and understanding this construction, and may eventually add a rule to allow them to produce the construction (and vice versa, for speakers in the first group). So a descriptive statement like "Constructions like *needs painted* are grammatical for some speakers, even though they are ungrammatical for me" is merely describing a situation of differences between mental grammars, with no judgment of intrinsic correctness, and is fundamentally different from a prescriptive rule that says "Constructions like *needs painted* are never correct in English; one should say *needs to be painted* or *needs painting* instead."

If prescriptive rules such as those in (1) are not based on actual use, how did they arise and become so familiar to many speakers of English? In many cases, these rules were formulated by people on the basis of something other than the actual language being spoken around them. During the seventeenth and eighteenth centuries, scholars became preoccupied with the art, ideas, and language of ancient Greece and Rome. The classical period was regarded as a golden age and Latin as the perfect language. The notion that Latin was somehow better or purer than contemporary languages was strengthened by the fact that Latin was by then strictly a written language and had long ceased to undergo the changes natural to spoken language. For many writers of the seventeenth and eighteenth centuries, the rules of Latin became, whenever remotely feasible, the rules of English. The rules in (1a) and (1b) above result from this phenomenon.

With regard to (1a), speakers of English have been freely ending sentences with prepositions since the beginning of the Middle English period (about 1100 C.E.). There are even some instances of this construction in Old English. In modern English, speakers who attempt to avoid it often sound stilted and stuffy (e.g., see the quote, some variation of which is often attributed to Winston Churchill, rejecting this rule: *This is the sort of English up with which I will not put*). The fact that ending sentences with prepositions is perfectly natural in English did not stop seventeenth-century poet, playwright, and literary critic John Dryden from forbidding it, because he found it to be non-Latin. His rule has been with us ever since.

Concerning the rule in (1b), English has had a two-word infinitive composed of *to* plus an uninflected verb (e.g., *to write*) since the early Middle English period as well. English speakers have always been able to split this two-word infinitive by inserting words (usually adverbs) between *to* and the verb (e.g., *to quickly write*). There have been periods in English literary history when splitting infinitives was very fashionable. However, eighteenth-century grammarians noticed that Latin infinitives were never split. Of course, it was impossible to split a Latin infinitive because it was a single word (e.g., *describere* 'to write down'). But that fact did not prevent the early grammarians from formulating this as another prescriptive rule of English grammar.

The double negative rule (see (1c)) has a different source. In Old and Middle English, double and triple negatives were common, and even quadruple negatives were used, usually for the purposes of emphasis. The sentence in (3) from Old English illustrates this. It contains two negative words and was entirely grammatical.

(3) The use of the double negative in Old English

ne	bið	ðær	**nænig**	ealo	gebrowen	mid	Estum
not	*is*	*there*	*not-any*	*ale*	*brewed*	*among*	*Estonians*

'No ale is brewed among the Estonians.'

By Shakespeare's time, however, the double negative was rarely used by educated speakers, although it was still common in many dialects. In 1762, Bishop Robert Lowth attempted to argue against the double negative by invoking rules of logic: "Two negatives in English destroy one another or are equivalent to an affirmative" (204). Of course, language and formal logic are different systems, and there are many languages, such as Russian and Spanish, in which multiple negation is **required** in some cases for grammaticality. Certainly no one misunderstands the English-speaking child or adult who says, "I don't want none." Lowth ignored the fact that it is **usage,** not logic, that must determine the descriptive rules of a grammar—but his prescriptive rule has persisted in classrooms and "grammar" books to this day.

Again, it may well be true for many speakers that their mental grammars do not have rules that produce double negatives (particularly in formal speech or writing), but for many other individual speakers and speakers of certain dialects of English, such constructions are perfectly regular, and there is certainly nothing inherent to English or any other language that would rule out constructions like this as being necessarily ungrammatical, which is how prescriptive rules often present the situation.

You may think it somewhat surprising that rules that do not reflect actual language use should survive. One of the most important reasons that they do survive is that such rules are associated with a particular social status. Nonstandard dialects are still frowned upon by many groups and can inhibit one's progress in society: for example, trying to get a job while speaking with a nonstandard, stigmatized dialect may be difficult. The existence of prescriptive rules allows a speaker of a nonstandard dialect to explicitly learn the rules of the standard dialect and employ them in appropriate social circumstances (for more discussion of language varieties, see Chapter 10). Therefore, prescriptive rules are used as an aid in social identity marking and mobility. This does not mean, however, that these judgments about dialects are linguistically valid. The idea that one dialect of a language is intrinsically better than another is simply false; from a strictly linguistic point of view all dialects are equally good and equally valid. To look down on nonstandard dialects is to exercise a form of social and linguistic prejudice. It is for these reasons that linguists do not make use of prescriptive grammars, but rather only descriptive grammars, which are used as a tool for discovering mental grammars.

In other cases, prescriptive rules arise as a reaction against, and an attempt to stop, the natural course of language change. A fact about language is that **all** living languages (i.e., those spoken natively) change (see Chapter 15), but such changes in progress are often not well received by current speakers of a language. An illustration of such a change and the reactions against it can be found in "progressive passive" constructions like modern-day English *The house is being painted today.* No grammar teacher or prescriptivist in the twenty-first century would have a problem with this sentence, but they would almost certainly frown upon a sentence like *The clock struck ten while the trunks were carrying down* (i.e., *were being carried down,* in modern English). Such a sentence would no doubt cause confusion among most English speakers and easily be judged as ungrammatical. But this sentence, which appears in Jane Austen's 1818 novel *Northanger Abbey,* was perfectly grammatical at that time, though the current way of saying such things had begun to appear a few decades earlier in English. Richard Grant Wright, in his 1882 fifth edition of *Words and Their Uses,* devotes an entire chapter to this construction, which, he says, "about seventy or eighty years ago, began to affront the eye, torment the ear, and assault the common sense of the speaker of plain and idiomatic English." He does note that "to check its diffusion would be a hopeless undertaking," but spends thirty pages discussing the history and grammatical background of this "monstrosity, [of] illogical, confusing, inaccurate, unidiomatic character," which today we consider to be completely grammatically correct. This provides a good example of how ideas about grammaticality can undergo drastic changes over time since they are not inherent to a language.

FILE 1.4

Design Features of Language

1.4.1 How to Identify Language When We Come across It

Before we discuss language in any more depth, it will be useful if we first have some idea of what people mean when they say "language." So far, we have discussed what you know when you know a language, and we have explored various commonly held ideas about language that are both true and untrue. We haven't yet defined language, though.

Defining language turns out to be a remarkably difficult task: nobody seems to be able to find a definition of *language* that captures its fundamental nature. But if we cannot define *language,* then we must come up with some other solution because we still must have some way to identify language when we come across it. One possibility is to identify the features that something must have in order to be a language. Linguist Charles Hockett designed one such list that identifies descriptive characteristics of language. While his list does not tell us the fundamental nature of language, it does tell us a great deal about what language is like and what we can do with it.

Hockett's descriptive characteristics of language are known as the **design features** of language. The list has been modified over the years, but a standard version is provided below. While there are many kinds of communication systems in the world, all of which follow some form of the communication chain outlined in File 1.2, only communication systems that display all nine of these design features can be called a "language." The order in which the design features are presented is also significant: the features proceed from most universal to most particular. All communication systems have the first three design features, while human language alone has the final two.

1.4.2 Mode of Communication

The very nature of a system of communication is that messages must be sent and received. The term **mode of communication** refers to the means by which these messages are transmitted and received. For most human languages, speakers transmit messages using their voices; however, a significant number of human languages are also transmitted gesturally—via hand, arm, head, and face movement. Both are viable systems for transmitting the complex sorts of messages required of language. Language **modality** will be discussed in considerably more depth in File 1.5.

1.4.3 Semanticity

Another aspect of language that is universal across all communication systems is **semanticity.** Semanticity is the property requiring that all signals in a communication system have a meaning or a function. It is critically important to successful linguistic communication that, for example, if your friend says to you "pizza," you both have a similar idea of what he is talking about. It would not be good for communication if your friend said "pizza" and you

thought, "There's that word with the /p/ sound again. Wonder why he keeps saying it all the time."

Even if you hear a word you don't know, you nevertheless assume that it must have some meaning. For example, if you heard the sentence *There was a large amount of frass in the tubes with the fruit flies,* you might not recognize the word *frass,*[1] but you would not assume that it was meaningless. If words or sentences didn't have meaning, then we would be unable to use them to communicate!

1.4.4 Pragmatic Function

Communication systems must also have a **pragmatic function:** that is, they must serve some useful purpose. Some functions of human language include helping individuals to stay alive, influencing others' behavior, and finding out more about the world. For example, a person who needs food might use language to ask for more mashed potatoes; more dramatically, a person trapped in a burning house might stay alive by calling for help. A politician communicates certain messages to try to influence people's voting behavior. People ask questions in order to learn the information they need to get through their days.

Sometimes people may question the usefulness of a certain communicative act, for example, in the case of gossip. However, even gossip fulfills a useful purpose in societies. It helps us to understand our social environment and plays an important role in social bonding and establishing social relationships. The same is true of set phrases such as "nice weather today" or the question, "Hey, what's up?"and its typical response, "Not much. How about you?" These set phrases serve to acknowledge the other person or initiate a conversation, which are both necessary tasks for the maintenance of our social structure.

1.4.5 Interchangeability

Interchangeability refers to the ability of individuals to both transmit and receive messages. Each individual human can both produce messages (by speaking or signing) and comprehend the messages of others (by listening or watching).

1.4.6 Cultural Transmission

Another important feature of human language is that there are aspects of language that we can acquire only through communicative interaction with other users of the system. This aspect of language is referred to as **cultural transmission.** Even though children's ability to learn language seems to be innate, they must still learn all of the specific signals of their language through interaction with other speakers. In fact, a child who is never spoken to will not learn language (see File 8.1). Furthermore, children will learn the language(s) or dialect(s) that other people use to interact with them. Thus, children of Russian parents will learn Russian if their parents interact with them in Russian, but they will learn English if their parents interact with them in English. Our genetic or hereditary background in and of itself has no influence whatsoever on the language that we acquire as children.

1.4.7 Arbitrariness

a. Arbitrariness in Language. It is generally recognized that the words of a language represent a connection between a group of sounds or signs, which give the word its **form,** and a **meaning,** which the form can be said to represent. The combination of a form and

[1]The word *frass* means 'the debris or excrement of insects.'

a meaning is called a **linguistic sign**: Form + Meaning = Linguistic Sign. For example, one word for 'the inner core of a peach' is represented in English by the sounds [pɪt][2] (which we spell as <pit>), occurring in that order to give the sound (i.e., the form) that we make when we say the word *pit*.

(1) [pɪt] +  = the word *pit*

An important fact about linguistic signs is that the connection between form and meaning is typically **arbitrary**. The term *arbitrary* here refers to the fact that the meaning is not in any way predictable from the form, nor is the form dictated by the meaning. Note that there **is** a relationship between form and meaning: you don't have a different meaning in mind every time that you say [pɪt]. If there were no relationship at all, then you could say [pɪt] one time and mean 'licorice' and say it again and mean 'courageous' and say it another time and mean 'mandolin.' Clearly language doesn't work this way. This relationship is an arbitrary **convention** of English, which tells you that a certain group of sounds goes with a particular meaning.

The opposite of arbitrariness in this sense is **nonarbitrariness**, and there are some nonarbitrary aspects of language, which will be discussed below. The most extreme examples of nonarbitrary form-meaning connections, where the form represents the meaning directly, are said to be **iconic** (or "picture-like"). For linguistic signs in general, however, the connection between form and meaning is not direct, nor is it derivable from laws of nature.

b. Evidence for Arbitrariness. The fact that the inner core of a peach may be called a *stone* or even a *seed* as well as a *pit* points to arbitrariness. If the connection between the form and the meaning were nonarbitrary (because the form determined the meaning, or vice versa), there would not be many possible forms to express a single meaning. Likewise, there is nothing intrinsic in the combination of the sounds represented by [pɪt] that suggests the meaning 'inner core of a peach'; the same sequence of sounds can represent 'a large, deep hole in the ground.'

Evidence of arbitrariness in language can also be seen in cross-linguistic comparisons. Words with the same meaning usually have different forms in different languages, and similar forms usually express different meanings, as the examples in (2) illustrate. If there were an inherent, nonarbitrary connection between forms and meanings, with the meaning being determined by the form or vice versa, then such cross-linguistic differences should not occur. There would be universally recognized forms for each meaning.

[2]Symbols in square brackets "[ ]" are transcriptions in the International Phonetic Alphabet (or IPA), which is a standardized set of symbols devised to indicate pronunciations for all languages. For more details, see Chapter 2 ("Phonetics") and the guides to the sounds of English and the IPA Chart on pp. 741–43.

(2) Arbitrary form-meaning connections of linguistic signs as seen cross-linguistically

Form	Meaning	Language
[wɑtɻ]	'water'	English
[o]		French
[vasɐ]		German
[søy]		Cantonese
[li]	proper name, 'Lee'	English
	'bed'	French
	'borrowed/lent'	German
	'this'	Cantonese

Finally, arbitrariness in language is shown in names for inventions and new products. For example, new cars come on the market every year. Many of them are very similar to each other: they all have four tires, a cabin that can seat some number of people, an engine, and so on. Yet despite their similarities, makes of cars have startlingly different names. Some of them are very long words while others are quite short, and they begin with all kinds of different sounds. A person naming a new car will certainly think of a sequence of sounds that she likes, but she will not be constrained in any way by the nature of the car or the nature of the sounds themselves—only by her own arbitrary preferences.

c. Onomatopoeia. It is clear that arbitrariness is the norm in language, at least as far as the basic relationship between the form of a word and its meaning is concerned. At the same time, though, it turns out that there are some nonarbitrary aspects to language. In the vocabulary of all languages, there is a small degree of nonarbitrariness involving items whose forms are largely determined by their meanings. Most notable and obvious are the so-called **onomatopoetic** (or onomatopoeic) words, i.e., words that are imitative of natural sounds or have meanings that are associated with such sounds of nature.

Examples of onomatopoetic words in English include noise-words such as *bow-wow* [bɑʊwɑʊ] for the noise a dog makes, *splat* [splæt] for the sound of a rotten tomato hitting a wall, and *burble* [bɻbl̩] for expressing the rushing noise of running water. In all of these words, the matchup between the form of the word and the meaning of the word is very close: the meaning is very strongly suggested by the sound of the word itself.

Even in such onomatopoetic words, however, an argument for arbitrariness can be found. While the form is **largely** determined by the meaning, the form is not an exact copy of the natural noise; roosters, for instance, do not actually "say" [kɑkədudl̩du]—English speakers have just arbitrarily **conventionalized** this noise in that form. Different languages can have different onomatopoetic words for the same sounds. For example, a rooster "says" [kɑkədudl̩du] in English but [kukuku] in Mandarin Chinese, even though (presumably) roosters sound the same in China and the United States. If there were an inherent and determined connection between the meaning and the form of onomatopoetic words, we would expect the same meaning to be represented by the same sounds in different languages. The table in (3), which lists eleven natural sounds represented by onomatopoetic words in nine languages, shows that this is not the case.

(3) Cross-linguistic examples of onomatopoeia (see Chapter 2 and the IPA chart in the back of the book for aid on IPA symbols)

Sound	English	German	French	Spanish	Hebrew	Hindi	Mandarin	Japanese	Greek
Dog barking	[bɑʊwɑʊ]	[vaʊvaʊ]	[wafwaf]	[waʊwaʊ]	[haʊhaʊ]	[bʰɔ̃bʰɔ̃]	[waŋwaŋ]	[wanwan]	[ɣavɣav]
Rooster crowing	[kɑkə-dudl̩du]	[kikəʁiki]	[kokoʁiko]	[kikiɾiki] or [kokoɾiko]	[kukuɣikuku]	[kukukuku]	[kukuku]	[kokekokko:]	[kikiriku]
Cat meowing	[miɑʊ]	[miaʊ]	[miaʊ]	[miaʊ]	[miaʊ]	[miaʊ]	[miaʊ]	[niaɯ]	[ɲaʊ]
Cow lowing	[mu:]	[mu]	[mə:]	[mu]	[mu]	[mũ:]	[məɹ]	[mo:mo:]	[mu:]
Sheep bleating	[bɑ:]	[mɛ:]	[bɛ:]	[be:]	[mɛ̃:]	[mɛ̃:mɛ̃:]	[miɛ]	[me:me:]	[be:]
Bird chirping	[twittwit]	[pippip]	[kɥikɥi]	[piopio] or [pippip]	[tsuitstsuits]	[ʧi:ʧi:]	[tɕitɕi]	[ʧiʧi]	[tsiutsiu]
Bomb exploding	[bum]	[bum] or [vʁum]	[bum]	[bum]	[bum]	[bʰɔɖa:m]	[bɔ̃ŋ]	[baɴ]	[bum]
Laughing	[hɑhɑ]	[haha]	[haha]	[xaxa]	[haha]	[haha]	[xaxa]	[haha]	[xaxa]
Sneezing	[ɑʧu]	[haʧi]	[aʧum]	[aʧu]	[apʧi]	[aʧũ:]	[aʔtʰi]	[hakɯʃoɴ]	[apsu]
Something juicy hitting a hard surface	[splæt]	[plaʧ]	[flɔk]	—	—	—	[pyaʔ]	[guʃaʔ]	[plats]
Clock	[tɪktɑk]	[tɪktak]	[tiktak]	[tiktak]	[tɪktak]	[tiktik]	[tiʔtaʔ]	[ʧɪktakɯ]	[tiktak]

d. Sound Symbolism. A second apparent counterexample to arbitrariness is **sound symbolism**: certain sounds occur in words not by virtue of being directly imitative of some sound but rather simply by being evocative of a particular meaning. That is, these words, or parts of these words, more abstractly suggest some physical characteristics by the way they sound. For instance, in many languages, words for 'small' and words that have smallness as part of their meaning often contain the vowel [i]. We observe this in English words such as ***teeny*** 'extra small,' ***petite*** and ***wee*** 'small,' and dialectal ***leetle*** for 'little,' in Greek ***mikros*** 'small,' and in Spanish diminutive nouns (i.e., those with the meaning 'little X') such as *perr**i**to* 'little dog,' where *-ito* is a suffix indicating 'little.' Such widespread sound symbolism—with the sound [i] suggesting 'smallness'—seems to be motivated because [i] is a high-pitched vowel and so more like the high-pitched sounds given off by small objects. Thus the use of [i] in 'small' words creates a situation in which an aspect of the form, i.e., the occurrence of [i], is influenced by an aspect of the meaning, i.e., 'smallness.' We may thus characterize the appearance of [i] in such words as somewhat nonarbitrary—the "small" vowel [i] has a connection to the meaning 'small(ness).'

e. Nonarbitrary Aspects of Language. The above examples show that nonarbitrariness and iconicity have at best a somewhat marginal place in language. At the same time, though, it cannot be denied that they do play a role in language and moreover that speakers are aware of their potential effects. Poets often manipulate onomatopoeia and sound symbolism in order to achieve a specific phonic impression in their poetry. For example, Alfred Tennyson in his poem *The Princess* utilized nasal consonants to mimic the noise made by the bees he refers to:

(4) The ***m**oa**n*** of doves i***n*** i***mm**e**m**orial el***m***s
And ***m**ur**m**uring of i***nn**u**m**erable bees (v. 11.206–7)

1.4.8 Discreteness

Consider the English sentence *He is fast.* It is not one unified sign that always appears exactly as it is. Rather, it is composed of many discrete units. First, there are the independent words *he, is,* and *fast.* These words, in turn, are composed of even smaller discrete units: the individual sounds [h], [i], [ɪ], [z], [f], [æ], [s], and [t]. The property of language (among other communication systems) that allows us to combine together discrete units in order to create larger communicative units is called **discreteness.**

Every language has a limited number of sounds, between roughly 10 and 100. English, for example, has about 50 sounds. The sounds themselves are for the most part meaningless—the sound [f] in *fish* or *foot* does not have any meaning by itself—but we can combine a very small number of sounds to create a very large number of meaningful words. For example, we can combine the sounds [f], [u], and [l] to create the word *fool*; [t], [u], and [l] to create the word *tool*; [p], [u], and [l] to create the word *pool*; [k], [u], and [l] to create the word *cool,* etc. We can then reorder the sounds in [kul] *cool* to get [klu] *clue* or [luk] *Luke.* We can thus generate a large number of meaningful elements (words) from a few meaningless units (sounds). We can further combine words into phrases and sentences. Thus, from a selection of only 100 or fewer units, we can create a very large number of meanings (an infinite number, actually). A communication system that can put pieces together in different ways has much more expressive capability than one that does not. If we were limited to only 100 or so meanings, then language would not be nearly so useful as it turns out to be!

1.4.9 Displacement

Displacement is the ability of a language to communicate about things, actions, and ideas that are not present in space or time while speakers are communicating. We can, for example, talk about the color red when we are not actually seeing it, or we can talk about a friend who lives in another state when he is not with us. We can talk about a class we had last year or the class we will take next year. We can also talk about things that do not exist, such as unicorns and fictional characters.

1.4.10 Productivity

The last of Hockett's design features is productivity, which is closely related to discreteness. **Productivity** refers to a language's capacity for novel messages to be built up out of discrete units. Note how productivity differs from discreteness. For a communication system to have discreteness, the only requirement is that there be recombinable units; however, it would be possible for there to be a fixed set of ways in which these units could combine. Indeed, some communication systems do work that way. Because language is productive, though, there is no fixed set of ways in which units can combine.

The productivity of human language grants people the ability to produce and understand any number of novel sentences that they have never heard before, thereby expressing propositions that may never have been expressed before. In fact, in any language it is possible to produce an infinite number of sentences, so many of the sentences that you hear are ones you have never heard before. For example, you probably have never read the following sentence before, but you can still understand what it means: *Funky potato farmers dissolve glass.* You understand what it means even though you may not know why the potato farmers are funky or how glass can be dissolved, and you know this even though you have never seen or heard the sentence before.

We are able to construct and understand novel forms such as this one based on the fact that the discrete units of language (sounds, morphemes, and words) can be put together in regular, systematic, and rule-governed ways. The way that you come to understand the

meaning of a new sentence is by applying what you know about the rules for how words combine in your language to the new string of words, together with the meanings of the words themselves (see Chapter 5 and File 6.4).

Rules at all levels of linguistic structure are **productive**. That is, they allow creation of new forms, tell which new forms are allowed, and tell how they can be used. The rules of language, rather than limiting us, are in fact what grant us the ability to communicate about such a broad range of ideas.

1.4.11 What the Design Features Tell Us, and What They Don't Tell Us

All languages exhibit all nine design features: any communication system that does not is therefore not a language. Furthermore, as far as we know, only human communication systems display all nine design features. (File 14.1 discusses Hockett's design features with respect to animal communication systems.)

Because all languages exhibit the nine design features, does this mean that any communication system that exhibits all nine features should be considered a language? For example, there are **formal languages,** such as the formal logic used to write mathematical proofs and various computer languages. While these formal languages display all of the design features, they nevertheless differ in critical ways from languages such as English, Spanish, Mandarin, and Apache. For example, no child could ever acquire a computer language like C++ as his native language! Furthermore, a number of people engage in constructing languages that imitate human language as a hobby. There are many reasons that people might choose to do this. For example, the created language could be used in some sort of fictional universe, such as Klingon in the television series *Star Trek* or Dothraki and Valyrian in the series *Game of Thrones*. Or it might be designed to facilitate international communication, which was the goal of the designers of the language Esperanto. Other people, such as J.R.R. Tolkien, have constructed artificial languages just for fun.

Do we want to make a distinction between languages such as English, Spanish, Mandarin, and Apache, on the one hand, and Esperanto, Elvish, Dothraki, Valyrian, and Klingon, on the other? And how should we classify "formal" languages? Although many of these questions are still open to debate and research, we will make the following distinctions for the purposes of this book. The object of our linguistic study here will be confined to what we call **natural languages,** those languages that have evolved naturally in a speech community. The lexicon and grammar of a natural language have developed through generations of native speakers of that language. A **constructed language,** on the other hand, is one that has been specifically invented by a human and that may or may not imitate all the properties of a natural language.

Some constructed languages have the potential to become natural languages, if they are learned by native speakers and adopted by a speech community. This is the case with Modern Hebrew, which was reconstructed from Ancient Hebrew and then adopted by a particular community. The distinction between constructed languages and formal languages is that formal languages are not the sort of system that a child can acquire naturally.

Because we want to confine most of our discussion to natural languages, we will often shorten the term to "language" in the rest of the book. You should keep in mind, however, that other types of language do, in fact, exist. Thus the design features help us distinguish language from other nonlinguistic communication systems, but we need more criteria to ensure that a system is a natural language and not an artificial language.