5

The Structure and Function of Phrases and Sentences: Syntax

What Do You Think?

- Classmate Clarence says we readily produce routine expressions like "What time is it?" and "Fine, thanks" because we hear them so frequently. But he wonders how many unique sentences we produce and how we understand the ones we've never heard before. What do you think?
- Sidekick Amber reports that reading Steven Pinker's *The Language Instinct* made her think about ambiguous language. She understands how a word like *bank* can mean 'savings bank' or 'bank of a river' but not how a string of unambiguous words like *new drug combinations* can mean both 'combinations of new drugs' and 'new combinations of (old) drugs.' What's your explanation?
- *Los Angeles Times* in hand, roommate Ron asks whether it's legitimately grammatical to write, "Not a drop of rain had fallen on Roanoke Island, said John Wilson." He thinks the correct grammatical form is, "John Wilson said not a drop of rain had fallen on Roanoke Island." He wants to know about the correct order of subjects, verbs, and objects. What can you tell him?
- Nerdy Ned's grammar checker in his word processor objects to nearly every passive sentence he writes. Instead of *The winning team was hobbled together by a hodgepodge of friends*, the checker recommended *A hodgepodge of friends hobbled together the winning team*. Ned claims the checker assumes all passives are bad, and he says the passive can be really useful. Is he right?

accessible follow-up to this chapter. More specialized treatments are available in Bybee (2002) and Goldsmith (1996). The speech error data are taken from Fromkin (1971), which has many more examples and is accessible at least to eager students.

References

Bybee, Joan. 2002. *Phonology and Language Use* (Cambridge, UK: Cambridge University Press).

Clark, John, Colin Yallop & Janet Fletcher. 2007. *An Introduction to Phonetics and Phonology*, 3rd ed. (Malden, MA: Blackwell).

Fromkin, Victoria A. 1971. "The Non-Anomalous Nature of Anomalous Utterances." *Language* 47, 1: 27–52.

Goldsmith, John A., ed. 1996. *The Handbook of Phonological Theory* (Malden, MA: Blackwell).

Halle, Morris & G. N. Clements. 1983. *Problem Book in Phonology* (Cambridge, MA: MIT Press).

Kaye, Jonathan. 1989. *Phonology: A Cognitive View* (Hillsdale, NJ: Erlbaum).

Roca, Iggy & Wyn Johnson. 1999. *A Course in Phonology* (Malden, MA: Blackwell).

———. 1999. *A Workbook in Phonology* (Oxford: Blackwell).

Introduction

In this chapter we explore how words are organized in phrases and sentences. We also explore the relationships between certain kinds of sentence pairs such as actives and passives and declaratives (statements) and interrogatives (questions). We investigate how a finite grammar can generate an infinite number of sentences and how the "creative" aspects of producing and understanding novel sentences are normal parts of everyone's competence.

Syntax is the part of grammar that governs the organization of words in phrases and sentences—the sentences speakers utter to make statements, ask questions, give directives, and so on. The study of syntax addresses the structure of sentences and their relationships to one another both structurally and functionally.

All languages have ways of referring to entities—people, places, things, ideas, events, and so on. The expressions used to refer to entities are noun phrases. Proper nouns like *Pam* and *Pennsylvania*, common nouns like *cows* and *calories*, and personal pronouns like *he, she,* and *them* are noun phrases. So are more complex expressions such as *Pam's mother, the star of the show, a jaunty juggler from Jersey,* and *that feisty federal judge in Massachusetts who was nominated by Obama in 2011.* All are referring expressions; all are noun phrases. What are called referring expressions when speaking about function are called noun phrases when speaking in syntactic terms.

From a functional perspective, expressions such as *married a butcher* and *bought an iPad* are predicates or predications, but from a syntactic point of view, they're verb phrases. Languages differ from one another in many ways, but languages generally rely on noun phrases as referring expressions and verb phrases as predicates.

A simple sentence—sometimes called a **clause**—contains a verb and, at a minimum, any other expressions required by the verb as part of its structural characteristics. In chapter 2 we discussed subcategories of verbs and the fact that speakers of a language know—subconsciously at least—the kinds of clause structure permitted by each familiar verb. We noted that some verbs require a noun phrase complement, as in *Britney bought a new raincoat.* But others do not permit a noun phrase complement, so English speakers can say, *Danny tripped* but not **Danny tripped a shoe*; they can say, *He fell into the pool* but not **He fell the pool.* From a syntactic point of view, the verb is the pivotal element in a clause, and its subcategorization determines what kinds of complements it may have. Verbs may consist of a single word, as with *bought, tripped,* and *fell,* or of several words such as those underlined in *She had hidden the key under a tree* and *His therapist should have alerted the authorities.*

Constituency

In analyzing sentences it's essential to recognize that they consist not simply of words strung together like beads on a string, one after another, but of organized groups of words called **constituents.** We saw in earlier chapters that words and even syllables have linear and hierarchical organizations, so it shouldn't be

surprising that, within a sentence, words are organized not just in their obvious linear order but also hierarchically.

Consider the sentence *The elusive poltergeist frightened Olivia's boyfriend during the night.* Plainly, it's made up of words in a particular order, and each word has sounds associated with it, so we could say that the sentence is made up of sounds (such as /d/, /u/, /r/, /ɪ/, /ŋ/) or of words (*the, elusive, poltergeist,* and so on). Though not wrong, those analyses would miss a crucial point. Describing that sentence in terms of sounds or words would be akin to describing a shopping mall in terms of steel girders, copper wires, and cement—not false but beside the point. In any analysis the aim is to identify units that are relevant to some purpose or level of organization. To characterize a shopping mall, we might want to say it comprises retail stores, restaurants, parking areas, movie theaters, and so on. We could go further and describe the composition of these constituent units and their relationship to one another. In analyzing a sentence, the relevant structural units are its constituents. So, in our sentence, we'd want to note that *the elusive poltergeist* and *Olivia's boyfriend* are unified in ways that *boyfriend during* and *during the* (word pairs that also appear adjacent to one another) are not unified; in structural terms, we'd say *boyfriend during* and *during the* are not constituents of the sentence. For the moment we rely on native-speaker intuitions in making those judgments. In the course of this chapter, we'll become more explicit about how to identify constituents.

Tree Diagrams

A useful way to represent constituents and their relationships to one another in phrases and clauses is in a tree diagram. Figure 5.1 represents the fact that the sentence *Harry liked Peeves* consists of two parts: the referring expression *Harry* and the predicate *liked Peeves.* (Of course, *Peeves* is a referring expression, too.) In the tree diagram, S stands for sentence, N for noun (or pronoun), and V for verb. Notice the two branching **nodes** in the tree. The topmost branching node is labeled S, and the lower node to the right (unlabeled for now) has two **branches**, one leading to V and the other to N. This same tree diagram could represent other sentences, such as *Harry saw it* in Figure 5.2. As we'll see later, the trees in Figures 5.1 and 5.2 are simplified for ease of initial presentation.

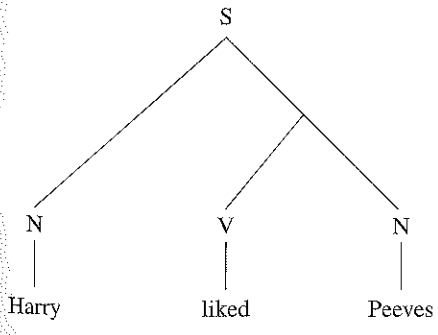


Figure 5.1

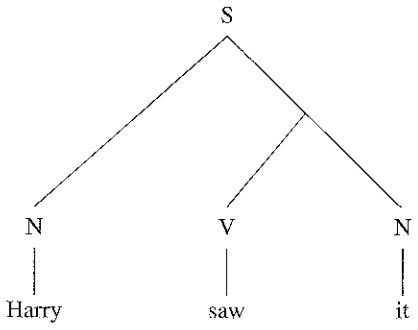
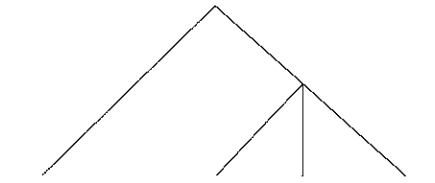
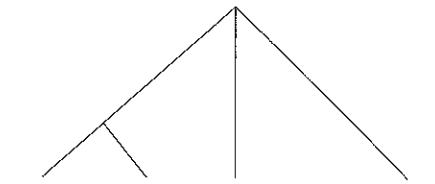


Figure 5.2



'gullible boys and gullible girls'

Figure 5.3



'gullible boys and (all) girls'

Figure 5.4

Linear Ordering of Constituents The words of every sentence occur as an ordered sequence: *Harry liked Peeves*; *Hillary hated the harp*; *Xavier comes from Xanadu*; and *A plump plumber from Portland poked a poltergeist in the park.*

Hierarchical Ordering of Constituents As is apparent in the tree diagrams of Figures 5.1 and 5.2, there is more to the organization of a sentence than the linear order of its words. Figure 5.1 illustrates that *Harry liked Peeves* contains two constituents—*Harry* and *liked Peeves*.

To explore the notion of internal structure further, consider the expression *gullible boys and girls*. It has two possible readings: 'gullible boys and gullible girls' and 'girls and gullible boys.' This ambiguity reflects the fact that *gullible boys and girls* has two possible constituent structures, depending on whether *gullible* modifies *boys and girls* or only *boys*. Notice in the tree diagram of Figure 5.3 that from the highest node there are two branches, representing two constituents. By contrast, Figure 5.4 shows three branches—and thus three constituents—stemming from the highest node. Two observations are worth making. In Figure 5.3 the word string *boys and girls* branches from a single node and thus forms a constituent, but *gullible* and *boys* do not branch from a single node and therefore do not form a constituent. In Figure 5.4, however, *gullible* and *boys* do branch from a single node and thus do form a constituent, whereas the string *boys and girls* does not branch from a single node and does not form a constituent. Figures 5.3 and 5.4 represent two possible constituent structures for *gullible boys and girls* and capture the fact that the linear string has two possible internal organizations—and therefore two readings or interpretations.

Try It Yourself Draw tree diagrams that capture the different constituent structures of these ambiguous expressions: (1) *excessive light and heat*; (2) *current information technology*.

Structural Ambiguity Just as structural ambiguity can occur in phrases like *gullible boys and girls*, it can occur in sentences. Examine sentence 1 below.

1. He sold the car to Kyle's cousin at Penn.

Although the individual words are not ambiguous, the sentence has more than one possible interpretation, and its ambiguity arises because the linear string of

words has two possible constituent structures. We can use brackets to represent the possible constituent structures of sentence 1, as in 2 and 3 below.

2. He sold the car [to [Kyle's cousin at Penn]].
3. He sold the car [to Kyle's cousin] [at Penn].

Sentence 2 can be paraphrased as in 4 below, but not as in 5 or 6. By contrast, sentence 3 can be paraphrased as in 5 or 6, but not as in 4:

4. It was to Kyle's cousin at Penn that he sold the car.
5. It was at Penn that he sold the car to Kyle's cousin.
6. At Penn he sold the car to Kyle's cousin.

These examples illustrate that the words in a sentence have an internal organization that is not apparent from direct inspection. The linear order—which word is first, second, and so on—is apparent from inspection. But only a speaker of English can recognize constituent structure in a string of English words and the fact that a string may have more than one possible internal organization.

Major Constituents of Sentences: Noun Phrases and Verb Phrases

Besides their obvious linear order, then, the words in a sentence are organized into constituents that, while not apparent, are nevertheless recognized by speakers. Consider the sentence in Figure 5.5, with two constituents, and more elaborate sentences such as those in Figure 5.6.

Noun Phrase and Verb Phrase

Sentences like those we've examined consist of two principal constituents: a noun phrase, or NP, and a verb phrase, or VP. (These structural characterizations correspond roughly to the functional characterizations that we earlier called referring expression and predicate.) In turn, each noun phrase typically contains a noun (*Alex, uncle, nerd*) and each verb phrase contains a verb (*disappeared, won, spilled*).

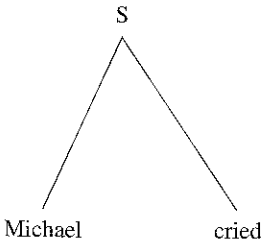


Figure 5.5

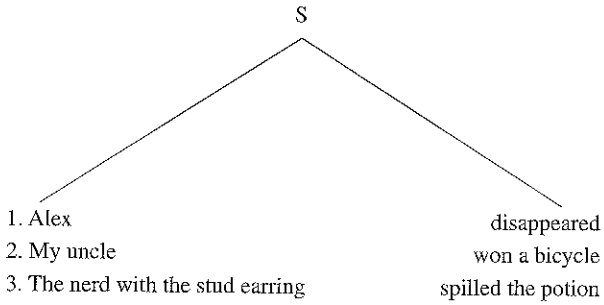


Figure 5.6

As a matter of definition a noun phrase contains a noun (or, as we'll see, a pronoun) as its head, and a verb phrase contains a verb as its head. The **head** of a phrase is its pivotal, central element, and heads may have specifiers and complements.

Noun phrases and verb phrases can be identified by the slots they fill in the architecture of a sentence and often by their functions. In Figure 5.6, for example, *Alex* in 1, *My uncle* in 2, and *The nerd with the stud earring* in 3 function as referring expressions about each of which a predication is made. Similarly, *disappeared, won a bicycle,* and *spilled the potion* make predications about a noun phrase.

Noun phrases can also be identified by substitution procedures such as those implied in the list of alternatives to the two-part structure shown in Figure 5.6. For *Alex* we could substitute *My uncle* or *The nerd with the stud earring.* All three are NPs and can occur in these slots: _____ *won a bicycle;* _____ *spilled the potion;* _____ *disappeared.*

In sentence 2 below, the verb phrase is *liked the song.* Unlike the VP of 1, consisting of the single word *vanished,* the VP of 2 contains the verb *liked* and the NP *the song.* Thus a VP may contain a noun phrase. Further, as 3 shows, a verb phrase may also contain a prepositional phrase, as with *on a bet.* (We'll talk more about prepositional phrases later in the chapter.)

	Noun Phrase	**Verb Phrase**
1.	[The cake]	[vanished]
2.	[Joshua]	[liked the song]
3.	[The neighbor with the iPad]	[won a bike on a bet]

The noun phrases in the sentences above include *The cake, Joshua, the neighbor, the iPad, the song, a bike,* and *a bet.* A word string you can insert in the slots below would be an NP:

She enjoyed talking about _____.

Invariably, _____ upset her.

Inserted into either slot, the following expressions would produce well-formed English sentences and are therefore NPs; in each case, the head noun is italicized.

wild *wolverines*
the *weather*
her yellow *yarn*
the *nitwit* who nicked her necklace
that *loyalty* to his lustrous love
his *resolve* to reside in Riverdale
Wally's wacky *wager*
the cynical *cyclist* from Cincinnati

Notice, too, that a noun phrase can be a pronoun:

She enjoyed talking about *it/him/them/us/those.*

Invariably, *it/they/we* upset her.

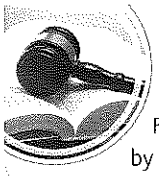
Noun phrases and pronouns have similar distributions in sentences; where a noun phrase can occur, a pronoun may occur instead. Pronouns are thus a form

of noun phrase (and a pronoun may be the head of a noun phrase). Later, we'll see how to exploit this fact in determining noun-phrase constituency.

Verb phrases can be identified using similar substitution procedures. Consider the sentence *Lou cried,* in which *cried* constitutes the verb phrase. Among many others, the following strings can substitute for *cried* in that sentence. They fit the frame and are thus verb phrases (the head in each verb phrase is italicized):

Lou { *fell.* / *lost* the race. / *won* a prize in the tournament. }

To this point, we have seen two major constituents of a sentence: noun phrase and verb phrase.



At the Bar
"Be Alert to All Risks, Hazards, and Dangers"

Forensic linguists—linguists retained by courts or litigants in legal cases—are often consulted about the comprehensibility of language by an ordinary reader. In one consulting case, someone bought a ski pass online and had to sign electronically that she had read *and understood* a multipage document that included many complicated passages including one sentence containing no fewer than 150 words. It read:

> Be alert to all risks, hazards and dangers at these resorts, including but not limited to: variations in terrain (including steepness and other variations, whether natural or as a result of slope or trail design), terrain parks, elements or features, surface or subsurface snow or ice conditions (whether natural or machine-made); bare spots; rocks, trees, stumps and other forms of forest growth or debris; lift towers and components thereof and other ski area components including lights, fences, posts and signs (all of the foregoing whether above or below snow surface); pole lines and plainly marked or visible snowmaking equipment, other equipment, vehicles and machines including snowmobiles and snowcats; collisions with other participants or other persons (whether as a result of failure to ski, ride or participate in these activities within their own ability or otherwise) or collisions with any of the risks included in this paragraph (whether natural or man-made).

There are established measures of readability that forensic linguists can employ in assessing the likelihood that an ordinary speaker could readily understand a document containing such dense language. Unfortunately, given the manifest density of this sentence and others in many liability waivers and insurance policies and given a hurried consumer's desire merely to buy a ski-lift pass (or other recreational access) or travel or accident insurance policy, the temptation simply to yield one's signature of agreement has gotten many a skier, swimmer, traveler, automobile renter, and insurance policyholder into serious difficulty—and led to a subsequent close reading of previously skimmed language—but only after an accident or other unexpected problem occurs. As for the particular sentence above, notice that, despite its length, there are few verbs (and thus few clauses) and very frequent nouns. (Go ahead: count just the verbs!) ■

Testing Constituency

To repeat for emphasis, a sentence is not merely an ordered string of individual words but a structured, or organized, string of words grouped into constituents that function as syntactic units. By syntactic unit we mean a string that can function as a whole in one of several ways. As one example, it may be able to be moved within a sentence from, say, the end to the beginning, as in *Mark bikes home from campus on Tuesdays and Thursdays* and *On Tuesdays and Thursdays Mark bikes home from campus.*

The tree diagrams earlier in this chapter relied on informal notions in determining constituency. Now we describe three kinds of tests that can be used for that purpose.

Movement We relied on movement in paraphrasing the earlier sentences that presented structural ambiguity. In exploring the ambiguity of *He sold the car to Kyle's cousin at Penn,* we noted that one reading could be paraphrased as *At Penn he sold the car to Kyle's cousin.* Moving *at Penn* to the front of its sentence demonstrates that it functions as a syntactic unit—a constituent. Generally speaking, then, a string of words that can be moved in a syntactic operation functions as a unit and is a constituent.

Substitution Substitution of pronouns and other pro-forms offers another method for identifying constituents. When a pro-form (for example, a pronoun or a "pro-verb") can substitute for a particular string of words in a sentence, that string of words is a constituent. In the sentences below, the substitution of a pro-form (underlined and **boldfaced**) for a preceding underlined string provides evidence that the preceding underlined string is a constituent.

a. *Josh gained a huge lead, and Beth gained* **one**, *too.* (So *a huge lead* is a constituent.)

b. *Josh gained a huge lead, and Beth* **did**, *too.* (So *gained a huge lead* is a constituent.)

Try It Yourself Because not every string of words in a sentence is a constituent, you can readily discover strings for which no pro-form can be substituted. In sentence b above, try to identify a pro-form for these strings: *a huge*; *Josh gained*; and *gained a*. What do your results indicate about the status of those strings as constituents?

Coordination A third useful test for identifying constituents involves coordination. Because, generally, only constituents of the same kind can be conjoined by a coordinator like *and* and *or*, coordination can offer evidence of constituency. Thus, in sentences like those below, the underlined conjoined strings are constituents (of the same kind).

a. For graduation, Ashley was given a Toyota Prius and a year's supply of fuel. (NPs)

b. Smokey scampered into the house and scarfed down her dinner. (VPs)

Exploring levels of constituency has proven to be a productive enterprise for theories of syntax, as has testing for and comparing constituent structures across languages. Further exploration of levels of constituency lies beyond our scope here, but we will occasionally introduce additional constituents, usually without providing explicit justification for them.

Phrase-Structure Expansions

Expanding Noun Phrase

Relying on the analysis of categories (parts of speech) in Chapter 2, we can now characterize and exemplify certain NP types:

Noun (N): *Danielle, oracles, justice, swimming*

Determiner (Det) + Noun: *that jellybean, a potion, some gnomes, her coach*

Determiner + Noun + Prepositional Phrase (PP): *the cellphone on the table, that rise in prices, a marketplace of ideas, her plumber in Portland*

Determiner + Adjective (A) + Noun: *an ancient oracle, these hellish precincts, my first Fiesta, a jaunty judge*

These various NP patterns can be represented by **phrase-structure expansion rules** such as the following:

1. NP → **N** (NP consists of N)
2. NP → Det **N** (NP consists of Det + N)
3. NP → Det **N** PP (NP consists of Det + N + PP)
4. NP → Det A **N** (NP consists of Det + A + N)

Expanding Prepositional Phrase

PP stands for prepositional phrase, such as *in the car, from Xanadu, to Kyle's cousin, with the iPad,* and *by a jaunty judge*. Prepositional phrases consist of a P (preposition) as head and typically an NP (noun phrase) as complement, so the phrase-structure expansion for PP is:

PP → **P** NP

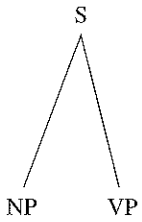
If NP is treated as optional, as in *It fell off (the table)*, it would appear in parenthesis: PP → **P** (NP)

Expanding Sentence and Verb Phrase

To capture the view of sentences and clauses as having two basic constituents, this phrase-structure expansion serves:

S → NP VP

Every expansion rule can generate a tree diagram, and S → NP VP would generate this tree:



Having already explored expansions of NP, we now turn to the internal structure of VP. The following expansions of our frame for identifying VPs reveal that the structures on the right (those following *Lou*) are VPs, and constituents of the VP are labeled beneath them.

		VP
1. Lou	won	
	V	
		VP
2. Lou	won	a bicycle
	V	NP
		VP
3. Lou	won	the bike in May
	V	NP PP

Sentences 1, 2, and 3 above indicate three VP expansions:

VP → **V**

VP → **V** NP

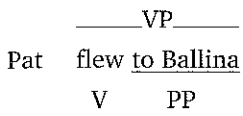
VP → **V** NP PP

V is the only constituent that occurs in all of these rules. Within the VP constituent, V is the essential category, the head. As is clear from sentence 1 above, NP and PP are optional constituents of VP. Using parentheses to mark optional elements, the three expansions above can be combined into a single phrase-structure rule:

VP → V (NP) (PP)

Note that the combined rule for VP allows for the absence of NP, which would generate a V PP structure, one that is not represented among sentences 1, 2, and 3. We can check the validity of V PP as an expansion and see that it represents the internal structure of sentences like *(Fido) frolicked in the yard,*

(Rachel) raced through the exam, and *(Pat) flew to Ballina*, the last of which is illustrated below.



Phrase-Structure Expansions and Tree Diagrams

We have formulated four phrase-structure expansion rules so far:

S → NP VP

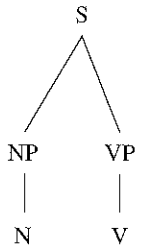
NP → (Det) (A) **N** (PP)

VP → **V** (NP) (PP)

PP → **P** (NP)

These represent the fact that S comprises NP and VP; NP contains N; VP contains V; and PP contains P. According to these phrase-structure rules, all other possible constituents are optional.

The following tree diagram is one representation of our expansion rules:



It is the simplest structure generated by our rules and would represent sentences like *Lou disappeared* and *Time flies*. Now consider the more complex structure given on the next page in Figure 5.7, where *A surfer from Brazil won a prize at the fair* is another illustrative sentence for these rules. So we see that our four expansion rules can represent structurally simple or structurally elaborate sentences.

Try It Yourself Limiting yourself to the four expansion rules used to produce the tree in Figure 5.7, draw a tree that would represent this sentence: *A surfer from Brazil won a car with a siren*. Before starting, ask yourself whether *a prize at the fair* is a constituent of the sentence in Figure 5.7, and take care to note the structural similarity of *a surfer from Brazil* and *a car with a siren*.

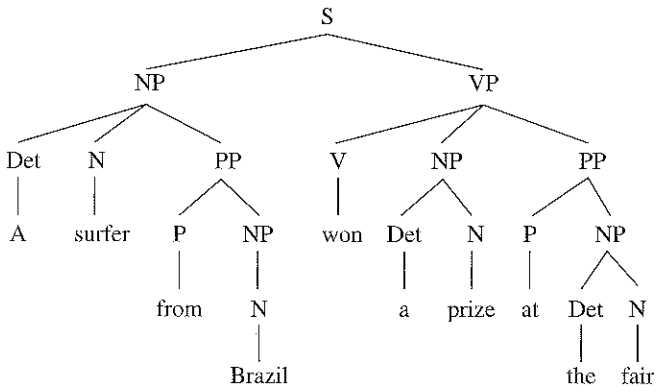
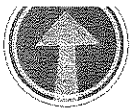


Figure 5.7

Grammatical Relations: Subject, Direct Object, and Others



Try It Yourself First, relying on intuitive notions of doer and receiver of the *action* in these sentences, try to identify each subject and object. (1) *New businesses and family-run businesses often begin small.* (2) *It isn't known how many members the group has.* (3) *One consequence of the recession among 18- to 30-year-olds living in New York is the availability of cheaper small apartments.* (4) *A sensitive camper taking this medicine may experience allergic reactions.* Next, relying on the agreement criterion, try to identify the subject in each of the sentences above. Given your application of those two criteria, do you regard them as reliable guides to identifying the subject of a sentence?

Some traditional English grammars offer notional definitions of subject of a sentence (for example, as *doer* of the action) and direct object (*receiver* of the action). Others rely on structure and define a subject as the sentence constituent that a present-tense verb agrees with (as in *Sarah sings* versus *they sing*). For various reasons, these and similar definitions leave a lot to be desired. Using constituent structure, on the other hand, does enable analysts to define subject and direct object more precisely.

Immediate Dominance

In Figure 5.8, the circled NP is directly under the S node, the boxed NP is directly under the VP node, and the VP node is directly under the S node. When a node is directly under another node—that is, when there are no intervening nodes—we say it is *immediately dominated* by that other node. To illustrate, V in Figure 5.8 is immediately dominated by VP; the circled NP is immediately dominated by S; the boxed NP is immediately dominated by VP; and both VP and the circled NP are immediately dominated by S. As we'll see, the notion of immediate dominance is useful in syntactic analysis.

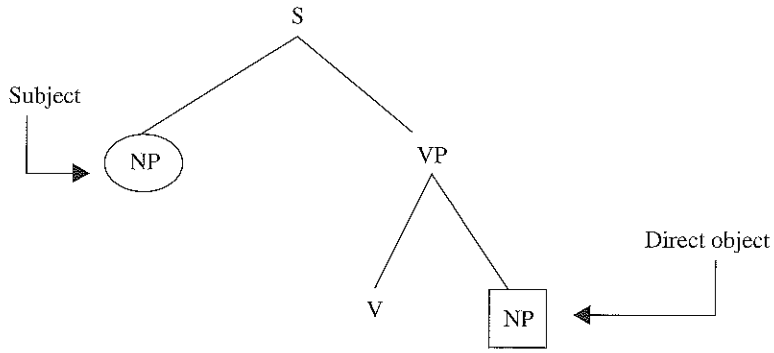


Figure 5.8

Subject and Direct Object

In English, **subject** can be defined as the NP that is immediately dominated by S. In our diagram, the circled NP is immediately dominated by S and is thus the *subject*. **Direct object** is defined as an NP that is immediately dominated by VP. In Figure 5.8 it is the boxed NP. Because NP is an optional element in the expansion of VP, not every sentence will have a direct object.

Transitive and Intransitive Recall from Chapter 2 that the verb in a sentence lacking a direct object is called an *intransitive* verb. In the sentences *Zachary cried, Kelsey laughed,* and *The pizza disappeared,* the verbs *cry, laugh,* and *disappear* are intransitive. By contrast, verbs like *make, buy,* and *find* take a direct object and are called *transitive* verbs, as in *make a mess, buy a MINI Cooper,* and *find a friend.* While some verbs may be either transitive or intransitive, as exemplified in the first three sentence pairs below, others are only transitive (as in 4) or only intransitive (as in 5). (We use an asterisk to mark an ungrammatical structure, one that does not occur in the language.)

Try It Yourself Provide a sentence with a verb that can *only* be transitive and another with a verb that can *only* be intransitive. Then provide a pair of sentences in which a given verb is used once in a transitive and once in an intransitive structure.

	Intransitive	**Transitive**
1.	Jacob won.	Jacob won a turkey.
2.	Emily sings.	Emily sings lullabies.
3.	Kelsey studied at Oxford.	Kelsey studied economics at Oxford.
4.	*Nicole frightened.	Nicole frightened the kittens.
5.	Logan reappeared.	*Logan reappeared the dishes.

Given the pivotal role of the verb in determining the structure of a clause, a verb's subcategorization as transitive or intransitive determines whether its clause may contain an object or not.

Grammatical Relations

The term used to capture the syntactic, or structural, relationship in a clause between an NP and the verb is called **grammatical relation**. Grammatical relations indicate the syntactic role that an NP plays in its clause, and that role cannot be equated with anything else, including meaning. Besides the grammatical relations of subject and direct object, an NP in a clause can be an **indirect object**, an **oblique**, or a **possessor**. *Oblique* is the term for NPs that are not subject, object, or indirect object; in English an oblique is realized as the object of a preposition (*The vampire pointed to his teeth*). *Possessor* is the term for entities showing possession (*Josh's new MINI*). (Indirect objects are analyzed further in Exercise 5-5.)

Passive Sentences and Structure Dependence

Having defined subject and direct object in structural terms, we turn to a syntactic relationship mentioned earlier. Relying on the grammatical relations of subject and direct object, we can formulate a description of the relationship between active and passive sentences as follows:

> To form a passive sentence from an active one, interchange the subject NP with the direct object NP. (Provision must also be made for the preposition *by* and a form of the verb BE, a matter that we don't address here.)

Figure 5.9 provides an example.

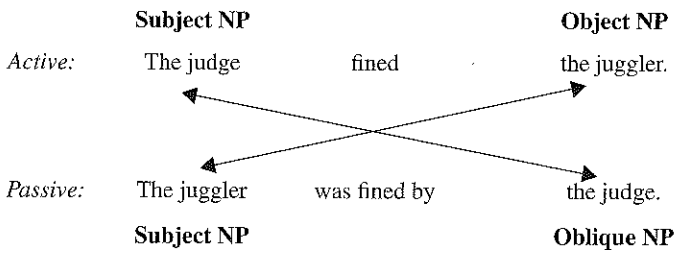


Figure 5.9

You can see that the direct object of the active sentence appears as the subject of the passive sentence, whereas the subject of the active sentence appears as an oblique (in a prepositional *by*-phrase) in the passive sentence.

Surface Structures and Underlying Structures

As we have seen in several ways, speakers understand considerably more about the architecture of the sentences of their language than is apparent in the linear order of words. In fact, not only do speakers have implicit knowledge of constituent structure within the linear string of words in a sentence—what is referred

to as its **surface structure**—but we often perceive or understand constituents that are unexpressed in the linear string. For example, in the sentence *Lisa won a prize, but Larry didn't,* we readily understand the meaning of *didn't* as represented in option 5 below.

Lisa won a prize, but Larry

1. didn't.
2. didn't care.
3. didn't tell Sarah.
4. didn't congratulate her.
5. didn't win a prize.

While the list of possible sentences following this pattern is endless, English speakers know that the only legitimate interpretation of 1 is 5 and, therefore, that sentences 2 through 4 are not possible interpretations of 1. But that understanding requires a speaker to have implicit knowledge of syntactic operations.

To help explain this, recall that in Chapter 4 we postulated underlying forms of sounds and morphemes. Well, one way to account for implicit knowledge about sentence structure is to posit **underlying structures** for syntax. For instance, we could represent the meaning of sentence 1 by positing an underlying structure something like *Lisa won a prize, but Larry didn't win a prize.* If we assumed such an underlying structure and certain syntactic operations that deleted the repeated occurrence of the constituent *win a prize,* we would have a mechanism for understanding how English speakers know that only 5 above matches the meaning of 1.

Syntactic Operations: Question Formation and the Auxiliary

Among examples of syntactic operations in English, we have examined movement (as in passivization) and deletion (as in *Lisa won a prize, but Larry didn't*). Now we analyze other examples.

English has two principal kinds of questions. Yes/no questions are those that can be answered with a reply of yes or no, as in *Was it a candid discussion?* Information questions, on the other hand, include a WH-word like *who, what,* or *when* and require more than a simple yes or no reply.

Yes/No Questions Examine the statements below and their corresponding yes/no questions.

1. Suze will earn a fair wage.

   Will Suze earn a fair wage?

2. Last year's winner of the Tour de France was leading the pack on Tuesday.

   Was last year's winner of the Tour de France leading the pack on Tuesday?

If you compare the matched declarative and interrogative sentences, you'll see that the question requires moving the auxiliary verb of the statement to a position preceding the subject NP. Verbs such as *will* in 1 and *was* in 2 are **auxiliary verbs**, or auxiliaries, and can be moved in front of a subject NP to form a

question; auxiliary verbs are distinguished from main verbs such as *earn* in 1 and *lead* in 2 above and *study* in 3 and *hurt* in 4 below.

Notice that yes/no questions contain an auxiliary even when the corresponding declarative sentence does not, as 3 and 4 show:

3. Jordan *studied* journalism in college.

   Did Jordan *study* journalism in college?

4. Inflation always *hurts* the poor.

   Does inflation always *hurt* the poor?

In addition, an auxiliary usually must appear in the surface structure of negative sentences, as in the examples below.

5. Jordan *studied* journalism in college.

   Jordan *didn't* study journalism in college.

Auxiliaries can also be used to express contrast or emphasis (*Jen certainly does exercise every day!*) and other information such as future time (*Tyler will certainly pass the course*) and aspect (*They were traveling then*). (Aspect and time reference are discussed in Chapter 6.)

Because an auxiliary often must appear in the surface structure of sentences (and for additional reasons not discussed here), a constituent representing the auxiliary is postulated in the underlying structure of *every* sentence. That means that, instead of its earlier expansion simply as NP VP, the expansion of S must include AUX, as below:

$S \rightarrow NP\ AUX\ VP$

The operation that changes the constituent structure of the declarative sentences in 1, 2, 3, and 4 above to the constituent structure of their respective yes/no questions moves AUX to a site preceding the subject NP, as represented in Figure 5.10.

We thus represent the underlying structure of both *Suze will earn a fair wage* and *Will Suze earn a fair wage* as in the tree on the left in Figure 5.11. The tree on the right represents the constituent structure that results from application of the subject-auxiliary inversion operation.

Information Questions In an information question, the information that is sought—the questioned constituent—is represented by a WH-word (*who* or *whom*, *why*,

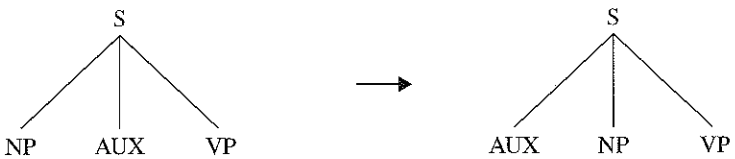


Figure 5.10

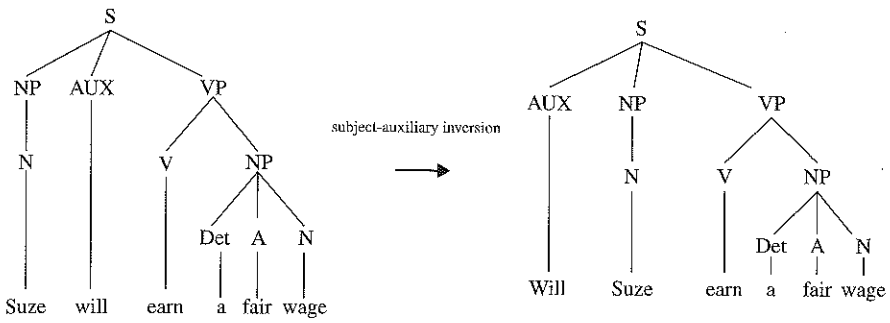


Figure 5.11

when, where, which, what, how), and such WH-questions occur in two forms. One echoes the form of the statement, as in these examples:

(He's boiling horsefeathers.)	He's boiling *what*?
(She was looking for Sigmund Freud.)	She was looking for *who*?

Intonation differs but the linear order of words in an echo question is identical to the linear order of words in the statement, except that a WH-word occurs in place of the questioned constituent—*what* for *horsefeathers*, *who* for *Sigmund Freud*. (For analysis of *who* and *whom*, see exercises 5-12 and 5-13.)

Much more common than echo questions are ordinary information questions. They take the form illustrated below, in which a syntactic operation called WH-movement fronts the WH-word to a position before the subject:

1. What is *he* — boiling —? (*He* is boiling what?)

2. Who was *she* — looking for — today? (*She* was looking for who today?)

If you compare these ordinary information questions with the parenthesized echo questions following them, you'll see that two movements have occurred:

- The WH-word (the questioned constituent *what* or *who*) appears at the front of its clause.
- The auxiliary (*is* or *was*) precedes the subject NP (which is *italicized* in the examples).

Notice, too, that ordinary information questions leave an understood "gap" in the structure at the site from which the fronted WH-word has been moved (indicated here by a dash —). By contrast, an echo question has no gap because the WH-word remains in its underlying site.

Embedded Clauses

We've been examining sentences consisting of a single clause, as in *Lou cried* or *The elusive poltergeist frightened Olivia's boyfriend during the night.* Now we analyze sentences containing more than one clause—those consisting of a clause that is embedded as a constituent of another clause. In sentences 1 and 2 below, the *italicized clause* is embedded within another clause.

1. Megan said *Lou cried.*
2. *That Brittany won the marathon* surprised Samantha.

In sentence 1, the clause *Lou cried* is embedded within the clausal structure *Megan said* _____. In 2, *(That) Brittany won the marathon* is a clause embedded within the clausal structure _____ *surprised Samantha* and corresponds structurally to the underlined NP in *It surprised Samantha.* These embedded clauses thus function like noun phrases within the embedding clause.

In sentences 1 and 2 above, an embedded clause functions as a constituent of an embedding clause, or what is often called a **matrix** clause. For example, in 3 below, the *italicized* embedded clause functions as a constituent of the matrix clause and has the same grammatical relation in the matrix clause as the underlined word in sentence 4 has within its clause:

3. *That Josh feared vampires* upset his wife.
4. It upset his wife.

In other words, *That Josh feared vampires* in 3 and *It* in 4 are both NPs with the grammatical relation of subject. Embedded clauses may have other functions within a matrix clause, including adverbial functions, as in *She failed most when she tried least*, but adverbial clauses lie beyond our scope.

Tree diagrams can be useful in illustrating the relationships among clauses in a sentence. In representing a sentence such as *Harry said he saw a ghost*, the embedded clause *he saw a ghost* fills the same sentence slot as the NP *it* in *Harry said it*, as shown in Figures 5.12 and 5.13. Figure 5.13 captures the fact that the embedded clause S_2 (*he saw a ghost*) functions structurally

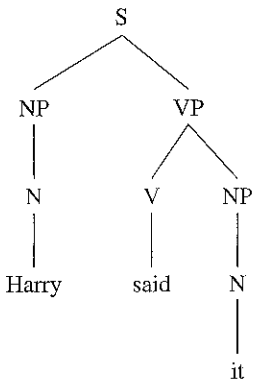


Figure 5.12

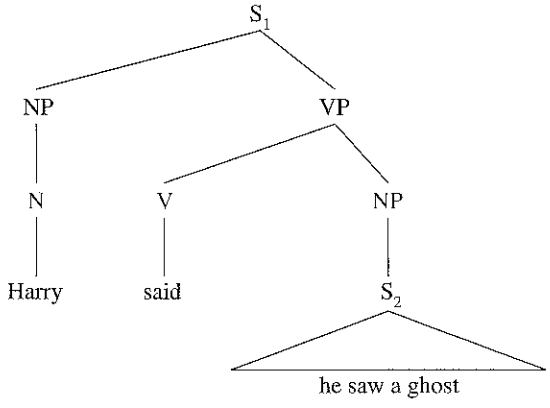


Figure 5.13

as part of the matrix clause S_1 (*Harry said* _____). In the case of *Harry said it,* the NP immediately dominated by VP is *it,* which is an N. In the case of *Harry said he saw a ghost,* the NP immediately dominated by VP is *he saw a ghost,* which is an S. Figure 5.14 is a more detailed tree structure for the abbreviated one of Figure 5.13. Note that the phrase-structure rules given earlier would need to be refined in order to accommodate expansion of NP as S (as in figures 5.13 and 5.14). As implied by these and other tree structures, we have begun to rely implicitly on certain elaborations of those expansion rules, and our expansions can be inferred from the tree diagrams.

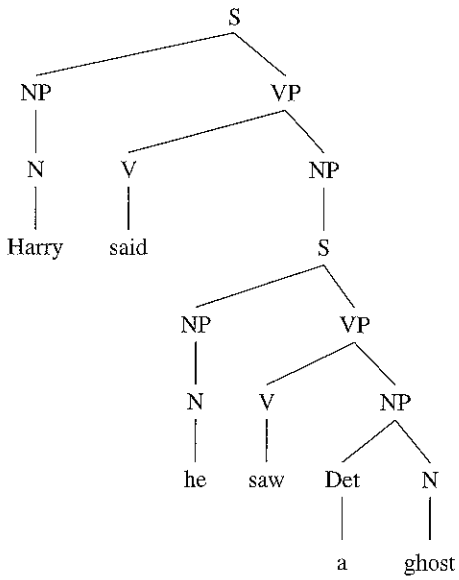


Figure 5.14

Subordinators An embedded clause may be introduced by a word that would not occur if the clause stood as an independent sentence. Called a **subordinator** (or subordinating conjunction), such an introductory word serves to mark the beginning of an embedded clause and help identify its function in the sentence. Not all embedded clauses are introduced by a subordinator. Sentence 1 above may have a subordinator (*Megan said that Lou cried*), but it doesn't require one (*Megan said Lou cried*), whereas sentence 2 (*That Brittany won the marathon surprised Samantha*) requires a subordinator.

Relative Clauses

Relative clause is the term used for a clause embedded within an NP to form structures such as those below (the relative clauses are *italicized*):

1. The dean defended [the prof *who flunked me*].
2. [The jewels *that Jake stole*] were fakes.
3. Sarah saw a new film by [the French director *that Kendrick raves about*].
4. Sarah saw a new film by [the French director *Kendrick raves about*].

When NPs with the same referent occur in two clauses, a relative clause can be formed by embedding one clause into the other, as in the following example where the identical indexes (subscript j) on *cousin* indicate identical referents:

I gave your address to my cousin$_j$ my cousin$_j$ lives in Dublin

I gave your address to my cousin$_j$ who$_j$ lives in Dublin

English relative clauses are typically introduced by a relative pronoun such as *who* (or *whom* or *whose*), *which,* or *that.* As a comparison of 3 and 4 above illustrates, the relative pronoun may be omitted in specific circumstances. (Exercise 5-7 addresses these circumstances.) Relative clauses modify nouns,

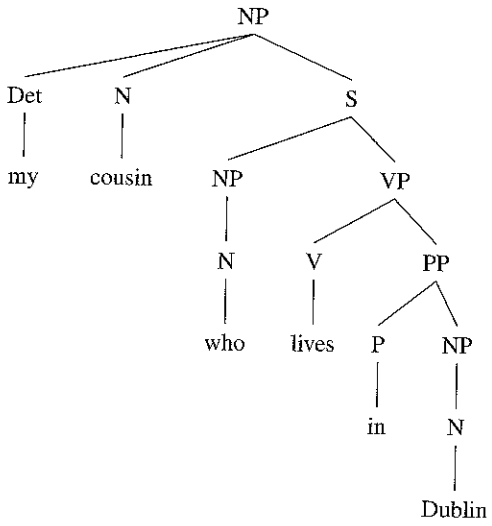


Figure 5.15

and the modified noun serves as the *head* of the entire noun phrase containing the relative clause. The head noun is repeated in the embedded clause, where it is *relativized* (taking the form of a relative pronoun). The structure of the resulting noun phrase can be represented as in Figure 5.15, in which the head noun *cousin* is labeled N. Notice in this instance that the relativized NP *who* functions as the subject of its clause (the NP immediately dominated by S).

In other clauses, the relativized NP may be the direct object, as here:

The jewels *that Jake stole* were fakes.

The relative clause *that Jake stole* derives from the underlying clause *Jake stole the jewels*, where *the jewels* is the direct object of the verb *stole* and has been relativized and moved to the front of its clause.

A relativized NP can also be an oblique, as in 1, or a possessor, as in 2:

1. Mackenzie is the officer *whom I told you about.* (cf. *I told you about the officer*)
2. Mackenzie is the officer *whose car was vandalized.* (cf. *the officer's car was vandalized*)

In English, then, a relativized NP can have any of these grammatical relations within its clause: subject, direct object, oblique, or possessor.

COMP Node

Now let's analyze the syntactic operations associated with relative clause formation in English. Examine the following sentences, noting the understood "gap" in the structure (indicated by a dash —):

1. There's the pothole that I warned you about —.
2. J. K. Rowling wrote the novel that I bought —.
3. The fans who — braved the weather paid a price.

We can represent the underlying constituent structure of these sentences in a tree diagram, as Figure 5.16 illustrates for sentence 2.

In order to form the relative clause structure of 2, the NP *the novel* (inside the lower clause *I bought the novel*) is relativized and moved to the front of its clause by the WH-movement operation we earlier introduced for information questions. Figure 5.16 shows a node labeled COMP (complementizer),

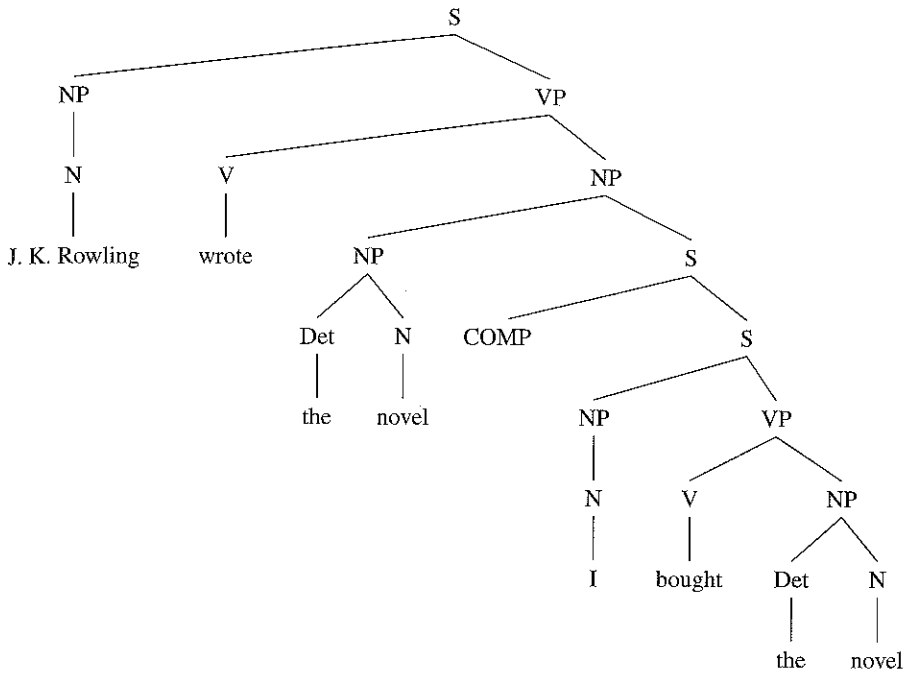


Figure 5.16

which we have not previously identified. There is good reason to posit a COMP node in the underlying structure. Among other functions, COMP serves as a kind of placeholder, a magnet so to speak, for relative pronouns such as *that*, *which*, and *who*, as well as for the WH-constituents in information questions.

Since syntactic operations transform one constituent structure into another, we can represent the output of WH-movement as applied to Figure 5.16 by the tree given in Figure 5.17 (on the next page). Thus, WH-movement extracts a WH-constituent (*that*) from S and attaches it to the COMP node. The same syntactic operation could move any WH-constituent to COMP, including question words in the formation of information questions.

Types of Syntactic Operations

While it is not known how many types of syntactic operations exist in human languages, recent theories of syntax reflect evidence that syntactic operations are considerably more general than our relatively detailed specifications of examples from English or other languages might suggest. Movement operations are extremely common in the languages of the world, and some theoretical models of syntax limit all syntactic operations essentially to movement operations.

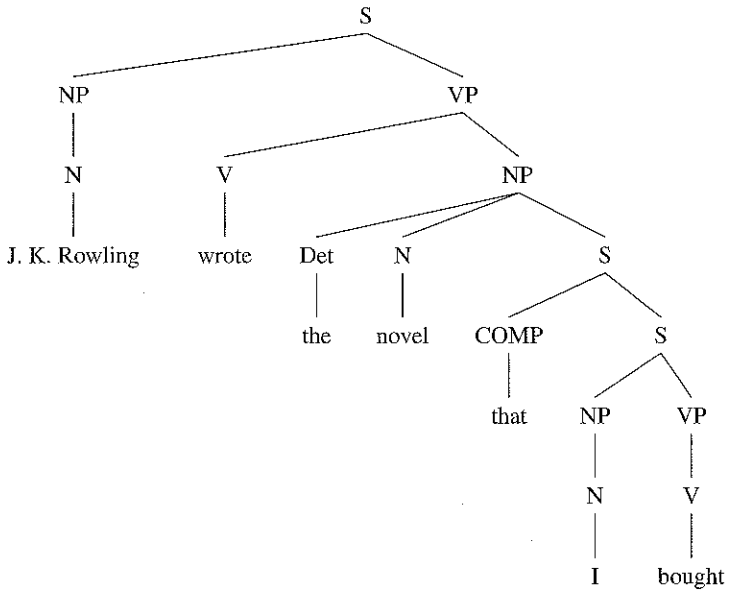


Figure 5.17

Functions of Syntactic Operations

We have examined several syntactic operations and stressed the point that they are structure-dependent. For example, we saw that, irrespective of NP length or complexity, active and passive sentences are related in that the *object* NP of the active sentence (*A jaunty old judge fined Jody*) is the *subject* NP of the passive counterpart (*Jody was fined by a jaunty old judge*), and the *subject* of the active sentence (*a jaunty old judge*) is an *oblique* in the passive sentence (*by a jaunty old judge*).

You might wonder why languages have different ways of saying the same thing: what's the purpose of a syntactic operation like English passivization that essentially interchanges a subject and object but leaves the meaning of the sentence basically unchanged? To answer that question we exemplify with English examples, but comparable analyses in other languages would make a similar point.

Yes/No Questions and Echo Questions

Yes/No Questions First, we analyze an example in which a syntactic operation does have a manifest effect on meaning. As we saw, yes/no questions are formed by moving the auxiliary in accordance with certain structural patterns. Thus, from the structure underlying *She will swear to it,* a syntactic operation produces the structure *Will she swear to it?* From a functional perspective the declarative structure makes a statement, the interrogative structure asks a question, and

languages must provide speakers ways to make statements and ask questions. The point is that the form of the question is related to the form of the statement and is achieved by the syntactic operation called *subject-auxiliary inversion*. The meaning of the declarative and the meaning of the interrogative are not the same, of course.

Information Questions We saw that information questions have alternative forms—those in which the questioned constituent is fronted (*What did they find? Who did she meet?*) and those in which it isn't (*They found what? She met who?*). Both forms serve to ask questions and, broadly speaking, mean the same thing. But speakers use these forms for different purposes: they choose echo questions when they have failed to hear something completely or want to express surprise or incredulity at what they've heard. Thus, the alternative ways of asking questions serve different functions in a discourse.

Active and Passive Structures

Like the two forms of information questions, which have the same meaning but serve different discourse functions, active and passive pairs generally have the same meaning. After all, if Jody was fined by a jaunty old judge, it must also be the case that a jaunty old judge fined Jody. Why, then, should English have two ways of saying the same thing? To help answer that question, consider this passage, taken from the Sports section of the *Los Angeles Times*, about the baseball player Odalis Perez, when Perez, Bonds, and Galarraga still played major league baseball:

> **Perez** *gave up* an infield single to Barry Bonds before getting Andres Galarraga on another infield popup for the final out. **Perez** *re-engaged* Hernandez as he was walking off the field, triggering the ejection. **He** *was* also *ejected* June 13 against the Cleveland Indians at Jacobs Field.

Perez is the grammatical subject of the first two sentences, and *He* (also referring to Perez) is the subject of the third sentence. Of the three *italicized* verbs in the passage, the first two are active, with Odalis Perez as the referent of their subjects: *Perez* gave up; *Perez* re-engaged. The writer's focus is clearly on Perez. What does the passive structure in the third sentence do? It allows the writer to keep Perez in the spotlight: *He was ejected June 13 against the Cleveland Indians.* Odalis Perez is the referent of the subject in *all* three sentences. By contrast, an active structure in the third sentence (*An umpire ejected him June 13 against the Cleveland Indians*) would have

Try It Yourself Explain why the writer of the passage below might have used the underlined passive structure in sentence 3 and why that sentence combines an active verb (*overran*) and a passive verb (*was thrown out*).

(1) *The Dodgers scored only one run despite twice loading the bases in the sixth inning, and Ward's base-running blunder in the ninth stirred more frustration for the team.* (2) *With one out and Cabrera on first base, Ward singled through the hole on the right side, sending Cabrera to third.* (3) *But Ward overran the bag and was thrown out, quickly dampening the Dodgers' mood.*

At the Bar
"You Got It Right!"

In June 2013 the *New York Times* reported that a court had overturned a man's conviction for a murder to which he had confessed. The man had been in prison for 21 years until the court freed him. The detective in the murder investigation was famous in the Brooklyn police department for his ability to extract confessions from suspects, even when other detectives had failed to do that. Once that man's conviction was overturned, reporters at the *Times* followed up on other confessions made to the same detective and discovered a remarkable fact. At least five of the confessions made to that detective over the years began with the same or similar words: "You got it right" or "I was there." In one man's confession, he said to the detective, "You got it right, I was there I had a gun and I was down on the robbery. I am gonna tell you everything." Another man began his confession with the words "You guys got it right." The Legal Aid Society's chief lawyer is examining several of the confessions and convictions and says he finds it "sort of beyond belief that [the similarity in the language of the confessions] would be coincidental."

Now each of us has set expressions that we use, and some of them like "hello" and "how are you?" and "what time is it?" we may use frequently. On the other hand, language is infinitely inventive, and we chiefly say and hear things that we've never before said or heard. So there is an interesting question here: Is there good reason to be suspicious of murder confessions made by different people with little in common other than the opening language of their confessions made to a detective famed for his ability to extract murder confessions? You can read more at <www.nytimes.com/2013/06/13/nyregion/several-murder-confessions-taken-by-brooklyn-detective-have-similar-language.html?pagewanted=all> ■

introduced an umpire (extraneous to the writer's interest) into the discourse and shifted the focus away from Perez.

As a further point, note that in a passive structure the subject of the corresponding active sentence may be omitted altogether. Instead of *He was ejected by an umpire June 13 against the Cleveland Indians*, the writer simply said *He was ejected June 13 against the Cleveland Indians*—without mentioning the umpire at all.

Recursion and Novel Sentences

We have now seen that NPs and VPs can be expanded in various ways. We've seen that VPs and PPs may contain NPs and that NPs may contain embedded clauses. That means we have seen the possibility of recursion—the ability of a sentence to incorporate another sentence that in turn could incorporate still another one, and so on. We've seen, in effect, that relying on a few expansion rules, English—like all other languages—can be endlessly creative in forming novel sentences. Using those same few rules, speakers can also interpret novel sentences produced by others. Allowing for recursion, mastery of just a few rules enables speakers to produce and interpret sentences they haven't ever heard or read before. Language is thus endlessly novel, endlessly creative.

Computers and the Study of Syntax

We saw in Chapter 2 that computer programs can do a good job of tagging words in a sentence with their correct part of speech, identifying lexical and functional categories for nearly all the words. Beyond that, computer programs known as *parsers* can analyze a string of categories for constituent structure, and some parsers achieve impressive success in assigning correct constituent structure to strings of syntactic categories.

Tagging words in a sentence for their syntactic category is not the same thing as identifying the constituent structure of the sentence. Just as a string of words may have more than one constituent structure, so a string of lexical categories may represent different constituent structures. As the noun phrase *gullible boys and girls* has two possible constituent structures, so the string of categories A-N-Conj-N could have the two bracketings

[A [N Conj N]] or [A N] [Conj] [N].

For a structurally ambiguous tagged string like *gullible boys and girls*, a parser would produce two candidate constituent structures.

Given a sentence such as *That rancher saw the wolves*, a tagger would first assign parts of speech to the words as follows:

$That_{Det}$ $rancher_{N}$ saw_{V} the_{Det} $wolves_{N}$.

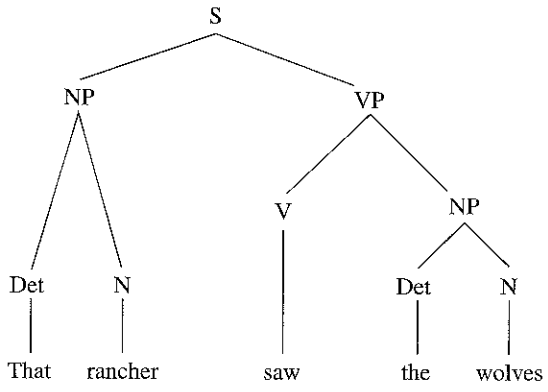
In principle, *saw* could be a noun or verb and *that* could have several possible tags, but even modestly good taggers could readily determine the correct tags here. Once part-of-speech tags have been assigned, a parser may use phrase-structure expansion rules to produce a tree diagram or constituent-structure bracketing for the string. You can envision the process as something like working from the bottom of a tree structure to the top. For example, the phrase-structure expansion NP → Det N would recognize and bracket *that rancher* and *the wolves* as NPs, which would yield a higher-level NP V NP bracketing to the Det N V Det N labels at the bottom of the tree. The expansion rule VP → V NP would then allow saw_{V} the_{Det} $wolves_{N}$ to be bracketed as VP, giving NP VP at a higher level. That in turn would be recognized as a representation of S. Taken together then, the tagged string can be parsed this way:

$[_{S}\ [_{NP}\ [That\ _{Det}]\ [rancher\ _{N}]\ _{NP}]$
$[_{VP}\ [saw\ _{V}\ [_{NP}\ [the\ _{Det}]\ [wolves\ _{N}]\ _{NP}]\ _{VP}]\ _{S}]$

And that bracketing is equivalent to the tree diagram in the figure at the end of this section.

Relying on relatively simple parsers, grammar checkers in word processors may sometimes suggest changes to your syntax in the interest of grammatical correctness or stylistic refinement, and often the suggested revisions indicate that the checkers have parsed a sentence incorrectly. Often, too, they find natural sentences too long to parse, and the best they can do is suggest shortening the sentence.

Now it is useful to recognize that the sentence *That rancher saw the wolves*, which we have just parsed, contains only five words in a single clause. In reality, English sentences are often four or five times that long and contain multiple clauses. The two sentences below, from an article about Edward Snowden in the *New York Times*, are not particularly unusual in



length or structure for a daily newspaper—and they are not difficult to understand, despite their length and syntactic complexity.

1. After handing over the documents, he told *The Guardian* of his admiration for both Pfc. Bradley Manning, who is now on trial for providing 700,000 confidential documents to WikiLeaks, and Daniel Ellsberg, who disclosed the Pentagon Papers in 1971.
2. "I think anyone smart enough to be involved in the type of work he does, who is privy to the type of information to which he was privy, will have at least moments like these," she wrote.

The first sentence contains 39 words in three clauses, while the second contains 37 words in seven clauses (and notice that six of the seven clauses are in a spoken utterance). Unlike the relatively simple sentences of the kind used as examples in many linguistic textbooks, sentences in newspapers, magazines, novels, and other publications are considerably more challenging for automatic parsers to analyze. As we'll see in later chapters in parallel sections to this one, the kind of parsing needed for machine translation and automatic speech recognition has proven extremely challenging for language scientists and engineers to succeed at. ■

Summary

- The operations governing the formation of sentences constitute the syntax of a language. The study of sentence structure is also called syntax.
- Languages generally have referring expressions and predication expressions.
- In syntactic terms, a referring expression is a noun phrase (NP) and a predication expression a verb phrase (VP).
- Sentences (and clauses) consist of a verb and an appropriate set of NPs.
- Speakers can generate an unlimited number of sentences from a finite number of operations for combining phrases.
- Phrase-structure expansion rules generate underlying constituent structures.
- Syntactic operations change one constituent structure into another one.
- Positing underlying constituent structures captures the striking regularity of certain relationships between sentences that are otherwise not apparent on the surface.
- Positing underlying structures helps explain some elements of meaning and certain syntactic and semantic relationships between sentences.
- In order to explain how speakers relate two structures to one another (such as *Sydney doesn't believe in poltergeists* and *Doesn't Sydney believe in poltergeists?*), linguists posit an operation that transforms the structure underlying the basic declarative sentence into the structure underlying the interrogative one.
- It appears that the most important and most general syntactic operations involve movement such as WH-movement.

What Do You Think? REVISITED

1. *Clarence and productivity.* We hear some expressions so frequently that it's easy to imagine how we know them. Most things we say and read, though, we haven't said, heard, or read before. But the structures that underlie what we say and

hear are relatively few, and we have experience with them in everything we say, hear, and read. By combining these few structures in different ways, we can generate and understand completely new sentences easily and accurately.

2. *Amber and ambiguity.* Ambiguous words often don't call attention to themselves because context promotes a particular reading and efficiently eliminates alternatives. The utterance *I'm going to the bank to deposit a check* excludes the likelihood of a riverbank. Another kind of ambiguity arises when a string of words has more than one possible internal organization. *Gullible boys and girls* can mean 'girls and gullible boys' or 'gullible boys and gullible girls.' Likewise *new drug combinations* may be organized as *[new drug] combinations* or *new [drug combinations].*
3. *Roommate Ron.* The usual word order in an English sentence is subject-verb-object (*I hate turnips*), but there are grammatical alternatives (*Turnips I hate!*—which has an object-subject-verb order). Similarly, in *Not a drop of rain had fallen on Roanoke Island, said John Wilson,* the subject of the main clause—*John Wilson*—appears after the main verb *said,* which appears after the object clause *not a drop of rain had fallen on Roanoke Island.* The ordinary subject-verb-object order (*John Wilson—said—not a drop of rain had fallen on Roanoke Island*) focuses attention on John Wilson. For greater focus on the fact that not a drop of rain had fallen on Roanoke Island, the writer exploited the object-verb-subject order: *Not a drop of rain had fallen on Roanoke Island—said—John Wilson.*
4. *Nerdy Ned.* Ned should consider offing a grammar checker that's so unsophisticated it recommends changing every passive sentence he writes. After all, a passive sentence is sometimes precisely what's needed to keep the focus where a writer intends it to be. If Ned were writing about a winning team, he might choose to keep the focus there, and one way to do that would be by making *the winning team* the subject of the sentence, as in the one his checker balked at. ■

Exercises

Practice Exercise

A. In each sentence, identify the subject constituent and any direct object constituent.
   a. A political compromise will achieve that.
   b. That doesn't mean everybody will have a win-win situation.
   c. I would've noticed a progressive teacher's ideal pupil.
   d. What does the alternator do?
   e. A more radical position was held by the most prominent figure of the mission.
   f. Now the man who yearned for ten years to be a woman wants to remain a man.

B. Each sentence below has undergone one or more syntactic operations. Provide an appropriate underlying form for each, except those in parentheses, which are given simply for context.
   a. The scheme was initiated by displeased sophomores.
   b. The other girls were frustrated by our tactics.

c. Erin could eat squid, but I couldn't.
d. (I didn't expect that to happen.) Did you?
e. (How are you?) Not bad.
f. Do you know he failed his chemistry exam?
g. Apples I love. Pears I hate.

Based on English

5-1. **a.** List as many examples of these constituents as you can identify in sentences 1 and 2 below: NP, PP, VP.

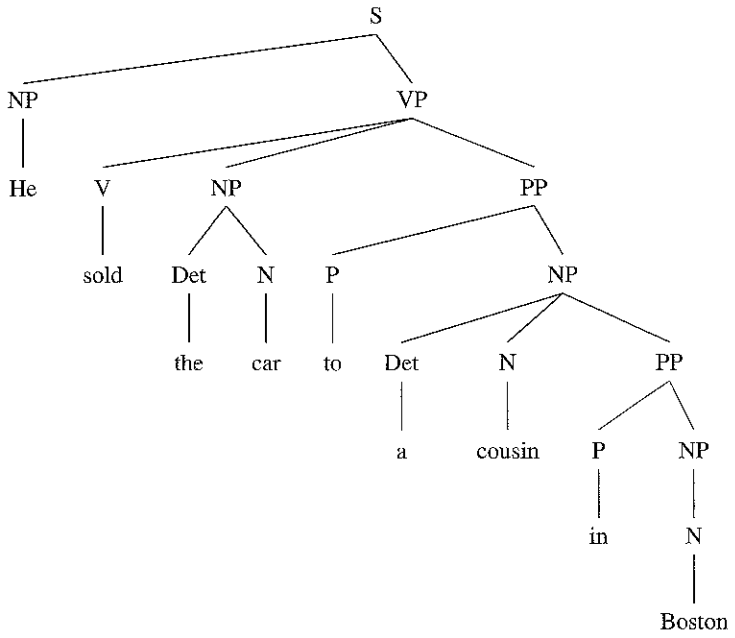
b. List as many examples of these lexical categories as you can identify in sentences 1 and 2 below: N, P, V.

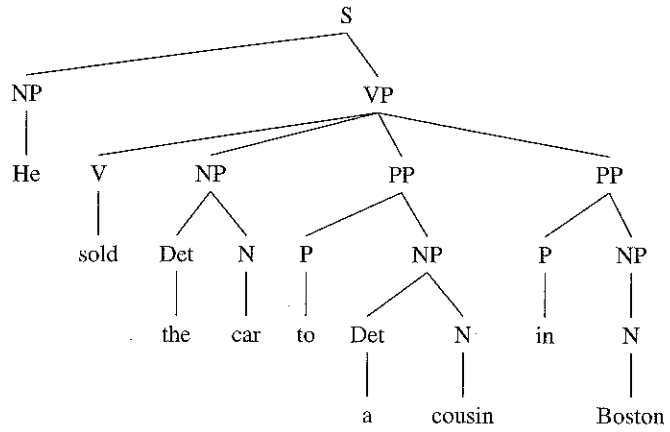
1) A concert at an arena near St. Louis ended in disaster after fans staged a full-fledged riot.

2) The trouble started when Axl Rose asked venue security to confiscate a camera he saw near the front of the stage.

c. For each of the expansions of VP given on page 162, provide an illustration. *Example*: *V NP—ate an apple.*

5-2. Match the following tree diagrams to one of these bracketed constituent structures: (i) He sold the car [to a cousin] [in Boston]; or (ii) He sold the car [to [a cousin in Boston]].





5-3. **a.** Draw a labeled tree diagram for each phrase below.

1) ancient inscriptions

2) in the dark night

3) concocted a potion

4) borrowed the book that the teacher recommended

5) the monstrous members of a terrible kingdom

b. Provide a tree diagram for each sentence (for the moment, ignore the italics).

1) Vampires *frighten him.*

2) The skies deluged the earth *with water.*

3) *A ghost has the spirit* of a dead person.

4) *Do ghosts exist* in *the physical world?*

5) *Does she* believe that ghosts exist?

6) The teacher *that I described to you* won the race.

c. For each *italicized* group of words in the sentences above, determine whether or not it is a constituent, and, if it is, provide its name.

5-4. What is the difference in the relationship between *Harry* and the verb *see* in 1 and 2 below? Draw tree diagrams of the underlying structure of the two sentences that reveal the difference in the structures.

1) Josh advised Harry to see the doctor.

2) Josh promised Harry to see the doctor.

5-5. English has the grammatical relations of subject, direct object, oblique, and possessor. But it is debatable whether indirect object is a distinct grammatical relation and, if so, whether it occurs in structures such as *The witch offered* **the child** *a potion* or *The witch offered a potion to* **the child.** The syntactic properties of *the child* differ in the two sentences. What syntactic evidence can you offer for arguing that *the child* does not have the same grammatical relation in each of those sentences? (*Hint*: At least one syntactic operation examined in this chapter does not produce grammatical strings for both the sentences.)

5-6. English has two forms of relative clauses. Form 1 fronts the relativized noun phrase but leaves any preposition where it stood in the original clause.

This is the man [whom I talked *to* — last night] (original clause: *I talked to the man last night*).

In Form 2, the preposition moves with the WH-word to the beginning of the clause.

This is the man [*to* whom I talked last night].

Describe the relative-clause operation for Form 2 relative clauses, focusing on how it differs from the operation for Form 1 relative clauses. Identify which relative pronouns can occur in which form of relative clause, and in which cases the two forms differ. Base your discussion on the following data:

This is the man [that left]. (Forms 1 and 2)

*This is the man [left]. (Forms 1 and 2)

This is the man [that I saw]. (Forms 1 and 2)

This is the man [who I saw]. (Forms 1 and 2)

This is the man [whom I saw]. (Forms 1 and 2)

This is the man [I saw]. (Forms 1 and 2)

This is the man [who I gave the book to]. (Form 1)

This is the man [whom I gave the book to]. (Form 1)

This is the man [that I gave the book to]. (Form 1)

This is the man [I gave the book to]. (Form 1)

*This is the man [to who I gave the book]. (Form 2)

This is the man [to whom I gave the book]. (Form 2)

*This is the man [to that I gave the book]. (Form 2)

*This is the man [to I gave the book]. (Form 2)

5-7. In the earlier section on relative clauses, we noted that the relative pronoun may be omitted from certain structures. Thus, in the following sentence, Ø represents an omitted relative pronoun:

Sarah saw a new film by the French director Ø Kendrick raved about.

a. For each of the following sentences, identify the grammatical relation of the relativized NP within its clause, using S for subject, DO for direct object, and Obl for oblique.

1) I lost the book [that you gave me].

2) He rented the video [that frightened you].

3) I bumped into the teacher [who taught me solid geometry].

4) I met the poet [who(m) we read about last week].

5) I found the video [that you lost].

6) I saw the oak tree [that you slept under].

7) The new teacher [that Lou liked] just quit.
8) The new teacher [who liked jazz] just quit.
9) I picked an apple from the tree [that you planted].
10) I like the new lyrics [that you complained about].

b. Which sentences would permit the relative pronoun to be omitted?

c. Which would not permit the relative pronoun to be omitted?

d. Which grammatical relations permit the relative pronoun to be omitted?

e. Which grammatical relations do not permit the relative pronoun to be omitted?

f. Rewrite sentences 4, 6, and 10, fronting the preposition with the relative pronoun.

g. Can the relative pronoun be omitted from the rewritten versions of 4, 6, and 10?

h. What generalization can you make about when a relative pronoun can be omitted from its clause?

5-8. Keeping in mind the movement operations for forming questions, analyze what has happened in the derivation of the sentences below to produce the ill-formed sentence. How would you formulate the auxiliary movement operation to avoid the ungrammatical example?

The teacher who will give that lecture is Lily's aunt.

*Will the teacher who give that lecture is Lily's aunt?

Is the teacher who will give that lecture Lily's aunt?

5-9. Examine the italicized sentence that follows: *If your wristband is lost or stolen, a nonrefundable fee of $25 for any replacement pass will be charged.* First, identify its passive voice verbs and then rewrite the sentence using only active voice verbs.

5-10. Below are five examples of sentences that a word processor's grammar checker found objectionable, along with the comment that suggests a particular correction. In each case, the grammar checker has made an incorrect analysis, and the suggested correction would yield an ill-formed sentence. For each example, identify the word or constituent structure that the grammar checker has wrongly analyzed and explain the basis for its suggested correction.

Example: "In this sentence, each embedded clause functions as a grammatical unit in its matrix clause."

Comment: The word *each* does not agree with *functions*. Consider *function* instead of *functions*. Explanation: Likely that grammar checker incorrectly analyzed *functions* as a plural noun (rather than a third-person-singular verb) and took *embedded clause functions* to be a noun phrase. If the analysis were correct, "each embedded clause function" would be well formed (but the clause would lack a verb).

1) "It is the word order in the sentence that signals who is doing what to whom."

   Comment: Consider *are* instead of *is.*

2) "Do 'George Washington' and 'the first president of the United States' mean the same thing?"

   Comment: Consider *presidents* instead of *president* or consider *means* instead of *mean.*

3) "When a student volunteers, 'Disneyland is fun,' . . . "

   Comment: The word *a* does not agree with *volunteers.*

4) "Linguistic semantics is the study of the systematic ways in which languages structure meaning."

   Comment: Consider *language's* or *languages'* instead of *languages.*

5) "Sentence 2 is true because we know the word *dogs* describes entities that are also described by the word *animals.*"

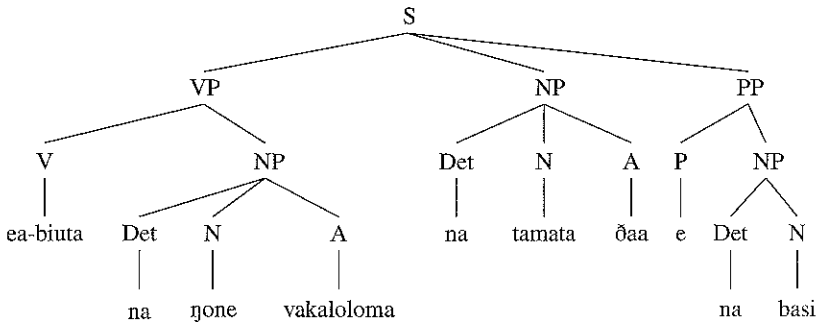
   Comment: Consider *describe* instead of *describes.*

Based on Languages Other Than English

5-11. Examine the tree diagram for this Fijian sentence:

ea-biuta	na	ŋone	vakaloloma	na	tamata	ðaa	e	na	basi
Past-abandon	the	child	poor		the man	bad	on	the	bus

'The bad man abandoned the poor child on the bus.'



a. Provide the phrase-structure rules that will generate this constituent-structure tree.

b. Notice that the order of certain constituents in the Fijian sentence differs from that of English. With respect to constituent order, what are the major differences between Fijian and English?

c. On the basis of the tree structure, determine which of the following strings of words are constituents and give the name of each constituent.

na basi	ea-biuta na ŋone vakaloloma
vakaloloma na tamata	e na
e na basi	na ŋone
na tamata ðaa	na ŋone vakaloloma na tamata ðaa
ðaa e na basi	ŋone vakaloloma
ea-biuta	e-biuta na ŋone

Especially for Educators and Future Teachers

5-12. Although we have downplayed the difference between *who* and *whom* in the examples in this chapter, writers and speakers who regularly make a distinction between them in relative clauses do so as in the sentences that follow:

1) It was Lynne *who* answered.
2) She's a keen golfer, *who* plays mostly in Morro Bay.
3) A nurse *who* walked his dog without a leash was fined $600.
4) Then came a meeting with the woman *whom* he intended to marry.
5) Her grandmother, *whom* she adored, was gravely ill.
6) He married a woman from Devon, *whom* he'd met in Australia.
7) Ricardo, with *whom* we spent a week in Sitges, had sailed in Baja.
8) He said this to Eddie, *who* doesn't deny the lawyer's gut feeling.
9) This isn't solely for those *who* have decided to turn their lives around.
10) He was a friend of Truman's, with *whom* he had an affair and *who* encouraged him to write.

After examining these sentences, formulate a statement that captures the facts about when such writers and speakers use *who* and *whom* in relative clauses. (*Hint*: Bracket the relative clause and examine the grammatical relation of the relative pronoun within its clause.)

5-13. In this chapter, we discussed *who* and *whom* in different ways. On page 169, we took a *descriptive* approach, using the forms that speakers commonly use. But in Exercise 5.12, we considered a more traditional analysis, favored by some teachers and editors, that is sometimes referred to as prescriptive grammar, an approach that *prescribes* particular language forms as some people think they *should be*. What position do you think a teacher should take with respect to common usages that are criticized by prescriptive grammarians? What do you think students should understand about the role of language prescription in their lives? Do you think its role should be the same for them when they write and when they speak? Should teachers at different levels of education take different approaches to description and prescription? Explain your position and justify it.

Other Resources

Suggestions for Further Reading

- **Andrew Carnie. 2007. *Syntax: A Generative Introduction*, 2nd ed.** (Malden, MA: Wiley-Blackwell). A challenging introduction to generative syntax, with additional chapters on lexical-functional grammar and head-driven phrase-structure grammar.
- **Vivian J. Cook & Mark Newson. 2007. *Chomsky's Universal Grammar: An Introduction*, 3rd ed.** (Malden, MA: Wiley-Blackwell). A more advanced introduction to formal grammar, with chapters on principles and parameters, X-bar theory, and the minimalist program, going beyond the present chapter in accessible steps.
- **Jim Miller. 2009. *An Introduction to English Syntax*, 2nd ed.** (Edinburgh: Edinburgh University Press). A basic introduction to the syntax of English, combining structural and functional considerations; thorough and advanced.
- **Max Morenberg. 2009. *Doing Grammar*, 4th ed.** (New York: Oxford University Press). Focused on practical understanding of English grammar in traditional terms.
- **Maggie Tallerman. 2005. *Understanding Syntax*, 2nd ed.** (New York: Oxford University Press; London: Hodding-Arnold). A clear introduction.

Advanced Reading

Comprehensive, if somewhat advanced, treatments of syntax, especially English syntax, can be found in Radford (2009). The volumes edited by Shopen (2007) contain a wealth of useful material; probably accessible to interested readers who have mastered the present chapter are two excellent chapters of Volume I: "Parts-of-Speech Systems" and "Passive in the World's Languages"; Volume II contains valuable chapters discussing "Complementation" and "Relative Clauses." Thompson (2004) is a somewhat advanced treatment of functional grammar. Haegeman (2006) shows how to analyze sentence structure. Huddleston and Pullum (2002) is a rich grammar of English, with valuable theoretical discussion; at pages 1018–22, interested readers will find arguments against treating clauses like *he saw a ghost* as an object noun phrase in sentences like *Harry said he saw a ghost*, but such arguments are beyond the scope of this chapter. Comrie (1989) provides a clear discussion across a range of languages of syntactic universals, especially of word order, subject, case marking, and relative clauses.

References

Comrie, Bernard. 1989. *Language Universals and Linguistic Typology: Syntax and Morphology*, 2nd ed. (Chicago: University of Chicago Press).

Haegeman, Liliane. 2006. *Thinking Syntactically: A Guide to Argumentation and Analysis* (Malden, MA: Blackwell).

Huddleston, Rodney & Geoffrey K. Pullum. 2002. *The Cambridge Grammar of the English Language* (Cambridge, UK: Cambridge University Press).

Radford, Andrew. 2009. *Analysing English Sentences: A Minimalist Introduction* (Cambridge, UK: Cambridge University Press).

Shopen, Timothy, ed. 2007. *Language Typology and Syntactic Description*, 2nd ed., 3 vols. (Cambridge, UK: Cambridge University Press).

Thompson, Geoff. 2004. *Introducing Functional Grammar*, 2nd ed. (London: Arnold; New York: St. Martin's).

6

The Study of Meaning: Semantics

What Do You Think?

- Philosophy major Phyllis frequently poses language questions to classmates. Recently she asked if you thought that "George Washington" and "the first president of the United States" mean the same thing? What do you tell her?
- Doubting Donald questions whether English has any true synonyms. Cocky Ken says, "What about *fast* and *quick*? Both of them mean 'speedy.'" Donald one-ups him, pointing out that *a fast talker* isn't the same as *a quick talker*. Donald claims that if you can't consistently substitute one word for another, they're not true synonyms. Who's right—or is the matter more complicated than that?
- Uncle Ernie knows you're studying linguistics and asks whether linguists have a term to capture the relationship between pairs of words like *uncle* and *nephew*, *student* and *teacher*, *doctor* and *patient*. "They're not opposites like *hot* and *cold*," he says. "But what are they?" What do you tell him?
- Cousin Kevin teases his 4-year-old daughter Dolly about a coloring book he's taken from her at a family picnic. Dolly says, "That's *mine*." Kevin says, "That's right, it *is* mine." Dolly repeats, "No, it's *mine*!" Kevin says, "That's what I said: it's *mine*." "No, it's not," Dolly insists, and then she grabs her book and walks away. What is it about the meaning of *yours* and *mine* that makes it possible to tease a 4-year-old this way?

Introduction

Semantics has to do with meaning, and linguistic semantics is the study of the systematic ways in which the world's languages structure meaning, especially in words and sentences. That will be the focus of this chapter.

In defining linguistic semantics (which we'll simply call "semantics"), we must invoke the word *meaning*. In everyday interaction, we use the words *meaning* and *to mean* in different contexts and for different purposes. For example:

The word *perplexity means* 'the state of being puzzled.'

Rash has two *meanings*: 'impetuous' and 'skin irritation.'

In Spanish, *espejo means* 'mirror.'

I don't *mean* that he's incompetent; just that he's inefficient.

The *meaning* of the cross as a symbol is complex.

I *meant* to bring you my paper but forgot it at home.

What Is Meaning?

Linguists, too, attach different interpretations to the word *meaning*. Because the goal of linguistics is to explain precisely how languages are structured and how they're used to represent situations in the world (among other things), it is helpful to distinguish among different ways of interpreting the word *meaning*.

A few examples will illustrate why we need to develop a precise way of talking about meaning. Consider these sentences:

1. I went to the store this morning.
2. All dogs are animals.

The truth of sentence 1 depends on whether or not the speaker is in fact telling the truth about having gone to the store; nothing about the words of the sentence makes it inherently true. By contrast, sentence 2 is true because the word *dogs* describes entities that are also described by the word *animals*. The truth of 2 depends not on whether the speaker is telling the truth but solely on the meanings of the words *dogs* and *animals*.

Now compare the following pairs of sentences:

3. You are too young to drink.

   You are not old enough to drink.

4. Matthew spent several years in northern Tibet.

   Matthew was once in northern Tibet.

The sentences of 3 basically "say the same thing" in that the first describes exactly what the second describes, and if the first is true then the second must also be true. We say they are *synonymous* sentences or that they paraphrase one another. In 4, the first sentence *implies* the second, but not vice versa. If Matthew spent several years in northern Tibet, he must have set foot there at some point in his life. On the other hand, if Matthew was once in northern Tibet, it is not necessarily the case that he spent several years there.

Next, consider these sentences:

5. The unmarried woman is married to a bachelor.
6. My toothbrush is pregnant.

Sentences 5 and 6 are well formed syntactically, but something is amiss with their semantics. The meanings of the words in 5 contradict each other: an unmarried woman cannot be married—certainly not to a bachelor. Sentence 5 thus presents a *contradiction*. Sentence 6 is not contradictory but semantically *anomalous*: toothbrushes are not capable of being pregnant. To diagnose precisely what is wrong with these sentences, we need to distinguish between contradictory and anomalous sentences.

Finally, examine sentences 7 and 8:

7. I saw her duck.
8. She ate the pie.

Sentence 7 may be interpreted in two ways: *duck* may be a verb referring to the act of bending over quickly (while walking through a low doorway, for example), or it may be a noun referring to a type of waterfowl. These interpretations give the sentence two distinct meanings. Because there are two possible readings of 7, it is said to be **ambiguous**. On the other hand, while 8 is not ambiguous, it has an imprecise quality, at least when considered out of context. While we know that the subject of 8 is female, we cannot know who it is that *she* refers to or which pie was eaten, although the phrase *the pie* indicates that the speaker has a particular one in mind. Taken out of context, 8 is thus *vague* in that certain details are left unspecified, but it is not ambiguous.

These observations illustrate that meaning is a multifaceted notion. A sentence may be meaningful and true because it states a fact about the world or because the speaker is telling the truth. Two sentences may be related to each other because they mean exactly the same thing or because one implies the other. Finally, when we feel there is something wrong with the meaning of a sentence, it may be because the sentence is contradictory, anomalous, ambiguous, or merely vague. One goal of semantics is to distinguish among these different ways in which language "means."

Linguistic, Social, and Affective Meaning

For our purposes we initially distinguish three types of meaning: linguistic meaning, social meaning, and affective meaning.

Linguistic Meaning

Meaning is a complicated matter and there is no single agreed-upon theory about how languages mean. Although analysis of meaning goes back as far as Plato and Aristotle, we remain far from a complete understanding of how languages encode meaning and how speakers interpret utterances.

Referential Meaning One way of defining meaning is to say that the meaning of a word or sentence is the actual person, object, abstract notion, event, or state to which the expression makes reference, the entity the term picks out or identifies. (Some treatments refer to referential meaning as *extensional* meaning.) The **referential meaning** of *Alexis Rathburton*, for example, would be the person who goes by that name. The phrase *Scott's dog* would refer to the particular domesticated canine belonging to Scott. That animal can be said to be the referential meaning of the linguistic expression *Scott's dog*, and the canine picked out or identified by the expression is its **referent**.

Words are not the only linguistic units that carry referential meaning. Sentences too refer to actions, states, and events in the world. *Cody is sleeping on the sofa* refers to the fact that a person named *Cody* is at the time of the utterance asleep on an elongated piece of furniture generally meant to be sat upon. The referent of the sentence is thus Cody's state of being on the piece of furniture in question.

Sense Meaning Referential meaning is not sufficient to explain *how* some expressions mean what they mean. For one thing, not all expressions have referents. Neither *a unicorn* nor *the present king of France* has an actual referent in the real world, but both expressions have meaning. Even leaving social and affective meaning aside, if expressions had only referential meaning, then the sentences in 1 below would mean exactly the same thing, as would those in 2. Of course, they don't mean the same thing.

1. George Washington was the first president of the United States.

   George Washington was George Washington.

2. Michelle Robinson married Barack Obama in 1992.

   Michelle Robinson married the forty-fourth president of the United States in 1992.

Not only do the sentences of 2 mean different things, but the second one seems distinctly odd: after all, the United States did not have its forty-fourth president until 2009. If *the forty-fourth president of the United States* had only a referential meaning, then the second sentence in 2 would seem perfectly ordinary because *Barack Obama* and *the forty-fourth president of the United States* have the same referent. But something is odd about that second sentence, including the fact that when Michelle Robinson got married there wasn't yet a forty-fourth president of the United States.

Proper nouns such as *George Washington*, *Michelle Robinson*, and *Barack Obama* constitute a special category, and we might say that the meaning of proper nouns like those is the person named, the person to whom the proper noun refers. By contrast, the meaning of expressions like *the president of the United States* and *the forty-fourth president of the United States* cannot be reduced to their referents. Consider the sentences of 3:

3. Al Gore nearly became the forty-third president of the United States.

   Al Gore nearly became George W. Bush.

Despite the fact that *George W. Bush* and *the forty-third president of the United States* have precisely the same referent, the sentences in 3 plainly do not mean the

same thing. In general, we cannot equate the meaning of an expression with the referent of the expression. We say that expressions have "senses" as well as referents, and any theory of semantics must take sense meaning into account. In the first sentence in 3 above, the focus is on the sense of *the forty-third president of the United States*. (Just as extensional meaning is a term sometimes used for referential meaning, so *intentional* meaning is sometimes used for sense meaning.)

Try It Yourself One of the sentences below relies on the referential meaning of *the president of the United States* and the other focuses on its sense. Which is which?

The president of the United States was born in Hawaii.

By law, *the president of the United States* must be at least 35 years of age.

Social Meaning

Linguistic meaning is not the only type of meaning that speakers communicate to each other. Consider these sentences:

1. So I says to him, "You can't do nothin' right!"
2. Is it a doctor in here?
3. Y'all gonna visit over the Labor Day holiday?
4. Great chow!

In addition to representing actions, states, and mental processes, these sentences convey information about the identity of the person who has uttered them or about the situation in which they've been uttered. In 1, use of the verb *says* with the first-person singular pronoun *I* indicates something about the speaker's social status. In 2, the form *it*, where some other varieties use *there*, likely indicates a speaker of African American English, an ethnically marked variety. In 3, the pronoun *y'all* identifies a particular regional dialect of American English. Finally, the choice of words in 4 indicates that the comment was made in an informal context. Social status, ethnicity, regional origin, and context are all social factors. In addition to linguistic meaning, then, every utterance also conveys social meaning, not only in the sentence as a whole but in word choice (*y'all* and *chow*) and pronunciation (*gonna* and *nothin'*).

Affective Meaning

In addition to linguistic meaning and social meaning, there is affective meaning. Compare the following examples:

1. Tina always boasts about her two doctorates, and she lectured me all night about Warhol's art.
2. Tina, who's got two doctorates, offered a fascinating overview of Warhol's art last night.

Because these two sentences can be used to represent exactly the same event, we say they have similar referential meaning. At another level, though, the

information they convey is different. Sentence 1 gives the impression that the speaker considers Tina a pretentious bore. Sentence 2, in contrast, indicates that the speaker finds her interesting. The "stance" of the speaker thus differs in these utterances.

Word choice is not the only way to communicate feelings and attitudes toward utterances and contexts. A striking contrast is provided by sentences that differ only in terms of stress or intonation. *Victoria is really smart* is a string of words that can be interpreted in several ways depending on the intonation. It may be uttered in a matter-of-fact way, without emphasizing any word in particular, in which case it will be interpreted literally as a remark acknowledging Victoria's intelligence. But if the words *really* and *smart* are stressed in an exaggerated manner, the sentence may be interpreted as sarcastic and intended to convey an opposite meaning. Intonation (often accompanied by appropriate facial expressions) can be used as a device to communicate attitudes and feelings, and it can override the literal meaning of a sentence.

Consider a final example. Suppose that Andy Grump, father of Sarah, addresses her as follows:

Sarah Grump, how many times have I asked you not to channel surf?

There would be reason to look beyond the words for the "meaning" of this unusual form of address. Mr. Grump may address his daughter as *Sarah Grump* to show his exasperation, as in this example. By addressing her as *Sarah Grump* instead of the usual *Sarah*, he conveys frustration and annoyance. His choice of name thus signals his exasperation. Contrast the tone of that sentence with a similar one in which he addresses her as *dear*.

The level of meaning that conveys a speaker's feelings, attitudes, and opinions about a particular piece of information or about the ongoing context is called *affective* meaning, and it is not a property belonging exclusively to sentences. Words such as *Alas!* and *Hooray!* obviously have affective meaning, and so can words such as *funny*, *sweet*, and *obnoxious*. Even common words like *father*, *democracy*, and *old* can evoke particular emotions and feelings in us. The difference between synonymous or near-synonymous pairs of words such as *vagrant* and *homeless* is essentially a difference at the affective level. In this particular pair, *vagrant* carries a negative affect, while *homeless* is neutral. Little is known yet about how affective meaning works, but it is of great importance in all verbal communication.

From our discussion so far, you can see that meaning is not a simple notion but a complex combination of three aspects:

- **Linguistic meaning**: referential meaning (the real-world object or concept picked out or described by an expression) and sense meaning
- **Social meaning**: the information about the social character of the speaker or the context of utterance
- **Affective meaning**: what the speaker feels about the content or the ongoing context

The linguistic meaning of an expression is frequently called its *denotation*, in contrast to *connotation*, which includes both social and affective meaning.

This chapter focuses primarily on linguistic meaning, the traditional domain of semantics, but we occasionally refer to the three-way distinction. Social meaning is further explored in Chapters 10 and 11.

Word, Sentence, and Utterance Meaning

Meaning of Words and Sentences

We have talked about words and sentences as the two units of language that carry meaning. **Content words**—principally nouns, verbs, prepositions, adjectives, and adverbs—have meaning in that they refer to concrete objects and abstract concepts; are marked as characteristic of particular social, ethnic, and regional dialects and of particular contexts; and convey information about the feelings and attitudes of speakers. **Function words** such as conjunctions and determiners also carry meaning, though in somewhat different ways from content words, as we'll see later in this chapter. Like individual words, sentences also have social and affective connotations. The study of word meaning, however, differs from the study of sentence meaning because the units are different in kind.

In order to derive meaning from a sentence, we must rely on the meaning of the individual words it contains. How we accomplish the task of retrieving sentence meaning from word meaning, however, is a complex question. One obvious hypothesis would be that the meaning of a sentence is simply the sum of its word meanings. To see that this is *not* the case, consider the following sentences in which the individual words (and therefore the *sum* of their meanings) are the same:

The lion licked the trainer.

The trainer licked the lion.

Obviously, the sentences refer to different events and hence have different linguistic meanings. This is conveyed by the fact that the words of the sentences are ordered differently. We cannot say that all we need to do to retrieve the meaning of a sentence is add up the meanings of its parts. We must also consider the *semantic role* assigned to each word. By *semantic role* we mean such things as *who* did what *to whom, with whom,* and *for whom.* In other words, the semantic role of a word is the role its referent plays in the action or state of being described by the sentence. Sentence semantics is concerned with semantic roles and with the relationship between words and constituents within a sentence.

Scope of Word Meaning

While it is important to distinguish between word meaning, on the one hand, and phrase and sentence meaning, on the other, the two interact on many levels. In Chapter 5 we examined the phrase *gullible boys and girls,* noting that it had two possible constituent structures and thus two possible meanings. Another way to think about the ambiguity of that phrase is to consider whether the adjective *gullible* has *boys and girls* within its scope (as in Figure 5.3) or only *boys* (as in Figure 5.4). In other words, does *gullible* modify only *boys* or both *boys and girls*? Scope is a very

important matter in determining meaning, and because the scope of modifiers has proven crucial in interpreting legal matters, including contracts and statutes themselves, many a case has come before the courts—including the United States Supreme Court—contesting the scope of an adjective or adverb modifier.

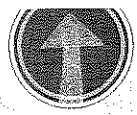
In a sentence, the scope of individual words is also important in determining meaning. Consider this sentence:

> He may leave tomorrow if he finishes his term paper.

The individual words *may*, *tomorrow*, and *if* have meanings: *may* denotes permission or possibility; *tomorrow* indicates a future time span that begins at midnight on the day the sentence is spoken; and *if* indicates a condition. But the impact of these words reaches beyond the phrases in which they occur and affects the meaning of the entire sentence. Indeed, if we replace *may* with *will*, the sentence takes on an altogether different meaning:

> He will leave tomorrow if he finishes his term paper.

With *may* the sentence denotes permission or possibility, but with *will* it simply describes a future event. Thus *may* affects the meaning of the *entire* sentence, and the *scope* of the meaning of *may* is the entire sentence. This is true also of *tomorrow* and *if*. Such examples illustrate that word meaning and sentence meaning are intertwined.



Try It Yourself Determine the scope of *only* in the sentences below. Using 1 as a model, provide a sentence that illustrates the scope of *only* for 2 and 3. Where the scope of *only* is ambiguous, give alternative sentences, each of which is *unambiguous*.

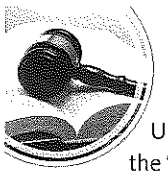
1. He wants *only* you to be happy. (alternative: He wants only you to be happy; he doesn't care about anyone else.)
2. *Only* she wants you to win.
3. She *only* wants to talk to her daughter.

Meaning of Utterances

In addition to words and sentences, a third factor carries meaning, but we may not readily notice it because we take it for granted in day-to-day interactions. Consider this utterance:

> I now pronounce you husband and wife.

This sentence may be uttered in different sets of circumstances: (1) by an officiant at a ceremony, speaking to a couple intending to get married in the presence of family and friends or (2) by an actor dressed as an officiant, speaking to two actors before a congregation of Hollywood extras assembled by a director filming a soap opera. In the first instance, *I now pronounce you husband and wife* creates a marriage for the couple. But that same utterance has no effect on the marital status of any actor on the filming location. Thus the utterance situation creates different meanings even when the linguistic meaning of the sentence remains unchanged. It is therefore necessary to know the circumstances of an utterance in order to understand its effect or force. We say that the sentence uttered in the wedding context and the sentence uttered in the film context have the same linguistic meaning but are different **utterances**, each with its own *utterance meaning*.



At the Bar
Knowingly Ate a Sandwich with Cheese

Under U.S. federal law, a statute called the "aggravated identity theft" law adds a two-year prison term when a person has committed certain crimes such as misusing immigration documents if the offender "knowingly transfers, possesses, or uses, without lawful authority, a means of identification of another person." The key word here is the adverb *knowingly*, and the key question is its scope: what does *knowingly* modify?

In 2006, Ignacio Flores-Figueroa, a citizen of Mexico, entered the United States without inspection and misused immigration documents, including giving a false Social Security number, crimes to which he pled guilty and for which he was sentenced to 51 months in prison. The judge imposed an additional two-year sentence because, as he saw things, *knowingly* (in the law quoted above) does not modify the phrase *of another person*. In other words, whether or not Flores-Figueroa knew that the document numbers belonged to another person does not matter because the phrase *of another person* does not fall within the scope of the adverb *knowingly*.

Flores-Figueroa appealed the additional prison sentence, and the linguistic question at the heart of his appeal was the scope of the adverb *knowingly*. (Here, we ignore the phrase "without lawful authority" because it doesn't affect the outcome at issue.) Is the scope of *knowingly* limited only to "transfers, possesses, or uses . . . a means of identification," or does it also include "of another person"? To put it simply, in order to break the aggravated identity theft law, would someone who *knowingly* used a means of identification belonging to a real person have to know that it did in fact belong to a real person? Think of it this way: if you made up a Social Security number as a means of identification (which would be unlawful) and if that Social Security number did not belong to anybody, clearly you couldn't be charged with aggravated identity theft. But what if the Social Security number you made up happened to belong to a real person? Flores-Figueroa claimed that the government couldn't prove one way or the other whether he knew that the "means of identification" (the Social Security number) belonged to a real person.

Flores-Figueroa lost his initial circuit court appeal and took his claim to the highest United States court. The Supreme Court of the United States asked, basically, whether the aggravated identity theft statute requires that an offender *know* that the unlawfully used "means of identification" in fact belongs to "another person," and it concluded that the statute requires precisely that. Although in the decision the justices used terms like "ordinary English usage" and "ordinary English grammar" a total of 10 times, the reason it agreed to hear the case in the first place was that appellate courts throughout the United States had different interpretations of the scope of *knowingly* in the statute's ordinary language. In other words, what in one context may be "ordinary English usage" may differ from that in another. For the Supreme Court, however, "If we say that someone knowingly ate a sandwich with cheese, we normally assume that the person knew both that he was eating a sandwich and that it contained cheese." In the same way, the scope of *knowingly* includes all the underscored words in "knowingly transfers, possesses, or uses . . . a means of identification of another person." In the view of the U.S. Supreme Court, Mr. Flores-Figueroa was correct in his view of the scope of the adverb *knowingly*! ■

The difference between sentence meaning and utterance meaning can be further illustrated by the question *Can you shut the window?* There are at least two ways in which an addressee might react to this question. One way would be to say *Yes* (meaning 'Yes, I am able to shut the window') and then do nothing about it. This "smart-aleck" interpretation isn't the way such a question is usually intended. Alternatively, the addressee could simply shut the window. Obviously, these interpretations of the

same question are different: the smart-aleck interpretation treats the question as a request for *information*; the alternative treats it as a request for *action*. To describe the difference between these interpretations, we say they are distinct *utterances*.

Sentence semantics is not concerned with utterance meaning. (Utterances are the subject of investigation of the branch of linguistics called *pragmatics*, which we treat in Chapters 8 and 9.) A premise of sentence semantics is that sentences must be divorced from the context in which they are uttered—in other words, that sentences and utterances must be distinguished. Because meaning depends so heavily on context, this premise may appear counterintuitive. The point is not to discard context as unimportant but to recognize that *sentences* may carry meaning independently of context, while utterance meaning depends crucially on the circumstances of the utterance. **Semantics** is the branch of linguistics that examines word and sentence meaning while generally ignoring context. By contrast, **pragmatics** attends more to the relationship of an utterance to its context.

Lexical Semantics

The *lexicon* of a language can be viewed as a compendium of all its words. Words are sometimes called **lexical items**, or *lexemes* (the *-eme* ending parallel to that in *phoneme* and *morpheme*). The branch of semantics that deals with word meaning is called **lexical semantics**.

Lexical semantics examines relationships among word meanings. For example, it asks what the relationship is between the words *man* and *woman* on the one hand and *human being* on the other hand. How are the adjectives *large* and *small* in the same relationship to each other as the pair *dark* and *light*? What is the difference between the meaning of words such as *always* and *never* and the meaning of words such as *often* and *seldom*? What do speakers actually mean when they say that a dog is "a type of" mammal? Lexical semantics investigates such questions. It is the study of how the lexicon is organized and how the meanings of lexical items are interrelated, and its principal goal is to build a model for the structure of the lexicon by categorizing the types of relationships between words. Lexical semantics focuses on linguistic meaning.

Semantic Fields

Consider the following sets of words:

1. cup, mug, wineglass, tumbler, chalice, goblet
2. hammer, cloud, tractor, eyeglasses, leaf, justice

The words of 1 denote concepts that can be described as 'vessels from which to drink,' while the words of 2 denote concepts that have nothing in common. The words of 1 constitute a **semantic field**—a set of words with an identifiable semantic affinity. The following set is also a semantic field, all of whose words refer to emotional states:

angry, sad, happy, exuberant, depressed, afraid

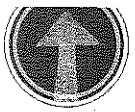
Words, then, can be classified into sets according to their meaning.

In a semantic field, not all lexical items necessarily have the same status. Consider the following sets, which together form the semantic field of color terms (of course, there are other terms in the same field):

1. blue, red, yellow, green, black, purple
2. indigo, saffron, royal blue, aquamarine, bisque

The colors referred to by the words in 1 are more "usual" than those described in 2. They are said to be less **marked** members of the semantic field than those of 2. The less marked members of a semantic field are usually easier to learn and remember than its more marked members. Children learn the term *blue* before they learn *indigo*, *royal blue*, or *aquamarine*. Often, a less marked word consists of only one morpheme, in contrast to more marked words (contrast *blue* with *royal blue* or *aquamarine*). The less marked member of a semantic field cannot be described by using the name of another member of the same field, whereas more marked members can be so described (*indigo* is a kind of blue, but *blue* is not a kind of indigo). Less marked terms also tend to be used more frequently than more marked terms; for example, *blue* occurs considerably more frequently in conversation and writing than *indigo* or *aquamarine*. (The million-word Brown Corpus of written American English contains 126 examples of *blue* but only one of *indigo* and not even one of *aquamarine*.) Less marked terms are also often broader in meaning than more marked terms; *blue* describes a broader range of colors than *indigo* or *aquamarine*. Finally, less marked words are not the result of the metaphorical usage of the name of another object or concept, whereas more marked words often are; for example, *saffron* is the color of a spice that lends its name to the color.

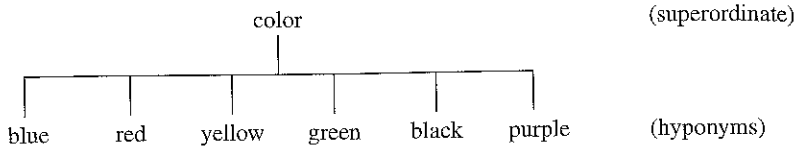
Using our understanding of semantic field and markedness, we now turn to identifying types of relationships between words. We'll see how the words of a semantic field can have different types of relationships to one another and to other words in the lexicon.



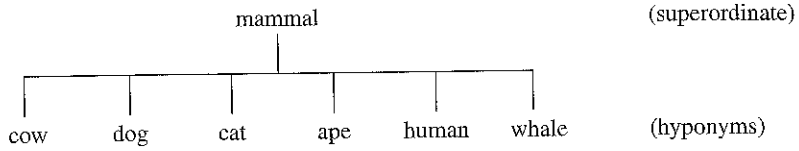
Try It Yourself *Rust, silver, orchid,* and *champagne* are members of the semantic field of colors, and you can readily identify the sources that gave rise to these color terms. Fruits, flowers, minerals, and other natural objects are notable sources of terms in this semantic field. Can you identify five additional color terms directly borrowed from the name of a real-world object of that color?

Hyponymy

Consider again this set of unmarked color terms: *blue, red, yellow, green, black, purple*. What they have in common is that they refer to colors. We say that the terms *blue, red, yellow, green, black,* and *purple* are hyponyms of the term *color*. A **hyponym** is a subordinate, specific term whose referent is included in the referent of a superordinate term. Blue is a kind of color; red is a kind of color; and so on. They are specific colors, and *color* is the general term for them. We can illustrate the relationship by the following diagram, in which the lower terms are the hyponyms (*hypo-* means 'below'). The higher term—in this case, *color*—is called the superordinate term (technically, the *hypernym*).

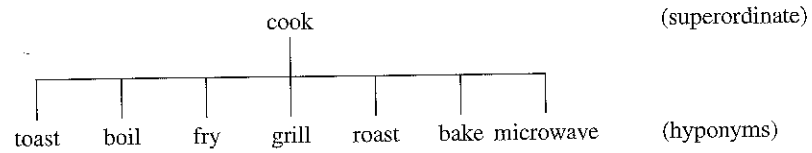


Another example is the term *mammal*, whose referent includes the referents of many other terms.



The relationship between each of the lower terms and the higher term is called *hyponymy*.

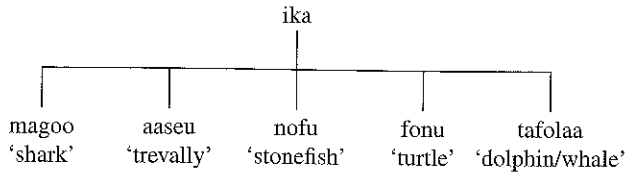
Hyponymy is not restricted to objects such as *mammal* or abstract concepts such as *color*—or even to nouns, for that matter. Hyponymy can be identified in many other areas of the lexicon. The verb *to cook*, for example, has many hyponyms.



Not every set of hyponyms has a superordinate term. For example, *uncle* and *aunt* form a lexical field because we can identify a shared property in their meanings. Yet English does not have a term that refers specifically to both uncles and aunts (that is, to siblings of parents and their spouses).

By contrast, some other languages do have a superordinate term for the equivalent field. In Spanish, the plural term *tíos* can include both aunts and uncles, and the Spanish equivalents of the terms *uncle* and *aunt* are therefore hyponyms of *tíos*.

While hyponymy is found in all languages, the concepts that have words in hyponymic relationships vary from one language to the next. In Tuvaluan (a Polynesian language), the higher term *ika* (roughly, 'fish') has as hyponyms not only all terms that refer to the animals that English speakers would recognize as fish but also terms for whales and dolphins (which speakers of English recognize as mammals) and for sea turtles (which are reptiles). Of course, we are dealing with folk classifications here, not scientific classifications.



Thus there is variability across languages as to the exact nature of particular hyponymic relationships.

In a semantic field, hyponymy may exist at more than one level. A word may have both a hyponym and a superordinate term, as *blue* has in Figure 6.1. Because they refer to different "types" or "shades" of blue, the terms *turquoise, aquamarine,* and *royal blue* are hyponyms of *blue. Blue* in turn is a hyponym of *color.* We thus have a hierarchy of terms related through hyponymic relationships. Similar hierarchies can be established for many semantic fields, almost without limit. In the "cooking" field, *fry* has hyponyms in the terms *stir-fry, sauté,* and *deep-fry* and is itself a hyponym of *cook.* The lower we get in a hierarchy of hyponyms, the more marked the terms: *cook* is relatively unmarked; *stir-fry* is considerably more marked. The intermediate term *fry* is less marked than *stir-fry* but more marked than *cook.*

Examples of multiple layers of hyponymic relationships abound in the area of folk biological classification, as illustrated in Figure 6.2. Note that the term

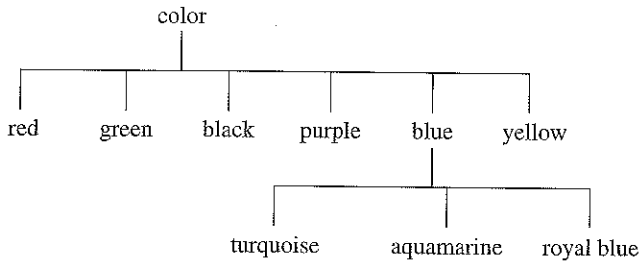


Figure 6.1

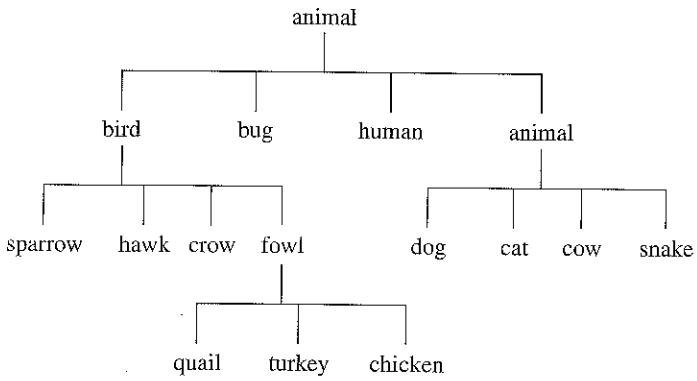


Figure 6.2

animal appears on two levels. English speakers use *animal* for at least two different referents: (1) animals as distinct from plants and rocks and (2) animals (generally mammals other than humans) as distinct from humans, birds, and bugs. Cases in which a word has different senses at different levels of a hyponymic hierarchy are not uncommon.

Hyponymy is one of several relationship types with which speakers organize the lexicon. It is based on the notion of *inclusion*: if the referent of term *A* (for example, *color*) includes the referent of term *B* (for example, *red*), then term *B* (*red*) is a *hyponym* of term *A* (*color*). Hyponymy is important in everyday conversation—we use it whenever we say "B is a kind of A" (*red* is a kind of *color*)—and for such tasks as using a thesaurus, which is organized according to hyponymic relationships.

Meronymy: Part/Whole Relationships

A second important hierarchical relationship between words is the one found in pairs such as *hand* and *arm* or *room* and *house*. In each pair, the referent of the first term is part of the referent of the second term. A hand, however, is not "a kind of" arm, and thus the relationship between *hand* and *arm* is not hyponymic. Instead, it is a *part/whole relationship* (also called a meronymic relationship). Part/whole relationships are not a property of pairs of words only: *hand*, *elbow*, *forearm*, *wrist*, and several other words are in a part/whole relationship with *arm*. Other examples of meronymy include words such as *second* and *minute*, *minute* and *hour*, *hour* and *day*, *day* and *week*, none of which could be described without reference to the fact that one is a subdivision of the other. Figure 6.3 illustrates the difference between a meronymic, or part/whole, relationship and a hyponymic relationship for the word *eye*.

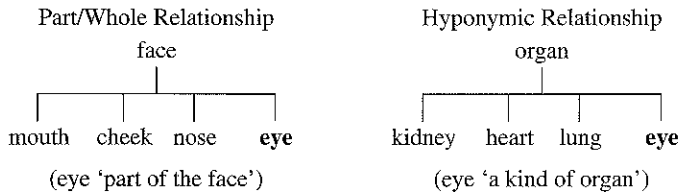


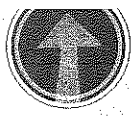
Figure 6.3

Synonymy

Two words are said to be **synonymous** if they mean the same thing. The terms *movie*, *film*, *flick*, and *motion picture* all have the same set of referents in the real world and are usually taken to be synonymous terms. To address the notion of synonymy more formally, we can say that term *A* is synonymous with term *B* if every referent of *A* is a referent of *B* and vice versa. For example, if every movie is a film and every film is a movie, the terms *movie* and *film* are synonymous. The "vice versa" is important: without it, we would be defining hyponymy.

You may wonder why speakers of a language bother to keep synonyms, given that they only add redundancy to the lexicon. English has many synonymous pairs, such as *cloudy* and *nebulous*, *help* and *assist*, *skewed* and *oblique* (the result

of English having borrowed the second term of each pair from French or Latin). When we assert that two terms are synonymous, we usually base that judgment on linguistic meaning only. Thus, even though *movie, film, flick,* and *motion picture* have the same linguistic meaning, they differ in social and affective meaning. *Film* may strike you as appropriate for movie classics or art movies; it is a more highbrow term. You recognize that *flick* is used chiefly in informal contexts, while *motion picture* is more traditional or industry-related. Thus we can consider the terms to be synonymous if we specify that we are taking only linguistic meaning into account. At the social and affective levels, however, they are not synonymous.



Try It Yourself For each of these, provide a synonym or near synonym in the same word class. (An example is given for the first word in each set.)

Adjective: *keen (sharp), former, juvenile, speedy, speechless, strong, fertile, bare*

Noun: *bard (poet), juvenile, appointment, tool, agony, matrimony, rubbish, chief*

Verb: *enclose (fence), kidnap, stammer, seek, praise, clothe, agitate, pester, commit*

In fact, there are very few true synonyms in the lexicon. More often than not, terms that appear to be synonymous have different social and affective connotations. Even if we restrict meaning to linguistic meaning, words that appear synonymous at first glance often refer to slightly different sets of concepts or are used in different situations. The adjectives *fast, quick,* and *rapid* may be used interchangeably in reference to someone's running speed, but a *fast talker* (a 'slippery or deceptive person') is different from a "quick talker"; some people live lives in the *fast lane,* not the "rapid lane"; and *quick* is the most appropriate term to describe a mind or a glance, while *rapid* is the usual term when reference is made to a person's *stride,* especially metaphorical strides, as in learning to do mathematics or speak a foreign language. Under the circumstances, is it accurate to say that these adjectives are synonymous?

The fact that there are few true synonyms in the lexicon of a language reflects the general tendency of speakers to make the most of what's available to them. If two terms have the same referent, the meaning of one is usually modified to express differences in linguistic, social, or affective meaning. Although true synonymy is rare, the notion is useful because it helps describe similarities among the meanings of different terms in the lexicon.

Antonymy

The word **antonymy** derives from the Greek root *anti-* ('opposite') and denotes opposition in meaning. In contrast to synonymy and hyponymy, antonymy is a *binary* relationship that can characterize a relationship between only two words at a time. Terms *A* and *B* are antonyms if when *A* describes a referent, *B* cannot describe the same referent, and vice versa.

The prototypical antonyms are pairs of adjectives that describe opposite notions: *large* and *small, wide* and *narrow, hot* and *cold, married* and *single, alive* and *dead.* Antonymy is not restricted to adjectives, however. The nouns *man* and *woman* are also antonyms because an individual cannot be described by both

terms at once. *Always* and *never* form an antonymous pair of adverbs: they have mutually exclusive referents. The verbs *love* and *hate* can also be viewed as antonyms because they refer to mutually exclusive emotions. Antonymy is thus a binary relationship between terms with complementary meanings.

Intuitively, you can see a difference between the antonymous pair *large/small* and *single/married*. The first pair denotes notions that are relatively subjective. You would agree that blue whales are large mammals and mice are small mammals, but whether German shepherds are large or small dogs depends on your perspective. The owner of a Chihuahua may say German shepherds are large, but the owner of a Great Dane may judge them to be on the small side. Furthermore, adjectives such as *large* and *small* have superlative and comparative forms: blue whales are the *largest* of all mammals; German shepherds are *larger* than Chihuahuas but *smaller* than Great Danes. Antonymous pairs that have these characteristics are called *gradable* pairs.

In contrast to *large* and *small*, *single* and *married* are mutually exclusive and complementary. A person cannot be single and married at the same time. With respect to marital status, a person cannot be described with a term that does not have either *single* or *married* as a hyponym; thus *single* and *married* are complementary. Furthermore, *single* and *married* generally cannot be used in a comparative or superlative sense (someone's being legally "more single" than another single person is impossible). The pair constitutes an example of *nongradable* antonymy (also sometimes called *complementarity*).

There are thus two types of antonymy: gradable and nongradable. If terms *A* and *B* are *gradable* antonyms and if *A* can be used to describe a particular referent, then *B* cannot be used to describe the same referent, and vice versa. If *A* and *B* are *nongradable* antonyms, the same condition applies along with an additional condition: if *A* cannot describe a referent, then that referent must be describable by *B*, and vice versa. So *male* and *female*, *married* and *single*, *alive* and *dead* can be viewed as nongradable antonyms, while *hot* and *cold*, *love* and *hate*, *always* and *never* are gradable. Typically, for gradable antonyms, there will be words to describe intermediate stages: *sometimes*, *seldom*, *occasionally*, *often* are gradations between *always* and *never*.

Try It Yourself For each of these, provide an antonym in the same word class:

Adjective: *palatable (distasteful), open, haughty, shallow, chilly, entire, rare*

Noun: *hindsight (foresight), insider, failure, benefit, chaos, certitude, fecundity*

Verb: *ignite (extinguish), reveal, remember, appear, expand, cleanse, bend*

As you recognize, the distinction between gradable and nongradable antonymy is sometimes blurred by speakers. In English, for example, it is reasonable to assume that whatever is alive is not dead and that whatever is dead is not alive, and thus that the adjectives *dead* and *alive* form a nongradable pair. However, we do have expressions such as *half dead*, *barely alive*, and *more dead than alive*. Such expressions suggest that, in some contexts, we see *alive* and *dead* as gradable antonyms.

Finally, antonymous words often do not have equal status with respect to markedness. For example, when you inquire about the weight of an object, you ask *How heavy is it?* and not *How light is it?*—unless you already know that the

object is light. Notice also that the noun *weight*, which describes both relative heaviness and relative lightness, is associated with *heavy* rather than with *light* (as in the expressions *carry a lot of weight* and *throw one's weight around*). Of the antonymous pair *heavy* and *light*, *heavy* is more neutral than *light* and is thus less marked. In the same fashion, *tall* is less marked than *short*, *hot* less marked than *cold*, and *married* less marked than *single* (we say *marital status*, not "singleness status"). Although there is some variation across languages as to which word of a pair is considered less marked, there is a surprising agreement from language to language.

Converseness

Another important relationship invokes the notion of oppositeness although it does so in a way that differs from antonymy. Consider the relationship between *grandparent* and *grandchild*. If A is the grandparent of B, then B is the grandchild of A. Thus *grandparent* is the converse of *grandchild*, and vice versa. **Converseness** characterizes a reciprocal semantic relationship between pairs of words. Other examples of converse pairs include terms denoting many other kinship relations, such as *child* and *parent*; terms describing professional relationships, such as *employer* and *employee* or *doctor* and *patient*; and terms denoting relative positions in space or time, such as *above* and *below*, *north of* and *south of*, or *before* and *after*.

Converse pairs can combine with other types of opposition to form complex relationships. The antonymous pair *father*: *mother* is in a converse relationship with the antonymous pair *son*: *daughter*. Generally, converse pairs denote relationships between objects or between people. Some converse relationships are a little more complex. The verb *give*, for example, requires a subject and two objects (*She gave him the book*). The converse of *give* is *receive*, except that the relationship is neither a "reversal" of the subject and the direct object as it would be with *kiss* and *be kissed* (*Smith kissed Jones* versus *Jones was kissed by Smith*) nor a mutual subject/possessor relation such as *grandparent* and *grandchild*; rather, the relationship is between the subject and the indirect object.

Siddharta gave Jessie a present.

Jessie received a present from Siddharta.

Other pairs of words with a similar relationship include *lend* and *borrow* and *buy* and *sell*. Note that *rent* is its own converse in American English.

Eve rents an apartment to Adam.

Adam rents an apartment from Eve.

When there is a possibility of confusion, the preposition *out* can be attached to *rent* in the meaning of 'lending out for money.' In British English, this sense of *rent* is described by the verb *let* (*flat to let*). In some languages, a single word is used for 'buy' and 'sell.' In Samoan, for example, the word *faʔatau* carries both meanings, while the Mandarin Chinese words *mǎi* 'buy' and *mài* 'sell' are etymologically related. These facts suggest that converseness is an intuitively recognizable relationship.

Polysemy and Homonymy

Two other notions closely related to the basic relationship types are **polysemy** and **homonymy**. In contrast to the notions discussed above, polysemy and homonymy refer to similarities rather than differences between meanings. A word is *polysemous* (or polysemic) when it has two or more related meanings. The adjective *plain*, for example, can have several related meanings, including:

1. 'evident, easy, clear' (*plain English*)
2. 'unpatterned, undecorated' (*plain white shirt*)
3. 'homely' (*plain Jane*)

Homographs have the same spelling but different meanings (and sometimes different pronunciations), such as *dove* 'a small bird with cooing voice' and *dove* 'past tense of *dive*' or *conduct* as a verb and *conduct* as a noun, where the verb has primary stress on the second syllable and the noun has it on the first syllable. *Homophones* have the same pronunciation but different senses: *sea* and *see*, *so* and *sew*, *two* and *too*, *plain* and *plane*, *flower* and *flour*, *boar* and *bore*, *bear* and *bare*, or *eye*, *I*, and *aye*. Words are *homonymic* when they have the same written *or* spoken form but different senses. A narrower definition of homonym limits the term to word sets that are both homographic and homophonous, as with *bank* of a river and savings *bank* or the adjective *still* 'quiet' (*still waters*) and the adverb *still* 'yet' (*still sick*). Languages exhibit polysemy and homonymy in their lexicons to varying degrees. A language such as Hawaiian, which has a restricted set of possible words because of its phonological structure, has a good deal more homonymy than English has (see "Sequence Constraints" in Chapter 4 and Figure 7.3).

A difficulty arises in distinguishing between homonymy and polysemy: How do we know if we have separate lexical items rather than a single word with different senses? Consider *plain*. How would we know whether or not the three adjectival senses ('clear,' 'unpatterned,' 'homely') constitute different words that happen to sound the same? Using spelling as a criterion is misleading: many sets of words are distinct but have the same spelling—as, for example, the noun *sound* 'noise' and the noun *sound* 'channel of water,' or *bank* 'financial institution' and *bank* 'shore of a river.' Yet the problem is important for anyone who wants to arrange or use the entries of a dictionary, in which different senses of the same word are grouped under a single entry but each homonymous form has its own distinct entry.

There is no simple solution. If there is a clear distinction between polysemy and homonymy, it must involve several criteria, no one of which would be sufficient by itself and some of which may yield different results. We have already excluded spelling as an unreliable criterion. One modestly reliable criterion is a word's historical origin, or *etymology*. We can consider that there are two words of the form *sound* corresponding to the two meanings given above because they derive from different historical roots. Likewise, the word *bank* meaning 'financial institution' is a borrowing from French, whereas *bank* meaning 'shore of a river' has a Scandinavian origin. The various antonyms and synonyms of a word provide a different kind of criterion for distinguishing between polysemy and homonymy. *Plain* in the sense of 'evident, clear' and *plain* in the sense of 'unpatterned' share a synonym in *simple* and an antonym in *complex*. This fact suggests that they

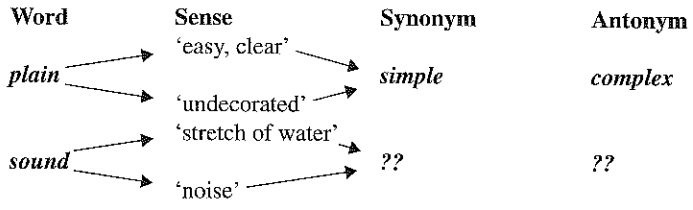


Figure 6.4

are indeed two meanings of the same polysemic word. No shared synonym or antonym can be identified for the two meanings of *sound*, as shown in Figure 6.4.

Finally, we can ask whether there is any commonality between different senses of what appears to be the same word. The two meanings of *plain* indicated above can be characterized as 'devoid of complexity,' which suggests that they are related, but no such superordinate description exists for *sound* 'stretch of water' and *sound* 'noise.' Thus *plain* in these two senses is polysemous, while the two senses of *sound* reflect homonymous lexical items. (Of course, other senses of *plain* may or may not belong to separate words.)

While these criteria help distinguish between polysemy and homonymy, they are not foolproof. It is often difficult to decide whether a particular pair of lookalike and sound-alike word forms are separate homonymous words or simply the same polysemic word with different senses. Although homonymy and polysemy can be distinguished as different notions, the boundary between them may not be clear-cut in particular cases.

Metaphors

Difficulties in drawing a distinction between polysemy and homonymy arise partly from the fact that speakers often use words metaphorically. A traditional notion of **metaphor** sees it as an extension in the use of a word beyond its primary sense to describe referents that bear similarities to the word's primary referent. The word *eye*, for example, can be used to describe the hole at the dull end of a needle, the bud on a potato, or the center of a storm. The similarities between these referents and the primary referent of the word *eye* are their roundish shape and their more or less central role or position in a larger form. People frequently create new metaphors, and once a metaphor becomes accepted speakers tend to view the metaphorical meaning as separate from its primary sense, as in *booking* a flight, *tabling* a motion, *seeing* the *point*, *stealing* the *headlines*, *buying* time, studying a foreign *tongue*. It's not straightforward determining whether one word with two meanings exists or two words with different but metaphorically related meanings.

Metaphors occur constantly in day-to-day speaking and writing because they are a fundamental part of our thinking. The following examples were gleaned from newspaper headlines:

St. Louis breezed past New Mexico State in the semi-finals.

The dollar is falling *sharply*.

His speech was the catalyst for a new popular *upheaval*.

Oakland officials praise police for curbing protest violence.

Oil *spill*'s economic impact muted, so far.

In the first example, the verb *breeze* is of course not meant literally; it is used to give the impression that the St. Louis team won its game effortlessly, as a breeze might blow easily across a practice court. Similarly, the underlined words in the other four sentences are meant to be interpreted as metaphors, whose effectiveness relies on our ability to see that in some contexts words are not to be interpreted literally. Besides the underlined words, other metaphors can be identified in the italicized words *sharply*, *upheaval*, and *spill*. (The mechanisms that we use in figuring out when a word must be interpreted metaphorically are discussed in Chapter 9.)

Metaphors aren't formed haphazardly. Observe, for example, the following metaphors that refer to the notion of time:

I look forward to seeing you again this weekend.

Experts do not foresee an increase in inflation in the near future.

He drags up old grudges from the past.

Once in a while, we need to look back over our shoulders at the lessons that history has taught us.

A pattern is apparent: in English, we construct time metaphors as if we physically move through time in the direction of the future. Thus the future is forward in the first two examples. Metaphors that refer to the past use words that refer to what is left behind, as in the latter two examples. Metaphors that violate this pattern would sound strange:

*I look back to seeing you again this weekend.

*He drags down old grudges from the past.

Another principle that governs the creation of metaphors is this: "Ideas are objects that can be sensed." Thus they can be smelled, felt, and heard.

Sam's proposal smells fishy.

Greg failed to grasp what they were trying to prove.

I'd like your opinion as to whether my plan sounds reasonable.

Writers and critics often talk about the writing process as "cooking."

Jasmine let her manuscript simmer for six months.

Who knows what kind of a story Brad is brewing up!

Abigail's last book was little more than a half-baked concoction of earlier work.

"The heart is where emotions are experienced" is a common principle on which our metaphors for emotions are based.

It was with a heavy heart that Corey reported her passing.

Luis shouldn't speak lightheartedly about this tragedy.

The rescuers received the survivors' heartfelt thanks.

The construction of metaphors thus follows preset patterns.

Most of the metaphors discussed so far are relatively conventionalized—that is, they are common in speech and writing because they are preset. But language lends itself to creative activities, and speakers do not hesitate to create new metaphors. Even when we create our own metaphors, however, we must follow the principles that regulate conventionalized metaphors. In English, metaphors that refer to time obey the convention of "moving through time in the direction of the future."

Some metaphorical patterns are frequent across the world's languages, as with the word for 'eye' used metaphorically for roundish objects, as discussed above. But other principles of metaphor vary from language to language. For example, in many languages it is not the heart that is the seat of emotions. Polynesian languages such as Samoan and Tahitian treat the stomach as the metaphorical seat of emotions. It is likely that some of these principles reflect different cultures' views of the world. The exact workings of the link between culture and language are still not fully understood.

Metaphors play a significant role in the development of cognitive linguistics, which has demonstrated how big a role metaphorical thinking plays in our language, our thinking, and our lives more generally. Rather than as principally a poetic device, some researchers view our cognitive system as "fundamentally metaphorical in nature" and as having profound daily effects. Lakoff and Johnson have written:

> How we think metaphorically matters. It can determine questions of war and peace, economic policy, and legal decisions, as well as the mundane choices of everyday life. Is a military attack a "rape," "a threat to our security," or "the defense of a population against terrorism"? The same attack can be conceptualized in any of these ways with very different military consequences.

Lexical Semantics: Discovering Relationships in the Lexicon

Hyponymy, part/whole relationships, synonymy, gradable and nongradable antonymy, converseness, polysemy, homonymy, and metaphor—lexical semantics is primarily concerned with discovering relationships in the lexicon of languages. The semantic relationships of a word are, in a sense, part of its meaning: the word *cold* can be defined as a gradable antonym of *hot*, as having the expression *sensation of heat* as a superordinate term, and as being more marked than *hot* but less marked than *chilly* and *freezing*. By knowing how the meaning of a word interacts with the meaning of other words, we gain insight into its meaning.

Lexical semantics, of course, does not explain the difference in meaning between words that are as unlike as *gorilla* and *doubtful*. For lexical semantics to be useful, it must be applied to particular areas of the lexicon in which word senses have shared characteristics. Thus the notion of semantic field becomes useful. If the word *gorilla* is placed in its appropriate semantic field, its relationship to *chimpanzee* and *great ape* can be investigated. Similarly, the word *doubtful* can be contrasted with *certain, probable, likely*, and other words that express likelihood or certainty.

The different types of relationships described above are the most basic tools of lexical semantics. They are basic because one type cannot be characterized in terms of another type. For example, an antonymous relationship between two words cannot be explained in terms of hyponymy, part/whole relationships, synonymy, converseness, or metaphor.

Function Words and Categories of Meaning

The lexicon is not made up exclusively of content words such as *father*, *pigeon*, *stir-fry*, and *democracy*, which refer to objects, actions, or abstract concepts. It also contains function words such as the conjunctions *if*, *however*, and *or*; the determiners *a*, *the*, and *these*; and the auxiliaries *may*, *should*, and *will*. The role of these categories is to signal grammatical relationships.

Tense and Modality

Many categories of meaning are associated with function words and function morphemes. Bound morphemes can denote several categories of meaning in English, including number (*toys/toy*) and tense (*walked/walk*). In other languages, the same categories are expressed not by means of bound morphemes but by separate words. In Tongan, the function word *ʔoku* denotes present tense, while *naʔe* denotes past tense.

ʔoku	ʔalu	e	fineʔeiki	ki	kolo
Present	go	the	woman	to	town

'The woman is going to town.'

naʔe	ʔalu	e	fineʔeiki	ki	kolo
Past	go	the	woman	to	town

'The woman was going to town.'

Whether tense is expressed through bound morphemes or separate lexical items is not important for semantics. What is important is that there is the semantic category *tense* that affects the meaning of sentences in both Tongan and English.

Semantic categories such as tense are conveyed by function words and function morphemes, but their scope extends beyond the constituent in which they occur. The meaning of a tense morpheme affects the whole sentence because the **tense** of the verb determines the time reference of the entire clause. The category *tense* (and other semantic categories like it) thus refers to both word meaning and clause meaning.

Modality, or *mood*, is a category through which speakers can convey their attitude toward the truth or reliability of their assertions (called *epistemic modality*) or express obligation, permission, or suggestion (called *deontic modality*). The sentences in the following pairs differ as to their *epistemic* modality:

1. Lily has *probably* left town by now. (probability)
   Lily has left town by now. (assertion)
2. Tyler *must've* been very tall when he was young. (conjecture)
   Tyler was very tall when he was young. (assertion)

3. Paul *may* come to the party. (possibility)

   Paul is coming to the party. (assertion)

And those in the following pairs differ as to their *deontic* modality:

4. Colin *must* come tomorrow. (command)

   Colin is coming tomorrow. (statement)

5. Dan *may* take the dishes away. (permission)

   Dan is taking the dishes away. (statement)

The two types of modality are interrelated, as witnessed by the fact that the same words (*must* and *may*, for example) can denote either type, depending on the context. Modality can be expressed through auxiliary verbs such as *may*, *should*, or *must* (which are called *modal* auxiliaries); through *modal* verbs such as *order*, *assume*, and *allow*; through *modal* adverbs such as *possibly* or *certainly*; and in some languages through affixes attached to verbs or nouns. Such affixes are common in Native American languages, some of which can have extremely complex systems of modal affixes and particles.

Reference

A noun phrase in an utterance may or may not have a corresponding entity in the real world. **Reference** concerns the ability of linguistic expressions to refer to real-world entities. If someone says *I read a new biography of James Joyce last weekend*, the expressions *I* and *a new biography of James Joyce* refer to real-world entities. By contrast, if someone says *I'd like to find a short biography of James Joyce*, there is in the speaker's mind a real-world entity corresponding to *I* but not to *a short biography of James Joyce*. (A short biography of James Joyce may exist, but in this sentence the speaker does not have in mind a real-world entity to which the expression refers.)

In the examples below, note the difference in reference for different uses of a given phrase. In examples 1, 3, and 5, the underscored phrases do not have a referent; we say they are not referential or that they are nonreferential. In 2, 4, and 6, the very same expressions do have referents in the real world; they are referential.

1. Can you recommend a good western for kids? (nonreferential)
2. Last night I saw a good western on HBO. (referential)
3. She'd buy a new Ford Fiesta if she found one on sale. (nonreferential)
4. She test-drove a new Ford Fiesta that she liked. (referential)
5. I'm searching for the best Thai restaurant in the city. (nonreferential)
6. On Tuesday I ate at the best Thai restaurant in the city. (referential)

As these examples show, reference is a property, not of words or phrases as such, but of linguistic expressions as they occur in actual discourse. The same phrase can be referential in one utterance and nonreferential in another. Note, too, that reference cannot be equated with definiteness, a subject to which we return below. (Reference is investigated further in Chapter 8.)

Deixis

The word *deixis* is related to the Greek adjective *deiktikos*, meaning 'pointing, indicative.' **Deixis** is the marking of the orientation or position of entities and events with respect to certain *points of reference*. Consider the following sentence addressed to a waiter by a restaurant customer while pointing to items on a menu:

I want this dish, this dish, and this dish.

To interpret this utterance, the waiter must have information about who *I* refers to, about the time at which the utterance is produced, and about what the three noun phrases *this dish* refer to. We say that *I* is a *deictic expression*, and so are the present-tense form of the verb and the three noun phrases *this dish*. Our ability to interpret them enables us to interpret the sentence, and we can't interpret them out of context. The context is critical.

Deixis consists of three semantic notions, all related to the orientation or position of events or entities in the real world. *Personal deixis* is commonly conveyed through personal pronouns: *I* versus *you* versus *he* or *she*. *Spatial deixis* refers to orientation in space: *here* versus *there* and *this* versus *that*. *Temporal deixis* refers to orientation in time, as in present versus past, for example.

Personal Deixis Many of the utterances that we produce daily are comments or questions about ourselves or our interlocutors.

I really should be going now.

Did *you* return the video *I* asked *you* to?

In this family, *we* never smoke and seldom drink.

The pronouns *I*, *you*, and *we*—along with *she*, *he*, *it*, and *they* (and inflected forms)—are markers of personal deixis. When we use these pronouns, we orient our utterances with respect to ourselves, our interlocutors, and third parties.

Personal pronouns are, of course, not the only tool used to mark personal deixis. The phrase *this person* in the sentence *You may enjoy scary roller-coaster rides, but this person doesn't care for them at all* may be used to refer to the speaker if the speaker wishes to express, say, annoyance or disdain. Likewise, in court, etiquette may require you to use the noun phrase *Your Honor* in addressing a judge: *Would Your Honor permit a brief recess?* Personal deixis is thus not associated exclusively with pronouns, although pronouns are the most common way to express personal deixis. In this discussion, we concentrate primarily on pronouns as markers of personal deixis.

The most basic opposition in personal-deixis systems is that between speaker (English *I*; German *ich*; Persian *man*; Thai *chăn*) and addressee (English *you*; German *du*; Persian *to*; Thai *thəə*). This opposition in *person* is so basic that it is reflected in the pronominal systems of all languages. Pronouns that refer to the speaker (or to a group including the speaker) are called *first-person* pronouns, and pronouns that refer to the addressee (or to a group including the addressee) are called *second-person* pronouns.

Besides the contrast between first person and second person, pronoun systems often have separate forms for the *third person*—that is, any entity other than the

speaker and the person spoken to. In English, *he, she, it,* and *they* denote third-person entities. But third-person pronouns are not found in all languages. Some languages simply do not have special forms to refer to third-person entities. In these languages, third-person entities are referred to with a demonstrative such as *this* or *that,* or they remain unexpressed. In Tongan, a verb without an expressed subject is understood as having a third-person subject.

na?e a?u
Past arrive
'(He/She/It) arrived.'

Tongan does have a third-person pronoun form but it is used only for emphasis.

na?e a?u ia
Past arrive he/she
'He/She is the one who arrived.'

That some languages lack separate third-person pronouns reflects the fact that the third person is less important than the first and second persons in personal deixis. In fact, the third person can be defined as an entity *other than* the first person and *other than* the second person. Because it can be described in terms of the other two persons, it is a less basic distinction in language in general. The singular pronoun system of English can thus be described as follows:

speaker only	I
hearer only	you
neither speaker nor hearer	he/she/it

Some languages make finer distinctions in their pronominal systems, while others make fewer distinctions (see the section on "Semantic Universals" in Chapter 7). In *all* spoken languages, though, there are separate first-person and second-person pronouns.

Besides person, personal-deixis systems may mark distinctions in gender and number. In English, a gender distinction is made only in the third-person singular: *he* for masculine, *she* for feminine, and *it* for referents that are neither masculine nor feminine. In other languages, gender may be marked in other persons as well. In Hebrew, the second-person singular pronoun is *ata* for masculine referents but *at* for feminine referents. In some circumstances, Japanese distinguishes between masculine and feminine first-person singular pronouns. Number is marked on English pronouns in the first person (*I* versus *we*) and the third person (*he/she/it* versus *they*); the second-person pronoun *you* is used for reference to both singular and plural entities. Many languages have separate second-person singular and plural pronouns (French *tu* and *vous*; German *du* and *ihr*; Persian *to* and *shoma*). Singular and plural are not the only number categories that can be distinguished: some languages have distinct dual forms to refer to exactly two people, and a few languages even mark a distinction between "a few" and "many" referents (see the chart of Fijian pronouns on page 238 in Chapter 7).

Finally, personal deixis frequently reflects the social status of referents. In French the choice of a pronoun in the second person depends on the nature of the speaker's relationship to the addressee. If speaker and addressee are of

roughly equal social status, the pronoun *tu* is used; to mark or create social distance or social inequality, a speaker uses the plural pronoun *vous* instead of *tu*, even when addressing one person. Considerably more complex systems are found in languages such as Japanese, Thai, and Korean. Strictly speaking, the use of deictic devices to reflect facts about the social relationship of the participants is a distinct type of deixis, commonly referred to as *social deixis*.

Thus personal deixis can mark a number of overlapping distinctions: person, gender, number, and social relations. Languages express these distinctions in different combinations, marking some and not others. As noted, however, the basic distinction between first person and second person is found in all spoken languages and appears to be a basic semantic category of deictic systems.

Spatial Deixis Spatial deixis is the marking of the orientation or position in space of the referent of a linguistic expression. The categories of words most commonly used to express spatial deixis are demonstratives (*this, that*) and adverbs (*here, there*). Demonstratives and adverbs of place are by no means the only categories that have spatial deictic meaning; the directional verbs *go* and *come* also carry deictic information, as do *bring* and *take*.

Languages differ in terms of the number and meaning of demonstratives and adverbs of place. The demonstrative system of English distinguishes only between *this* (proximate—close to the speaker) and *that* (remote—relatively distant from the speaker). It is one of the simplest systems found. At the other extreme are languages such as Eskimo, which has 30 demonstrative forms. In all languages, however, the demonstrative system treats the speaker as a point of reference. Thus the speaker is a basic point of reference for spatial deixis.

Many spatial-deixis systems have three terms. Three-term systems fall into two categories. In one category, the meanings of the terms are 'near the speaker,' 'a little distant from the speaker,' and 'far from the speaker.' The Spanish demonstratives *este, ese, aquel* have these three respective meanings. In another type of three-term demonstrative system, the terms have the meanings 'near the speaker,' 'near the hearer,' and 'away from both speaker and hearer.' Fijian exemplifies such a system.

na ŋone oᵑgo
the child this (near me)
'this child (near me)'

na ŋone oᵑgori
the child this (near you)
'that child (near you)'

na ŋone oya
the child that (away from you and me)
'that child (away from you and me)'

In both systems, however, the speaker is taken as either the sole point of reference or as one of two points of reference.

Spatial deixis thus represents the orientation of actions and states in space, and it is most commonly conveyed by demonstratives and by adverbs of place. Languages may have anywhere from two to thirty distinct demonstrative forms, but all demonstrative systems take the speaker as a basic point of reference.

Temporal Deixis A third type of deixis is temporal deixis—the orientation or position of the referent of actions and events in time. All languages have words and phrases that are inherently marked for temporal deixis, such as the English terms *before, last year, tomorrow, now,* and *this evening.* In many languages temporal deixis can be marked through tense, encoded on the verb with affixes, or expressed in an independent morpheme. In English, you must make an obligatory choice between the past-tense and the nonpast-tense form of verbs.

Tyler bikes to school every day. (nonpast tense)

Tyler biked to school every day. (past tense)

To express a future *time,* English has no distinct verbal inflection (it lacks a future *tense*) but uses a multiword verb in the nonpast tense.

Tyler will walk to school next week. (nonpast tense for future time)

Tuvaluan is like English: *e* denotes nonpast, while *ne* is a past-tense marker.

au e fano ki te fakaala
I Nonpast go to the feast
'I am going/will go to the feast.'

au ne fano ki te fakaala
I Past go to the feast
'I went to the feast.'

In some languages, the choice is between future and nonfuture (with undifferentiated present and past).

In a number of languages, temporal deixis can be marked only with optional adverbs. This Chinese sentence can be interpreted as past, present, or future, depending on the context:

xià yǔ
down rain
'It was/is/will be raining.'

When there is the possibility of ambiguity, an adverb of time ('last night,' 'right now,' 'next week') is added to the sentence.

In languages that do not mark tense on verbs, another semantic category called **aspect** is frequently obligatory. Aspect is not directly related to temporal deixis but refers to the ways in which actions and states are viewed: as continuous (*I was talking*), repetitive (*I talked [every day]*), instantaneous (*I talked*), and so on. Tense is thus not the only marker of temporal deixis, although it is frequently exploited by languages as the primary means of marking temporal deixis.

The most basic point of reference for tense is the moment at which the sentence is uttered. Any event that occurs before that moment may be marked as past, and any event that occurs after that moment may be marked as future.

The train arrived. (any time before the utterance moment)

The train is arriving. (at the moment of utterance)

The train will arrive. (any time after the utterance moment)

When the point of reference is some point in time other than the moment of utterance we say that tense is *relative.* Relative tense is used in many languages when speakers compare the time of occurrence of two events.

The receptionist finally spoke to me after I *had waited* 30 minutes.

Before Glenn saw you yesterday, he *had been* sick for a week.

Some languages have complex rules of *tense concord* that dictate the form of verbs in relative contexts.

Deixis as a Semantic Notion The three types of deixis illustrate how semantic categories permeate language beyond the simple meanings of words. The deictic orientation of a sentence or part of a sentence can be conveyed through bound morphemes such as tense endings, through free morphemes and function words such as pronouns and demonstratives, or through content words such as *here* and *bring*. Deictic meaning is independent of the means used to convey it.

One aim of semantics is to describe the important or essential parameters for characterizing deixis in language in general. We noted, for example, that distinguishing between speaker and addressee is an essential function of the personal deixis system of all languages. Similarly, every spatial deixis system has at least one point of reference, a location near the speaker. A spatial deixis system may also have a secondary point of reference near the hearer or addressee.

There is considerable overlap among the types of deixis. For example, personal, spatial, and temporal deixis share a basic point of reference: the speaker's identity and location in space and time. Some linguistic devices can be used to mark more than one kind of deixis. The English demonstrative *this* can be used for personal deixis (*this teacher*), spatial deixis (*this book*), and temporal deixis (*this morning*). Clearly, then, personal, spatial, and temporal deixis are closely related notions.

Textual Deixis Another important type of deixis is *textual deixis*, which is the orientation of an utterance with respect to other utterances in a string of utterances. Consider, for example, the following pair of sentences:

Curtis started to swear at me and curse. *That* made me even more angry.

The demonstrative *that* at the beginning of the second sentence refers not to a direction in space or time but rather to something previously mentioned. Often in this book, we use terms such as *above* or *below*, which refer to parts of the text with respect to other parts of the text. Such textual deixis enables speakers to package utterances together and indicate relationships across utterances. Because textual deixis is primarily concerned with utterances and their context, it goes beyond the scope of semantics as traditionally defined, although its importance is not to be underestimated.

Semantic Roles and Sentence Meaning

Although sentences, like words, must carry meaning in order for speakers to understand one another at all, the meaning of sentences cannot be determined merely by adding up the meaning of each content word in the sentence. This fact was illustrated in the previous section, where we saw that bound morphemes and function words may carry meaning with semantic implications for the entire sentence. We also noted that sentences such as *The trainer licked the lion* and *The lion licked the trainer* convey different meanings despite the fact that they

contain exactly the same words. More than the meaning of its individual content words must be taken into consideration when defining what contributes to the meaning of a sentence.

Consider the following active/passive counterparts, which, at the level of referential meaning, describe the same situation:

1. The lion licked the trainer.
2. The trainer was licked by the lion.

These sentences differ in that 1 is an active structure, whereas 2 is a passive structure. Since our concern here is with meaning, we ask how to account for the synonymy between 1 and 2.

Further, consider the following sentences:

3. David sliced the salami with a knife.
4. David used a knife to slice the salami.

Here is a situation not unlike the active/passive counterparts of 1 and 2, in that the sentences have the same referential meaning. Nevertheless, we need to characterize how sentences 3 and 4 mean "the same thing."

The situations just presented suggest that the crucial factor in the way sentence meaning is constructed is the *role* played by each noun phrase in relation to the verb, and to help with that we introduce the notion of **semantic role** of a noun phrase. (Some treatments of semantics use the term *thematic* role instead of *semantic* role.) *Semantic role* refers to the way in which the referent of a noun phrase contributes to the state, action, or situation described by the sentence. The semantic role of a noun phrase differs from its syntactic role (as subject, object, and so on), as illustrated by the contrast between sentences 1 and 2 above. In both sentences, the way in which the trainer is involved in the action is the same (and the way in which the lion is involved is the same). In other words, *the trainer* has the same semantic role in both sentences (and *the lion* has the same semantic role in both sentences). But despite its having the same *semantic* role in both 1 and 2, *the trainer* has different syntactic roles (direct object in 1 and subject in 2).

Semantic role is not an inherent property of a noun phrase: a given noun phrase can have different semantic roles in different sentences, as in the following:

5. Michael was injured by a friend.
6. Michael was injured with a friend.

Semantic role is a way of characterizing the meaning relationship between a noun phrase and the verb of a sentence, and *a friend* is an agent in 5 but not in 6 (in 6, *a friend* could be characterized as having the semantic role of accompaniment).

Agents and Patients The agent is the responsible initiator of an action; the patient is the entity that is affected by the verb and undergoes something of a change of state. In sentences 1 and 2 above, the agent is *the lion* and the patient is *the trainer*. That both sentences describe the same situation (and hence have the same referential meaning) can be explained by the fact that each noun phrase has the same semantic role in both sentences: *the lion* is the agent in both; *the trainer* is the patient in both.

Experiencers In the following sentences the semantic role of the subject noun phrases is not agent: Courtney is not the responsible initiator of the actions denoted by the verbs but instead experiences a physical or mental sensation:

Courtney likes blueberry pancakes.

Courtney felt threatened by the lion.

In both sentences, the semantic role of Courtney is *experiencer*, which is defined as that which receives a sensory input. In English, experiencers can be subjects or direct objects, depending on the verb. Compare the sentences about Courtney, in which the experiencer is the subject, with the following sentence, in which the experiencer is the direct object:

Derek sometimes astounds me with his wit.

Instruments and Causes Now consider the semantic roles of the underscored noun phrases in the following sentences:

7. Michael was injured by a stone.
8. Michael was injured with a stone.

The difference between these sentences is that 8 implies that someone used a stone to attack Michael, while 7 does not require that implication. In 8, we say *a stone* is the *instrument*, or the intermediary, through which an unnamed agent performs the action; note that the definition of instrument requires that there be an agent, which is consistent with our interpretation of 8. In 7, *a stone* could be assigned the role of instrument only if an agent were doing the injuring. If the stone that injured Michael were part of a rockfall, *a stone* would be assigned the semantic role of *cause*, which is defined as any natural force that brings about a change of state. Instruments and causes can be expressed as prepositional phrases (as in examples 7 and 8) or as subjects, as in 9 and 10 below.

9. A silver key opened the door to the wine cellar. (INSTRUMENT)
10. The heavy snow caved in the roof. (CAUSE)

That the noun phrase *a silver key* is an instrument and not an agent is supported by the fact that it cannot be conjoined (linked by *and*) with an agent, as the following anomalous example shows:

*A silver key and John opened the door to the cellar.

However, an instrument *can* be conjoined with another instrument, and an agent can be conjoined with another agent.

John and Kelsey opened the door to the cellar.

It took a push and a shove to open the door to the cellar.

Recipients, Benefactives, Locatives, Temporals A noun phrase can be a *recipient* (that which receives a physical object), a *benefactive* (that for which an action is performed), a *locative* (the location of an action or state), or a *temporal* (the time at which an action or state occurs).

I gave Morgan a puppy. (RECIPIENT)

Colby passed me a message for Morgan. (BENEFACTIVE)

The Midwest is cold in winter. (LOCATIVE)

Rebecca left home the day before yesterday. (TEMPORAL)

The point of this enterprise is to characterize the possible semantic roles that noun phrases can fill in a sentence. Every noun phrase in a clause is assigned a semantic role, and, aside from coordinate noun phrases, the same semantic role cannot be assigned to two noun phrases in a single clause. Consequently, a sentence such as the following is semantically odd or anomalous because it contains two instrumental noun phrases, which are underlined:

*This ball broke the window with a hammer.

In addition, in most cases a noun phrase can be assigned only one semantic role. In rare instances, though, a noun phrase may be assigned two roles. For example, in the sentence *Sean rolled down the hill*, if Sean rolled down the hill deliberately, he is both agent and patient because he is at once the responsible initiator of the action and the entity that undergoes the change of state.

Semantic Roles and Grammatical Relations

Semantic roles and grammatical relations are not the same thing, as we have noted, and it is important to understand the relationship between them. For example, in English, the subject of a sentence can be an agent (as in the underlined noun phrase in sentence 1), a patient (as in 2), an instrument (3), a cause (4), an experiencer (5), a benefactive (or recipient) (6), a locative (7), or a temporal (8), depending on the verb.

1. The janitor opened the door. (AGENT)
2. The door opened easily. (PATIENT)
3. His first record greatly expanded his audience. (INSTRUMENT)
4. Bad weather ruined the grape harvest. (CAUSE)
5. Jorge heard his father whispering. (EXPERIENCER)
6. The young artist won the prize. (BENEFACTIVE or RECIPIENT)
7. Arizona attracts asthmatics. (LOCATIVE)
8. The next day found us on the road to Alice Springs. (TEMPORAL)

In certain English constructions, the subject may not have any semantic role, as with the "dummy *it* " construction, where *it* fills the subject slot but is semantically empty.

It became clear that the government had jailed Jared.

So the notion of subject is independent of the notion of semantic role, and we could show the same thing of direct objects and other grammatical relations.

Conversely, semantic roles do not appear to be constrained by grammatical relations. A locative, for example, may be expressed as a subject (as in 1 below), a direct object (2), an indirect object (3), or an oblique (4).

1. The garden will look great in the spring. (subject)
2. William planted the garden with cucumbers and tomatoes. (direct object)
3. The begonias give the garden a cheerful look. (indirect object)
4. The gate opens on the garden. (oblique)

Nevertheless, there is a relationship between grammatical relations and semantic roles. Consider the following sentences, all of which have *open* as a verb:

Michelle opened the door with this key. (AGENT)

The door opened easily. (PATIENT)

This key will open the door. (INSTRUMENT)

The wind opened the door. (CAUSE)

The grammatical subjects of the sentences above are an agent (*Michelle*), a patient (*the door*), an instrument (*this key*), and a cause (*the wind*). Such variety is not found with all verbs. The verb *soothe*, for example, can have an instrument or a cause as subject.

This ointment will soothe your sunburn. (INSTRUMENT)

The cold stream soothed Juan's sore feet. (CAUSE)

To have an experiencer as the grammatical subject of the verb *soothe*, we use a passive construction.

Juan was soothed by the herbal tea. (EXPERIENCER)

Clearly, the verb controls the range of variation allowed in each case. Speakers know the semantic roles that each verb allows as subject, direct object, and so on. In the mental lexicon, there is what we might call a "tag" attached to the verb *soothe* indicating that only instruments and causes are allowed in subject position, whereas the tag attached to the verb *open* permits the subject to be agent, patient, instrument, or cause.

Semantic roles are universal features of the semantic structure of all languages, but how they interact with grammatical relations such as subject and direct object differs from language to language. Equivalent verbs in different languages do not carry similar tags. The tag attached to the English verb *like*, for example, permits only experiencers as subjects.

I like French fries. (EXPERIENCER)

But only patients can be the subjects of the equivalent Spanish verb *gustar*.

Las papas fritas me gustan. (PATIENT)
The French-fries to-me like
'I like French fries.' (Literally, 'French fries to me are pleasing.')

A similar situation is found for verbs of liking and pleasing in many other languages, including Russian. In some languages, the verb meaning to understand

allows its subjects to be experiencers or patients, as in Samoan. The choice depends on emphasis and focus.

?ua maalamalama a?u i le mataa?upu.
Present-tense understand I Object-marker the lesson
'I understand the lesson.'

?ua maalamalama le mataa?upu iate a?u
Present-tense understand the lesson to me
'I understand the lesson.' (Literally: 'The lesson understands to me.')

Some languages distinguish between agent and experiencer more carefully than English does. For example, the verb might take a subject when the action is intentional but a direct object when it is unintentional.

In addition to cross-linguistic variation with respect to specific verbs, languages vary in the degree to which different semantic roles fit into different grammatical slots in a sentence. In English, as we saw, the subject slot can be occupied by noun phrases of any semantic role—depending on the verb. Many English verbs allow different semantic roles for subject, direct object, and so on. But the situation is different in many other languages. Russian and German verbs do not allow nearly so much variation in semantic roles as English verbs do, and in those languages there is a much tighter bond between semantic roles and grammatical relations.

Computers, Corpora, Semantics

Computerized corpora are useful to dictionary makers and others in establishing patterns of language that are not accessible to introspection. For example, patterns of **collocation**—which words go together with which words—are much more readily understood with the help of a computerized corpus of natural-language texts, and such patterns can be helpful in highlighting word senses and co-occurrence frequencies.

Further, while it may appear that synonymous words can be used in place of one another, corpora show that it is not common for words to be readily substitutable for one another. For example, *little* and *small*, *big* and *large*, and *fast* and *quick* are sometimes considered synonymous pairs. But even a cursory examination of a key word in context (KWIC) concordance for these pairs shows that they are not straightforwardly substitutable. Table 6.1 shows a selection of KWIC lines for *little*, and Table 6.2 shows a selection of KWIC lines for *small*. (The sentences come from the British National Corpus and have been concordanced using WordSmith. Either end of a KWIC line may show incomplete words.)

The first observation to be made is that quite a few word strings in Table 6.1 would not tolerate substituting *small* for *little* (e.g., 2, 5, 6, 10, 11, 15, 16, 17, and 21). A second observation is that some instances of *little* are adjectives (e.g., 1, 14, 19) for which *small* might readily be substituted, but others are adverbs for which *small* cannot be substituted (e.g., 3, 9, 12, 13, 18). In 3, *a little* functions as an adverb modifying the adjective *irritated* and English does not permit "not a small irritated." Some instances where substitution is possible would give rise to a different connotation, even when the denotation remained steady, as in 1, 4, and 8. In 1, "poor little rich boy" and "poor small rich boy" carry different connotations.

As Table 6.2 shows, *little* seems more frequently substitutable for *small*, partly because in its use as an adjective *little* carries denotations and connotations much like those of most uses of *small*. Looking again at Table 6.1, however, we see that the opposite is not true. This is because *little* is not only an adjective meaning

Table 6.1 *KWIC Concordance for* little

1	ke council activities and so on. The poor	**little**	rich boy was looked after by a second
2	a few hours of stall avoidance training and	**little,**	if any, spinning. Vienna Dear Fräu
3	and, I am deeply distressed, and also not a	**little**	irritated, by the direction events hav
4	Even without the threat to his job, he had	**little**	choice. There may be little or no
5	job, he had little choice. There may be	**little**	or no hope of finding those particular
6	cted, some as yet unrecorded. But he had	**little**	reason yet to ask for a search warrant
7	him if he so much as tried. But there is	**little**	point, for instance, in turning on an
8	and those of his friends. You noticed my	**little**	ploy. Current findings suggest a c
9	of success between classes have changed very	**little.**	Objectively, he was little more a
10	changed very little. Objectively, he was	**little**	more attractive to the Conservatives w
11	nd that it was necessary for him to retire a	**little**	from the active life in which he had p
12	d energy upon his real work. We talked a	**little**	longer, and then I bought some chocola
13	ess was still there, but the fur was maybe a	**little**	ruffled. I wish all men enjoyed th
14	joyed their whole bodies, rather than just a	**little,**	wobbly bit of it.' There is a nee
15	it.' There is a need, however, to look a	**little**	more at the role of Parliament. ON
16	role of Parliament. ON A SLOW pitch with	**little**	bounce, South Africa once again were u
17	and seven overs to spare. Addition of a	**little**	silicone lubricant (vacuum grease, DOW
18	fair and quite softly-spoken and actually a	**little**	shy-looking, and he'd made a point of
19	is ugly body quiet and still above them as a	**little**	gravestone. Once the carriage was
20	motion, she closed her eyes, tired now and a	**little**	dispirited. Then the front zip of
21	to his importuning hands and he eased away a	**little**	so that his fingers could slide inside

'small' but also part of an adverb, as in the expressions *a little ruffled* (13) and *a little dispirited* (20), in each of which *a little* modifies an adjective, and *a little longer* (12), where it modifies an adverb. (At the end of this chapter among "Other Resources," you'll find the URL for a site that provides sample sentences containing any word or expression you might want to examine.)

Lines in a KWIC concordance can be ordered in various ways—for example, according to preceding or following word, thereby allowing inspection of collocations and ready discernment of senses and parts of speech. From a KWIC concordance, researchers can learn a good deal about the semantics of any word or phrase, thus significantly improving the kind of information furnished in a dictionary. Even quantitative analysis is possible so that, for example, illustrative quotations for learners could favor contexts in which the head word most frequently occurs.

In recent years, the availability of huge amounts of data has improved the quality of dictionary entries not only with illustrative citations but with collocations and even with a clearer picture of semantic relationships like synonymy and antonymy. As an example of the kind of information and lively displays now available on the Internet, we'll examine the Visual Thesaurus (VT). Figure 6.5 (on page 222) is a sketch produced by VT for the adjective *small*. VT offers a net for *small* in its various parts of speech or it can be limited to a particular part of speech, as we have limited it to adjective. The various clusters apparent in

Table 6.2 *KWIC Concordance for* small

1	ad of papers with individual readerships too	**small**	for us to analyse (the Scotsman, the G
2	into tears at the sight of the house and the	**small**	familiar crowd waiting for her outside
3	McCloy, who lives here in town, runs a very	**small**	unsuccessful sort of decorating busines
4	the Führer down to spring 1941 rested in no	**small**	measure on the lack of serious interfer
5	ws volatile session. His clothes were too	**small**	now, pinching him at the neck, the wais
6	(although of course the numbers are far too	**small**	for any quantitative analysis) can be s
7	illery and mortars, and themselves down to a	**small**	amount of ammunition, the remnants of t
8	The Captain's white face had greyed, his	**small**	mouth tightening into a cruel line.
9	esult, the individual may retain only a very	**small**	percentage of the extra income earned a
10	unications products are helping both big and	**small**	businesses in more than one hundred co
11	ex longed for a pond in the garden, but with	**small**	children around the idea was shelved—
12	subsequent continuation of a large number of	**small**	unions and, as a secondary consequence,
13	le, often near remote skerries, headlands or	**small**	uninhabited islands, and this necessita
14	ime of the Russian conquest, although only a	**small**	remnant of this nationality survives to
15	d bought their house and provided her with a	**small**	income. perfect like a small velvet
16	ences for arbitrage risk were also generally	**small,**	and 88% of the cases fell within the r
17	ntract). In doing so, she knocked down a	**small,**	boy and immediately went down again to
18	essible to teachers, along with a monitor (a	**small,**	black and white one would do), then it
19	In the end they hauled the Gnomes into a	**small,**	ante-room across the galleried landing
20	e famous Shaker pegged wall-rail for hanging	**small,**	cupboards, shelves, mirrors and even ch
21	ves that churchyards provide a focus and are	**small**	enough for a group of local enthusiasts

the figure represent different senses of *small*. For example, toward the top is a cluster united in the sense 'low or inferior in station or quality,' a sense spelled out if you click on the circle leading to the words *humble*, *lowly*, *low*, and *modest*. Clicking on that circle also produces illustrative citations (not shown here) for the words in the cluster. Notice that *modest* is linked to a second word cluster representing the sense 'limited in size or scope' and realized in the words *minor*, *small-scale*, and *pocket-size*. By clicking on any word you can explore it and its network of semantically related connections, including synonyms and near synonyms. As the dotted line through *small* indicates, VT also identifies antonyms, here *big* and *large*, and if you click on one of those it becomes the hub of a new VT representation. To explore relationships among synonyms and antonyms or the various senses of almost any favorite word, you will find Thinkmap's Visual Thesaurus fascinating; it will teach you a good deal about relationships between particular words. Go ahead: visit the website (address given under Other Resources)!

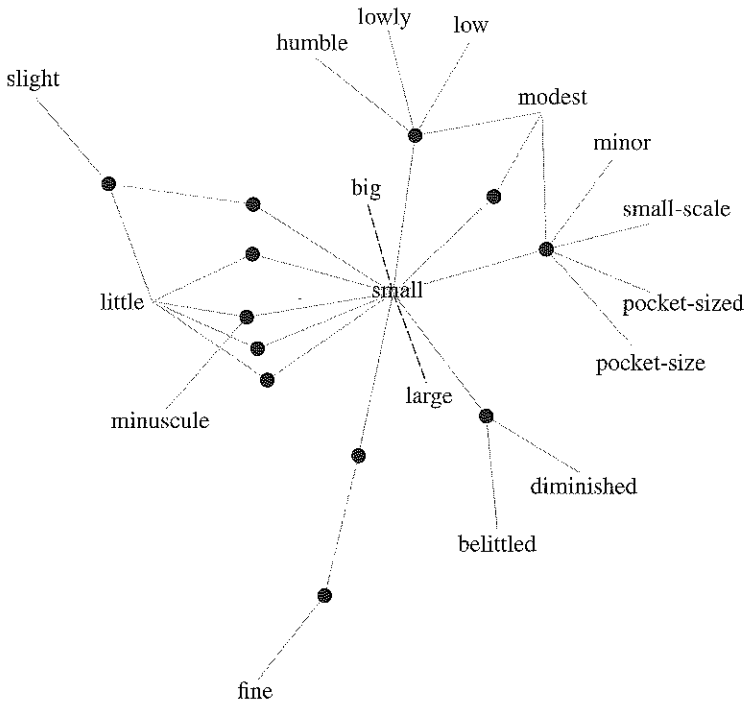


Figure 6.5
Source: Thinkmap's Visual Thesaurus: http://www.visualthesaurus.com/

Summary

- Semantics is the study of meaning in language.
- Semantics traditionally focuses on linguistic meaning, but languages also convey social meaning and affective meaning.
- Words, sentences, and utterances can all carry meaning, and sentence meaning and utterance meaning must be distinguished.
- The study of sentence meaning falls primarily within the domain of semantics.
- Within a sentence, words may have *scope* over other constituents, as *only* has scope over the bracketed constituent in *Ned only knew [what he had read in the letter]*.
- Pragmatics is the branch of linguistics that concerns itself with utterance meaning.
- Lexical semantics is the study of meaning relationships in vocabulary. The *types* of relationships that hold among sets of words are universal, though the particular word sets to which they apply vary from language to language.
- Semantic fields are sets of words whose referents belong together on the basis of fundamental semantic characteristics.
- The words in a semantic field can be arranged in terms of these relationships: hyponymy (a kind of), meronymy or part/whole (subdivision), synonymy

(similar meaning), gradable and nongradable antonymy (opposite meaning), converseness (reciprocal meaning), polysemy (multiple meanings), homonymy (same written or spoken form), and metaphor (derived meaning).

- Semantic notions such as deixis can be expressed by bound morphemes (*-ed* in *walked*) and function words (*that* in *that one*) as well as by content words (*tomorrow*).
- There are several types of deixis: personal (*you, me*), spatial (*here, there*), and temporal (*now, then*). All require that a point of reference be identified.
- In relation to the speaker and the moment of utterance, the here and now is highly privileged as a point of reference in all three types of deixis.
- The meaning of a sentence is not simply the sum meaning of its words.
- Sentence semantics aims to uncover the basic relationships between the noun phrases and the verb of a sentence.
- Semantic roles (e.g., agent or instrument) are not inherent properties of noun phrases but are relational notions. They are independent of the grammatical relations (e.g., subject or object) of the noun phrase. The verb determines which semantic role may be used in particular grammatical slots of a sentence.
- This chapter has described nine semantic roles:

  agent: the responsible initiator of an action
  patient: the entity that undergoes a certain change of state
  experiencer: the entity that receives a sensory input
  instrument: the intermediary through which an agent performs an action
  cause: the natural cause that brings about a change of state
  benefactive: the entity for which an action is performed
  recipient: the entity that receives a physical object
  locative: the location of an action or state
  temporal: the time at which the action or state occurs

- Semantic roles are universal, but languages differ as to how particular roles are encoded in syntax.

What Do You Think? REVISITED

- *Philosopher Phyllis. George Washington* and *the first president of the United States* usually refer to the same person, namely that man who lived from 1732 to 1799 and became president of the United States in 1789. *George Washington* is his name, but *George Washington* does not mean 'the first president of the United States.' The two expressions have the same *referent* but different *senses*. The fact that two expressions refer to the same entity does not necessarily entail that they *mean* the same thing. Consider this example: "Some Maryland residents like to claim that John Hanson was the first president of the United States." Even though that statement is true, it would not be true to say, "Some Maryland residents like to claim that John Hanson was George Washington." The fact that one is true but not the other demonstrates that they do not mean the same thing.
- *Doubting Donald.* Although synonyms might not have the same co-occurrence patterns with other words, they may still mean the same thing in some

contexts. Donald has identified a frame into which you could slot *fast* or *quick* but not with the same meaning, and that fact seems to be an argument that the two words are not used exactly the same way, but they are synonymous. And of course "fast talker" is an idiom that may have its origin in someone's talking quickly, but the idiom identifies someone who persuades by smooth or deceptive talk.

- *Uncle Ernie.* The term that characterizes the semantic relationship between *uncle* and *nephew* is "converse," by no means the same as opposite. Among other meanings, *hot* means 'not cold,' but *nephew* is not the same as 'not uncle.' In addition, opposites usually represent the extremes of words that can be arrayed along a continuum, for example from *hot* to *warm* to *lukewarm* to *cold*, where *hot* and *cold* are opposites. Converse terms, by contrast, usually involve a reciprocal relationship—as with the verbs *buy* and *sell*, *give* and *receive*, or *teach* and *learn* and the nouns *doctor* and *patient* or *employer* and *employee*.
- *Cousin Kevin.* Words like *mine* and *yours* are "deictic" expressions, and their meaning depends, in this case, on who is saying them. *Mine* means something like 'belonging to the speaker' (or the reported speaker), so when cousin Kevin says, "It's mine," he's claiming ownership, and when Dolly uses the very same words she's claiming ownership. Deictic words must be interpreted in context.

Exercises

Practice Exercise

A. Provide a word whose referent has the specified semantic relationship to the words below.

1. *mother* and *father* are the hyponyms.
2. *knee* is the part.
3. *jewel* is the superordinate term.
4. *bicycle* is the whole.
5. *tall* is the antonym.
6. *grandmother* is the converse.
7. *niece* is the converse.
8. *obese* is the synonym.

B. From Table 6.1, provide the numbers of the KWIC concordance lines in which the word *little* could be glossed in each of these senses:

1. 'small'
2. 'not much'
3. 'small amount of'

Based on English

6-1. The following sentences are ambiguous. Based on the discussion in this chapter and Chapter 5, describe the ambiguity.

1) They found the peasants revolting.
2) The car I'm getting ready to drive is a Lamborghini.
3) Erika does not like her husband, and neither does Natalie.
4) They said they told her to come to them.
5) He met his challenger at his house.

6-2. Identify the differences in linguistic, social, and affective meaning among the words and phrases in each of the following sets:

1) hoax, trickery, swindle, rip-off, ruse, stratagem
2) delightful, pleasant, great, far-out, nice, pleasurable, bad, cool
3) man, guy, dude, jock, imp, lad, gentleman, hunk, boy
4) eat, wolf down, nourish, devour, peck, ingest, graze, fill one's tummy
5) tired, fatigued, pooped, weary, languorous, zonked out, exhausted, spent
6) stupid person, idiot, nerd, ass, jerk, turkey, wimp, punk, airhead, bastard

6-3. Some of the sets of terms below form semantic fields. For each set:

a. Identify the words that do *not* belong to the same semantic field as the others in the set.
b. Identify the superordinate term of the remaining semantic field, if there is one (it may be a word in the set).
c. Determine whether some terms are less marked than others, and justify your claim.

1) acquire, buy, collect, hoard, win, inherit, steal
2) whisper, talk, narrate, report, tell, harangue, scribble, instruct, brief
3) road, path, barn, way, street, freeway, avenue, thoroughfare, interstate, method
4) stench, smell, reek, aroma, bouquet, odoriferous, perfume, fragrance, scent, olfactory

6-4. For each semantic relationship specified below, provide one or more examples of words whose referents have that relationship to the specified word and identify the name of the semantic category that is used to cover your answer.

Example: *fish* is the superordinate term (hypernym).

Answer: *salmon, trout, ling cod, flounder, swordfish, tuna* are its hyponyms.

1) *Irish setter, Dalmatian, cocker spaniel* are the hyponyms.
2) *tabby, tom, Persian, alley* are the hyponyms.
3) *dog, cat, goldfish, parakeet, hamster* are the hyponyms.

4) *knife, fork, spoon* are the hyponyms.
5) *true* is the antonym.
6) *inaccurate* is the antonym.
7) *sister* is the converse.
8) *teacher* is the converse.
9) *partner* is the converse.
10) *toe* is the part.
11) *menu* is the whole.
12) *friend* is the synonym.
13) *teacher* is the synonym.

6-5. In the following sets of sentences one or more words are used metaphorically. Provide a general statement describing the principle that underlies each set of metaphors; then add to the set one metaphor that follows the principle.

Example:

I let my manuscript *simmer* for six months.

She *concocted* a retort that readers will appreciate.

There is no easy *recipe* for writing effective business letters.

General statement: "The writing process is viewed as cooking." Additional example: "He is the kind of writer who *whips up* another trashy novel every six months."

1) Members of the audience besieged him with counterarguments.

   His opponents tore his arguments to pieces.

   My reasoning left them with no ammunition.

   The others will never be able to destroy this argument.

   His question betrayed a defensive stance.

2) This heat is crushing.

   The sun is beating down on these poor laborers.

   The clouds seem to be lifting.

   The northern part of the state is under a heavy snowstorm.

   The fresh breeze cleared up the oppressive heat.

6-6. Determine whether the words in each of the following sets are polysemic, homonymous, or metaphorically related. In each case, state the criteria used to arrive at your conclusion. You may use a dictionary.

1) to run down (the stairs); to run down (an enemy); to run down (a list of names)
2) the seat (of one's pants); the seat (of government); the (driver's) seat (of a car)
3) an ear (for music); an ear (of corn); an ear (as auditory organ)
4) to pitch (a baseball); pitch (black); the pitch (of one's voice)

5) to spell (a word); (under) a spell; a (dry) spell

6) vision (the ability to see); (a man of) vision; vision (as a hallucination)

7) the butt (of a rifle); the butt (of a joke); to butt (as a ram)

6-7. Identify the semantic role of each underscored noun phrase in these sentences:

1) In October, I gazed ^ into the small river behind our college.

2) I have forgotten everything that I learned in grade school.

3) The snow completely buried my car during the last storm.

4) Fifty kilos of cocaine were seized by the DEA.

5) Natalie was awarded one thousand dollars' worth of travel.

6) The hurricane destroyed the island.

7) Their ingenuity never ceases to amaze me.

6-8. **a.** Examine Table 6.1 on page 220 to determine which words frequently co-occur with *little*, either preceding or following it.

b. List all the immediate constituents of which *little* is an element in the examples of Table 6.1; on that basis say what kind of a phrase *little* functions in—for example, an adjective phrase or adverb phrase.

Example 12: *a little longer*—adverb phrase; 20: *a little dispirited*—adjective phrase

Based on English and Other Languages

6-9. A "tag" is attached to every verb in the lexicon, indicating which semantic role can be assigned to each noun argument. For example, the verb *bake* can have an agent as its subject (as in sentence 1), a patient (as in sentence 2), a cause (3), or an instrument (4). But in subject position it does not allow locatives (5) or temporals (6).

1) Matthew baked scones.

2) The cake is baking.

3) The sun baked my lilies to a crisp.

4) This oven bakes wonderful cakes.

5) *The kitchen bakes nicely.

6) *Tomorrow will bake nicely.

a. Determine which semantic roles these verbs allow as subject on the basis of the sentences provided: *feel, provide, absorb, thaw, taste.*

1) His hands felt limp and moist.

I could feel the presence of an intruder in the apartment.

This room feels damp.

They all felt under the blanket to see what was there.

This semester feels very different from last semester.

2) Gas lamps provided light for the outdoor picnic.

   These fields provide enough wheat to feed a city.

   Who provided these scones?

   The accident provided me plenty to worry about.

   Your textbooks provide many illustrations of this phenomenon.

   The bylaws provide for dissolution of the board in these cases.

3) The students have absorbed so much material that they can't make sense of it anymore.

   This kind of sponge does not absorb water well.

   The United States absorbed the Texas Republic in 1845.

   My work hours are absorbing all my free time.

   The soil is absorbing the rain.

4) If Antarctica suddenly thawed, the sea level would rise dramatically.

   Chicken does not thaw well in just two hours.

   The crowd thawed after Kent arrived.

   Kent's arrival thawed the party.

   The heat of the sun will thaw the ice in the ice chest.

   Ice thaws at 0 degrees Celsius.

   The peace treaty will thaw relations between the United States and China.

5) This wine tastes like vinegar.

   He's tasted every single hors d'oeuvre at the party.

   I can taste the capers in the sauce.

b. Languages may differ with respect to the semantic roles that particular verbs may take. The following are semantically well-formed French sentences with the verb *goûter* 'taste':

Il n'a jamais goûté au caviar
he not-have ever tasted the caviar
'He's never tasted caviar.'

Je goûte un goût amer dans ce café.
I taste a taste bitter in this coffee
'I taste a bitter taste in this coffee.'

By contrast, the following sentence is not well constructed:

*Les cuisses de grenouille goûtent bon.
the thighs of frog taste good
'Frogs' legs taste good.'

What is the difference between English *taste* and French *goûter* in terms of the range of semantic roles that they permit as subject?

Especially for Educators and Future Teachers

6-10. Your high school ESL class asks you whether *bank* in *bank of a river* and in *savings bank* are the same word. You note that the terms are both nouns and are spelled alike and pronounced alike. By trying to identify synonyms and antonyms (as in Figure 6.4), you construct an argument designed to persuade your students that they are different words and not the same word with different senses. To show the contrast, identify another pair of word forms that represent different senses of the same word, again constructing the argument by identifying synonyms and antonyms.

6-11. In your first year of teaching, you tell your middle-school English class that the subject of a sentence is the "doer" of the action, and give as an example, *Devon scored the most points.* When you ask for other examples, a student volunteers *Disneyland is fun,* and you immediately see a problem: *Disneyland* is the subject of the sentence but not the doer of any action. Relying on your knowledge of semantic roles, what do you say to correct your explanation about the roles that subjects play in sentences?

6-12. Draw up characterizations of one or two sentences each to help your students remember the difference between a grammatical relation (e.g., subject or object) and a semantic role (e.g., agent or instrument).

6-13. Cite three pairs of expressions in each of which the referent for the two expressions is the same but the sense is different. Examples: *Mt. McKinley* and *the highest peak in the United States.*

6-14. Writing handbooks sometimes urge writers to be cautious about where in a sentence to position the word *only*. They may recommend placing *only* immediately in front of the constituent within its scope (handbooks may phrase it as placing *only* in front of the words it *modifies*). In the sentences below, bracket the constituent within the scope of *only* and insert a caret where *only* could be placed to have it directly preceding the structure in its scope. (*Note*: These sentences are adapted from the British National Corpus.)

Example: That *only* leaves ^ [one logical explanation]. (= That leaves *only* one logical explanation.)

a. She *only* needed to rest.

b. I *only* saw one tiny bit of it.

c. The opportunities have *only* been adopted halfheartedly.

d. Ads in newspapers usually *only* offer one product or a small range of products.

e. Cassie *only* knew of one stone like that.

Other Resources

Internet

- **LISU website: http://www.CengageBrain.com** For users of this textbook. Provides updated Internet links as well as supplemental material for students and instructors. Here you will find interactive learning tools.
- **British National Corpus: http://www.natcorp.ox.ac.uk/** Here you can obtain up to 50 authentic sentences containing any word or expression you specify, chosen at random from the 100-million-word resources of the British National Corpus.
- **Internet Thesaurus: http://thesaurus.com** At this website you'll find access to an online thesaurus. With it you can explore the relationships among words, especially those in synonymous and antonymous relationships.
- **WordNet: http://wordnet.princeton.edu/** In the words of its website, WordNet is a lexical database of English, developed under the direction of George A. Miller, with support from the National Science Foundation and other agencies. Nouns, verbs, adjectives, and adverbs are grouped into sets of cognitive synonyms called "synsets," each expressing a distinct concept. The synsets are interlinked by means of conceptual-semantic and lexical relations. You can explore the network of related words and concepts with the browser at the website. The site also provides some information about ongoing research supported by NSF and Google into ways of enhancing and improving WordNet. There is so much to be learned at this website. Pay a visit and enjoy the experience!
- **Thinkmap's Visual Thesaurus: http://www.visualthesaurus.com** Type in a word at this site and venture into a visual thesaurus. Besides an impressive network of lexical and semantic relations usefully displayed, the site provides access to a visual thesaurus and pronunciations. Clicking on any word in a displayed net rearranges the configuration to reveal a new set of relationships. Well worth at least a trial visit.

Suggestions for Further Reading

- **Stephen R. Anderson & Edward L. Keenan. 1985. "Deixis," in Timothy Shopen, ed., *Language Typology and Syntactic Description*, vol. 3** (Cambridge, UK: Cambridge University Press), pp. 259–308. A relatively brief and comprehensive treatment of deixis.
- **Alan Timberlake. 2007. "Aspect, Tense, and Mood," in Timothy Shopen, ed., *Language Typology and Syntactic Description*, vol. 3: *Grammatical Categories and the Lexicon*, 2nd ed.** (Cambridge, UK: Cambridge University Press), pp. 280–333. Provides a concise discussion of the semantic notions named in the title.
- **George Lakoff & Mark Johnson. 2003. *Metaphors We Live By*** (Chicago: University of Chicago Press). An update of the 1980 classic work on metaphors, reissued with an "Afterword, 2003," from which comes our quote in the section on "Metaphors."

- **George A. Miller. 1996.** ***The Science of Words*** (Indianapolis: W. H. Freeman). An accessible and award-winning treatment of the psychology of lexical meaning.
- **Sebastian Lobner. 2002.** ***Understanding Semantics*** (London: Arnold; New York: Oxford University Press). Appearing in the "Understanding Language Series," this is a thorough and wide-ranging introduction to semantics in general. It goes beyond the current chapter by treating sentence meaning more fully and by treating cognition, translation, and formal semantics.
- **Simon Winchester. 1998.** ***The Professor and the Madman: A Tale of Murder, Insanity, and the Making of the*** **Oxford English Dictionary**(New York: HarperCollins). Whether you're interested in a tale of murder and insanity or the making of the OED, this page-turner proves that lexicographers aren't harmless drudges.

Advanced Reading

Accessible treatments of semantics can be found in Lyons (1995) and Saeed (2009). Lexical semantics is discussed in Lehrer (1974), which focuses on semantic universals (discussed in Chapter 7 of this textbook). Cruse (1986) is a good overview of lexical semantics. Several of the papers in Holland and Quinn (1987) investigate connotation and the cultural elements in the organization of semantic fields. Other valuable works in related veins are Lakoff and Johnson (1989) and Fauconnier and Turner (2002). Cognitive linguistics and cognitive grammar, which we only mention in this chapter but which are increasingly important in semantic understanding, are discussed in Croft and Cruse (2004) and Langacker (2008). Deixis is discussed in Chapter 2 of Levinson (1983). General and practical treatments of lexicography can be found in Landau (2001) and the somewhat more advanced Atkins and Rundell (2008), the latter complemented by Fontenelle (2008), a collection of previously published influential articles, accessible to keen students.

References

Atkins, B. T. Sue & Michael Rundell. 2008. *The Oxford Guide to Practical Lexicography* (Oxford: Oxford University Press).

Croft, William & D. Alan Cruse. 2004. *Cognitive Linguistics* (Cambridge, UK: Cambridge University Press).

Cruse, D. A. 1986. *Lexical Semantics* (Cambridge, UK: Cambridge University Press).

Fauconnier, Gilles & Mark Turner. 2002. *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities* (New York: Basic Books).

Fontenelle, Thierry, ed. 2008. *Practical Lexicography: A Reader* (Oxford: Oxford University Press).

Holland, Dorothy & Naomi Quinn, eds. 1987. *Cultural Models in Language and Thought* (Cambridge, UK: Cambridge University Press).

Lakoff, George & Mark Johnson. 1989. *More than Cool Reason: A Field Guide to Poetic Metaphor* (Chicago: University of Chicago Press).

Landau, Sidney I. 2001. *Dictionaries: The Art and Craft of Lexicography*, 2nd ed. (Cambridge, UK: Cambridge University Press).

Langacker, Ronald W. 2008. *Cognitive Grammar: A Basic Introduction* (New York: Oxford University Press).

Lehrer, Adrienne. 1974. *Semantic Fields and Lexical Structure* (Amsterdam: North-Holland).

Levinson, Stephen C. 1983. *Pragmatics* (Cambridge, UK: Cambridge University Press).

Lyons, John. 1995. *Linguistic Semantics: An Introduction* (Cambridge, UK: Cambridge University Press).

Saeed, John I. 2009. *Semantics*, 3rd ed.(Chichester: Wiley-Blackwell).