

# 6 SEMANTICS

## The Study of Meaning

*Indeed, it is well said, in every object there is inexhaustible meaning.*

Thomas Carlyle

Up to now, this book has focused on the form of utterances—their sound pattern, morphological structure, and syntactic organization. But there is more to language than just form. In order for language to fulfill its communicative function, utterances must also convey a message; they must have content. Speaking very generally, we can call this message or content the utterance's **meaning**.

This chapter is concerned with **semantics**, the study of meaning in human language. Because some work in this complicated area of linguistic analysis presupposes considerable knowledge of other disciplines (particularly logic, mathematics, and philosophy), not all aspects of contemporary semantics are suitable for presentation in an introductory linguistics textbook. We will restrict our attention here to four major topics in semantics. (1) the nature of meaning, (2) some properties of the conceptual system underlying meaning, (3) the contribution of syntactic structure to the interpretation of sentences, and (4) the role of nongrammatical factors in the understanding of utterances.

### 6.1 MEANING

Long before linguistics existed as a discipline, thinkers were speculating about the nature of meaning. For thousands of years, this question has been considered central to philosophy. More recently, it has come to be important in psychology as well.

Contributions to semantics have come from a diverse group of scholars, ranging from Plato and Aristotle in ancient Greece to Bertrand Russell in the twentieth century. Our goal in this section will be to consider in a very general way what this research has revealed about the meanings of words and sentences in human language.

Semantic  
Relations  
among  
Words

By virtue of their meaning, words and phrases are able to enter into a variety of semantic relations with other words and phrases in the language. Because these relationships help identify those aspects of meaning relevant to linguistic analysis, they constitute a good starting point for this chapter.

Synonymy synonyms are words or expressions that have the same meanings in some contexts. The following pairs of words provide- plausible examples of synonymy in English.

Table 6.1 Some synonyms in English

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youth	adolescent
automobile	car
remember	recall
purchase	buy
big	large

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Although it is easy to think of context in which both words in each pair have essentially the same meaning, there are also contexts in which their meanings diverge at least slightly. For example, although *youth* and *adolescent* both refer to people of about the same age, only the latter word has the meaning of 'immature' in a phrase such as *He's such an adolescent!* Many linguists believe that it would be inefficient for a language to have two words or phrases whose meanings are

absolutely identical in all contexts, and that complete synonymy is therefore rare or nonexistent.

**Antonymy** **Antonyms** are words or phrases that are opposites with respect to some component of their meaning. The following pairs of words provide examples of antonymy.

Table 6.2 Some antonyms in English

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dark	light
boy	girl
hot	cold
up	down
in	out
come	go

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In each of these pairs, the two words contrast with respect to at least one component of their meaning. Thus, the meanings of *boy* and *girl* are opposites with respect to sex, although they are alike with respect to species (both are human). Similarly, *come* and *go* are opposites with respect to direction, although both involve the concept of movement.

**Polysemy and Homophony** Polysemy occurs where a word has two or more related meanings. The following table contains some examples of polysemous words in English.

Table 6.3 Some polysemy in English

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Word	Meaning A	Meaning B
bright	'shining'	'intelligent'
a deposit	'to shine intensely'	'to stare angrily'
to glare	'minerals in the earth'	'money in the bank'

---

If you consult a reasonably comprehensive dictionary for any language, you will find numerous examples of polysemy. The ease with which words acquire additional related meanings allows language to accommodate the new concepts and perspectives that accompany cultural change.

Homophony exists where a single form has two or more entirely distinct meanings. In such cases, it is assumed that there are two (or more) separate words with the same pronunciation rather than a single word with different meanings.

Table 6.4 Some homophones in English

Word	Meaning A	Meaning B
bat	'a winged rodent'	'a piece of equipment used in baseball'
bank	'a financial institution'	'the edge of a river'
club	'a social organization'	'a blunt weapon'
pen	'a writing instrument'	'a small cage'

Polysemy and homophony create **lexical ambiguity** in that a single form has two or more meanings. Thus, a sentence such as / could mean either that Liz purchased an instrument to write with or that she bought a small cage.

1. Liz bought a pen.

Of course, in actual speech the surrounding words and sentence usually make the intended meaning clear. The lexical ambiguity in sentences such as the following therefore normally goes unnoticed.

2. He got a loan from the *bank*.

3. -Because Liz needed a place to keep her guinea pig, she went downtown and bought a *pen* for \$ 10.

Semantic  
Relations  
Involving  
Sentences

Like words, sentences have meanings that can be analyzed in terms of their relation to other meanings. We consider three such relations here—paraphrase, entailment, and contradiction.

**Paraphrase** Two sentences that can have the same meaning are said to be paraphrase of each other. The following pairs of sentences provide examples of complete or near paraphrases.

4. *a)* The police chased the burglar.  
*b)* The burglar was chased by the police.
5. *a)* I gave the summons to Erin.  
*b)* I gave Erin the summons.
6. *a)* It is unfortunate that the team lost.  
*b)* Unfortunately, the team lost.
7. *a)* Paul bought a car from Sue.  
*b)* Sue sold a car to Paul. S.
8. *a)* The game will begin at 3:00 P.M.  
*b)* At 3:00 P.M., the game will begin.

The *a* and *b* sentences in each of the above pairs are obviously very similar in meaning. Indeed, it would be impossible for one sentence in any pair to be true without the other also being true. Thus, if it is true that the police chased the burglar, it must also be true that the burglar was chased by the police. (Sentences whose meanings are related to each other in this way are said to have the same truth **conditions**.)

For some linguists, this is enough to justify saying that the two sentences have the same meaning. However, you may notice that there are subtle differences in emphasis between the *a* and *b* sentences in 4 to 8. For instance, it is natural to interpret *4a* as a statement about what the police did and *4b* as a statement about

what happened to the burglar. Similarly, *8b* seems to place more emphasis on the starting time of the game than *8a* does. As is the case with synonymy, many linguists feel that languages do not permit two or more structures to have absolutely identical meanings and that paraphrases are therefore never perfect.

**Entailment** A relation in which the truth of one sentence necessarily implies the truth of another, as happens in examples 4 to 8 above, is called entailment. In the cases we have been considering, the entailment relation between the *a* and *b* sentences is mutual since the truth of either sentence guarantees the truth of the other. In some cases, however, entailment is asymmetrical. The following examples illustrate this.

9. *a)* The park wardens killed the bear.  
*b)* The bear is dead.

10. *a)* Robin is a man.  
*b)* Robin is human.

The *a* sentences in 9 and 10 entail the *b* sentences. If it is true that the park wardens killed the bear, then it must also be true that the bear is dead. However, the reverse does not follow since the bear could be dead without the park wardens having killed it. Similarly, if it is true that Robin is a man, then it is also true that Robin is human. Once again though, the reverse does not hold: even if we know that Robin is a human, we cannot conclude that Robin is a man rather than a woman or a child.

**Contradiction** Sometimes, it turns out that if one sentence is true, then another sentence must be false. This is the case with the examples in 11.

11. *a)* Charles is a bachelor.  
*b)* Charles is married.

If it is true that Charles is a bachelor, then it cannot be true that he is married. When two sentences cannot both be true, we say that there is a **contradiction**.

## What Is Meaning?

Although it is relatively easy to determine whether two words or sentences have identical or different meanings, it is much more difficult to determine precisely what meaning is in the first place. In fact, despite many centuries of study, we still know very little about the nature of meaning or how it is represented in the human mind. Nonetheless, it is worthwhile to review briefly some of the better known proposals and the problems that they encounter.

**Connotation** One notion that is closely linked with the concept of meaning is **connotation**, the set of associations that a word's use can evoke. For people living in the north, for example, the word *winter* evokes thoughts of snow, bitter cold, short evenings, frozen fingertips and the like. These associations make up the word's connotation, but they cannot be its meaning (or at least not its entire meaning). This is because *winter* is still used for the season stretching from December to March even if none of these other things are present (for example, if one lives further to the south). We must therefore look beyond connotation for our understanding of what meaning is.

The basic repository of meaning within the grammar is the lexicon, which provides the information about the meaning of individual words relevant to the interpretation of sentences.

**Referents** One well-known approach to semantics attempts to equate a word's meaning with the entities to which it refers—its **referents**. According to this theory, the meaning of the word *dog* corresponds to the set of entities (dogs) that it picks out in the real world. Although not inherently implausible, this idea encounters certain serious difficulties. For one thing, there is a problem with words such as *unicorn* and *dragon*, which have no referents in the real world even though they are far from meaningless. A problem of a different sort arises with expressions such as *the Prime Minister of Great Britain* and *the leader of the Conservative Party*, both of which refer (in 1993 at least) to John Major. Although these two expressions may have the same referent, we would not say that they mean the same thing. No one would maintain that the phrase *Prime Minister of Great Britain* could be defined as 'the leader of the Conservative Party' or vice versa.

**Extension and Intension** The impossibility of equating a word's meaning with its referents has led to a distinction between **extension** and **intension**. Whereas a word's extension corresponds to the set of entities that it picks out in the world, its intension corresponds to its inherent sense, the concepts that it evokes. Some examples are given in Table 6.5. Thus, the extension of *woman*

Table 6.5 Extension versus intension

Phrase	Extension	Intension
Primer Minister of Great Britain	John Major	leader of the majority party in Parliament
World Series champions (1992)	Toronto Blue Jays	winners of the baseball championship
capital of California	Sacramento	city containing the state legislature



would be a set of real world entities (women) while its intension would involve notions like 'female' and 'human'. Similarly, the phrase *Prime Minister of Great Britain* would have as its extension an individual ('John Major'), but its intension would involve the concept 'leader of the majority party in Parliament'. The distinction between a word's intension and its extension does not allow us to resolve the question of meaning. It simply permits us to pose it in a new way: what is the nature of a word's inherent sense or intension?

One suggestion is that word meanings (intensions) correspond to mental images. This is an obvious improvement over the referential theory since it is conceivable that one might have a mental image of a unicorn or a dragon even if there are no such entities in the real world. Unfortunately, this idea encounters serious difficulties of another sort. For one thing, it is hard to conceive of a mental image for words like *nitrogen*, *522,101*, *if*, *very*, and so on. Moreover, there seems to be no mental image for the meaning of the word *dog* that could be general enough to include Chihuahuas and Irish wolfhounds, yet still exclude foxes and wolves.

**Semantic Features** Still another approach to meaning tries to equate a word's intension with an abstract concept consisting of smaller components called **semantic features**. This componential analysis is especially effective when it comes to representing similarities and differences among words with related meanings. The feature analysis in Figure 6.1 for the words *man*, *woman*, *boy*,

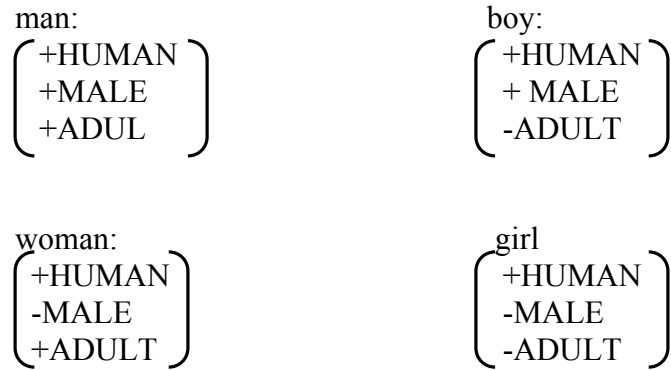


Figure 6.1 Semantic feature composition for *man*, *woman*, *boy*, *girl*

and *girl* illustrates this. An obvious advantage of this approach is that it allows us to group entities into natural classes (much as we do in phonology). Hence, *man* and *boy* could be grouped together as [+ HUMAN, +MALE], while *man* and *woman* could be put in a class defined by the features [+ HUMAN, +ADULT].

Componential analysis gives its most impressive results when applied to sets of words referring to classes of entities with shared properties. As illustrated above, a few simple features will allow us to distinguish among subclasses of people—men, women, boys, and girls. Unlike phonological features, however, semantic features do not seem to make up a small, well-defined class, and it is often very hard to reduce word meanings to smaller parts. Can we say, for example, that the meaning of *blue* consists of the feature [+ COLOR] and something else? If so, what is that other thing? Isn't it blueness? If so, then we still have not broken the meaning of *blue* into smaller features, and we are back where we started.

In other cases, it is unclear whether semantic features really provide any insights into the nature of the meaning they are supposed to represent. What value is there, for instance, in characterizing the meaning of *dog* in terms of the feature complex [+ +ANIMAL, +CANINE] so long as there is no further analysis of the concept

underlying the feature [CANINE]? A similar objection could be made to the use of feature like [HUMAN] and [MALE] to define *man* and *woman*.

**Meaning and Concepts** What, then, can we say about meaning? From the preceding survey, it seems that meaning must be something that exists in the mind rather than the world and that it must be more abstract than pictures and more complex than features. The seventeenth-century philosopher John Locke suggested that words are "marks of ideas in the mind." This proposal is typical of a wide range of traditional and modern approaches to semantics, all of which "to relate meaning to mental concepts of some sort. Since concepts don't have to correspond to objects in the world and need not be images or sets )of features, these approaches can avoid the problems outlined above. However, they face a serious problem of their own. Unless it is possible to determine what a concept is, it does little good to equate the meaning of linguistic forms with concepts in the mind. In the next section of this chapter, we will consider the human conceptual system from the point of view of linguistic meaning and try to determine some of its basic properties.

## 6.2 THE CONCEPTUAL SYSTEM

Underlying the use of words and sentences to express meaning in human language is a conceptual system capable of organizing and classifying every imaginable aspect of our experience, from inner feelings and perceptions, to cultural and social phenomena, to the physical world that surrounds us. This section focuses on what the study of this conceptual system reveals about how meaning is expressed through language. We will begin by considering some examples that illustrate the way in which these concepts are structured, extended, and interrelated..

## Fuzzy Concepts

We tend to think that the concepts expressed by the words and phrases of our language have precise definitions with clear-cut boundaries that distinguish them from other concepts. Some concepts may indeed be like this. For example, the concept expressed by the phrase *Member of Congress* seems to be clear-cut enough: one is a Member of Congress if and only if one is duly elected to a particular legislative body; no other person can be truthfully called a Member of Congress.

But are all concepts so straightforward? Consider the concept associated with the word *rich*. How much does one have to be worth to be called *rich*? Five hundred thousand dollars? Eight hundred thousand? A million? Is there any figure that we can give that would be so precise that a person who was short by just five cents would not be called rich? It seems not. While one could miss out on being a Member of Congress by five votes, it does not seem possible to miss out on being rich by just five cents. Moreover, while some people clearly qualify as rich and others uncontroversially qualify as nonrich, an indefinitely large number of people fall into the unclear area at the borderline of the concept and it is just not possible to say definitively whether or not they count as rich. This is because the notion of 'richness' does not have clear-cut boundaries; it is what we call a **fuzzy concept**.

Many linguists believe that this type of fuzziness pervades the human conceptual system. Certainly, it is not hard to think of everyday concepts whose boundaries are fuzzy in the same way as the preceding example—*tall, old, playboy, strong, grey-haired, genius, clean, bargain*, and so on.

**Graded Membership** A second important fact about concepts is that their members can be graded in terms of their typicality. Consider first a fuzzy concept

such as 'basketball star'. Even within the set of people who we can agree are basketball stars, some provide better examples of this concept than others. At the time of writing, for instance, Michael Jordan is a better example of a basketball star than is Patrick Ewing. Although basketball fans agree that both players are stars, Michael Jordan has scored more points, won more awards, set more records, endorsed more products on TV, received more media attention, and so on. This makes him a better example of a star than Patrick Ewing.

Even concepts whose boundaries can be scientifically defined exhibit this type of graded membership. A good example of this involves the concept 'bird'. Even assuming that English speakers all think of birds as 'warm-blooded, egg-laying, feathered vertebrae with forelimbs modified to form wings' (the dictionary definition), they still feel that some of these creatures are more bird-like than others. Thus, robins and magpies, for example, are intuitively better examples of birds than are hummingbirds, ostriches, or penguins.

Examples like these suggest that concepts have an internal structure, with the best or **prototypical** exemplars Michael Jordan in the case of 'basketball stars', robins in the case of 'birds') close to the core and less typical members arranged in successively more peripheral regions.

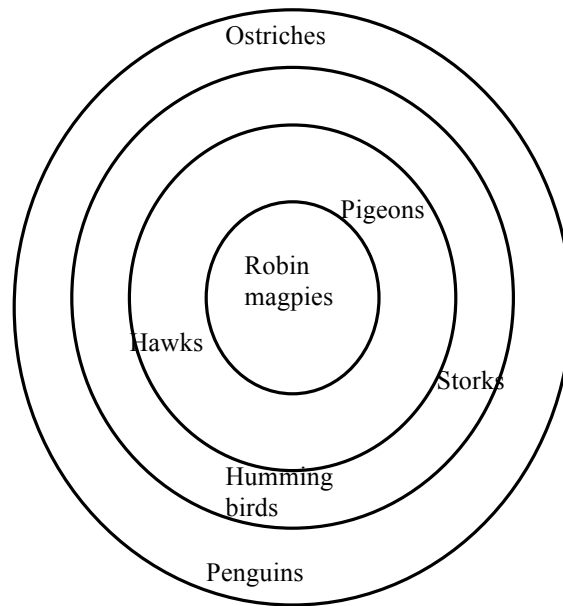


Figure 6.2 Possible internal structure of the concept 'bird'

The existence of fuzzy concepts and of graded membership in concepts provides important insights into the nature of the human conceptual system. In particular, it seems that many (perhaps even most) concepts expressed in language are not rigid all-or-nothing notions with precise and clear-cut boundaries. Rather, they are characterized by an internal structure that recognizes of typicality as well as by fuzzy boundaries that make categorization uncertain in some cases.

**Metaphor** The concepts expressed through language are not isolated from each other. Rather, they make up a giant network, with many interconnections and associations among the various subparts. A good example of these interconnections involves **metaphor**, the understanding of one concept in terms of another.

We have a tendency to think of metaphor as a literary device reserved for the use of authors and poets. In fact, however, there is reason to think that it has a prominent

place in the conceptual system shared by all human beings. The effects of this prominence are seen in the way in which we use language to talk about various abstract notions.

A simple example of this involves the concept of time, which we analyze metaphorically by treating it as if it were a concrete commodity. Consider in this regard the following sentences, which illustrate how we talk about time.

12. a) You're *wasting* my time.
- b) This gadget will *save* you hours.
- c) How do you *spend* your time these days?
- d) I have *invested* a lot of time in that project.
- e) You need to *budget* your time.
- f) Is that *worth* your while?
- g) He's living on *borrowed* time.
- h) You don't use your time *profitably*.

The words that we use in speaking about time suggest that it is conceptualized as something concrete—a commodity that can be saved, wasted, and invested just like other valuable things can.

What is the basis for the metaphor that determines how we talk about time? There is apparently no objective, inherent similarity between time and commodities such as gold or money. What brings these two concepts together is the perception, based in part on culture and in part on the subjective feeling that the passing of time is like the passage of valuable commodities from one hand to another.

**A Spatial Metaphor** Another very prevalent metaphor in our language involves the use of words that are primarily associated with spatial orientation to talk about physical and psychological states. The basis for these metaphors appears to lie in our physical experience. Unhappiness and ill health tend to be associated with lethargy and inactivity, which often involve being on one's back (physically down). In

contrast, happiness and good health are often correlated with energy and movement, which involve being on one's feet (physically up).

Table 6.6 Metaphorical use of spatial terms

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Emotions: happy is up, sad is down

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I'm feeling <i>up</i> .	I'm feeling <i>down</i> .
That <i>boosted</i> my spirits.	He <i>fell</i> into a depression.
My spirits <i>rose</i> .	Her spirits <i>sank</i> .
You're in <i>high</i> spirits.	He's feeling <i>low</i> .
The <i>height</i> of ecstasy	the <i>depths</i> of depression
That gave me a <i>lift</i> .	

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Physical health: up is health and life, down is sickness and death

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He's at the <i>peak</i> of health.	He's <i>sinking</i> fast.
Lazarus <i>rose</i> from the dead.	He <i>fell</i> ill.
He's in <i>top</i> shape.	He came <i>down</i> with the flu.
	His health is <i>declining</i> .
	He's feeling <i>under</i> the weather.

---

These few examples illustrate a more general point about language and meaning. The innumerable many concepts that we express through language do not all exist independent of each other. Rather, many concepts are structured and understood metaphorically in terms of notions more basic to our physical and cultural experience. Thus, time is understood in terms of a commodity metaphor, health and happiness in terms of a spatial metaphor, and so on. By studying how concepts are represented in language, we can gain valuable insights into the role of experience and metaphor in the human conceptual system.

The  
Lexicalization  
of Concepts

Do all human beings share the same conceptual system? Do all languages express concepts in the same way? These are questions that have fascinated and puzzled researchers for many decades. At the present time, there is no reason to believe that



human beings in different linguistic communities have different conceptual systems. But there is ample evidence that languages can differ from each other in terms of how they express concepts.

**Lexicalization** The classic and frequently distorted example of how languages can differ from each other in the expression of concepts involves the words for ‘snow’ in Eskimo (Inuktitut). Sometimes estimated in the hundreds by unknowledgeable commentators, the set of simple words for ‘snow’ in Eskimo is in fact much smaller. For example, one well-known dictionary gives only the following four items (although other dictionaries give several more for at least some varieties of Eskimo).

Table 6.7 Words for ‘snow’ in Eskimo

aput	‘snow on the ground’
gana	‘falling snow’
piqsirpoq	‘drifting snow’
qimuqsuq	‘snow drift’

As you can see, there is nothing particularly startling about this list of words. In fact, even in English there is more than just one word to describe snow in its various forms—*snow*, *slush*, *blizzard*, and *sleet* come to mind, for example.

The types of differences we are considering involve **lexicalization**, the process whereby concepts are encoded in the words of a language. Thus, Eskimo lexicalizes the concepts ‘falling’ and ‘snow’ in a single word (*qana*) while English uses two separate words. While some lexicalization differences may correlate with cultural factors (the relative importance of types of snow in traditional Eskimo culture), this is not always so. For example, English has an unusually rich set of vocabulary items pertaining to the perception of light.

Table 6.8 Some verbs pertaining to light in English

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glimmer	glisten
gleam	glow
glitter	flicker
shimmer	shine
flare	glare
flash	

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Although most English speakers know and use the words in this list, it is hard to see how the variety found in this particular area of vocabulary can be correlated with any identifiable feature of our culture or society.

The lexicalization differences just illustrated are generally not considered by linguists to have any special importance. As we have tried to emphasize throughout this book, the focus of linguistic analysis is on the *system* of knowledge that makes it possible to speak and understand a language. The fact that a particular language has more words pertaining to snow or light does not in and of itself provide any insight into the nature of the human linguistic system, and therefore does not merit special attention. However, as we will see in the next subsection, there are lexicalization differences whose properties can shed light on how linguistic systems express meaning.

**Motion Verbs** All languages have words that can describe motion through space (in English, *come*, *go*, and *move*, among many others). However, recent work suggests that there may be systematic differences in terms of how languages express motion and the concepts related to it. In English, for example, there are many verbs that simultaneously express both the concept of motion and the manner in which the motion occurs.

Table 6.9 Some verbs expressing motion and manner in English

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The rock *rolled* down the hill.  
The puck *slid* across the ice.  
She *limped* through the house.  
The smoke *swirled* through the opening.

---

Notice how each of these verbs expresses both the fact that something moved and the manner in which it moved (by rolling, sliding, limping, and so on).

Interestingly, Romance languages (descendents of Latin) cannot express motion events in this way. Thus, while Spanish has a verb *rodar* with the meaning 'to roll', it does not use this verb to express both manner and motion as English does.

13. \*La botella rodó en la cueva.  
'The bottle rolled into the cave.'

Instead, the motion and its manner have to be expressed separately.

14. La botella entró en la cueva, rodando.  
'The bottle entered the cave, rolling.'

However, Spanish *does* have a series of verbs that jointly express the concept of motion and the path along which it occurs.

Table 6.10 Some verbs expressing motion and path in Spanish

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El globo *bajó* por la chimenea.  
'The balloon moved-down through the chimney.'  
El globo *subió* por la chimenea.  
'The balloon moved-up through the chimney.'  
La botella *volvió* a la orilla.  
'The bottle moved-back to the bank.'  
La botella *cruzó* el canal.  
'The bottle moved-across the canal.'  
La botella *salió* de la cueva.  
'The bottle moved-out from the cave.'

---

As the English translations show, Spanish verbs of motion express both the concept of movement and the direction of its path—down, up, back, across, out, and so forth.

(English, too, has verbs that can express both motion and path—*descend*, *ascend*, *return*, and so on—but these words are not part of its native vocabulary. Rather they were borrowed into English from latinate sources, usually through French.)

Another lexicalization option is found in the Amerindian language Atsugewi, in which verbs can express both motion and the type of thing that moves.

Table 6.11 Some verb roots expressing motion and the thing moving in Atsugewi

---

lup	for movement of a small, shiny spherical object (a hailstone)
t	for movement of a smallish, fiat object that can be attached to another (a stamp, a clothing patch, a shingle)
caq	for movement of a slimy, lumpish object (a toad, a cow dropping)
swal	for movement of a limp linear object, suspended by one end (a shirt on a clothesline, a hanging dead rabbit)
qput	for movement of loose, dry dirt
staq	for movement of runny, unpleasant material (manure, guts, chewed gum, rotten tomatoes)

---

We learn two things from these facts. First, the concept of motion is associated with a number of other concepts, including 'path', 'manner of movement', and 'moving thing'. Second, the way in which these concepts are grouped together for purposes of lexicalization can differ systematically from language to language. Languages such as English have verbs that simultaneously lexicalize motion and manner while other languages have verbs that simultaneously lexicalize motion and path (Spanish) or motion and the type of thing that moves (Atsugewi).

The general picture that is emerging from this type of work is that within particular semantic domains, there may be a small universal set of concepts (motion, manner, path, thing that moves, and so on) and a small set of options for how these concepts can be combined for purposes of lexicalization. Unlike the lexicalization differences involving snow and fight discussed earlier, these differences appear to be

highly systematic and to reveal some general tendencies about the way in which meaning can be expressed in human language. Further work of this type should provide additional insights into the organization of the human conceptual system as well as the ways in which its component notions can be lexicalized in human language.

The Grammaticization of Concepts

Of the indefinitely large set of concepts expressible in human language, a relatively small subset enjoys a special status. These are the concepts that are lexicalized as affixes and nonlexical (functional) categories in one language or another. Some of the concepts that are treated this way in English are listed in Table 6.12.

Table 6.12 Some concepts associated with affixes and nonlexical categories in English

Concept	Affix
Past	<i>-ed</i>
More than one	<i>-s</i>
Again	<i>re-</i>
Negation	<i>in-, un-</i>
Concept	Nonlexical category
Obligation	<i>must</i>
Possibility	<i>may</i>
Definite, specific	<i>the</i>
Indefinite, non-specific	<i>a</i>
Disjunction	<i>or</i>
Negation	<i>not</i>
Conjunction	<i>and</i>

Concepts that are expressed as affixes or nonlexical categories are said to have been **grammaticized**.

Some concepts tend to be highly grammaticizable in that most, if not all, languages lexicalize them as affixes or special nonlexical categories. Negation and

conjunction are possible examples of concepts that are grammaticized in all languages. Contrasts involving singular versus plural and past versus non past are encoded by special affixes in many languages, but not all. Still other concepts are grammaticized in a smaller number of languages, as the following example from the Siouan language Hidatsa illustrates.

**Hidatsa Assertion Morphemes** In Hidatsa, each statement is accompanied by a morpheme to indicate which of the following five categories it exemplifies. (Still other markers are used for questions, commands, and wishes.)

Table 6.13 Assertion morphemes in Hidatsa

---

*ski*     *the speaker is certain of the statement's truth*

---

Waceo iiki<sup>u</sup>pi kure heo-ski  
 'The man (definitely) carried the pipe.'

---

*c*     *The speaker believes the statement to be true*

---

Waceo iiki<sup>u</sup>pi kure heo-c  
 'The man (supposedly) carried the pipe.'

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*wareac*     *The speaker regards the statement to be common knowledge*

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Waceo iiki<sup>u</sup>pi kure heo-wareac  
 'The man carried the pipe (they say).'

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*rahe*     *The statement is based on an unverified report from someone else*

---

Waceo wira rakci heo-rahe  
 'The man roasted the goose (it is rumored).'

---

*toak*     *The truth of the statement is unknown to both speaker and listener*

---

Waceo cihpa rakci heo-toak  
 'The man roasted the prairie dog (perhaps).'

---

Choice of the appropriate assertion morpheme is extremely important in Hidatsa. A speaker who utters a false sentence marked by the morpheme *-ski* is considered to be

a liar. Had he used the morpheme *-c*, on the other hand, it would be assumed that he simply made a mistake.

While English has ways of indicating these contrasts (by using expressions such as *perhaps*, *I heard that*, and *I guess*), it does not have a grammatical system of morphemes that obligatorily encodes this information in every sentence. By investigating the grammaticization options found in different languages, it may eventually be possible to identify the factors that determine which concepts are singled out for association with affixes and nonlexical categories.

### 6.3 SYNTACTIC STRUCTURE AND INTERPRETATION

The preceding sections have focused on the meaning conveyed by the individual words and phrases that make up a sentence. In this section, we turn to the problem of sentence interpretation, with an emphasis on how the positioning of words and phrases in syntactic structure helps determine the meaning of the entire sentence, consistent with the following principle.

15. The Principle of Compositionality:

The meaning of a sentence is determined by the meaning of its component parts and the manner in which they are arranged in syntactic structure.

There are many different ideas about precisely how the meaning of a sentence's component words and their arrangement in syntactic structure determine sentence meaning. For purposes of illustration, we will consider the relevance of syntactic structure to three aspects of sentence interpretation—the representation of structural ambiguity, the assignment of thematic roles, and the interpretation of pronouns.

## Structural Ambiguity

Some sentences are ambiguous because their component words can be arranged into phrases in more than one way. This is called structural ambiguity and is to be distinguished from lexical ambiguity, which is the result of homophony or polysemy. Structural ambiguity is exemplified by phrases like *old men and women*, where we can take *old* to be a property of both the men and the women or of the men alone. These two interpretations or readings can be linked to separate tree structures, as Figure 6.3 shows. (C = *conjunction*.)

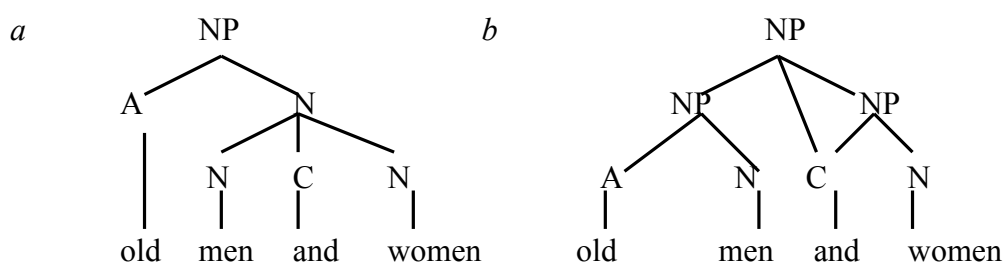


Figure 6.3

Figure 6.3a corresponds to the reading in which *old* modifies *men* as well as *women*. This is shown by making the adjective a sister of the category that dominates both nouns. In Figure 6.3b, on the other hand, the adjective is a sister of only the N *men*, and this structure corresponds to the reading in which 'old' applies only to the men.

Another case of structural ambiguity is found in sentences such as 16.

16. Nicole saw the people with binoculars.

In one interpretation of 16, the people had binoculars when Nicole noticed them (the phrase *with binoculars* modifies the noun *people*), while in the other interpretation, Nicole saw the people by using the binoculars (the PP modifies the verb). These two readings can be represented as in Figure 6.4. In Figure 6.4a, the PP *with binoculars* combines with the N *people*, reflecting the first reading for this sentence. In Figure



6.4b, on the other hand, the PP combines with the verb and its direct object and is not linked in any special way to the N *people*.

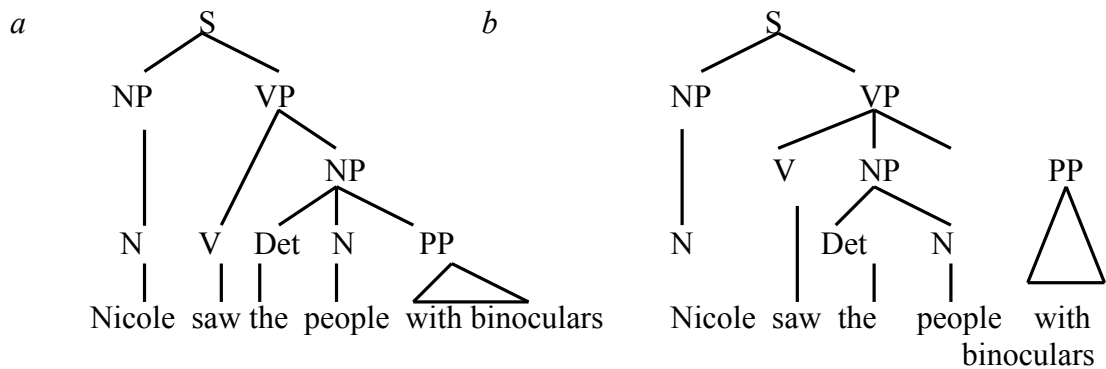


Figure 6.4

As a final example of this type of structural ambiguity, consider the compound *French history teacher*, which can refer either to a history teacher who is French or to a teacher of French history. These two readings can be associated with the trees depicted in Figure 6.5a and 6.5b, respectively.

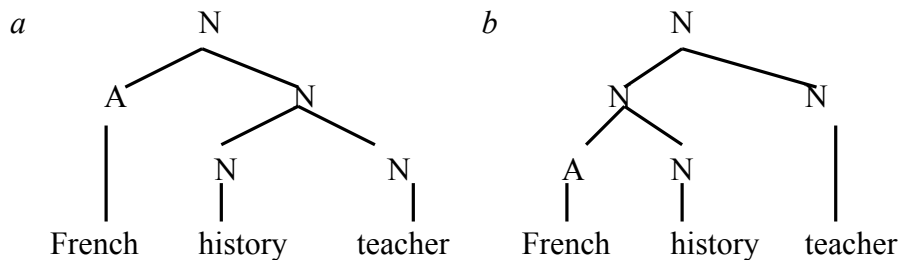


Figure 6.5

The three cases of structural ambiguity just outlined all have in common the fact that the two interpretations can be related to differences in the surface structure tree. Sometimes, however, ambiguity can be properly characterized only with the help of deep structure. Consider in this regard a sentence such as the following:

17. Who do you expect to play?

On one reading, *17* can be interpreted as a question about who your opponent will be (who you will play against) while on another, it asks who will be playing. Although it is difficult to see how the grouping of constituents in surface structure could reflect these different interpretations, consideration of the relevant deep structures provides the needed insight. The first reading corresponds to *18a*, in which *who* appears as direct object of *play*. The second interpretation, on the other hand, is associated with the deep structure depicted in *18b*, in which the *wh* word is subject of play. In both cases, *Wh* Movement will yield the sentence in *17*. (See Section 3 of Chapter 5.)

- 18. a) You expect to play who.*  
*b) You expect who to play.*

The fact that deep structure is needed to represent certain types of ambiguity provides interesting additional evidence for the view that there are at least two levels of syntactic structure—deep structure and surface structure.

Thematic Roles (advanced) Part of semantic interpretation involves determining the roles that the referents of NPs play in the situation described by sentences. Consider in this regard the simple sentence in *19*.

*19. The senator sent the lobster from Maine to Nebraska.*

It would be impossible to understand this sentence if we could not identify the senator as the person who is responsible for sending something, the lobster as the thing that is sent, and so on. The term thematic role or semantic role is used to describe the part played by a particular entity in an event. In most linguistic analyses, at least the thematic roles in Table 6.14 are recognized. (These

Table 6.14 Thematic roles

---

*The senator sent the lobster from Maine to Nebraska*

Agent:	the entity who deliberately performs an action	<i>the senator</i>
Theme:	the entity undergoing a change of state or transfer	<i>the lobster</i>
Source:	the starting point for a transfer	<i>Maine</i>
Goal:	the end point for a transfer	<i>Nebraska</i>

---

definitions have been simplified somewhat.) The notion of transfer used in the definition of theme, source, and goal is intended to involve not only actual physical movement, but also changes in possession, as in 20, and identity, as in 21.

20. Terry gave the skis to Mary.  
       agent  theme          goal

21. The magician changed the handkerchief into a rabbit.  
       agent  theme          goal

Many semantic analyses recognize various other thematic roles, as shown in Table 6.15, to describe the NPs in sentences such as the following:

22. The astronomer saw the comet with a new telescope at the observatory.

Table 6.15 Some additional thematic roles

---

*The astronomer saw the comet with a new telescope at the observatory*

Experiencer:	the entity perceiving something	<i>the astronomer</i>
Stimulus:	the entity perceived	<i>the comet</i>
Instrument:	the entity used to carry out an action	<i>a new telescope</i>
Location:	the place at which an entity or action is located	<i>the observatory</i>

---

**Thematic Role Assignment** Where do thematic roles come from, and how does the grammar ensure that the appropriate thematic role is associated with each NP in a sentence? Thematic roles originate in word meaning. Thus, if the sentence *Harry hit the ball* contains an agent and a theme, it is because the verb *hit* has the type of meaning that implies an entity that does the hitting (an agent) and an entity that gets hit (a theme). Similarly, if we understand *Maine* as a source and *Nebraska* as a goal

in sentence 19, it is because of the difference in the meaning of the prepositions *from* and *to* that occur with these NPs.

Table 6.16 Some words and the thematic roles implied by their meanings

hit	V,	<agent, theme>
walk	V,	<agent>
to	P,	<goal>
from	P,	<source>
near	P,	<location>

These roles are then assigned to NPs based on their position in syntactic structure, with each NP receiving one and only one role.

As a first example of this, let us consider the complement of a preposition.

In such cases, the process of thematic role assignment can be summarized as follows.

23. A P assigns a thematic role to its complement NP.

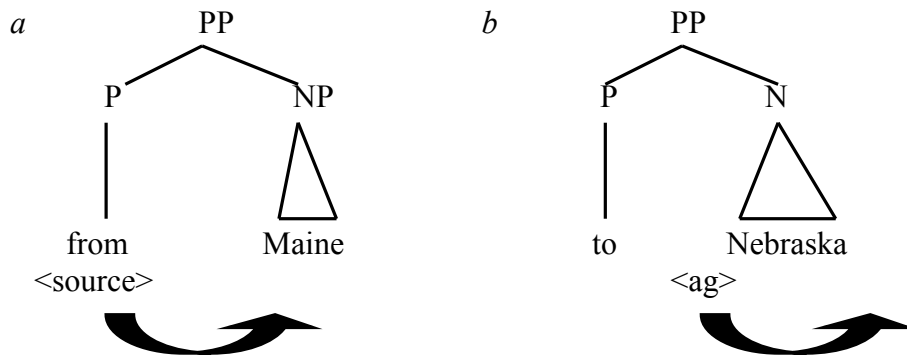


Figure 6.6

Matters are slightly more complicated in the case of Vs. Here we must distinguish between the theme role, which is assigned to the V's complement and the agent role, which is assigned to its subject (the NP immediately under S).

24. A V assigns a theme role (if it has one) to its complement NP.  
 A V assigns an agent role (if it has one) to its subject NP.

This is exemplified in the following structures.

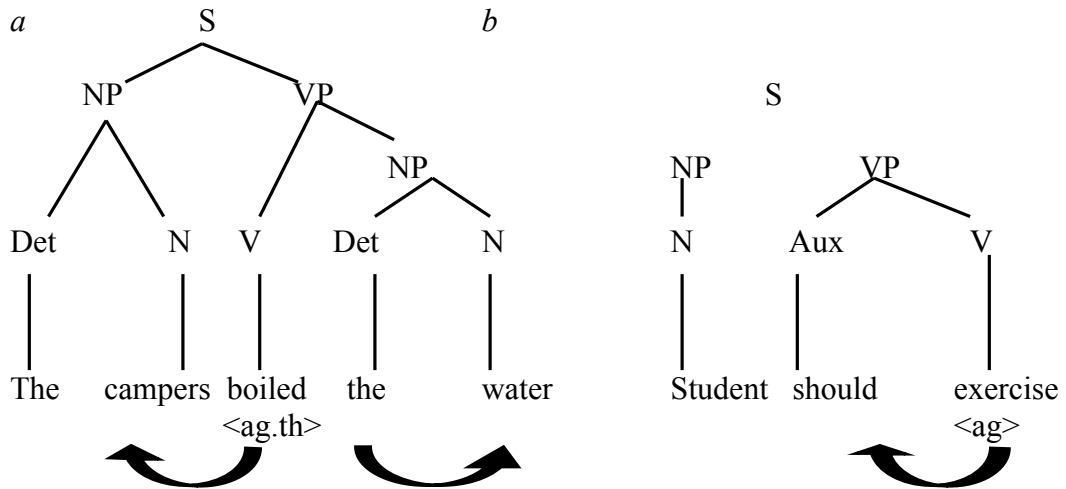


Figure 6.7

In accordance with 24, the theme role (where present) is assigned to the V's NP complement while the agent role is assigned to the subject.

The structure in Figure 6.8 illustrates the assignment of thematic roles in a sentence that contains a P in addition to a V.

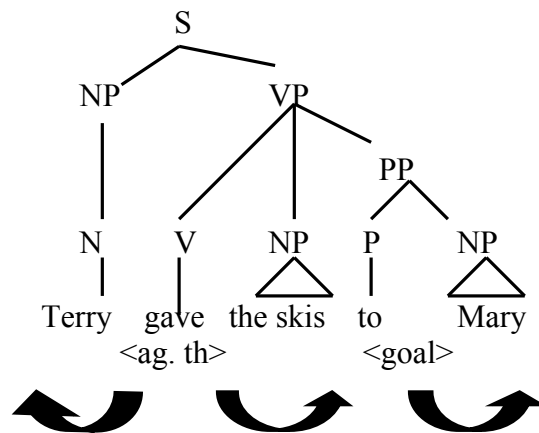


Figure 6.8

Here, the P *to* assigns its goal role to its complement NP *Mary* while the verb *give* assigns its theme role to the complement *the skis* and its agent role to the subject *Terry*.

**Deep Structure and Thematic Rules** In the examples considered to this point, it is unclear whether an NP receives its thematic role on the basis of its position in deep structure or surface structure. This is because our example sentences are all formed without the help of movement transformations, so that each NP occupies the same position in both deep structure and surface structure. But now consider a sentence such as 25, which is formed with the help of *Wh* Movement.

25. What should the man bring?

This sentence has the deep structure depicted in Figure 6.9.

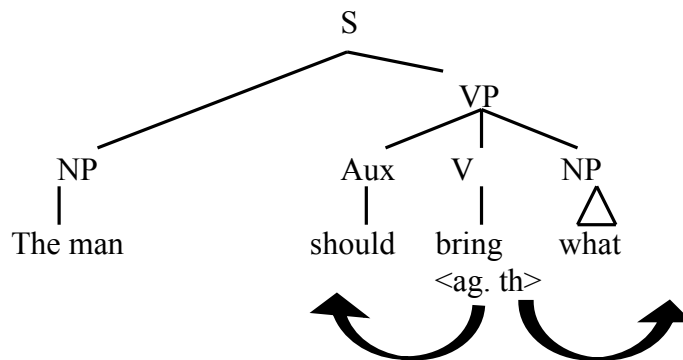


Figure 6.9

Since the theme role is assigned to the complement of V (see 24 and Figure 6.8 above), it follows that the NP *what* in the above example receives this role by virtue of its position in deep structure, not surface structure (where it occurs at the beginning of the sentence). This allows us to draw the following conclusion.

26. An NP's deep structure position determines its thematic role.

The relevance of deep structure to the assignment of thematic roles is important for two reasons. First, it shows that syntactic structure not only represents the way in which words are organized into phrases, but also is relevant to semantic interpretation. Second, the fact that an NP's position in deep structure determines its



Since the NP *the thief* appears as complement of the verb *arrest* in deep structure and since an NP's deep structure position determines its thematic role, it follows that it will be assigned the theme role, as desired.

But what of the agent role? The crucial assumption is that the passive form of a verb loses the ability to assign an agent role. This is why passive sentences are perfectly acceptable even when there is no agent NP (for example, *The thief was arrested*). When an NP hearing the agent role does appear, it occurs not in the subject position but rather as complement of the preposition *by*. Because the verb is unable to assign an agent role, some other element must do this job if the agent role is to be assigned. *By* is that element, being unique among prepositions in having the type of meaning that assigns an agent role. Thus, the sentence *The thief was arrested by the police* has the deep structure depicted in Figure 6.11. (This *by* should not be confused with the *by* in *He stood by the tree*, which assigns a location role.)

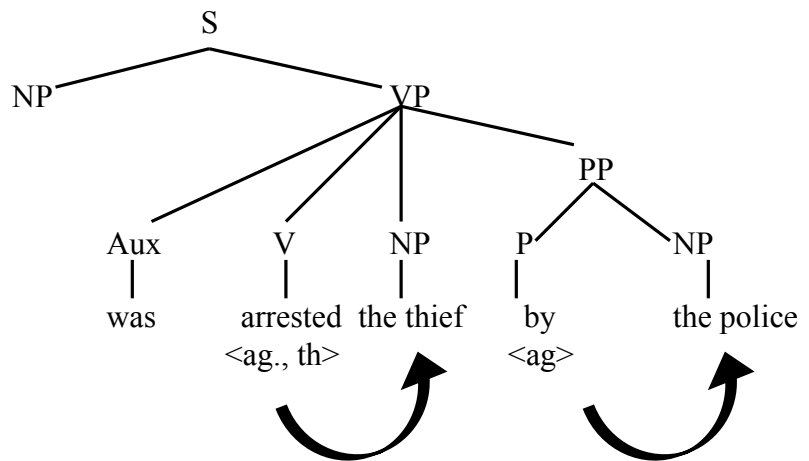


Figure 6.11

In this structure, the passive verb (*was*) *arrested* assigns its theme role its complement (The NP *the thief*) while the special preposition *by* assigns its agent role



to its complement (the NP *the police*). This ensures that the sentence has the correct interpretation, with the police doing the arresting and the thief getting arrested.

In order to form the correct surface structure for passive sentences, we need a transformation that will move the NP bearing the theme role from the direct object position to the subject position when the latter is empty.

28. NP Movement:  
Move NP into the subject position.

This transformation applies to the deep structure in Figure 6.11 to give the surface structure depicted in Figure 6.12.

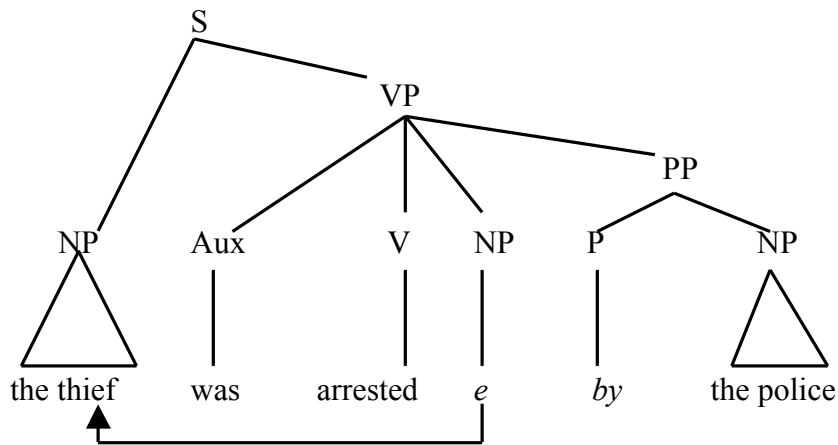


Figure 6.12

In sum, then, the transformational analysis of passives makes use of both deep structure and surface structure. In order to account for thematic role assignment, the NP that receives the theme role occurs as complement of the verb in deep structure, while the NP that receives the agent role, if present, occurs as complement of the special preposition *by*. A transformation then moves the NP bearing the theme role from its deep structure position to the subject position in surface structure, giving the correct final form of the sentence.

The Interpretation  
to  
Pronouns  
(advanced)

The category of **pronouns** includes words such as *he, she, himself, and herself*.

These words are characterized by the fact that their interpretation can be determined by another element in the same sentence. (This other element is called the **antecedent**. Consider in this regard the following two sentences.

29. a) Jim's new car cost him a lot of money.  
b) Jim hurt himself.

In the first of these sentences, the pronoun *him* can have the same referent as the NP *Jim* or can be taken to refer to someone not mentioned in the sentence (say, Jim's father). In the second sentence, in contrast, the pronoun *himself* must have the same referent as *Jim*; no other interpretation is possible. The former type of pronoun is called a *pronominal* and the latter type a **reflexive pronoun**.

The interpretation of pronominal and reflexive pronouns also differs in the following sentences.

30. a) [s Clare knew that [s Alexis trusted *herself*]].  
[s Clare knew that[s Alexis trusted *her*]].

Notice that *herself* in 30a can refer only to Alexis, but that *her* refers to either Clare or someone not mentioned in the sentence. This is because the interpretation of reflexive pronouns, but not ordinary pronominals, is subject to the following principle.

31. A reflexive pronoun must have an antecedent in the smallest S containing it.

Since Alexis, but not *Clare*, occurs in the smallest S containing the reflexive pronoun in 30, only it is an eligible antecedent for *herself*.

**Principle A** A somewhat more abstract feature of syntactic structure enters into the interpretation of the reflexive pronouns in sentence such as 32, which has the structure in Figure 6.13. (Pronouns are treated as N-type categories that head NPs; to save space, some word-level category labels are omitted. Possessor NPs occur in the specifier position within larger NPs).

32. The boy's uncle admired himself.

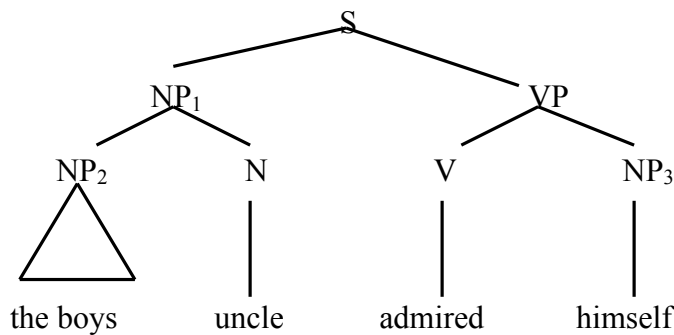


Figure 6.13

Although there are two NPs in the same S as *himself* (namely, *the boy* and *the boy's uncle*), only one (*the boy's uncle*) can serve as antecedent for the reflexive pronoun. Thus, the person who was admired in 32 must have been the boy's uncle, not the boy.

The principle needed to ensure this interpretation makes use of the notion **c-command**, which is defined as follows.

33. NP<sub>a</sub> c-commands NP<sub>b</sub> if the first category above NP<sub>a</sub> contains NP<sub>b</sub>.

Although c-command might appear to be a rather technical notion, the underlying idea is very simple. Figure 6.14 illustrates the type of configuration in which c-command occurs. when trying to determine c-command relations, you can either use

the definition in 33 or play the template in Figure 6.14 to the structure being analyzed.

We can now formulate the constraint on the interpretation of reflexives, called **Principle A**, as follows. In order to keep the discussion at an introductory level, we

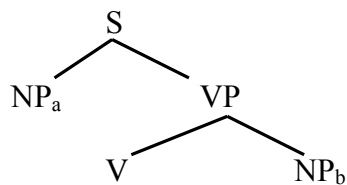


Figure 6.14 The c-command configuration.

consider only the version of this principle required for simple, one-clause sentences.

**34. Principle A:**  
**A reflexive pronoun must have an antecedent that**  
c-commands it

When using Principle A, the key step involves determining whether a potential antecedent c-commands the reflexive pronoun. Compare in this regard the status of the NPs *the boy* and *the boy's uncle* in figure 6.13.

Since the first category above *the boy's uncle* (namely, S) contains the reflexive, this NP c-commands *himself* according to our definition and can therefore serve as its antecedent. As we have already seen, the sentence has this interpretation.

In contrast, the first category above NP<sub>2</sub> (*the boy*) is NP<sub>1</sub> as illustrated in Figure 6.15.

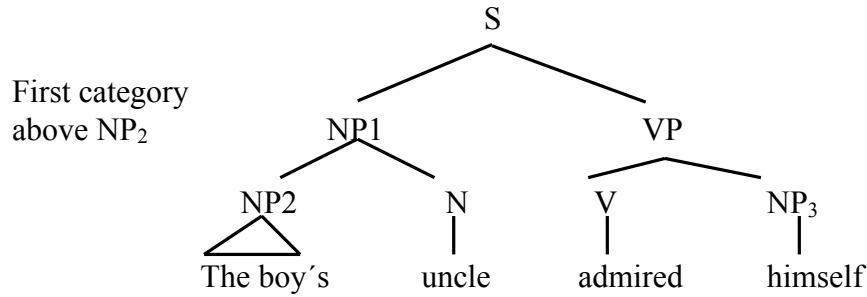


Figure 6.15

Since NP<sub>1</sub> does not contain the reflexive, there is no c-command relationship between NP<sub>2</sub> and *himself* according to our definition. It is therefore not possible for *the boy* to serve as antecedent for *himself*.

**Principle B** Now let us consider the interpretation of pronominals. As the following example shows, the interpretation of the pronominal *him* contrasts sharply with that of the reflexive *himself* in the structure that we have been considering. Thus, *him* can refer to the boy, but not to the boy's uncle—the opposite of what we observed for *himself*.

35. The boy's uncle admired him.

How are we to account for these facts? The relevant constraint, called **Principle B**, is stated in 36. (As with Principle A, we present only the version of this principle relevant to simple one-clause sentences.)

**36. Principle B.**

A pronominal must not have an antecedent that c-commands it.

To see how this principle works, consider the following structure.

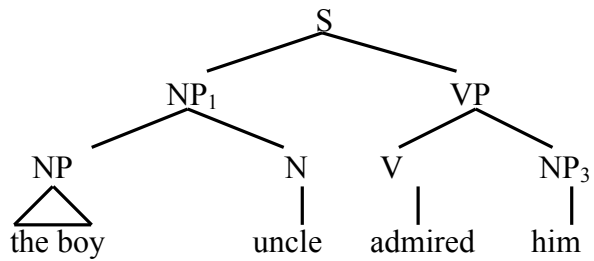


Figure 6.16

In this structure, NP, (*the boy's uncle*) c-commands him since the first category above it (namely, S) also contains *him*. Principle B therefore prevents NP<sub>1</sub> from serving as antecedent for *him*. In contrast, NP<sub>2</sub> (*the boy*) does not c-command *him* since the first category above it (namely, NP<sub>1</sub>) does not contain the pronoun. Thus, nothing prevents the interpretation in which *him* and *the boy* refer to the same person.

There is much more that can and should be said about the interpretation of pronouns. A more detailed examination of this very complex phenomenon would reveal the need for even more abstract principles referring to additional properties of syntactic structure. However, the examples we have already considered suffice to illustrate the crucial point in all of this, which is that syntactic structure plays an important role in the interpretation of both pronominals and reflexive pronouns.

#### 6.4 OTHER FACTORS IN SENTENCE INTERPRETATION

Syntactic structure provides only part of the information needed to determine the meaning of a sentence. Other necessary information comes from *pragmatics*, which includes the speaker's and addressee's background attitudes and beliefs, their understanding of the context in which a sentence is uttered, and their knowledge of how language can be used to inform, to persuade, to mislead, and so forth. This section focuses on the role of pragmatics in sentence interpretation.

As we saw in the preceding section, the grammar includes a structural principle (Principle B) that regulates the interpretation of pronominals such as *he* and *they*. However, as the following sentences show, nonlinguistic knowledge and beliefs can also play an important role in selecting the antecedent for a pronominal.

37. a) The judge denied the prisoner's request because he was cautious.  
b) The judge denied the prisoner's request because he was dangerous.

These two sentences have identical syntactic structures, differing only in the choice of the adjective in the second clause (*cautions* in the first sentence versus *dangerous* in the second). Yet, most people feel that *he* refers to the judge in 37a but to the prisoner in 37b.

These preferences seem to have nothing to do with structural principles. Rather, the crucial factor involves our beliefs about different groups within society. In particular, since most people believe that a judge is more likely to be cautious than dangerous, they take the pronoun to refer to the judge in the first sentence but the prisoner in the second.

**Presupposition** There are many other ways in which a speaker's beliefs can be reflected in language use. Compare in this regard the following two sentences.

38. a) Have you stopped exercising regularly?  
b) Have you tried exercising regularly?

Use of the verb *stop* implies a belief on the part of the speaker that the listener has been exercising regularly. No such assumption is associated with the verb *try*.

The assumption or belief implied by the use of a particular word or structure is called a **presupposition**. The following two sentences provide another example of this.

39. a) Nick admitted that the team had lost.

b) Nick said that the team had lost.

Choice of the verb *admit* in 39a indicates that the speaker is presupposing the truth of the claim that the team lost. No such presupposition is associated with choice of the verb *say* in 39b. The speaker is simply reporting Nick's statement without taking a position on its accuracy.

Still another type of presupposition is illustrated in 40.

40. a) Abraham Lincoln was assassinated in 1865.

b) Abraham Lincoln was murdered in 1865.

Notice that use of the verb *assassinate* in 40a involves the assumption that Abraham Lincoln was a prominent political figure, but that no such presupposition is associated with the verb *murder*.

## Setting

As noted at the beginning of this section, the pragmatic factors relevant to sentence interpretation can include knowledge of the context in which a sentence is uttered. Two types of contextual information are involved here, the first having to do with the physical environment in which a sentence is uttered (the **setting**), and the second having to do with the other utterances in the speech event (the **discourse**). In this subsection we will consider an example of how information about the setting enters into language use; the role of discourse will be examined in the next subsection. Both these issues are examined from a slightly different perspective in Chapter 12.

**Deictics** All languages have forms whose use and interpretation depend on the location of the speaker and/or addressee within a particular setting. Called spatial



**deictics**, these forms are exemplified in English by words such as *this* and *here* (proximity to the speaker) versus *that* and *there* (proximity to the addressee and/or distance from the speaker). Thus, if Steve and Brian are sitting across from each other at a table, each would refer to a plate directly in front of him as *this plate* and to a plate in front of the other person or a plate distant from both as *the plate*. Without an understanding of how the setting in which a sentence is uttered can influence the choice of words such as *this* and *that*, it would be impossible for speakers of English to use or interpret these forms correctly.

As the preceding examples show, English makes a two-way distinction in its expression of deictic contrasts. However, many languages use a third set of forms in this part of their grammar.

Table 6.17 A three-way deictic distinction

Language	'this'	'that'	'that over there'
Spanish	este		ese      aquel
Korean	i		ku      ce
Japanese	kono		sono      ano
Palauan	tia		tilecha se
Turkish	bu		su      o

An even more complex system is found in the Amerindian language Tlingit, which makes a four-way distinction: *jáa* 'this one right here', *héi* 'this one nearby', *wée* 'that one over there', and *jóo* 'that one far off'.

Determiners are not the only type of element whose use and interpretation require reference to features of the setting. In English, for example, deictic contrasts are also crucial to the understanding of such commonly used verbs as *come* and *go*. Notice in this regard the striking difference in perspective found in the following two sentences.

41. a) The bear is coming into the tent!  
b) The bear is going into the tent!

Whereas *come* with a third person subject implies movement towards the speaker (hence we know that the person who utters 41a must be in the tent), *go* with the same type of subject suggests movement away from the speaker. Use of *come* with a first person subject (*I*) is different again. Hence the sentence *I'm come over* implies that the speaker is about to go to where the addressee is. As was the case with deictic determiners, we could not fully understand these sentences without reference to the physical setting in which they are uttered.

Discourse Properties of other utterances in the same speech event (the discourse) are also crucial to understanding a sentence. A very simple example Of this involves the interpretation of elements such as *he*, *it*, and *there*, whose referent is often determined by a word or phrase in a preceding utterance. Consider in this regard the following passage.

42. A child went for a walk in the park. While *there*, *he* saw a rabbit.  
Since *it* was injured, *he* took *it* home.

Each of the italicized words in this passage relies for its interpretation on information encoded in a preceding sentence. Thus, we interpret *there* with reference to *in the park*, *he* with reference to a *child*, and *it* with reference to a *rabbit*.

**Old and New Information** One of the most important contrasts in the study of discourse is the distinction between new and old information. **Old** (or **given**) **information** consists of the knowledge that the speaker assumes is available to the addressee at the time of the utterance, either because it is shared by both or because

it has already been introduced into the discourse. In contrast, **new information** involves knowledge that is introduced into the discourse for the first time. Consider the contrast between the following two sentences.

43. a) The man is at the front door.  
b) A man is at the front door.

Choice of *the* as the determiner for *man* in 43a suggests that the referent of the phrase is someone who has been mentioned in the previous discourse and is therefore already known to the addressee (old information). In contrast, choice of the determiner *a* in 43b implies that the referent is being introduced into the discourse for the first time (new information).

Notice that both sentences in 43 use *the* as the determiner for *front door*. This is because the setting for the conversation presumably includes only one front door, whose identity and location is known to both speaker and addressee. As noted, old information can consist of shared knowledge such as this and need not always be explicitly stated in the previous discourse.

**Topics** Another important notion for the study of discourse is that of **topic**, which corresponds to what a sentence or group of sentences is about. Consider the following passage.

44. Once upon a time there was a merchant with two sons. The older son wanted to be a scholar. He spent his time reading and studying. As for the younger son, he preferred to travel and see the world.

The first sentence in this passage introduces a merchant and his two sons as new information. A topic (the older son) is selected in the second sentence and maintained in the third, in which *he* refers back to *the older son*. The final sentence then switches to a new topic (the younger son), providing some information about

him. This switch is facilitated by the expression *for*, which is often used in English as a marker of new topics.

In English, the subject of the sentence tends also to be the topic. This is why it is natural to interpret the active sentence in *45a* as being about the police and the passive sentence in *b* as being about the burglar.

- 45. a) The police chased the burglar.
- b) The burglar was chased by the police.

In some languages, a special affix is used to identify the topic. The following sentences from Japanese illustrate this phenomenon. (Nom = nominative, the subject marker; Top = topic marker; Q = question marker)

- 46. *Speaker A*: Dare-ga kimasita-ka?  
Who-Nom came -Q?
- Speaker B*: John-ga kimasita.  
John-Nom came.
- Speaker A*: John-wa dare-to kimasita-ka?  
John-Top who-with came-Q?  
'Who did John come with?'

The topic marker in Japanese (the suffix *-wa*) is distinguished from the subject marker (*-ga*) by its use to mark old or background information. This is why speaker B responds to A's first question by using the subject marker on the NP *John*. Because this NP provides new information here (an answer to A's question), the topic marker would be inappropriate. However, once it has been established that John is the person who came, the corresponding NP can then bear the topic marker. This is precisely what happens in Speaker A's final utterance, wherein the NP *John* (which is now associated with previously established information) is marked by the topic suffix *-wa*.

In addition to background beliefs, the setting, and the discourse context, there is at least one other major type of information that enters into the interpretation of utterances. This information has to do with the 'rules for conversation', our understanding of how language is used in particular situations to convey a message. If, for example, I ask someone, *'Would you like to go to a movie to night?'* and I receive as a response *'I have to study for an exam'*, I know that the other person is declining my invitation even though there is nothing in the literal meaning of the sentence that says so. Moreover, even though the response does not contain a literal answer to my invitation, I recognize it as a perfectly appropriate way to respond to my question. (Notice that the same could not be said of a response like *'I have to comb my hair'* or *'I enjoy reading books'*.)

As speakers of a language, we are able to draw inferences about what is meant but not actually said. Information that is conveyed in this way is called a **conversational implicature**. The ease with which we recognize and interpret implicatures stems from our knowledge of how people in our linguistic community use language to communicate with each other.

The general overarching guideline for conversational interactions is often called the **Co-operative Principle**.

47. The Co-operative Principle:  
Make your contribution appropriate to the conversation.

More specific **maxims** or guidelines ensure that conversational interactions actually satisfy the Co-operative Principle.

Table 6.18 Some conversational maxims

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**The Maxim of Relation:**

Be relevant.

**The Maxim of Quality:**

Try to make your contribution one that is true. (Do not say things that are false or for which you lack adequate evidence.)

**The Maxim of Quantity:**

Do not make your contribution more or less informative than required.

**The Maxim of Manner:**

Avoid ambiguity and obscurity; be brief and orderly.

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These maxims are responsible for regulating normal conversation but, as we will see directly, each can be suspended under certain circumstances to create particular effects.

**Relation** The Maxim of Relation is crucial to evaluating the appropriateness of responses to the question *'Would you like to go to a movie tonight?'* (the example given at the beginning of this section). Because we assume that the conversational contributions of others are relevant to the topic at hand, we are able to infer from the response *'I have to study for an exam'* that the speaker is unable or unwilling to go to the movie. Similarly, because it is hard to see a connection between combing one's hair and being able to go to a movie, we judge the response *'I have to comb my hair'* to be irrelevant and hence inappropriate.

Of course, the Maxim of Relation can sometimes be suspended by a speaker who wants to create a particular impression. For example, if someone asks you *'Have you finished that term paper yet?'*, and you respond *'It's been raining a lot lately, hasn't it?'*, you violate the Maxim of Relation by not responding in a relevant way. On the

other hand, by giving this response you signal to the other person that you want to move away from the topic of conversation that has been raised.

**Quality** The Maxim of Quality requires that the statements used in conversations have some factual basis. If, for example, I ask *'What's the weather like?'* and someone responds *'It's snowing'*, I will normally assume that this statement provides reliable information about the current weather.

In order to achieve irony or sarcasm, however, it is sometimes possible to abandon the Maxim of Quality and say something that one knows to be false. Thus, if two people live in the middle of a sweltering desert and one person insists on asking every morning *'What's the weather like?'*, it might be appropriate for the other person to respond sarcastically *'Oh, today it's snowing, as usual'*, perhaps with a particular facial expression or intonation to indicate that the statement was not intended as a true report of the facts.

**Quantity** The Maxim of Quantity introduces some very subtle guidelines into a conversation. If, for example, someone asks me where a famous American author lives, then the nature of my response will depend in large part on how much information I believe to be appropriate for that point in the conversation. If I know that the other person is simply curious about which part of the country the author lives in, it might suffice to respond *'in Michigan'*. On the other hand, if I know that the person wants to visit the author, then much more specific information (perhaps even an address) is appropriate.

The Maxim of Quantity can be suspended in order to mislead a conversational partner. For example, if someone asks me where Mary is and I know that Mary does not want to see this person, I might respond by saying *'I think she went downtown or*

*something'* even though I know precisely where in the downtown area she is. In responding in this way, I am not being untruthful since I have said nothing false, but by giving less information than is appropriate I am violating the Maxim of Quantity and hence being misleading.

**Manner** The Maxim of Manner imposes several constraints on language use, two of which will be exemplified here. First, imagine that I refer to a particular person as *the man who Mary lives with*. A listener would be justified in concluding that the man in question is not Mary's husband. This is because, by the Maxim of Manner, a briefer and less obscure description, *Mary's husband*, would have been used if it could have correctly described Mary's companion.

Second, imagine that I am writing a letter of recommendation to an employer and I say about a former student of mine *'You will be fortunate indeed if you can get Henry to work for you'*. By using a sentence that can be interpreted in two dramatically different ways ('You will be glad to have Henry on your staff' versus 'It is not easy to get Henry to do any work'), I violate the Maxim of Manner by using an ambiguous structure. Since the maxims are violated only for specific purposes (as when the Maxim of Quality is suspended to yield sarcasm), the person to whom the letter is written would be justified in concluding that my choice of language constitutes a veiled warning about Henry.

**The Maxims in Other Societies** The preceding maxims represent constraints on conversation that may well be an integral part of language use in all cultures. This is not to say that the maxims are employed in exactly the same way in all linguistic communities, however. In fact, we know that the circumstances under which it is appropriate to suspend a maxim can differ. A good example of this involves the



Maxim of Quantity as it is used in rural areas of the Malagasy Republic (formerly called Madagascar), the large island off the east coast of Africa.

Because rural villages in the Malagasy Republic form small, tightly integrated societies, new information is rare and considerable prestige accrues to its holder. Speakers are therefore often reluctant to impart it to just anyone. When asked about a particular event, then, they may reply evasively, avoiding mention of the information being sought by their conversational partner. Thus, a visit to the market might be described by saying simply '*there were many people there*' rather than giving any specific details. This suggests not only that the Maxim of Quantity can be overridden, but that the conditions under which this happens may be intertwined with the cultural practices of a particular society.

#### Speech Acts

Still another set of factors that must be taken into account in semantic analysis involves the type of act associated with the utterance of a sentence. According to one influential proposal, there are three basic speech acts: the **locutionary act**, which corresponds to the utterance of a sentence with a particular meaning; the **illocutionary act**, which reflects the intent of the speaker in uttering that sentence (to praise, criticize, warn); and the **perlocutionary act**, which involves the effect that the speaker has on his or her addressees in uttering the sentence. Suppose, for example, that a teacher who is having trouble maintaining order in the classroom utters the sentence *I'll keep you in after class*. In uttering such a sentence, the teacher is simultaneously producing three speech acts—a locutionary act (involving utterance of a sentence with the meaning 'I'll make you stay in school later than

usual'), an illocutionary act (a warning), and a perlocutionary act (silencing the students).

There is no one-to-one relationship between syntactic structure and speech acts. An illocutionary act of warning, for example, could involve (1) a declarative sentence (a statement), (2) an imperative (a command), (3) a *yes-no* question, or (4) a *wh* question.

- 48.a) There's a bear behind you.
- b) Run!
- c) Did you know there's a bear behind you?
- d) What's that bear doing in here?

Similarly, a perlocutionary act aimed at getting someone to open the window could be expressed in a variety of ways.

- 49.a) I wish you'd open the window.
- b) Open the window.
- c) Could you open the window?
- d) Why don't you open the window?
- e) It's awfully hot in here.

Because of the perlocutionary act associated with these utterances, the appropriate response on the part of the listener should be to open the window. Speakers of English therefore know that 49c is not to be interpreted as a simple request for information. Only as a joke would someone respond by saying *Yes, I could* and then not do anything about opening the window.

Despite the indirect relationship between sentence structure and speech acts, there is a small set of verbs whose use makes explicit the illocutionary force of a sentence. Common examples of these verbs include *promise, bet, warn, and agree*.

- 50. a) I promise that I'll be there.
- b) I bet that the Yankees will lose.
- c) I warn you that's not a good idea.

d) I agree that you should do it.

The verbs in 50 indicate the type of illocutionary act involved in uttering the sentence—an act of promising, an act of warning, and so on. Such verbs are called **performatives** since the very act of producing them involves the performance of an illocutionary act. Thus, in saying I promise that *I'll be there*, I automatically carry out an illocutionary act of promising. Such is not the case with a sentence like *I'll be there*, which could be a simple prediction, a warning, or a threat.

When a verb is used performatively, it always has a first person subject (*I or we*) and occurs in the present tense. Some performative verbs are subject to an additional restriction: they can only be appropriately uttered by speakers with a certain social status or authority. Only a clergyman or a similarly qualified person can appropriately utter the sentence *I pronounce you man and wife* while only a judge can properly say *I sentence you to five years in prison*.

## 6.5 LANGUAGE, MEANING, AND THOUGHT

As we examine the way in which words and structures are used to express meaning, it is natural to wonder about the possibility that language might play a role in shaping how we think. While it is certainly plausible to believe that language facilitates reasoning and problem solving by providing a way to represent complex thoughts, it has sometimes been proposed that linguistic systems might have a considerably more fundamental effect on cognition. Indeed, it has even been suggested that the particular language people speak shapes the way in which they think and perceive the world.

The Sapir-Whorf Hypothesis

The best-known and most influential version of this idea has come to be known as the **Sapir-Whorf Hypothesis** in honor of Edward Sapir and Benjamin Lee Whorf, the two linguists who articulated it most clearly. Sapir, for instance, wrote in 1929:

Human beings... are very much at the mercy of the particular language which has become the medium of expression for their society... the 'real world' is to a large extent unconsciously built upon the language habits of the group.

Several years later, Whorf expressed essentially the same sentiment when he made the following claim.

We dissect nature along lines laid down by our native language. The categories and types that we isolate from the world of phenomena we do not find there because they stare every observer in the face; on the contrary, the world is presented in a kaleidoscopic flux of impressions which has to be organized by our minds—this means largely by the linguistic systems in our minds.

Two types of linguistic phenomena are commonly cited in support of the Sapir-Whorf Hypothesis: cross-linguistic differences in vocabulary, and variation in the type of grammatical contrasts a language encodes. The first type of phenomenon is exemplified by the claim discussed on page 220 that Eskimo has far more words for snow than does English, or that Arabic has more words for sand. From this, it is sometimes concluded that Eskimo and Arabic allow their speakers to make perceptual distinctions pertaining to snow and sand that English speakers cannot.

A more plausible explanation is that language is shaped by the need to adapt to the cultural and physical environment. According to this alternate view, if a language has a large vocabulary in a particular area, it is because subtle distinctions of that

type are important to its speakers. Even speakers of a language without an extensive vocabulary in that area should be able to make the relevant contrasts if they become important to them. This is presumably why skiers, for instance, are able to distinguish among many different types of snow, even though their language may not have a separate word for each. Where necessary, they can then use the resources of their language to describe these distinctions by creating expressions such as *powder snow*.

Consider now cross-linguistic differences in the expression of grammatical contrast—the type of phenomenon on which Whorf concentrated. Whorf attempted to link the apparent lack of tense contrasts in Hopi (an Amerindian language spoken in the American Southwest) with different cultural attitudes toward time and the future. According to Whorf, time for the Hopi does not consist of the passage of countable units (like days), but rather the successive reappearance of the same entity. There is no ‘new day’ for the Hopi, Whorf claimed, just the return of the same day. Whorf believed that this is reflected in the Hopi belief that the future is best dealt with by working on the present situation (which will return as the future).

Here again, innumerable problems arise. For one thing, Whorf was apparently mistaken in his belief that Hopi does not have tense; such a category is, in fact, found in this language. Moreover, even if there were no tense contrasts in Hopi or if they were radically different from those found in English, it is unlikely that they could be correlated with speakers' attitudes toward time. There are doubtlessly many individual speakers of English who share the Hopi philosophy for dealing with the future (and some Hopi speakers who do not).

The problem of Hopi tense aside, there are many grammatical phenomena that it would be absurd to correlate with the ability to make distinctions in the real world. Finnish, for instance, has no grammatical contrasts that reflect natural gender (or sex), but one would hardly conclude that the absence of a distinction between *he* and *she* impedes the ability of Finns to distinguish between males and females. Likewise, it is hard to believe that speakers of French believe that women, tents, and shirts are somehow alike even though the words for all three entities (*femmes*, *tentes*, and *chemises*) are assigned to the same gender class (feminine).

An Experiment There have been various attempts to verify the Sapir-Whorf Hypothesis by experimental means. The most famous of these experiments was conducted in 1958. The basic idea was to determine the effect of English and Navaho on the perception of color, size, and shape. In Navaho, verbs expressing handling actions vary in form depending on the shape of the object being handled. Thus, a long flexible object (a snake) requires the verbal form *fánléh*, a long rigid object (a spear) requires the verbal form *fántúh* while flat flexible material requires *fánilcóós*. Since there is no such contrast in English, it was thought that children speaking these two languages might group objects in different ways. An experiment was designed to test this.

The children participating in the experiment were presented with a pair of objects such as a piece of rope and a stick, and then shown a third object and asked to tell the experimenter which of the pair went best with the new object. It was thought that the responses of the Navaho—speaking children might reflect the classification imposed by the verb system of their language rather than similarities in size or color. However, it was found that the responses of the forty-seven white English-speaking

children (from Boston) were very similar to those of the fifty-nine monolingual speakers of Navaho. Given the differences between the two languages, this is not the result predicted by the Sapir-Whorf Hypothesis.

The repeated failure of experimental attempts to uncover systematic shaping effects for language has drastically reduced the credibility of the Sapir-Whorf Hypothesis. This is not to say that languages do not represent reality in different ways. Clearly, they do. Thus, French distinguishes between knowing someone (*connaître*) and knowing something (*savoir*), a distinction that is not made in the verb system of English. On the other hand, as noted earlier, English has an extremely fine set of contrasts involving light (*glimmer, glitter, glow, gleam, and glisten*) that are not found in other languages. What is in doubt is whether such differences in the linguistic description of reality reflect deeper, language-induced differences in patterns of thought or perception.

### Summing Up

The study of **semantics** is concerned with a broad range of phenomena including the nature of **meaning**, the role of syntactic structure in the interpretation of sentences, and the effect of **pragmatics** on the understanding of utterances. Although serious problems and obstacles remain in all these areas, work in recent years has at least begun to identify the type of relations and Principles involved in the understanding of language. These include the notions of **extension** and **intension** in the case of word meaning, **thematic** role assignment in the case of sentence interpretation, and **c-command** in the case of pronoun interpretation. Other factors known to be involved in an utterance's interpretation include the speaker's and addressee's background beliefs (as manifested, for example, in

**presuppositions**), the context provided by the **setting** and the discourse, and the **maxims** associated with the **Co-operative Principle**.

## Key Terms

agent	motion verbs
antecedent	non-lexical categories
antonyms	old information
c-command	paraphrases
Co-operative principle	polysemy
componential analysis	pragmatics
connotation	presupposition
conversational implicature	Principle A
conversational maxim	Principle B
denotation	Principle of compositionality
discourse	pronominal
entailment	pronouns
extension	prototypical
functional categories	reflexive pronoun
fuzzy concepts	semantic feature
goal	semantics
graded membership	setting
grammaticized	source
homophones	spatial metaphor
lexical ambiguity	spatial deictics
lexicalization	structurally ambiguous
location	synonyms
maxim of manner	thematic roles
maxim of quality	theme
maxim of quantity	topic
maxim of relation	truth conditions



Surveys of the nature of word meaning and semantic relations can be found in many sources, including the book by Allen cited below. The discussion of fuzzy categories and graded membership in Section 6.2 draws from Part 1 of *Women, Fire, and Dangerous Things* by G. Lakoff (Chicago: University of Chicago Press, 1987) and the references cited there. The discussion of metaphor takes as its starting point the book *Metaphors We Live By*, cited below. The four Eskimo words for snow in Table 6.7 are from *The Handbook of American Indian Languages* by F. Boas (Washington: Smithsonian Institute, 1911) and are also cited on p. 123 of the book by Allen referenced below; for a longer list of words for snow, see *Dictionnaire francais-eskimau du parler de l'Ungava* (Quebec: Presses de l'Université Laval, 1970); see also "The Great Eskimo Vocabulary Hoax" by G. Pullum in *Natural Language and Linguistic theory* 7: 275-81 (1989). The discussion of verbs of motion is based on the paper "Lexicalization Patterns: Semantic Structure in Lexical Form" by L. Talmy in *Language Typology and Syntactic Description*, Vol. 3, edited by T. Shopen, 57-149 (New York: Cambridge University Press, 1985). The definition of grammaticization used in Section 6.2 is based on D. Slobin's "Crosslinguistic Evidence for the Language-Making Capacity" in *The Crosslinguistic Study of Language Acquisition*, Vol. 2, edited by D. Slobin, 1172-73 (Hillsdale, N.J.: Erlbaum, 1985). The data on Hidatsa assertion morphemes in the same section is from *Hidatsa Syntax* by G.H. Matthews (The Hague: Mouton, 1965).

The treatment of structural ambiguity, thematic role assignment, and pronoun interpretation in this chapter presents slightly simplified versions of views widely held within generative grammar in the last half of the 1980s. For a simple summary

of the last two issues, see *Lectures on Contemporary Syntactic Theories* by P. Sells (Stanford, Calif.: Center for the Study of Language and Information, 1985)

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Speech act theory is introduced in J. Austin's classic work *How to Do Things with Words* (Oxford: Clarendon Press, 1962). The quote from Edward Sapir on language and thought comes from a passage cited in Whorf's article "The Relation of Habitual Thought and Behavior to Language" reprinted in *Language, Thought and Reality*, edited by J. Carroll (Cambridge, Mass.: MIT Press, 1956). The quote from Whorf is taken from his article "Science and Linguistics," also reprinted in *Language, Thought and Reality*. The attempt to verify the Sapir-Whorf Hypothesis experimentally is reported in an article by J. Carroll and J. Casagrande, "The

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