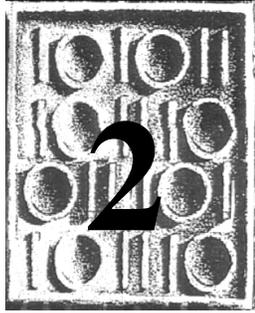


CHAPTER



2

Linguistic Background: An Outline of English Syntax

2.1 Words

2.2 The Elements of Simple Noun Phrases

2.3 Verb Phrases and Simple Sentences

2.4 Noun Phrases Revisited

2.5 Adjective Phrases

2.6 Adverbial Phrases

This chapter provides background material on the basic structure of English syntax for those who have not taken any linguistics courses. It reviews the major phrase categories and identifies their most important subparts. Along the way all the basic word categories used in the book are introduced. While the only structures discussed are those for English, much of what is said applies to nearly all other European languages as well. The reader who has some background in linguistics can quickly skim this chapter, as it does not address any computational issues. You will probably want to use this chapter as a reference source as you work through the rest of the chapters in Part I.

Section 2.1 describes issues related to words and word classes. Section 2.2 describes simple noun phrases, which are then used in Section 2.3 to describe simple verb phrases. Section 2.4 considers complex noun phrases that include embedded sentences such as relative clauses. The remaining sections briefly cover other types of phrases: adjective phrases in Section 2.5 and adverbial phrases in Section 2.6.

2.1 Words

At first glance the most basic unit of linguistic structure appears to be the word. The word, though, is far from the fundamental element of study in linguistics; it is already the result of a complex set of more primitive parts. The study of **morphology** concerns the construction of words from more basic components corresponding roughly to meaning units. There are two basic ways that new words are formed, traditionally classified as **inflectional** forms and **derivational** forms. Inflectional forms use a **root** form of a word and typically add a **suffix** so that the word appears in the appropriate form given the sentence. Verbs are the best examples of this in English. Each verb has a basic form that then is typically changed depending on the subject and the tense of the sentence. For example, the verb *sigh* will take suffixes such as *-s*, *-ing*, and *-ed* to create the verb forms *sighs*, *sighing*, and *sighed*, respectively. These new words are all verbs and share the same basic meaning. Derivational morphology involves the derivation of new words from other forms. The new words may be in completely different categories from their subparts. For example, the noun *friend* is made into the adjective *friendly* by adding the suffix *-ly*. A more complex derivation would allow you to derive the noun *friendliness* from the adjective form. There are many interesting issues concerned with how words are derived and how the choice of word form is affected by the syntactic structure of the sentence that constrains it.

Traditionally, linguists classify words into different categories based on their uses. Two related areas of evidence are used to divide words into categories. The first area concerns the word's contribution to the meaning of the phrase that contains it, and the second area concerns the actual syntactic structures in which the word may play a role. For example, you might posit the class **noun** as those words that can be used to identify the basic type of object, concept, or place being discussed, and **adjective** as those words that further qualify the object,

concept, or place. Thus *green* would be an adjective and *book* a noun, as shown in the phrases *the green book* and *green books*. But things are not so simple: *green* might play the role of a noun, as in *That green is lighter than the other*, and *book* might play the role of a modifier, as in *the book worm*. In fact, most nouns seem to be able to be used as a modifier in some situations. Perhaps the classes should be combined, since they overlap a great deal. But other forms of evidence exist. Consider what words could complete the sentence *It's so . . .*. You might say *It's so green*, *It's so hot*, *It's so true*, and so on. Note that although *book* can be a modifier in *the book worm*, you cannot say **It's so book* about anything. Thus there are two classes of modifiers: adjective modifiers and noun modifiers.

Consider again the case where adjectives can be used as nouns, as in *the green*. Not all adjectives can be used in such a way. For example, the noun phrase *the hot* can be used, given a context where there are hot and cold plates, in a sentence such as *The hot are on the table*. But this refers to the hot plates; it cannot refer to hotness in the way the phrase *the green* refers to green. With this evidence you could subdivide adjectives into two subclasses—those that can also be used to describe a concept or quality directly, and those that cannot. Alternatively, however, you can simply say that *green* is ambiguous between being an adjective or a noun and, therefore, falls in both classes. Since *green* can behave like any other noun, the second solution seems the most direct.

Using similar arguments, we can identify four main classes of words in English that contribute to the meaning of sentences. These classes are nouns, adjectives, verbs, and adverbs. Sentences are built out of phrases centered on these four word classes. Of course, there are many other classes of words that are necessary to form sentences, such as articles, pronouns, prepositions, particles, quantifiers, conjunctions, and so on. But these classes are fixed in the sense that new words in these classes are rarely introduced into the language. New nouns, verbs, adjectives and adverbs, on the other hand, are regularly introduced into the language as it evolves. As a result, these classes are called the **open class words**, and the others are called the **closed class words**.

A word in any of the four open classes may be used to form the basis of a phrase. This word is called the **head** of the phrase and indicates the type of thing, activity, or quality that the phrase describes. For example, with noun phrases, the head word indicates the general classes of objects being described. The phrases

the dog
the mangy dog
the mangy dog at the pound

are all noun phrases that describe an object in the class of dogs. The first describes a member from the class of all dogs, the second an object from the class of mangy dogs, and the third an object from the class of mangy dogs that are at the pound. The word *dog* is the head of each of these phrases.

<p>Noun Phrases The president <i>of the company</i> His desire <i>to succeed</i> Several challenges <i>from the opposing team</i></p>	<p>Verb Phrases looked <i>up the chimney</i> believed <i>that the world was flat</i> ate <i>the pizza</i></p>
<p>Adjective Phrases easy <i>to assemble</i> happy <i>that he'd won the prize</i> angry <i>as a hippo</i></p>	<p>Adverbial Phrases rapidly <i>like a bat</i> intermittently <i>throughout the day</i> inside <i>the house</i></p>

Figure 2.1 Examples of heads and complements

Similarly, the adjective phrases

hungry
very hungry
hungry as a horse

all describe the quality of hunger. In each case the word *hungry* is the head.

In some cases a phrase may consist of a single head. For example, the word *sand* can be a noun phrase, *hungry* can be an adjective phrase, and *walked* can be a verb phrase. In many other cases the head requires additional phrases following it to express the desired meaning. For example, the verb *put* cannot form a verb phrase in isolation; thus the following words do not form a meaningful sentence:

*Jack put.

To be meaningful, the verb *put* must be followed by a noun phrase and a phrase describing a location, as in the verb phrase *put the dog in the house*. The phrase or set of phrases needed to complete the meaning of such a head is called the **complement** of the head. In the preceding phrase *put* is the head and *the dog in the house* is the complement. Heads of all the major classes may require complements. Figure 2.1 gives some examples of phrases, with the head indicated by boldface and the complements by italics. In the remainder of this chapter, we will look at these different types of phrases in more detail and see how they are structured and how they contribute to the meaning of sentences.

2.2 The Elements of Simple Noun Phrases

Noun phrases (NPs) are used to refer to things: objects, places, concepts, events, qualities, and so on. The simplest NP consists of a single pronoun: *he*, *she*, *they*, *you*, *me*, *it*, *I*, and so on. Pronouns can refer to physical objects, as in the sentence

It hid under the rug.

to events, as in the sentence

Once I opened the door, I regretted *it* for months.

and to qualities, as in the sentence

He was so angry, but he didn't show *it*.

Pronouns do not take any modifiers except in rare forms, as in the sentence

He who hesitates is lost.

Another basic form of noun phrase consists of a **name** or **proper noun**, such as *John* or *Rochester*. These nouns appear in capitalized form in carefully written English. Names may also consist of multiple words, as in the *New York Times* and *Stratford-on-Avon*.

Excluding pronouns and proper names, the head of a noun phrase is usually a common noun. Nouns divide into two main classes:

count nouns—nouns that describe specific objects or sets of objects.

mass nouns—nouns that describe composites or substances.

Count nouns acquired their name because they can be counted. There may be one *dog* or many *dogs*, one *book* or several *books*, one *crowd* or several *crowds*. If a single count noun is used to describe a whole class of objects, it must be in its plural form. Thus you can say *Dogs are friendly* but not **Dog is friendly*.

Mass nouns cannot be counted. There may be *some water*, *some wheat*, or *some sand*. If you try to count with a mass noun, you change the meaning. For example, *some wheat* refers to a portion of some quantity of wheat, whereas *one wheat* is a single type of wheat rather than a single grain of wheat. A mass noun can be used to describe a whole class of material without using a plural form. Thus you say *Water is necessary for life*, not **Waters are necessary for life*.

In addition to a head, a noun phrase may contain **specifiers** and **qualifiers** preceding the head. The qualifiers further describe the general class of objects identified by the head, while the specifiers indicate how many such objects are being described, as well as how the objects being described relate to the speaker and hearer. Specifiers are constructed out of **ordinals** (such as *first* and *second*), **cardinals** (such as *one* and *two*), and **determiners**. Determiners can be subdivided into the following general classes:

articles—the words *the*, *a*, and *an*.

demonstratives—words such as *this*, *that*, *these*, and *those*.

possessives—noun phrases followed by the suffix *'s*, such as *John's* and *the fat man's*, as well as possessive pronouns, such as *her*, *my*, and *whose*.

wh-determiners—words used in questions, such as *which* and *what*.

quantifying determiners—words such as *some*, *every*, *most*, *no*, *any*, *both*, and *half*.

Number	First Person	Second Person	Third Person
singular	I	you	he (masculine) she (feminine) it (neuter)
plural	we	you	they

Figure 2.2 Pronoun system (as subject)

Number	First Person	Second Person	Third Person
singular	my	your	his, her, its
plural	our	your	their

Figure 2.3 Pronoun system (possessives)

A simple noun phrase may have at most one determiner, one ordinal, and one cardinal. It is possible to have all three, as in *the first three contestants*. An exception to this rule exists with a few quantifying determiners such as *many*, *few*, *several*, and *little*. These words can be preceded by an article, yielding noun phrases such as *the few songs we knew*. Using this evidence, you could subcategorize the quantifying determiners into those that allow this and those that don't, but the present coarse categorization is fine for our purposes at this time.

The qualifiers in a noun phrase occur after the specifiers (if any) and before the head. They consist of adjectives and nouns being used as modifiers. The following are more precise definitions:

adjectives—words that attribute qualities to objects yet do not refer to the qualities themselves (for example, *angry* is an adjective that attributes the quality of anger to something).

noun modifiers—mass or count nouns used to modify another noun, as in *the cook book* or *the ceiling paint can*.

Before moving on to other structures, consider the different inflectional forms that nouns take and how they are realized in English. Two forms of nouns—the singular and plural forms—have already been mentioned. Pronouns take forms based on **person** (first, second, and third) and **gender** (masculine, feminine, and neuter). Each of these distinctions reflects a systematic analysis that is almost wholly explicit in some languages, such as Latin, while implicit in others. In French, for example, nouns are classified by their gender. In English many of these distinctions are not explicitly marked except in a few cases. The pronouns provide the best example of this. They distinguish **number**, **person**, **gender**, and **case** (that is, whether they are used as possessive, subject, or object), as shown in Figures 2.2 through 2.4.

Number	First Person	Second Person	Third Person
singular	me	you	him her it
plural	us	you	them

Figure 2.4 Pronoun system (as object)

Mood	Example
declarative (or assertion)	The cat is sleeping.
yes/no question	Is the cat sleeping?
wh-question	What is sleeping? or Which cat is sleeping?
imperative (or command)	Shoot the cat!

Figure 2.5 Basic moods of sentences

Form	Examples	Example Uses
base	hit, cry, go, be	<i>Hit</i> the ball! I want to <i>go</i> .
simple present	hit, cries, go, am	The dog <i>cries</i> every day. I <i>am</i> thirsty.
simple past	hit, cried, went, was	I <i>was</i> thirsty. I <i>went</i> to the store.
present participle	hitting, crying, going, being	I'm <i>going</i> to the store. <i>Being</i> the last in line aggravates me.
past participle	hit, cried, gone, been	I've <i>been</i> there before. The cake was <i>gone</i> .

Figure 2.6 The five verb forms

2.3 Verb Phrases and Simple Sentences

While an NP is used to refer to things, a sentence (S) is used to assert, query, or command. You may assert that some sentence is true, ask whether a sentence is true, or command someone to do something described in the sentence. The way a sentence is used is called its **mood**. Figure 2.5 shows four basic sentence moods.

A simple declarative sentence consists of an NP, the subject, followed by a verb phrase (VP), the predicate. A simple VP may consist of some adverbial

Tense	The Verb Sequence	Example
simple present	simple present	He walks to the store.
simple past	simple past	He walked to the store.
simple future	<i>will</i> + infinitive	He will walk to the store.
present perfect	<i>have</i> in present + past participle	He has walked to the store.
future perfect	<i>will</i> + <i>have</i> in infinitive + past participle	I will have walked to the store.
past perfect (or pluperfect)	<i>have</i> in past + past participle	I had walked to the store.

Figure 2.7 The basic tenses

Tense	Structure	Example
present progressive	<i>be</i> in present + present participle	He is walking.
past progressive	<i>be</i> in past + present participle	He was walking.
future progressive	<i>will</i> + <i>be</i> in infinitive + present participle	He will be walking.
present perfect progressive	<i>have</i> in present + <i>be</i> in past participle + present participle	He has been walking.
future perfect progressive	<i>will</i> + <i>have</i> in present + <i>be</i> as past participle + present participle	He will have been walking.
past perfect progressive	<i>have</i> in past + <i>be</i> in past participle + present participle	He had been walking.

Figure 2.8 The progressive tenses

modifiers followed by the head verb and its complements. Every verb must appear in one of the five possible forms shown in Figure 2.6.

Verbs can be divided into several different classes: the **auxiliary verbs**, such as *be*, *do*, and *have*; the **modal verbs**, such as *will*, *can*, and *could*; and the **main verbs**, such as *eat*, *ran*, and *believe*. The auxiliary and modal verbs usually take a verb phrase as a complement, which produces a sequence of verbs, each the head of its own verb phrase. These sequences are used to form sentences with different tenses.

The **tense system** identifies when the proposition described in the sentence is said to be true. The tense system is complex; only the basic forms are outlined in Figure 2.7. In addition, verbs may be in the **progressive tense**. Corresponding

	First	Second	Third
Singular	<i>I am</i> <i>I walk</i>	<i>you are</i> <i>you walk</i>	<i>he is</i> <i>she walks</i>
Plural	<i>we are</i> <i>we walk</i>	<i>you are</i> <i>you walk</i>	<i>they are</i> <i>they walk</i>

Figure 2.9 Person/number forms of verbs

to the tenses listed in Figure 2.7 are the progressive tenses shown in Figure 2.8. Each progressive tense is formed by the normal tense construction of the verb *be* followed by a present participle.

Verb groups also encode person and number information in the first word in the verb group. The person and number must agree with the noun phrase that is the subject of the verb phrase. Some verbs distinguish nearly all the possibilities, but most verbs distinguish only the third person singular (by adding an *-s* suffix). Some examples are shown in Figure 2.9.

Transitivity and Passives

The last verb in a verb sequence is called the **main verb**, and is drawn from the open class of verbs. Depending on the verb, a wide variety of complement structures are allowed. For example, certain verbs may stand alone with no complement. These are called **intransitive** verbs and include examples such as *laugh* (for example, *Jack laughed*) and *run* (for example, *He will have been running*). Another common complement form requires a noun phrase to follow the verb. These are called **transitive** verbs and include verbs such as *find* (for example, *Jack found a key*). Notice that *find* cannot be intransitive (for example, **Jack found* is not a reasonable sentence), whereas *laugh* cannot be transitive (for example, **Jack laughed a key* is not a reasonable sentence). A verb like *run*, on the other hand, can be transitive or intransitive, but the meaning of the verb is different in each case (for example, *Jack ran* vs. *Jack ran the machine*).

Transitive verbs allow another form of verb group called the **passive** form, which is constructed using a *be* auxiliary followed by the past participle. In the passive form the noun phrase that would usually be in the object position is used in the subject position, as can be seen by the examples in Figure 2.10. Note that tense is still carried by the initial verb in the verb group. Also, even though the first noun phrase semantically seems to be the object of the verb in passive sentences, it is syntactically the subject. This can be seen by checking the pronoun forms. For example, *I was hit* is correct, not **Me was hit*. Furthermore, the tense and number agreement is between the verb and the syntactic subject. Thus you say *I was hit by them*, not **I were hit by them*.

Active Sentence	Related Passive Sentence
Jack saw the ball.	The ball was seen by Jack.
I will find the clue.	The clue will be found by me.
Jack hit me.	I was hit by Jack.

Figure 2.10 Active sentences with corresponding passive sentences

Some verbs allow two noun phrases to follow them in a sentence; for example, *Jack gave Sue a book* or *Jack found me a key*. In such sentences the second NP corresponds to the object NP outlined earlier and is sometimes called the **direct object**. The other NP is called the **indirect object**. Generally, such sentences have an equivalent sentence where the indirect object appears with a preposition, as in *Jack gave a book to Sue* or *Jack found a key for me*.

Particles

Some verb forms are constructed from a verb and an additional word called a **particle**. Particles generally overlap with the class of prepositions considered in the next section. Some examples are *up*, *out*, *over*, and *in*. With verbs such as *look*, *take*, or *put*, you can construct many different verbs by combining the verb with a particle (for example, *look up*, *look out*, *look over*, and so on). In some sentences the difference between a particle and a preposition results in two different readings for the same sentence. For example, *look over the paper* would mean reading the paper, if you consider *over* a particle (the verb is *look over*). In contrast, the same sentence would mean looking at something else behind or above the paper, if you consider *over* a preposition (the verb is *look*).

You can make a sharp distinction between particles and prepositions when the object of the verb is a pronoun. With a verb-particle sentence, the pronoun must precede the particle, as in *I looked it up*. With the prepositional reading, the pronoun follows the preposition, as in *I looked up it*. Particles also may follow the object NP. Thus you can say *I gave up the game to Mary* or *I gave the game up to Mary*. This is not allowed with prepositions; for example, you cannot say **I climbed the ladder up*.

Clausal Complements

Many verbs allow clauses as complements. Clauses share most of the same properties of sentences and may have a subject, indicate tense, and occur in passivized forms. One common clause form consists of a sentence form preceded by the complementizer *that*, as in *that Jack ate the pizza*. This clause will be identified by the expression S[that], indicating a special subclass of S structures. This clause may appear as the complement of the verb *know*, as in *Sam knows*

that Jack ate the pizza. The passive is possible, as in *Sam knows that the pizza was eaten by Jack*.

Another clause type involves the infinitive form of the verb. The VP[inf] clause is simply a VP starting in the infinitive form, as in the complement of the verb *wish* in *Jack wishes to eat the pizza*. An infinitive sentence S[inf] form is also possible where the subject is indicated by a *for* phrase, as in *Jack wishes for Sam to eat the pizza*.

Another important class of clauses are sentences with complementizers that are wh-words, such as *who*, *what*, *where*, *why*, *whether*, and *how many*. These question clauses, S[WH], can be used as a complement of verbs such as *know*, as in *Sam knows whether we went to the party* and *The police know who committed the crime*.

Prepositional Phrase Complements

Many verbs require complements that involve a specific prepositional phrase (PP). The verb *give* takes a complement consisting of an NP and a PP with the preposition *to*, as in *Jack gave the book to the library*. No other preposition can be used. Consider

*Jack gave the book from the library. (OK only if *from the library* modifies book.)

In contrast, a verb like *put* can take any PP that describes a location, as in

Jack put the book in the box.
Jack put the book inside the box.
Jack put the book by the door.

To account for this, we allow complement specifications that indicate prepositional phrases with particular prepositions. Thus the verb *give* would have a complement of the form NP+PP[to]. Similarly the verb *decide* would have a complement form NP+PP[about], and the verb *blame* would have a complement form NP+PP[on], as in *Jack blamed the accident on the police*.

Verbs such as *put*, which take any phrase that can describe a location (complement NP+Location), are also common in English. While locations are typically prepositional phrases, they also can be noun phrases, such as *home*, or particles, such as *back* or *here*. A distinction can be made between phrases that describe locations and phrases that describe a path of motion, although many location phrases can be interpreted either way. The distinction can be made in some cases, though. For instance, prepositional phrases beginning with *to* generally indicate a path of motion. Thus they cannot be used with a verb such as *put* that requires a location (for example, **I put the ball to the box*). This distinction will be explored further in Chapter 4.

Figure 2.11 summarizes many of the verb complement structures found in English. A full list would contain over 40 different forms. Note that while the

Verb	Complement Structure	Example
laugh	Empty (intransitive)	Jack laughed.
find	NP (transitive)	Jack found a key.
give	NP+NP (bitransitive)	Jack gave Sue the paper.
give	NP+PP[to]	Jack gave the book to the library.
reside	Location phrase	Jack resides in Rochester
put	NP+Location phrase	Jack put the book inside.
speak	PP[with]+PP[about]	Jack spoke with Sue about the book.
try	VP[to]	Jack tried to apologize.
tell	NP+VP[to]	Jack told the man to go.
wish	S[to]	Jack wished for the man to go.
keep	VP[ing]	Jack keeps hoping for the best.
catch	NP+VP[ing]	Jack caught Sam looking in his desk.
watch	NP+VP[base]	Jack watched Sam eat the pizza.
regret	S[that]	Jack regretted that he'd eaten the whole thing.
tell	NP+S[that]	Jack told Sue that he was sorry.
seem	ADJP	Jack seems unhappy in his new job.
think	NP+ADJP	Jack thinks Sue is happy in her job.
know	S[WH]	Jack knows where the money is.

Figure 2.11 Some common verb complement structures in English

examples typically use a different verb for each form, most verbs will allow several different complement structures.

2.4 Noun Phrases Revisited

Section 2.2 introduced simple noun phrases. This section considers more complex forms in which NPs contain sentences or verb phrases as subcomponents.

All the examples in Section 2.2 had heads that took the null complement. Many nouns, however, may take complements. Many of these fall into the class of complements that require a specific prepositional phrase. For example, the noun *love* has a complement form PP[of], as in *their love of France*, the noun *reliance* has the complement form PP[on], as in *his reliance on handouts*, and the noun *familiarity* has the complement form PP[with], as in *a familiarity with computers*.

Many nouns, such as *desire*, *reluctance*, and *research*, take an infinitive VP form as a complement, as in the noun phrases *his desire to release the guinea pig*, *a reluctance to open the case again*, and *the doctor's research to find a cure for cancer*. These nouns, in fact, can also take the S[inf] form, as in *my hope for John to open the case again*.

Noun phrases can also be built out of clauses, which were introduced in the last section as the complements for verbs. For example, a *that* clause (S[that]) can be used as the subject of a sentence, as in the sentence *That George had the*

ring was surprising. Infinitive forms of verb phrases (VP[inf]) and sentences (S[inf]) can also function as noun phrases, as in the sentences *To own a car would be delightful* and *For us to complete a project on time would be unprecedented*. In addition, the **gerundive** forms (VP[ing] and S[ing]) can also function as noun phrases, as in the sentences *Giving up the game was unfortunate* and *John's giving up the game caused a riot*.

Relative clauses involve sentence forms used as modifiers in noun phrases. These clauses are often introduced by **relative pronouns** such as *who*, *which*, *that*, and so on, as in

The man *who gave Bill the money* . . .
The rug *that George gave to Ernest* . . .
The man *whom George gave the money to* . . .

In each of these relative clauses, the embedded sentence is the same structure as a regular sentence except that one noun phrase is missing. If this missing NP is filled in with the NP that the sentence modifies, the result is a complete sentence that captures the same meaning as what was conveyed by the relative clause. The missing NPs in the preceding three sentences occur in the subject position, in the object position, and as object to a preposition, respectively. Deleting the relative pronoun and filling in the missing NP in each produces the following:

The man gave Bill the money.
George gave *the rug* to Ernest.
George gave the money to *the man*.

As was true earlier, relative clauses can be modified in the same ways as regular sentences. In particular, passive forms of the preceding sentences would be as follows:

Bill was given the money by the man.
The rug was given to Ernest by George.
The money was given to the man by George.

Correspondingly, these sentences could have relative clauses in the passive form as follows:

The man *Bill was given the money by* . . .
The rug *that was given to Ernest by George* . . .
The man whom *the money was given to by George* . . .

Notice that some relative clauses need not be introduced by a relative pronoun. Often the relative pronoun can be omitted, producing what is called a **base relative clause**, as in the NP *the man George gave the money to*. Yet another form deletes the relative pronoun and an auxiliary *be* form, creating a **reduced relative clause**, as in the NP *the man given the money*, which means the same as the NP *the man who was given the money*.

2.5 Adjective Phrases

You have already seen simple adjective phrases (ADJPs) consisting of a single adjective in several examples. More complex adjective phrases are also possible, as adjectives may take many of the same complement forms that occur with verbs. This includes specific prepositional phrases, as with the adjective *pleased*, which takes the complement form PP[with] (for example, *Jack was pleased with the prize*), or *angry* with the complement form PP[at] (for example, *Jack was angry at the committee*). *Angry* also may take an S[that] complement form, as in *Jack was angry that he was left behind*. Other adjectives take infinitive forms, such as the adjective *willing* with the complement form VP[inf], as in *Jack seemed willing to lead the chorus*.

These more complex adjective phrases are most commonly found as the complements of verbs such as *be* or *seem*, or following the head in a noun phrase. They generally cannot be used as modifiers preceding the heads of noun phrases (for example, consider **the angry at the committee man* vs. *the angry man* vs. *the man angry at the committee*).

Adjective phrases may also take a degree modifier preceding the head, as in the adjective phrase *very angry* or *somewhat fond of Mary*. More complex degree modifications are possible, as in *far too heavy* and *much more desperate*. Finally, certain constructs have degree modifiers that involve their own complement forms, as in *too stupid to come in out of the rain*, *so boring that everyone fell asleep*, and *as slow as a dead horse*.

2.6 Adverbial Phrases

You have already seen adverbs in use in several constructs, such as indicators of degree (for example, *very*, *rather*, *too*), and in location phrases (for example, *here*, *everywhere*). Other forms of adverbs indicate the manner in which something is done (for example, *slowly*, *hesitantly*), the time of something (for example, *now*, *yesterday*), or the frequency of something (for example, *frequently*, *rarely*, *never*).

Adverbs may occur in several different positions in sentences: in the sentence initial position (for example, ***Then***, *Jack will open the drawer*), in the verb sequence (for example, *Jack **then** will open the drawer*, *Jack will **then** open the drawer*), and in the sentence final position (for example, *Jack opened the drawer **then***). The exact restrictions on what adverb can go where, however, is quite idiosyncratic to the particular adverb.

In addition to these adverbs, adverbial modifiers can be constructed out of a wide range of constructs, such as prepositional phrases indicating, among other things, location (for example, *in the box*) or manner (for example, *in great haste*); noun phrases indicating, among other things, frequency (for example, *every day*); or clauses indicating, among other things, the time (for example, *when the bomb exploded*). Such adverbial phrases, however, usually cannot occur except in the sentence initial or sentence final position. For example, we can say *Every day*

John opens his drawer or *John opens his drawer every day*, but not **John every day opens his drawer*.

Because of the wide range of forms, it generally is more useful to consider adverbial phrases (ADVPs) by function rather than syntactic form. Thus we can consider manner, temporal, duration, location, degree, and frequency adverbial phrases each as its own form. We considered the location and degree forms earlier, so here we will consider some of the others.

Temporal adverbials occur in a wide range of forms: adverbial particles (for example, *now*), noun phrases (for example, *today*, *yesterday*), prepositional phrases (for example, *at noon*, *during the fight*), and clauses (for example, *when the clock struck noon*, *before the fight started*).

Frequency adverbials also can occur in a wide range of forms: particles (for example, *often*), noun phrases (for example, *every day*), prepositional phrases (for example, *at every party*), and clauses (for example, *every time that John comes for a visit*).

Duration adverbials appear most commonly as prepositional phrases (for example, *for three hours*, *about 20 feet*) and clauses (for example, *until the moon turns blue*).

Manner adverbials occur in a wide range of forms, including particles (for example, *slowly*), noun phrases (for example, *this way*), prepositional phrases (for example, *in great haste*), and clauses (for example, *by holding the embers at the end of a stick*).

In the analyses that follow, adverbials will most commonly occur as modifiers of the action or state described in a sentence. As such, an issue arises as to how to distinguish verb complements from adverbials. One distinction is that adverbial phrases are always optional. Thus you should be able to delete the adverbial and still have a sentence with approximately the same meaning (missing, obviously, the contribution of the adverbial). Consider the sentences

Jack put the box by the door.

Jack ate the pizza by the door.

In the first sentence the prepositional phrase is clearly a complement, since deleting it to produce **Jack put the box* results in a nonsensical utterance. On the other hand, deleting the phrase from the second sentence has only a minor effect: *Jack ate the pizza* is just a less general assertion about the same situation described by *Jack ate the pizza by the door*.

Summary

The major phrase structures of English have been introduced—namely, noun phrases, sentences, prepositional phrases, adjective phrases, and adverbial phrases. These will serve as the building blocks for the syntactic structures introduced in the following chapters.

Related Work and Further Readings

An excellent overview of English syntax is found in Baker (1989). The most comprehensive sources are books that attempt to describe the entire structure of English, such as Huddleston (1988), Quirk et al. (1972), and Leech and Svartvik (1975).

Exercises for Chapter 2

1. (*easy*) The text described several different example tests for distinguishing word classes. For example, nouns can occur in sentences of the form *I saw the X*, whereas adjectives can occur in sentences of the form *It's so X*. Give some additional tests to distinguish these forms and to distinguish between count nouns and mass nouns. State whether each of the following words can be used as an adjective, count noun, or mass noun. If the word is ambiguous, give all its possible uses.

milk, house, liquid, green, group, concept, airborne

2. (*easy*) Identify every major phrase (noun, verb, adjective, or adverbial phrases) in the following sentences. For each, indicate the head of the phrase and any complements of the head. Be sure to distinguish between complements and optional modifiers.

The man played his fiddle in the street.

The people dissatisfied with the verdict left the courtroom.

3. (*easy*) A very useful test for determining the syntactic role of words and phrases is the conjunction test. Conjunctions, such as *and* and *or*, tend to join together two phrases of the same type. For instance, you can conjoin nouns, as in *the man and woman*; noun phrases, as in *the angry men and the large dogs*; and adjective phrases, as in *the cow, angry and confused, broke the gate*. In each of the following sentences, identify the type of phrase being conjoined, and underline each phrase.

He was tired and hungrier than a herd of elephants.

We have never walked home or to the store from here.

The dog returned quickly and dropped the stick.

4. (*easy*) Explain in detail, using the terminology of this chapter, why each of the following sentences is ill formed. In particular, state what rule (given in this chapter) has been violated.
- He barked the wrong tree up.
 - She turned waters into wine.
 - Don't take many all the cookies!
 - I feel floor today.
 - They all laughed the boy.

5. (*easy*) Classify the following verbs as being intransitive, transitive, or bitransitive (that is, it takes a two-NP complement). If the verb can be used in more than one of these forms, give each possible classification. Give an example sentence for each form to demonstrate your analysis.
- a. cry
 - b. sing
 - c. donate
 - d. put
6. (*easy*) Using the verb *to be*, give example sentences that use the six basic tenses listed in Figure 2.7 and the six progressive tenses listed in Figure 2.8.
7. (*easy*) Using the verb *donate*, give examples of the passive form for each of the six basic tenses listed in Figure 2.7.
8. (*easy*) Classify the following verbs by specifying what different complement structures they allow, using the forms defined in Figure 2.11.

give, know, assume, insert

Give an example of an additional complement structure that is allowed by one of these verbs but not listed in the figure.

9. (*easy*) Find five verbs not discussed in this chapter that take an indirect object and, for each one, give a paraphrase of the same sentence using a prepositional phrase instead of the indirect object. Try for as wide a range as possible. Can you find one that cannot be paraphrased using either the preposition *to* or *for*?
10. (*medium*) Wh-questions are questions that use a class of words that includes *what, where, who, when, whose, which, and how*. For each of these words, give the syntactic categories (for example, verb, noun, noun group, adjective, quantifier, prepositional phrase, and so on) in which the words can be used. Justify each classification with some examples that demonstrate it. Use both positive and negative arguments as necessary (such as “it is one of these because . . .,” or “it can’t be one of these even though it looks like it might, because . . .”).