Linguistics

An Introduction

SECOND EDITION

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Introduction

The major perspective we adopt in this book regards a language as a *cognitive* system which is part of any normal human being's mental or psychological structure. An alternative to which we shall also give some attention emphasises the *social* nature of language, for instance studying the relationships between social structure and different dialects or varieties of a language.

The cognitive view has been greatly influenced over the past five decades by the ideas of the American linguist and political commentator Noam Chomsky. The central proposal which guides Chomsky's approach to the study of language is that when we assert that Tom is a speaker of English, we are ascribing to Tom a certain mental structure. This structure is somehow represented in Tom's brain, so we are also implicitly saying that Tom's brain is in a certain state. If Clare is also a speaker of English, it is reasonable to suppose that Clare's linguistic cognitive system is *similar* to Tom's. By contrast, Jacques, a speaker of French, has a cognitive system which is *different* in important respects from those of Tom and Clare, and different again to that of Guo, a speaker of Chinese. This proposal raises four fundamental research questions:

(1) What is the nature of the cognitive system which we identify with knowing a language?

(2) How do we acquire such a system?

(3) How is this system used in our production and comprehension of speech?

(4) How is this system represented in the brain?

Pursuit of these questions defines four areas of enquiry: linguistics itself, developmental linguistics, psycholinguistics and neurolinguistics.

At the outset, it is important to be clear that an answer to question (1) is *logically* prior to answers to questions (2), (3) and (4); unless we have a view on the nature of the relevant cognitive system, it makes no sense to enquire into its acquisition, its use in production and comprehension and its representation in the brain.

Question (1), with its reference to a *cognitive* system, looks as if it ought to fall in the domain of the cognitive psychologist. However, the Chomskian approach maintains that we can formulate and evaluate proposals about the nature of the human mind by *doing linguistics*, and much of this book is intended to establish the plausibility of this view. In order to do linguistics, we usually rely on native speakers of a language who act as informants and provide us with data; and it is

with respect to such data that we test our hypotheses about native speakers' linguistic cognitive systems. Often, linguists, as native speakers of some language or other, rely on themselves as informants. Linguists (as opposed to psycholinguists, see below) do not conduct controlled experiments on large numbers of subjects under laboratory conditions. This is a major *methodological* difference between linguists and cognitive psychologists in their study of the human mind, and some critics might see it as making linguistics unscientific or subjective. However, it is important to point out that the data with which linguists work (supplied by themselves or by other native speakers) usually have such clear properties as to render controlled experimentation pointless. For instance, consider the examples in (5):

(5) a. The dog chased the cat
b. *Cat the dog chased the

A native speaker of English will tell us that (5a) is a possible sentence of English but (5b) is not (the * is conventionally used to indicate this latter judgement). Of course, we could design experiments with large numbers of native speakers to establish the reliability of these claims, but there is no reason to believe that such experiments would be anything other than a colossal waste of time. Native speakers have vast amounts of data readily available to them, and it would be perverse for linguists not to take advantage of this. Notice that above we said that the data supplied by native speakers *usually* have very clear properties. When this is not the case (and an example will arise in our discussion of psycholinguistics below), we proceed with more caution, trying to understand the source of difficulty.

The logical priority of question (1) should not lead to the conclusion that we must have a *complete* answer to this question before considering our other questions. Although question (2) requires some view on the cognitive linguistic system, there is no reason why acquisition studies of small children should not themselves lead to modifications in this view. In such a case, pursuit of question (2) will be contributing towards answering question (1), and similar possibilities exist for (3) and (4). In practice, many linguists, developmental linguists, psycholinguists and neurolinguists are familiar with each other's work, and there is a constant interchange of ideas between those working on our four questions.

Our questions foster different approaches to linguistic issues, and in this introduction we shall first take a preliminary look at these. Having done this, we shall turn to the social perspective mentioned at the outset and offer some initial remarks on how this is pursued.

Linguistics

To begin to answer question (1), Chomsky identifies knowing a language with having a mentally represented **grammar**. This grammar constitutes the native speaker's **competence** in that language, and on this view, the key to

understanding what it means to know a language is to understand the nature of such a grammar. Competence is contrasted with **performance**, the perception and production of speech, the study of which falls under psycholinguistics (see below). Since this is a fundamental distinction that underlies a great deal of what we shall be discussing, it is worth trying to get a clear grasp of it as early as possible. Consider the situation of a native speaker of English who suffers a blow to the head and, as a consequence, loses the ability to speak, write, read and understand English. In fortunate cases, such a loss of ability can be short-lived, and the ability to use English in the familiar ways reappears quite rapidly. What cognitive functions are impaired during the time when there is no use of language? Obviously, the ability to use language, i.e. to perform in various ways, is not available through this period, but what about knowledge of English, i.e. linguistic competence? If we suppose that this is lost, then we would expect to see a long period corresponding to the initial acquisition of language as it is regained, rather than the rapid re-emergence which sometimes occurs. It makes more sense to suppose that knowledge of language remains intact throughout such an episode; the problem is one of accessing this knowledge and putting it to use in speaking, etc. As soon as this problem is overcome, full knowledge of English is available, and the various abilities are rapidly reinstated.

What does a grammar consist of? The traditional view is that a grammar tells us how to combine words to form phrases and sentences. For example, by combining a word like *to* with a word like *Paris* we form the phrase *to Paris*, which can be used as a reply to the question asked by speaker A in the dialogue below:

(6) SPEAKER A: Where have you been?
SPEAKER B: *To Paris*.

By combining the phrase *to Paris* with the word *flown* we form the larger phrase *flown to Paris*, which can serve as a reply to the question asked by speaker A in (7):

(7) SPEAKER A: What's he done?
SPEAKER B: *Flown to Paris*.

And by combining the phrase *flown to Paris* with words like *has* and *he*, we can form the sentence in (8):

(8) He has flown to Paris

On this view, a grammar of a language specifies how to combine words to form phrases and sentences, and it seems entirely appropriate to suggest that native speakers of English and of other languages have access to cognitive systems which somehow specify these possibilities for combination (***exercise 1***). A very important aspect of this way of looking at things is that it enables us to make sense of how a cognitive system (necessarily *finite*, since it is represented in a brain) can somehow characterise an *infinite* set of objects (the phrases and sentences in a natural language). That natural languages are infinite in this sense is easy to see by considering examples such as those in (9):

(9) a. Smith believes that the earth is flat
b. Brown believes that Smith believes that the earth is flat
c. Smith believes that Brown believes that Smith believes that the earth is flat
d. Brown believes that Smith believes that Brown believes that Smith believes that the earth is flat

A native speaker of English will recognise that such a sequence of sentences could be indefinitely extended, and the same point can be made in connection with a variety of other constructions in English and other languages (***exercise 2***). But the infinite nature of the set of English sentences, exemplified by those in (9), does not entail that the *principles of combination* used in constructing these sentences are also infinite; and it is these principles which form part of a grammar.

The view we have introduced above implies that a grammar contains two components: (i) a **lexicon** (or dictionary), which lists all the words found in the language, and (ii) a **syntactic component**, which specifies how to combine words together to form phrases and sentences. Each **lexical entry** (i.e. each item listed in the lexicon) will tell us about the linguistic properties of a word. For example, the entry for the word *man* will specify its **phonological** (= sound) properties (namely that it is pronounced /man/ – for the significance of the slashes, see section 5), its **grammatical** properties (e.g. that it can function as a noun and that when it does, it has the irregular plural form *men*) and its **semantic** (i.e. meaning) properties (namely that it denotes an adult male human being). The linguistic properties of words, including the nature of lexical entries, form the subject matter of part II of this book, while syntax (i.e. the study of how words are combined together to form phrases and sentences) provides the focus for part III. A grammar can be said to **generate** (i.e. specify how to form) a set of phrases and sentences, and using this terminology, we can view the task of the linguist as that of developing a theory of **generative grammar** (i.e. a theory about how phrases and sentences are formed).

Careful reflection shows that a grammar must contain more than just a lexicon and a syntax. One reason for this is based on the observation that many words change their **phonetic form** (i.e. the way they are pronounced) in connected speech, such sound changes being determined by the nature of neighbouring sounds within a word, phrase or sentence. These changes are effected by native speakers in a perfectly natural and unreflective way, suggesting that whatever principles determine them must be part of the relevant system of mental representation (i.e. grammar). We can illustrate what we mean here by considering examples of changes which result from the operation of regular **phonological processes**. One such process is **elision**, whereby a sound in a particular position can be dropped and hence not pronounced. For instance, the 'f' in the word *of* (which is pronounced /v/) can be elided in colloquial speech before a word beginning with a consonant (but not before a word beginning with a vowel): hence we say 'pint o' milk' (sometimes written *pinta milk*) eliding /v/ before the /m/ of the word *milk*, but 'pint of ale' (not 'pint o' ale') where the /v/ can't be elided because the word *ale* begins with a vowel. A second regular phonological

process is **assimilation**, a process by which one sound takes on some or all the characteristics of a neighbouring sound. For example, in colloquial speech styles, the final 'd' of a word like *bad* is assimilated to the initial sound of an immediately following word beginning with a consonant: hence, *bad boy* is pronounced as if it were written *bab boy* and *bad girl* as if it were written *bag girl* (***exercise 3***).

The fact that there are regular phonological processes such as those briefly described above suggests that in addition to a lexicon and a syntactic component, a grammar must also contain a **phonological component**: since this determines the phonetic form (= PF) of words in connected speech, it is also referred to as the **PF component**. **Phonology**, the study of sound systems and processes affecting the way words are pronounced, forms the subject matter of part I of this book.

So far, then, we have proposed that a grammar of a language contains three components, but it is easy to see that a fourth component must be added, as native speakers not only have the ability to *form* sentences, but also the ability to *interpret* (i.e. assign meaning to) them. Accordingly, a grammar of a language should also answer the question 'How are the meanings of sentences determined?' A commonsense answer would be that the meaning of a sentence is derived by combining the meanings of the words which it contains. However, there's clearly more involved than this, as we see from the fact that sentence (10) below is ambiguous (i.e. has more than one interpretation):

(10) She loves me more than you

Specifically, (10) has the two interpretations paraphrased in (11a, b):

(11) a. She loves me more than you love me
b. She loves me more than she loves you

The ambiguity in (10) is not due to the meanings of the individual words in the sentence. In this respect, it contrasts with (12):

(12) He has lost the match

In (12), the word *match* is itself ambiguous, referring either to a sporting encounter or a small piece of wood tipped with easily ignitable material, and this observation is sufficient to account for the fact that (12) also has two interpretations. But (10) contains no such ambiguous word, and to understand the ambiguity here, we need to have some way of representing the logical (i.e. meaning) relations between the words in the sentence. The ambiguity of (10) resides in the relationship between the words *you* and *loves*; to get the interpretation in (11a), *you* must be seen as the **logical subject** of *loves* (representing the person giving love), whereas for (11b), it must function as the **logical object** of *loves* (representing the person receiving love). On the basis of such observations, we can say that a grammar must also contain a component which determines the **logical form** (= LF) of sentences in the language. For obvious reasons, this component is referred to as the **LF component**, and this is a topic which is discussed in section 23 of this book (***exercise 4***).

Our discussion has led us to the conclusion that a grammar of a language comprises (at least) four components: a lexicon, a syntactic component, a PF component and an LF component. A major task for the linguist is to discover the nature of such grammars.

However, there is an additional concern for the linguist. Suppose grammars are produced for a variety of languages by specifying the components introduced above. Naturally, we would expect these grammars to exhibit certain differences (a grammar of English will be different to a grammar of Japanese), but we might also discover that they have some properties in common. If these properties appear in grammars for a wide range of languages, standard scientific practice leads us to hypothesise that they are common to the grammars of *all* natural languages, and this means that an additional goal for the linguist is the development of a theory of **Universal Grammar (UG)**. A great deal of contemporary linguistic theory can be viewed as testing hypotheses about UG on an ever-wider class of languages.

As described above, UG is viewed as emerging from the linguist's study of individual grammars, but there is a different way to introduce this concept which affords it a much more important and fundamental position in the work of linguists. To appreciate this, we need to turn to the second of our questions, namely, 'How do we acquire a grammar?'

Developmental linguistics

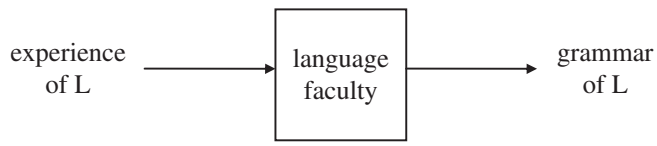
Readers familiar with small children will know that they generally produce their first recognisable word (e.g. *Dada* or *Mama*) round about their first birthday; from then until the age of about one year, six months, children's speech consists largely of single words spoken in isolation (e.g. a child wanting an apple will typically say 'Apple'). At this point, children start to form elementary phrases and sentences, so that a child wanting an apple at this stage might say 'Want apple'. From then on, we see a rapid growth in children's grammatical development, so that by the age of two years, six months, most children are able to produce adult-like sentences such as 'Can I have an apple?'

From this rough characterisation of development, a number of tasks emerge for the developmental linguist. Firstly, it is necessary to *describe* the child's development in terms of a sequence of grammars. After all, we know that children become adults, and we are supposing that, as adults, they are native speakers who have access to a mentally represented grammar. The natural assumption is that they move towards this grammar through a sequence of 'incomplete' or 'immature' grammars. Secondly, it is important to try to *explain* how it is that after a period of a year and a half in which there is no obvious sign of children being able to form sentences, between one-and-a-half and two-and-a-half years of age there is a 'spurt' as children start to form more and more complex sentences, and a phenomenal growth in children's grammatical development. This uniformity and (once the 'spurt' has started) rapidity in the pattern of children's linguistic

development are central facts which a theory of language acquisition must seek to explain. But how?

Chomsky maintains that the most plausible explanation for the uniformity and rapidity of first language acquisition is to posit that the course of acquisition is determined by a biologically endowed innate **language faculty** (or *language acquisition program*, to borrow a computer software metaphor) within the human brain. This provides children with a genetically transmitted set of procedures for developing a grammar which enables them to produce and understand sentences in the language they are acquiring on the basis of their *linguistic experience* (i.e. on the basis of the speech input they receive). The way in which Chomsky visualises the acquisition process can be represented schematically as in (13) below (where L is the language being acquired):

(13)



Children acquiring a language will observe people around them using the language, and the set of expressions in the language which the child hears (and the contexts in which they are used) in the course of acquiring the language constitute the child's linguistic experience of the language. This experience serves as input to the child's language faculty, which provides the child with a set of procedures for analysing the experience in such a way as to devise a grammar of the language being acquired. Chomsky's hypothesis that the course of language acquisition is determined by an innate language faculty is known popularly as the **innateness hypothesis**.

Invocation of an innate language faculty becoming available to the child only at some genetically determined point may constitute a plausible approach to the questions of uniformity and rapidity, but there is an additional observation which suggests that some version of the innateness hypothesis *must be correct*. This is that the knowledge of a language represented by an adult grammar appears *to go beyond anything supplied by the child's linguistic experience*. A simple demonstration of this is provided by the fact that adult native speakers are not only capable of combining words and phrases in acceptable ways but also of recognising unacceptable combinations (see 5b above and exercise 1). The interesting question this raises is: where does this ability come from? An obvious answer to this question is: that the child's linguistic experience provides information on unacceptable combinations of words and phrases. But this is incorrect. Why do we assert this with such confidence?

Obviously, when people speak, they do make mistakes (although research has shown that language addressed to children is *almost* completely free of such mistakes). However, when this happens, there is no clear signal to the child indicating that an adult utterance contains a mistake, that is, as far as the child is

concerned, an utterance containing a mistake is just another piece of linguistic experience to be treated on a par with error-free utterances. Furthermore, it has been shown that adults' 'corrections' of children's own speech do not take systematic account of whether children are producing syntactically acceptable or unacceptable combinations of words and phrases; parents do 'correct' their children, but when they do this, it is to ensure that children speak *truthfully*; grammatical correctness is not their target. Overall, there is compelling evidence that children do *not* receive systematic exposure to information about unacceptable sequences, and it follows that in this respect the child's linguistic experience is *not sufficient* to justify the adult grammar. From this **poverty of the stimulus** argument it follows that something must supplement linguistic experience and the innate language faculty fulfils this role (***exercise 5***).

Now, it is important to underline the fact that children have the ability to acquire *any* natural language, given appropriate experience of the language: for example, a British child born of monolingual English-speaking parents and brought up by monolingual Japanese-speaking parents in a Japanese-speaking community will acquire Japanese as a native language. From this it follows that the contents of the language faculty *must not be specific to any one human language*: if the language faculty accounts for the uniformity and rapidity of the acquisition of English, it must also account for the uniformity and rapidity of the acquisition of Japanese, Russian, Swahili, etc.; and if the language faculty makes up for the insufficiency of a child's experience of English in acquiring a grammar of English, it must also make up for the insufficiency of a child's experience of Japanese in acquiring a grammar of Japanese, for the insufficiency of a child's experience of Russian in acquiring a grammar of Russian, for the insufficiency of a child's experience of Swahili in acquiring a grammar of Swahili, etc. This entails, then, that the language faculty must incorporate a set of **UG principles** (i.e. principles of Universal Grammar) which enable the child to form and interpret sentences in any natural language. Thus, we see an important convergence of the interests of the linguist and the developmental linguist, with the former seeking to formulate UG principles on the basis of the detailed study of the grammars of adult languages and the latter aiming to uncover such principles by examining children's grammars and the conditions under which they emerge.

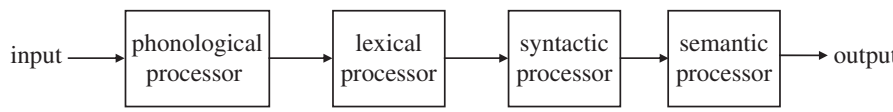
In the previous paragraph, we have preceded 'language' with the modifier 'human', and genetic transmission suggests that a similar modifier is appropriate for 'language faculty'. The language faculty is *species-specific* and the ability to develop a grammar of a language is *unique to human beings*. This ability distinguishes us from even our nearest primate cousins, the great apes such as chimpanzees and gorillas, and in studying it we are therefore focusing attention on one of the defining characteristics of what it means to be a human being. There have been numerous attempts to teach language to other species, and success in this area would seriously challenge the assertion we have just made. Indeed, it has proved possible to teach chimpanzees a number of signs similar to those employed in the Sign Languages used as native languages by the deaf, and it has been

reported that pigmy chimpanzees can understand some words of spoken English, and even follow a number of simple commands. Such research arouses strong emotions, and, of course, we are not in a position to assert that it will *never* produce dramatic results. At the moment, however, we can maintain that all attempts, however intensive, to teach grammatical knowledge to apes have been spectacular failures when the apes' accomplishments are set alongside those of a normal three-year-old child. As things stand, the evidence is firmly in favour of the species-specificity of the language faculty.

Psycholinguistics

As noted above, the psycholinguist addresses the question of how the mentally represented grammar (linguistic competence) is employed in the production and comprehension of speech (linguistic performance). The most direct way to approach this relationship is to adopt the hypothesis that a generative grammar can simply be regarded as itself providing an account of how we understand and produce sentences in real time. From the point of view of language comprehension, this gives rise to the following (highly simplified) model, where the input is a stretch of spoken or written language such as a particular sentence:

(14)



In terms of this rather crude model, the first step in language comprehension is to use the *phonological processor* to identify the sounds (or written symbols) occurring in the input. Then, the *lexical processor* identifies the component words. The next step is for the *syntactic processor* (also called the *parser*, and incorporating the syntactic component of the grammar) to provide a syntactic representation of the sentence (i.e. a representation of how the sentence is structured out of phrases and the phrases out of words). The last step is for the semantic processor to compute a meaning representation for the sentence, on the basis of the syntactic and lexical information supplied by earlier stages in the process. The relevant meaning representation serves as the output of the model: once this has been computed, we have understood the sentence.

An important characteristic of (14), as of all models of psycholinguistic processing, is that its various stages are to be viewed as taking place in real time, and a consequence of this is that psycholinguists can utilise their experimental techniques to try to measure the duration of specific parts of the process and link these measurements to levels of complexity as defined by the grammar itself. In fact, it is fairly easy to see that the idea that the grammar can, without any additional

considerations, serve as a model of sentence comprehension is implausible. A sentence such as (15) is known as a **garden-path sentence**:

(15) The soldiers marched across the parade ground are a disgrace

A common reaction to (15) from native speakers of English is that it is *not* an acceptable sentence. However, this reaction can often be modified by asking native speakers to consider the sentences in (16) (recall our observation that not all linguistic data have immediately obvious properties):

(16) a. The soldiers who were driven across the parade ground are a disgrace
b. The soldiers driven across the parade ground are a disgrace
c. The soldiers who were marched across the parade ground are a disgrace

Sentence (16a) should be regarded as entirely straightforward, and we can view (16b) as 'derived' from it by deleting the sequence of words *who were*. Now, if we delete *who were* from sentence (16c), which should also be recognised as an acceptable English sentence, we 'derive' (15), and at this point many readers are likely to change their reaction to (15): it *is* an acceptable English sentence, so long as it is interpreted with the phrase *the soldiers* as the logical object of *marched* (see p. 5 above). When we read (15) for the first time, we immediately interpret *the soldiers* as the logical subject of *marched* – the soldiers are marching rather than being marched; as a consequence, the sequence *the soldiers marched across the parade ground* is interpreted as a complete sentence and the sentence processor doesn't know what to do with *are a disgrace*. The sentence processor has been 'garden-pathed', i.e. sent down the wrong analysis route (***exercise 6***).

What is important about garden-path sentences is that they show that sentence comprehension *must* involve something in addition to the grammar. As far as the grammar is concerned, (15) is an acceptable structure with only one interpretation. However, it appears that this structure and interpretation are not readily available in sentence processing, suggesting that the parser must rely (to its detriment in this case) on something beyond the principles which determine acceptable combinations of words and phrases.

There are other aspects of (14) which are controversial and have given rise to large numbers of experimental psycholinguistic studies. For instance, there is no place in (14) for *non-linguistic general knowledge about the world*; according to (14), interpretations are computed entirely on the basis of linguistic properties of expressions without taking any account of their plausibility, and an alternative would allow encyclopaedic general knowledge to 'penetrate' sentence perception and guide it to more likely interpretations. A further assumption in (14) is that the different sub-components are *serially ordered* (in that the first stage is phonological processing which does its job before handing on to lexical processing, etc.) An alternative would allow syntactic and semantic factors to influence phonological and lexical processing, for semantic factors to influence syntactic processing, etc. These issues, along with several others, will be discussed in sections 14 and 26.

Neurolinguistics

The neurolinguist addresses the fourth of our research questions: how is linguistic knowledge represented in the brain? It is easy to sympathise with the fundamental nature of this question, since we firmly believe that cognitive capacities are the product of structures in the brain. However, the direct study of the human brain is fraught with difficulties. Most obvious among these is the fact that ethical considerations forbid intrusive experimentation on human brains. Such considerations are not extended to non-humans, with the consequence that the neuroanatomy and neurophysiology of non-human, primate *visual* systems, similar in their capacities to that of humans, are already understood in some detail. For language, however, we have to rely on less controlled methods of investigation, for example, by studying brain-damaged patients who suffer from language disorders. In these circumstances, the extent and precise nature of the damage is not known, a factor which inevitably contributes to the tentativeness of conclusions.

The brain is an extremely complex organ, consisting of several 'layers'. The layer which has evolved most recently and is most characteristic of higher primates such as ourselves is the **cerebral cortex**, the folded surface of the **cerebral hemispheres**, which contains what is often referred to as **grey matter**. This is where the higher intellectual functions, including language, are located. There are various ways in which the cerebral cortex can be damaged. For instance, it may suffer injury from a blow to the head or through some other type of wound. Alternatively, it may suffer internal damage due to disease or a blockage in a blood vessel (an embolism or thrombosis), which results in disruption of the blood supply and the death of cortical cells. Areas of damage are generally referred to as **lesions**.

The study of patients with various types of brain damage has revealed that different parts of the brain are associated with (i.e. control) different functions. In other words, it is possible to **localise** different functions in the brain as indicated in figure 1.

A language disorder resulting from brain damage is called **aphasia**, and a notable point is that this sort of brain damage almost always occurs in the left side of the brain (the left hemisphere). Damage to similar areas in the right hemisphere usually gives rise to entirely different deficits that have little to do with language. Aphasics who lose their language completely are said to suffer from **global aphasia**, and while in many cases the brain damage is extensive enough to affect other intellectual functions, sometimes patients retain a good many of the cognitive capacities they had before the injury. In particular, although these patients are unable to produce or understand language, they can often solve intellectual puzzles which don't rely on language.

As we have seen, Chomsky claims that linguistic competence is the product of a species-specific innate language faculty, and it is further maintained that this faculty is *independent* of other cognitive capacities. Of course, the **selective impairment** of language with other faculties remaining intact, which we have just described, is exactly what we might expect on the supposition that the language faculty is an autonomous and innate cognitive capacity.

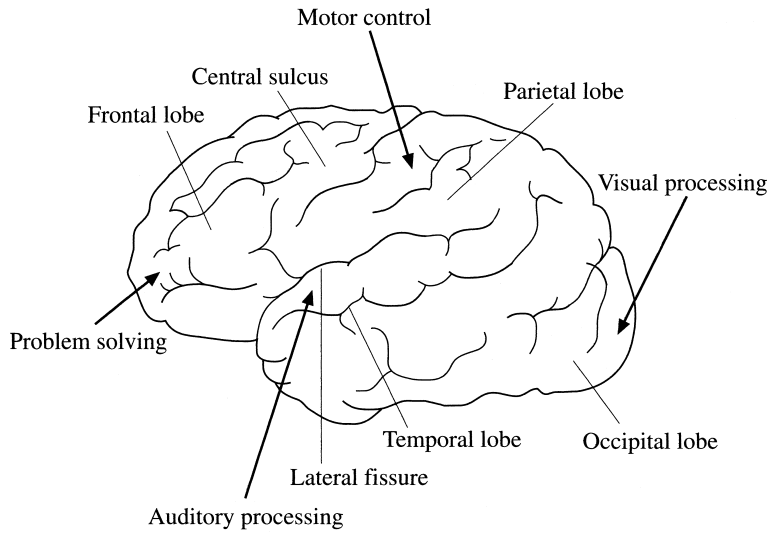


Figure 1 *The human cerebral cortex, with the functions of some areas indicated*

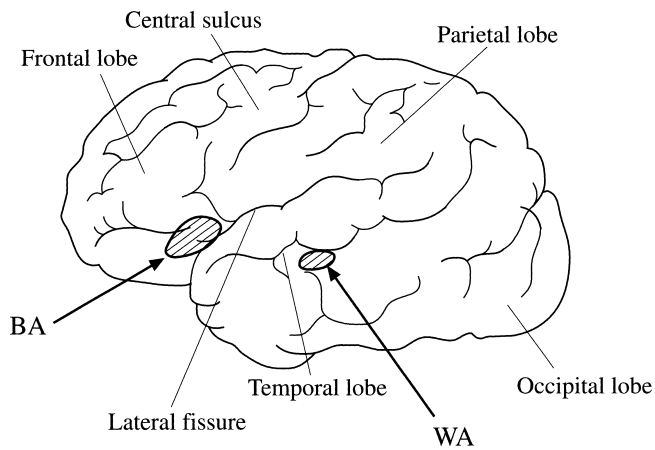


Figure 2 *The human cerebral cortex, with Broca's Area (BA) and Wernicke's Area (WA) indicated*

As well as language being adversely affected while other aspects of cognitive functioning remain intact, it is possible for *specific* types of language function to be impaired, depending on where in the cortex the lesion occurs. In 1861 a French neurologist, Paul Broca, described a patient who had suffered a stroke and who could say only one word. After the patient's death, Broca studied his brain and discovered a large lesion in the frontal lobe of the left hemisphere, the area BA in figure 2.

Broca concluded that this was the area of the brain responsible for controlling the *production* of speech, which has since come to be known as **Broca's area**.

Later research revealed that there is a second group of aphasic patients who have considerable difficulty in *understanding* language. In many cases, such patients appear to produce language reasonably fluently, but close examination reveals that they often speak in a garbled fashion. This pattern of deficit is often referred to as Wernicke's aphasia, in acknowledgement of Carl Wernicke, a German neurologist who first described it in detail in the 1870s. Wernicke's aphasia is associated with damage to another area of the left hemisphere known as **Wernicke's area** (WA in figure 2).

However, the initial view that language can be thought of as located in the left hemisphere and specifically in Broca's and Wernicke's areas has had to be refined. As more research has been done, it has become clear that several different areas of the brain are involved in performing linguistic tasks. This does not mean that the language faculty cannot be located in the brain, but it does entail that complex distributed representations are involved which require more sophisticated experimental procedures for their study. In recent years, new techniques have been developed for studying the activity of the brain as it performs a specific linguistic task. These so-called **imaging techniques** such as EEG (electroencephalography), MEG (magnetoencephalography) and fMRI (functional magnetic resonance imaging) provide images of the brain 'at work' and have led to a growth in our knowledge about the physiological mechanisms underlying the knowledge of language. Studies using these techniques have found, for example, that the brain areas dealing with grammar are not all in Broca's area and that the areas involved in semantics are not all in Wernicke's area. Instead, more recent brain-imaging research on language suggests that each of the different components of the language system (phonology, syntax, semantics, etc.) consists of subparts and these subparts are localised in different parts of the brain. Some of these are within the traditional language areas (Broca's and Wernicke's) and some outside, even in the right hemisphere. However, while we may hope that this research will ultimately lead to a brain map for language and language processing, it is still in a preliminary state, and in the relevant sections that follow (15 and 26), we shall restrict ourselves to discussing the linguistic characteristics of patients who have suffered brain damage and who exhibit particular syndromes (***exercise 7***).

Of course, the brain is a biological organ, and above we have noted another aspect of the biological foundations of language: the claim that the language faculty is a product of human *genetic* endowment. Species-specificity is consistent with such a claim, but we might ask how we could obtain additional empirical evidence for it. One source of such evidence may be provided by the study of genetically caused disorders of language. If the availability of the language faculty (and the consequent ability to acquire a grammar) is indeed genetically controlled, then we would expect failures of this genetic control to result in language disorders. It is, therefore, of considerable interest that there is a group of language-impaired people who suffer from **Specific Language Impairment (SLI)**, a language disorder which must be clearly distinguished from the disorders introduced above, which are *acquired* as the result of damage to the brain. This

group provides us with the chance of studying the effects of what is probably a genetically determined deficit in the acquisition of language. The specificity of SLI is indicated by the fact that SLI subjects have normal non-verbal IQs, no hearing deficits and no obvious emotional or behavioural difficulties. Its likely genetic source is suggested by the fact that it occurs in families, it is more frequent in boys than in girls and it affects both members of a pair of identical twins more frequently than it affects both members of a pair of fraternal twins. The nature of the impairment displayed by SLI subjects seems to be fairly narrow in scope, affecting aspects of grammatical inflection and certain complex syntactic processes. From this it might follow that if there is a 'language gene', its effects are rather specific and much of what is customarily regarded as language is not controlled by it. More research on SLI will be necessary before we can fully evaluate its consequences for this issue, but we shall provide some additional discussion of these matters in sections 15 and 26 (***exercise 8***).

Up to now, we have focused on the four research questions raised by Chomsky's programme and tried to give some idea of how we might begin to approach them. The idea of a grammar as a cognitive (ultimately, neurological) structure is common to each of these fields, which also share an emphasis on the *individual*. At no point have we raised questions of language as a means of communication with others, or as a tool for expressing membership in a group, or as indicative of geographical origins. These are intriguing issues and the sociolinguistic perspective addresses this omission.

Sociolinguistics

Sociolinguistics is the study of the relationship between **language use** and the **structure of society**. It takes into account such factors as *the social backgrounds of both the speaker and the addressee* (i.e. their age, sex, social class, ethnic background, degree of integration into their neighbourhood, etc.), *the relationship between speaker and addressee* (good friends, employer–employee, teacher–pupil, grandmother–grandchild, etc.) and *the context and manner of the interaction* (in bed, in the supermarket, in a TV studio, in church, loudly, whispering, over the phone, by fax, etc.), maintaining that they are crucial to an understanding of both the structure and function of the language used in a situation. Because of the emphasis placed on language *use*, a sociolinguistically adequate analysis of language is typically based on (sound or video) recordings of everyday interactions (e.g. dinner-time conversations with friends, doctor–patient consultations, TV discussion programmes, etc.).

Recordings of language use, as described above, can be analysed in a number of different ways depending on the aims of the research. For instance, the sociolinguist may be interested in producing an analysis of **regional** or **social dialects** in order to investigate whether different social groups speak differently and to discover whether language change is in progress. Rather different is research into

the form and function of **politeness** in everyday interaction, an interest which will lead to a search for markers of politeness in conversations and how these are related to social dimensions such as those enumerated above. Alternatively, the focus may be on so-called **minimal responses** (such as *mmm*, *yeah* and *right*) or **discourse markers** (such as *well*, *you know* and *actually*).

In addition to phenomena which arise in interactions between individuals or small groups, sociolinguistics is concerned with larger-scale interactions between language and society as a whole. One such interaction is **language shift**. Here, in a multilingual setting, one language becomes increasingly dominant over the other languages, taking over more and more of the domains in which these other languages were once used. Understanding the conditions which facilitate language shift and the dynamics of the process itself is properly viewed as a sociolinguistic task. It would, of course, be possible to raise many other research topics in the study of language which share a *social* focus, but because it will play a central role in much of our subsequent discussion, we shall close this introduction by going into a little more detail on the contemporary study of **language variation and change**.

The views of lay people about language are often quite simplistic. One illustration of this concerns the relationship between the so-called **standard** languages and the **non-standard** dialects associated with those languages. Standard French and Standard English, for example, are varieties of French and English that have written grammar books, pronunciation and spelling conventions, are promoted by the media and other public institutions such as the education system and are considered by a majority of people to be the 'correct' way to speak these two languages. Non-standard varieties (sometimes called 'dialects') are often considered to be lazy, ungrammatical forms, which betray a lack of both educational training and discipline in learning. Linguists strongly disagree with this view. The study of language use has shown not only that non-standard varieties exhibit grammatical regularity and consistent pronunciation patterns in the same way that standard varieties do, but also that a vast majority of people will use non-standard features *at least some of the time* in their speech. Sociolinguistic research has demonstrated that the speech of most people is, at least in some respects, **variable**, combining, for example, both standard and non-standard sounds, words or grammatical structures. The study of **language variation** involves the search for consistent patterns in such variable linguistic behaviour.

Another area where language variation plays a crucial role is in the study of **language change**. It is the principal concern of **historical linguistics** to investigate how languages change over time, and until recently, historical linguists have studied language change by relying exclusively on **diachronic** methods. These involve analysing the structure of language from a succession of dates in the past and highlighting those structural features (phonological, morphological or syntactic) that appear to have changed over that period of time. For obvious reasons, if we are considering a form of a language from many years ago, we do not have access to native speakers of the language; as a consequence, historical linguists have had to rely largely on manuscripts from the past as evidence of how languages may once

have been spoken, but such evidence is of variable quality, particularly when we take account of the fact that very few people were able to write in the pre-modern era. In these circumstances, it is difficult to judge just how representative surviving manuscripts are of the way ordinary people actually spoke.

As an alternative to diachronic methods and aided by the invention of the tape recorder allowing the collection of a permanent record of someone's speech, William Labov has pioneered a **synchronic** approach to studying language change. Whereas diachronic techniques demand language data from different periods in time, Labov's synchronic, so-called **apparent-time**, approach requires data to be collected at only one point in time. Crucially, the data collected within the same community are from people of different ages and social groups. Labov reasoned that if the speech of young people within a particular social group is different from that of old people in the same group, then it is very likely that language change is taking place. This technique has a number of advantages over the traditional historical method. Firstly, the recorded language data constitute a considerably more representative sample of the speech patterns of a community than do the manuscript data of traditional historical linguistics. Secondly, it allows the linguist to study language change as it is actually taking place – traditionally, historical linguists had believed this to be impossible. Finally, it allows the linguist to study how language changes spread through society, answering questions such as, Which social groups tend to lead language changes? How do language changes spread from one social group to another? (***exercises 9*** and ***10***).

Labov's apparent-time model assumes that a difference between young and old with respect to a certain linguistic feature *may* be due to linguistic change. Not all variable linguistic features that are sensitive to age variation are necessarily indicative of language changes in progress, however. Slang words, for example, are often adopted by youngsters, but then abandoned when middle age is reached. Similarly, some phonological and grammatical features, such as the use of multiple negation (e.g. *I haven't got none nowhere*), seem to be **stable** yet **age-graded**, i.e. not undergoing change, but associated with a particular age group, generation after generation.

This brief introduction to the methods and concerns of sociolinguistics may seem to suggest that these are far removed from those of other types of linguist. However, in studying variable patterns of language behaviour and the language change that this variation may reveal, the sociolinguist seeks to uncover universal properties of language, attempting to address questions such as, Do all languages change in the same way? We have already met this preoccupation with universals in our earlier discussion, so we can see that at this level, sociolinguistics exhibits important affinities with other approaches to the study of language. However, a fundamental difference remains: the sociolinguist's questions about universals require answers in which the structure of society plays an integral part. In this regard, they differ from the questions with which we opened this introduction, but there is no conflict here. Taken together, the various emphases we pursue in this book present a comprehensive picture of the complex and many-faceted phenomena which the study of language engages.

PART II

Words

8 Introduction

All languages have words, and words are probably the most accessible linguistic units to the layman. As part I has amply demonstrated, in order to get a sense of the sounds which are used in an utterance, a good deal of analysis is required, and most speakers of a language cannot easily identify these sounds. Similarly, sentences do not have the same intuitive immediacy as words, an observation that probably owes much to the fact that when we speak, we often employ sequences of words which do not make complete sentences. The following mundane dialogue illustrates this perfectly:

(85) SPEAKER A: Where are you going?
SPEAKER B: Shopping.
SPEAKER A: What for?
SPEAKER B: To buy some socks.

Of the utterances in (85), only the first corresponds to a complete sentence, the others being elliptical and not including information which A and B can readily supply from the context of their conversation.

Now, while it is not true to suggest that we always fully articulate the sequence of sounds which go to make up a word (see examples of elision and assimilation cited in the main introduction), it is also not true that we systematically get by with 'word fragments'. Just imagine the difficulties we would confront if in either spoken or written text, we did indulge in such an activity: we might be faced (along with A and B) with trying to interpret (86):

(86) SPEAKER A: Whareying?
SPEAKER B: Shing.
SPEAKER A: Whor?
SPEAKER B: Tymsos.

Despite this comfortable familiarity of the word based on our everyday experience with language, it should come as no surprise that serious consideration of words leads to intriguing questions and sometimes, when we're lucky, answers. Of all linguistic constructs, the word is probably closest to familiar physical objects, but, as the history of physical science has shown, beneath these everyday objects lies a world that we cannot perceive without expensive equipment and which is organised in ways which few of us can readily understand. It would be misleading to suggest that our understanding of words (or, indeed, any aspect of

language) is as developed as natural scientists' understanding of the physical world; but we should be ready to be surprised and to have challenged those preconceptions which emanate from our practised acquaintance with words in our native language.

The next four sections of this part of the book develop some of the issues which are important in understanding the nature of words from the theoretical perspective presented in our main introduction. It will be recalled that we proposed there that a grammar of a language must contain a *lexicon*, i.e. a listing of the words occurring in the language along with their linguistic properties. In part I, particularly section 5, we developed some ideas on the nature of the phonological information which appears in a lexical entry, one aspect of the *form* of a word. This focus on form will continue in sections 9, 10 and 11, where we will examine in some detail aspects of the morphological and syntactic information which must appear in lexical entries. Additionally, (most) words have one or more *meanings*, and section 12 raises some of the questions that arise when we consider how the semantic properties of a word might be represented in its lexical entry and what implications considerations of word meaning have for the overall organisation of the lexicon. Having introduced a set of notions for dealing with the cognitive representation of words in the lexicon, we move to the other perspectives from the introduction. The quite remarkable acquisition of words by small children is the topic of section 13, and the ways in which experimental studies might throw light on how we store words in our memory and perceive and produce them in our everyday linguistic interaction are dealt with in section 14. Some language disorders give rise to problems which are rather specifically to do with words, and we shall introduce these difficulties and discuss their implications in section 15. Finally, adopting the sociolinguistic perspective, in section 16 we examine some of the issues which affect words when languages or varieties of a single language are in contact.

9 Word classes

A natural first step in a scientific approach to words is to seek to establish the different types of words which appear in languages. It's easy to see that native speakers can divide words into different types (even if they can't actually tell you how they do this), and, moreover, we can see that speakers can use their knowledge of what the different word types are when they are confronted with a completely new word. Suppose, for instance, that you hear the sentence in (87):

(87) A plingle has arrived

Of course, you don't know what *plingle* means, but you can immediately infer that *plingle* is the sort of expression which occurs in the constructions *the plingle*, *two plingles*, *every plingle which has ever existed*, etc. In short, (87) enables you to assign *plingle* to a particular class of words, and once you know what class of words it belongs to, you know a great deal about its potential for occurrence within the language. It is reasonable, then, to suppose that the word class to which a word belongs is specified in that word's lexical entry. The immediate task facing us in this section is that of developing criteria for assigning words to classes.

Lexical categories

A familiar distinction is that between **nouns** (N) and **verbs** (V), and there are several ways in which we can justify this for English. For instance, nouns often refer to types of concrete objects in the world (e.g. *cake*, *engine*, *moon*, *waiter*, and, we might now suppose, *plingle*!), while verbs typically refer to activities (*applaud*, *steal*, *collide*, *bark*). Furthermore, verbs and nouns exhibit a different range of forms: most nouns have a special form for the plural (*engine* ~ *engines*), while verbs have a larger number of forms, as shown by the sentences in (88):

(88) a. Dogs *bark*
b. Fido *barks*
c. Fido is *barking*
d. Fido *barked*

Thirdly, nouns and verbs combine with other words to form phrases in distinct ways. For example, a noun will often be found preceded by a **definite** (*the*) or **indefinite article** (*a/an*) (*the moon*, *an engine*). Most forms of a verb cannot be preceded by these articles (**the applauds*, **an applauded*). If we form a phrase consisting of an article and a noun, this can often follow a verb to form a larger phrase (*steal a car*, *applaud the singer*) – we say that *a car* and *the singer* function as **complements** of the verbs *steal* and *applaud* in these constructions. Words which are unmistakably verbs cannot themselves fulfil the roles of complements (**We heard barked*). Additionally, an article–noun sequence may combine with a verb to form a whole sentence as in *the dog barked*. Here, the phrase *the dog* functions as the **subject** of the sentence (see section 17 for further discussion of subject and complement). Again, words which are unmistakably verbs cannot themselves fulfil the role of subject (**Barked surprised us*). Generalising, we say that subjects and complements are **arguments** of verbs and a typical simple sentence, such as that in (89), consists of a verb (*stole*) and its arguments (*the waiter*, *a cake*):

(89) The waiter stole a cake

A third major word class recognised in traditional grammar is **adjectives** (A). These typically refer to properties which people or things possess and they are used to modify nouns, e.g. ***happy*** *man*, ***noisy*** *engine*. Although they share with articles the property of appearing in front of a noun, if an article and an adjective both combine with a noun, they do so in a fixed order (*a happy man*, **happy a man*, *the noisy engine*, **noisy the engine*). We can also ascribe a property by putting the adjective after a form of the verb *be* to form a sentence (*the man is happy*, *the engine was noisy*). Like nouns and verbs, many adjectives have special forms indicating the extent to which a property is true of something: the **comparative** form, *happier*, 'happy to a greater degree than', and the **superlative** form, *happiest*, 'happy to the greatest degree'.

A fourth class of word is **adverbs** (ADV). While an adjective modifies a noun, an adverb typically modifies a verb, adjective or another adverb, indicating how, when or why something happened or the degree to which a property characterises an individual or event. Examples illustrating these three uses appear in (90) – the modifying adverbs are in italics and the modified item is in bold:

(90) a. The waiter *carelessly* **dropped** the plate
b. The engine is *really* **noisy**
c. The audience applauded the singer *very* **enthusiastically**

(note that in 90c, the adverb *enthusiastically*, itself modified by *very*, modifies the verb *applauded*).

Adverbs can readily be formed from a majority of adjectives by the addition of *-ly*: *happily*, *slowly*, *reluctantly*, etc. However, adverbs which do not fit this characterisation are far from uncommon: *very*, *well*, *yesterday.*

Another important word class is illustrated in (91):

(91) a. Harriet was sitting *under* a tree
b. They're due to arrive *before* noon
c. That is the end *of* the news
d. There was a debate *about* economic policy

The italicised words in (91) precede nouns (or phrases centred around nouns, such as *a tree* or *economic policy*). They typically serve to relate objects, people or events in space or time (*under/before*), though often the relationship is more abstract as in (91c, d). Words of this type are called **prepositions** (P), and they do not have the capacity to appear in a range of different forms (**unders*, **abouted*, **ofest*, **beforely*).

Up to now, we have distinguished five word classes or **lexical categories**. In doing this, we have appealed to three types of criteria for establishing a category: semantic (relying on meaning), morphological (relying on word forms) and syntactic (taking account of behaviour in phrases). Taken together, these criteria identify our separate classes quite well. However, it is important to be clear that there are plenty of cases where one or other type of criterion fails to work. For instance, some nouns refer to abstract ideas rather than concrete objects (*justice*, *idea*, *quantity*); worse still, there are nouns such as *game* and *speech* which refer to types of activities, the semantic criterion we introduced for recognising verbs. For some nouns the pluralisation criterion does not work in a straightforward fashion, either because their plural forms are irregular (*men*, *women*, *children*) or because they lack a plural form entirely (**furnitures*, **sakes*). Likewise, there are verbs which refer to states rather than activities (*fear*, *border (on)*), and other difficulties with applying these criteria too rigidly will become apparent as we proceed. Despite these problems, it is uncontroversial to suppose that lexical entries in the lexicon must contain an indication of word-class membership (***exercises 1***, ***2***, ***3*** and ***4***).

A particularly interesting illustration of the semantic correlations breaking down arises from observing that English provides many ways of forming new words from old ones. For example, we can form a noun *happiness* from the adjective *happy*. That *happiness* is a noun is indicated by the fact that it can be preceded by the definite article (*the happiness John felt*), and that it is not an adjective by the fact that it does not have comparative and superlative forms (**happinesser*, **happinessest*). Thus, *happiness* is a noun denoting the *property* of being happy. So, both the adjective and the noun seem in this case to denote a property, and semantic criteria for establishing class membership are not useful. Of course, the example we have chosen here is not exceptional and it illustrates the pervasive process of **word formation**. The word *happiness* is formed by adding an ending, *-ness*, to *happy* (the spelling change is irrelevant here and has no effect on the pronunciation). Such a process is referred to as **derivational morphology** (because we derive a new word from the old one). Derivational processes typically apply to nouns, verbs and adjectives, allowing us to change the

category of the word, and we shall return to a more systematic discussion of such processes in section 10.

Functional categories

Nouns, verbs, adjectives, adverbs and prepositions are the major word classes of English, and they are the sorts of words we find in dictionaries with meanings attached to them (cf. section 12). However, not all words are straightforwardly meaningful in this way, and this observation paves the way for extending the word classes which must be recognised in grammars for languages. Consider the italicised words in the following example:

(92) Bill thinks *that* Tom *and* Dick *have been* visiting Harriet *to* ask for help with one *of the* assignments *which have to be* finished for *the* next morphology class

It is difficult to begin to ascribe a simple meaning to such words in the way that we often can for words in our major classes. For instance, imagine being asked by someone who doesn't know English well what *think* or *assignment* means in (92). Since major class words normally denote objects, ideas, events, states, properties and so on, native speakers of English can usually formulate answers of some kind to such questions. However, suppose that instead you are asked what *that* or *of* or *to* mean in (92), and it is unlikely that you will have an answer. A better way of thinking of these words is as fulfilling a particular *function* in the sentence. For instance, *that* (in this usage) is traditionally regarded as a subordinating conjunction. It is attached to the beginning of the sentence *Tom and Dick have been visiting Harriet* ... to indicate that the clause it introduces is a statement rather than a question. The word *to* in *to ask* signals that this was the purpose of Tom and Dick's visits, while the *to* in *to be finished* is there simply because it appears to be part of English grammar that the verb *have* in its meaning of 'obligation' must be followed by *to* and the base form of a verb (notice that *must*, a synonym of this type of *have*, does not require this *to*; indeed, it would be ungrammatical to add it: *the assignments which must be finished / *must to be finished*). From a quite different perspective, *which* appears to be somehow dependent on *the assignments* (they have to be finished) and to be devoid of any meaning in its own right. The reader is invited to reflect on the remaining italicised words in (92).

Words such as the above, which do not denote objects, ideas, etc. are known as **function words** and they belong to classes known as **functional categories**. They are distinguished from nouns, verbs, adjectives, adverbs and prepositions, which are often called **content words**. The distinction has proved important, not only in the description of individual languages, but also in the study of the acquisition of language and the study of language disorders (see sections 13, 24 and 26).

There is an important relationship between function words and content words, in that very often the syntactic criteria for assigning words to lexical categories rely on specific types of function words. For example, above it was pointed out that nouns can be preceded by a definite or indefinite article (*the* or *a(n)*). The function of the article is (very roughly) to make what the noun refers to either more or less specific. If you say *I bought a car* this simply refers to a car-buying event on your part, without implying anything about the car concerned, but if you say *I bought the car*, then you must be assuming that your addressee already knows which car you are talking about (for example, because you have described it earlier). We can be even more specific with **demonstratives**, *this* or *that*. The articles *the/a* and the demonstratives belong to a class of function words called **determiners** (D). These are often found before nouns, though the determiner may be separated from the noun by one or more adjectives, e.g. *a bright, shiny, new car*).

Verbs can also be preceded by a type of function word, the **auxiliary verbs** (AUX) such as *can*, *will*, *must*, *have*, *be*:

(93) a. You *can* go to the ball
b. Linguistics *is* developing rapidly
c. Sam *has* lost the plot again

That auxiliary verbs behave quite differently from **lexical verbs** (V) can be seen by examining their role in forming questions:

(94) a. Harriet *is* studying linguistics
b. *Is* Harriet studying linguistics?

(95) a. Tom *can* speak Urdu
b. *Can* Tom speak Urdu?

Here we see that the formation of a question involves 'moving' an auxiliary verb to the initial position in the structure. Lexical verbs do not 'move' in this way in Modern English (see sections 21 and 22 for much more extended discussion):

(96) a. Harriet *studies* linguistics
b. **Studies* Harriet linguistics?

Furthermore, a sentence is negated by placing *not* (or *n't*) after an auxiliary:

(97) a. Harriet *is* studying linguistics
b. Harriet *is*n't studying linguistics

Again, this is not possible with lexical verbs:

(98) *Harriet *studies*n't / *studies* not linguistics

We can immediately see, then, not only that auxiliary verbs are useful in enabling us to assign lexical verbs to the appropriate class, but also that they have distinctive properties which justify the recognition of the separate functional category AUX.

Another function word that often accompanies lexical verbs is the word *to*. This is added to the base form of a verb to form the **infinitive**: *to be or not to be*, *to know her is to love her*. In English, the infinitive is the **citation form** of a verb, that is, the form we use to name a verb (as in *The most irregular verb in English is the verb 'to be'*). Although *to* usually comes immediately before the verb, it can be split from it by an adverb, and sometimes this is the only possible construction: *to **really** impress her, you have to be able to cook*. Often, the split infinitive sounds cumbersome and for that reason it's often avoided (especially outside the United States), but it's always been possible to split infinitives in English (despite assertions to the contrary from people who know nothing about English grammar). A convenient label for the infinitive use of *to* is 'INF' (see section 19, p. 259, where a slightly different proposal on the status of infinitival *to* is adopted).

Another important type of function word is the **pronoun** (PRN). This is a group of words the members of which (roughly speaking) stand for a noun expression (like *John*, *the president*, *a book of mine*, etc.). The commonest pronouns are the **personal pronouns**, which can be (partially) described in terms of number (singular/plural) and person (first person when the speaker is included, second person for the addressee when the speaker is excluded, and third person in other cases).

Table 14 shows that *we/us* is a first person plural pronoun, that *he/him* is a third person singular pronoun, etc. Nouns such as *Tom*, or *apples* can also be regarded as third person forms (singular and plural respectively) because they can be replaced by the corresponding personal pronouns *he* and *them*.

Another type of function word is illustrated in (92) by *and*. Such words are called **co-ordinating conjunctions** (CONJ) and further examples are shown in (99):

(99) a. naughty *but* nice
b. your money *or* your life
c. Harriet is English *but* she speaks Russian

These conjunctions serve to join words or phrases together to form larger phrases of the same type (99a, b), or join whole sentences together to form new sentences (99c).

Table 14 *Personal pronouns in English*

number	singular	plural
person		
first	I/me	we/us
second	thou/thee/you	you
third	he/him, she/her, it	they/them

(The second person singular pronoun *thou/thee* is obsolete in standard dialects of Modern English, though it survives in other varieties.)

The subordinating conjunction *that* has already been mentioned in connection with (92). In modern linguistics, words like this are known as **complementisers** (C) because one of their most important uses is to introduce complement clauses (i.e. clauses which function as the complement of a verb, adjective or noun). Additional examples of this type are shown in (100):

(100) a. Tom **wonders** [*if* it will rain]
b. Tom **arranged** [*for* Dick to leave early]

Each of the bracketed clauses in (100) is a complement clause, since it serves as the complement of the bold-face verb.

Up to this point, then, we have seen that it is necessary to recognise at least five lexical categories (N, V, A, ADV, P) in the grammar of English along with a number of functional categories (D, AUX, PRN, CONJ, C). We have also suggested that category membership will be specified as part of a word's lexical representation in the lexicon. Without wishing to suggest that our set of categories is exhaustive, we shall now focus on verbs and on some of the complexities which arise in consideration of their morphological properties.

The morphological properties of English verbs

Verbs in English have a simple form, such as *read*, *write*, *illustrate*, called the **base** form. However, consider the verbs in sentences such as *Tom reads poetry*, *Dick writes letters*, *Harriet illustrates comics*. These are in a special form, consisting of the base form plus an ending *-s*. This form is used whenever the word or phrase referring to the person doing the reading, writing or illustrating (i.e. the subject) is third person singular and the verb is in the present tense. The *-s* form is not used for any other person (*I*, *we*, *you*) or for third person plural subjects: *I/we/you read / *reads novels, the girls write / *writes letters*. Because of these different verb forms, we say that the verb **agrees** with its subject. In English, the agreement system has almost entirely disappeared (in some dialects it has completely withered away, see section 16), and the third person singular agreement form in the present tense is its last vestige.

The special agreement forms for third person singular subjects are characteristic of verbs as a class. Other special forms of this class are shown in (101):

(101) a. Harriet *took* a picture of Dick
b. Harriet is *taking* a picture of Dick
c. Harriet has *taken* a picture of Dick

Verbs typically signal the time when an action or event occurs. In (101a), the picture-taking event is presented as taking place in the past, whereas in (101b), it is presented as unfolding at present. In (101c), the event took place in the past, but because of the use of the auxiliary *have*, the action is perceived as retaining

PART III

Sentences

18 Basic terminology

A substantial proportion of the terminology we need in order to embark on the study of syntax has already been introduced, particularly in section 9. However, there are some additional notions which are important for us to understand, so in this section we shall introduce these, integrating them with ideas with which we are already familiar.

Categories and functions

It is traditionally said that sentences are structured out of words, phrases and clauses, each of which belongs to a specific **grammatical category** and serves a specific **grammatical function** within the sentence containing it. The lexical and functional categories from section 9 are examples of grammatical categories, and as our discussion proceeds, we shall see how phrases and clauses can be categorised. The smallest type of sentence which we can produce is one containing a single clause, such as (221):

(221) John smokes

This comprises the noun *John*, which is traditionally claimed to function as the **subject** of the clause (in that it denotes the person performing the act of smoking), and the verb *smokes*, which functions as the **predicate** of the clause (in that it describes the act being performed). Consider next the slightly longer clause in (222):

(222) John smokes cigars

Here we have the subject *John*, the predicate *smokes* and a third item, *cigars*, which is the **complement** (*cigars* refers to the entities on which the act of smoking is being performed). The subject *John* and the complement *cigars* are the two **arguments** of the predicate *smokes* (i.e. the two entities involved in the act of smoking). A **clause** is an expression which contains a subject and a predicate, and which may also contain other types of element (e.g. the clause in 222 contains a complement as well, and so has the form *subject* + *predicate* + *complement*).

There are a number of morphological and syntactic properties which differentiate subjects from complements. For one thing, the two occupy different positions within the clause: in English, subjects generally precede predicates and

complements follow them. Moreover (with an exception to be noted later), subjects generally have different **case** properties to complements. The different case forms of typical pronouns and noun expressions in English are given in (223):

(223)

nominative	accusative	genitive
I	me	my/mine
we	us	our/ours
you	you	your/yours
he	him	his
she	her	her/hers
it	it	its
they	them	their/theirs
who	who(m)	whose
Mary	Mary	Mary's
the dog	the dog	the dog's

Genitive forms are used (amongst other things) to mark possession. Some pronouns have two genitive forms, a *weak* (shorter) form used when followed by a noun expression, and a *strong* (longer) form used elsewhere (e.g. *My car is bigger than your car, but yours is faster than mine*). Of more concern to us here, however, is the nominative/accusative contrast, and the fact that subjects typically carry **nominative** case, whereas complements typically carry **accusative** case (sometimes termed **objective** case). This isn't immediately obvious from (222), since nouns like *John* and *cigars* aren't overtly inflected for the nominative/accusative case distinction. However, if we replace *John* by an overtly case-marked pronoun, we require the nominative form *he*, not the accusative form *him*; and conversely, if we replace *cigars* by an overtly case-marked pronoun, we require the accusative form *them*, not the nominative form *they*:

(224) a. He/*Him smokes cigars
b. John smokes them/*they

A third difference between subjects and complements is that, as we have noted on several occasions, in English verbs agree in Person and Number with their subjects. However, they don't agree with their complements. So, if we have a third person singular subject like *he* or *John*, we require the corresponding third person singular verb form *smokes*; but if we have a first person singular subject like *I*, or a first person plural subject like *we*, or a second person singular or plural subject like *you*, or a third person plural subject like *they*, we require the alternative form *smoke*:

(225) a. He smokes/*smoke cigars
b. I/We/You/They smoke/*smokes cigars

If, however, we change the complement, say replacing the plural form *cigars* with the singular *a cigar* in (222), the form of the verb in English is unaffected:

(226) John smokes cigars/a cigar

Overall, then, we can differentiate subjects from complements in terms of whether they normally precede or follow the verb, whether they have nominative or accusative case and whether or not they agree with the verb.

Now consider the even longer clause in (227):

(227) The president smokes a cigar after dinner

This clause comprises three **constituents** (i.e. structural units), the functions of which are already familiar – namely the subject *the president*, the predicate *smokes* and the complement *a cigar*. But what is the function of the expression *after dinner*, which also occurs in (227)? Since *after dinner* does not refer to one of the entities directly involved in the act of smoking (i.e. it isn't consuming or being consumed), it isn't an argument of the predicate *smokes*. On the contrary, it simply serves to provide additional information about the time when the smoking activity takes place. In much the same way, the italicised expression in (228) provides additional information about the location of the smoking activity:

(228) The president smokes a cigar *in his office*

An expression which serves to provide (optional) additional information about the time or place (or manner, or purpose, etc.) of an activity is said to serve as an **adjunct**. So, *after dinner* in (227) and *in his office* in (228) are both adjuncts.

Now consider the following kind of clause (characteristic of colloquial styles of English):

(229) Cigars, the president never smokes them in front of his wife

The functions of the constituents contained in the part of the clause following the comma are straightforward to analyse: *the president* is the subject, *smokes* is the predicate, *them* is the complement, and *never* and *in front of his wife* are both adjuncts. But what is the function of the expression *cigars*, which precedes the comma? The traditional answer is that *cigars* functions as the **topic** of the clause, in the sense that it serves to indicate that the clause tells us something about cigars; the part of the clause following the comma is said to be the **comment**. It is interesting to contrast (229) with (230):

(230) Cigars, the president never smokes in front of his wife

In (229) *cigars* is the clause topic, and *them* (which refers back to *cigars*) is the complement of the verb *smokes*. By contrast, in (230), *cigars* seems to serve both functions and hence is the topic of the overall clause as well as being the complement of the verb *smokes*.

Now consider the clause in (231):

(231) The president was smoking a cigar for relaxation

Again, this comprises a number of constituents with familiar functions: *the president* is the subject, *smoking* is the predicate, *a cigar* is the complement, and *for relaxation* is an adjunct. But what is the function of the auxiliary *was*? The

answer is that it serves to mark **Tense**, indicating the time at which the activity took place (namely the past). English has a binary (i.e. two-way) tense system, so that in place of the past tense form *was* in (231), we could use the corresponding present tense form *is*. Although this distinction is traditionally said to be a past/present one, many linguists prefer to see it as a past/non-past distinction, since the so-called present tense form can be used with future time reference (e.g. in sentences such as *our guest is arriving at 3 p.m. tomorrow*). However, since the term 'present tense' is a familiar one, we'll continue to use it below.

Complex sentences

So far, we have looked at **simple sentences** – i.e. sentences which comprise a single clause (Hence, all the clauses in 221, 222 and 224–31 above are *simple* sentences). However, alongside these we also find **complex sentences** – i.e. sentences which contain more than one clause. In this connection, consider the structure of the following sentence:

(232) Mary knows John smokes

If we take a clause to be a structure comprising (at least) a subject and a predicate, it follows that there are two different clauses in (232) – the *smokes* clause on the one hand, and the *knows* clause on the other. The *smokes* clause comprises the subject *John* and the predicate *smokes*; the *knows* clause comprises the subject *Mary*, the predicate *knows* and the complement *John smokes*. So, the complement of *knows* here is itself a clause. The *smokes* clause is a **complement clause** (because it serves as the complement of *knows*), while the *knows* clause is the **main clause**. The overall sentence in (232) is a complex sentence because it contains more than one clause. In much the same way, (233) below is also a complex sentence:

(233) The president may secretly fear Congress will ultimately reject his proposal

Once again, it comprises two clauses – one containing the predicate *fear*, the other containing the predicate *reject*. The main clause comprises the subject *the president*, the auxiliary *may*, the adverbial adjunct *secretly*, the verbal predicate *fear* and the complement clause *Congress will ultimately reject his proposal*. The complement clause in turn comprises the subject *Congress*, the auxiliary *will*, the verbal predicate *reject*, the complement *his proposal* and the adjunct *ultimately*.

Now contrast the two different types of complex sentence illustrated below:

(234) a. We expect [John will win the race]
b. We expect [John to win the race]

Both sentences comprise two clauses – a main clause and a bracketed complement clause. The main clause in (234a) comprises the subject *we*, the verbal predicate *expect* and the complement clause *John will win the race*; the main clause in

(234b) is identically constituted, except that the complement clause is *John to win the race*. The complement clause in (234a) comprises the subject *John*, the auxiliary *will*, the verbal predicate *win* and the complement *the race*; the complement clause in (234b) comprises the subject *John*, the infinitive particle *to*, the verbal predicate *win* and the complement *the race*. So, superficially, at least, the two sentences appear to have much the same structure.

Yet, there are important differences between the two complement clauses they contain. In (234a), the auxiliary *will* is a **tensed** form (more specifically, a non-past form), as we see from the fact that if we transpose the whole sentence into the past tense, we use the corresponding past tense form *would* instead of *will*:

(235) We expected [John *would* win the race]

By contrast, if we transpose (234b) into the past tense, the infinitive particle *to* remains invariable:

(236) We expected [John *to* win the race]

So, we can say that the bracketed complement clause in (234a) and (235) is tensed, whereas its counterpart in (234b) and (236) is **untensed** (i.e. unspecified for tense).

A further difference between the two types of complement clause can be illustrated in relation to (237):

(237) a. I didn't know [John wears glasses]
b. I've never known [John wear glasses]

In (237a), the verb *wears* agrees with its third person singular subject *John*; but the corresponding verb *wear* in (237b) doesn't agree with *John*. More generally, complement clauses like that bracketed in (237a) contain a verb inflected for agreement with its subject, whereas complement clauses like that in (237b) contain a verb form which lacks agreement.

There is a third important difference between the two types of complement clause in (234a, 237a) and (234b, 237b), as we can see from the fact that if we replace the subject *John* by a pronoun overtly marked for case, we require the nominative form *he* in (234a, 237a), but the accusative form *him* in (234b, 237b):

(238) a. We expect [he/*him will win the race]
b. We expect [him/*he to win the race]

(239) a. I didn't know [he/*him wears glasses]
b. I've never known [him/*he wear glasses]

To use the relevant grammatical terminology, we can say that an auxiliary or a verb is **finite** if it inflects for tense/agreement and has a nominative subject, and **non-finite** if it doesn't inflect for tense or agreement and doesn't have a nominative subject. By extension, we can distinguish between a **finite clause** (i.e. a clause with a nominative subject which contains a verb/auxiliary inflected for tense/agreement) and a **non-finite clause** (i.e. a clause which doesn't have a nominative

subject, and which doesn't contain a verb/auxiliary inflected for tense/agreement). Thus, the complement clauses in (234a) and (237a) are finite clauses, but those in (234b) and (237b) are non-finite, and, in non-finite complement clauses, we see exceptional examples of subjects that are not nominative (see p. 248 above).

We observed in section 9 that verbs in English can have up to five distinct forms, as illustrated in (240):

(240)

-s	*-d*	base	*-n*	*-ing*
shows	showed	show	shown	showing

The *-s* and *-d* forms are finite forms, the *-s* form being the third person singular present tense form, and the *-d* form being the past tense form. By contrast, the *-n* and *-ing* forms are non-finite forms, since they are not inflected for either tense or agreement (recall that the *-n* form often ends in *-ed*!). At first sight, it might seem odd to claim that the *-n* and *-ing* forms are untensed, since (as we noted in section 9) *-ing* forms are sometimes referred to in traditional grammars as *present* participles and *-n* forms as *past* participles. However, it is clear from sentences like (241) that the tense of the clause is marked by the auxiliaries *is*/*was*, not by the verb form *going*:

(241) a. He is going home
b. He was going home

But if the *-ing* inflection on *going* doesn't mark tense, what does it mark?

The answer, as noted in section 10, is that *-ing* in this kind of use serves to mark **aspect** (a term used to describe the duration of the activity described by a verb, e.g. whether the activity is on-going or completed). In sentences such as (241), the *-ing* form indicates that the action of going home is still in progress at the time indicated by the auxiliary: hence (241a) can be loosely paraphrased as 'He is now still in the process of going home', and (241b) as 'He was then still in the process of going home.' Thus, the *-ing* forms like *going* in (241) mark **progressive aspect**. By contrast, *-n* forms such as *gone* in (242a, b) mark the completion of the act of going home:

(242) a. He has gone home
b. He had gone home

Hence (242a) can be loosely paraphrased as 'He has now completed the action of going home' and (242b) as 'He had by then completed the action of going home.' Tense is marked by the choice of *has* or *had*, and we say that *-n* forms like *gone* in (242) mark **perfect aspect** (i.e. they indicate *perfection* in the sense of completion of the relevant act). We have, of course, already met *-ing* forms and *-n* forms in section 10, where they were respectively referred to as *progressive participles* and *perfect participles*. Since participles mark aspect (not tense or agreement), they are non-finite forms.

So far, we have argued that the *-s* and *-d* forms of verbs are finite, but the *-ing* and *-n* forms are non-finite. But what about the uninflected base forms of verbs

(the forms which appear in dictionaries of English)? The answer is that the base form of the verb has a dual status and can function either as a finite form or a non-finite form (i.e. it corresponds to more than one grammatical word in the sense of section 10). In uses like that italicised in (243) below, the base form serves as a finite present tense form:

(243) I/We/You/They/People *show* little interest in syntax these days

But in uses like those italicised in (244), the base form is non-finite and is traditionally termed an **infinitive** form:

(244) a. She didn't want him to *show* any emotion
b. He didn't *show* any emotion
c. You mustn't let him *show* any emotion

Base forms also have other uses which we will come across subsequently (e.g. the imperative use of *keep*/*tell* in 246c and 247c below).

Up to now, all the complex sentences we have looked at have comprised a main clause and a complement clause. But now consider the rather different kind of complex sentence illustrated in (245):

(245) I couldn't find anyone who could help me

There are two clauses here – the *find* clause and the *help* clause. The *find* clause comprises the subject *I*, the negative auxiliary *couldn't*, the verbal predicate *find* and the complement *anyone who could help me*. The complement in turn comprises the pronoun *anyone* followed by the clause *who could help me*. Since the pronoun *who* in this clause 'relates to' (i.e. refers back to) *anyone*, it is called a **relative pronoun**, and the clause containing it (*who could help me*) is called a **relative clause**. The relative clause in turn comprises the subject *who*, the auxiliary *could*, the verbal predicate *help* and the complement *me*. The relative clause is a finite clause. Although it doesn't inflect for agreement, the auxiliary *could* is a past tense form (since it carries the past tense suffix *-d*, see *I couldn't find anyone who help**s**/help**ed** in the kitchen*), and its subject *who* carries nominative case (in formal English, the corresponding accusative form would be *whom*, and this would be inappropriate here – cf. **anyone whom could help me*) (***exercise 1***).

The functions of clauses

One aspect of the syntax of clauses which we have so far overlooked is that different clauses have quite different functions. In this connection, consider the functions of the following simple (single-clause) sentences:

(246) a. He failed the exam b. Did he help you?
c. You keep quiet! d. What a fool I was!

The sentence in (246a) is said to be **declarative** in function, in that it is used to make a statement; by contrast, (246b) is **interrogative** since it serves to ask a

19 Sentence structure

In this section, we shall look at the way in which words are combined to form phrases, phrases are combined to form clauses, and clauses are combined to form complex sentences. This involves the introduction of our first core syntactic operation, that of *merger*.

Merger

To put our discussion on a concrete footing, let's consider how an elementary two-word phrase such as that produced by speaker B in the following mini-dialogue is formed:

(249) SPEAKER A: What is the government planning to do?
SPEAKER B: *Reduce taxes*.

As speaker B's reply illustrates, the simplest way of forming a phrase is by joining two words together: for example, by combining the word *reduce* with the word *taxes* in (249), we form the phrase *reduce taxes*. Just as every compound word has a head (so that *mill* is the head of the compound *windmill* because a windmill is a kind of mill, not a kind of wind: section 10), so too every syntactic phrase has a head word. For example, the head word of the phrase *reduce taxes* in (249) is the verb *reduce*, and accordingly the overall phrase *reduce taxes* is said to be a verb phrase. One reason for thinking this is that the phrase *reduce taxes* describes a particular kind of reduction activity (that of reducing taxes), not a particular kind of tax. Moreover, since the head word of a phrase determines not only its semantic properties but also its grammatical properties, our claim that the verb *reduce* is the head of the phrase *reduce taxes* correctly predicts that when we combine a verb like *reduce* with a noun like *taxes*, the resulting phrase *reduce taxes* has verb-like properties (as opposed to noun-like properties or properties which are neither verb-like nor noun-like). This can be seen from the fact that the phrase *reduce taxes* can occupy the same range of positions as a verb like *resign*, and hence, for example, occur after the infinitive particle *to*:

(250) a. The government ought to *resign*
b. The government ought to *reduce taxes*

By contrast, *reduce taxes* cannot occupy the kind of position occupied by a plural noun such as *taxes*, as we see from (251):

(251) a. *Taxes* are at the heart of the debate about policy
b. **Reduce taxes* are at the heart of the debate about policy

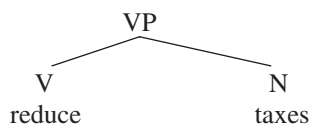
So, it seems clear that the grammatical properties of a phrase like *reduce taxes* are determined by the verb *reduce*, and not by the noun *taxes*. We can say that the verb *reduce* is the **head** of the phrase *reduce taxes*, and conversely that the phrase *reduce taxes* is a **projection** of the verb *reduce* (i.e. a larger expression whose head word is the verb *reduce*). Since the head of the resulting phrase is the verb *reduce*, the phrase *reduce taxes* is a **verb phrase**: and in the same way that we abbreviate category labels like verb to V, we can abbreviate the category label verb phrase to VP. If we use the labelled bracketing technique (section 10) to represent the category of the overall phrase *reduce taxes* and of its component words *reduce* and *taxes*, we can represent the structure of the resulting phrase as in (252):

(252) $[_{VP}\ [_{V}$ reduce$]\ [_{N}$ taxes$]]$

What (252) tells us is that the overall phrase *reduce taxes* is a verb phrase (VP), and that it comprises the verb (V) *reduce* and the noun (N) *taxes*. The verb *reduce* is the *head* of the overall phrase, and the noun *taxes* is the complement of the verb *reduce*. The operation by which the two words are combined to form a phrase is called **merger**.

Although we have used the labelled bracketing technique to represent the structure of the verb phrase *reduce taxes* in (252), we have seen in section 10 that an alternative way of representing this sort of structure is in terms of a **labelled tree diagram** such as (253):

(253)



The tree diagram in (253) is entirely equivalent to the labelled bracketing in (252), in the sense that the two provide us with precisely the same information about the structure of the phrase *reduce taxes*: so (253) – like (252) – tells us that *reduce* is a verb (V), *taxes* is a noun (N) and *reduce taxes* is a verb phrase (VP). The differences between a labelled bracketing like (252) and a tree diagram like (253) are purely notational: each category is represented by a single **node** (i.e. point) in a tree diagram, but by a pair of brackets in a labelled bracketing.

We can generalise our discussion at this point and hypothesise that all phrases are formed in essentially the same way as the phrase in (253), namely by merging two categories together to form a larger category. In the case of (253), the resulting phrase is formed by merging two words. However, not all phrases contain just two words, as we see if we look at the structure of B's reply in (254):

(254) SPEAKER A: What's the government's principal objective?
SPEAKER B: *To reduce taxes*.

The italicised phrase in (254) appears to be formed by merging the infinitive particle *to* with the verb phrase *reduce taxes*. What's the head of the resulting phrase *to reduce taxes*? There is evidence which indicates that this head is the infinitive particle *to*, so that the resulting string (i.e. continuous sequence of words) *to reduce taxes* is an **infinitive phrase**. The evidence is that strings such as *to reduce taxes* have a different distribution from verb phrases, as is indicated by sentences such as those in (255) and (256):

(255) a. They ought [to reduce taxes]
b. *They ought [reduce taxes]

(256) a. They should [reduce taxes]
b. *They should [to reduce taxes]

If we assume that *reduce taxes* is a verb phrase whereas *to reduce taxes* is an infinitive phrase, we can then account for the data in (255) and (256) by saying that *ought* is the kind of word which requires an infinitive phrase after it as its complement, whereas *should* is the kind of word which requires a verb phrase as its complement.

But what kind of word is infinitival *to*? It is traditionally termed an *infinitive particle*, and this terminology implies that it is a unique kind of word unrelated to any other kind of word in English. But is this so? In some respects, infinitival *to* seems to resemble an auxiliary like *will*, in that both are typically used in a clause with future time reference (as you can see from the fact that the bracketed complement clauses in (257) both refer to a future event):

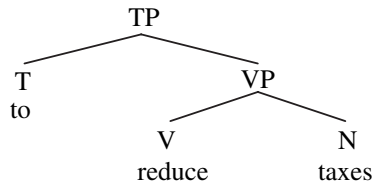
(257) a. Everyone is expecting [the government *will* reduce taxes before the election]
b. Everyone is expecting [the government *to* reduce taxes before the election]

Moreover, the fact that the auxiliary *will* and the infinitive particle *to* occupy the same position in the two clauses (between the subject *the government* and the verb phrase *reduce taxes before the election*) makes it plausible to suggest that the two are different exponents of the same category. The core function of an auxiliary is to mark tense – as we see from the fact that the present/past tense distinction in sentences such as *He is/was lying* is marked by use of the present tense auxiliary *is* or the past tense auxiliary *was*. Let us therefore assume that finite auxiliaries and infinitival *to* both belong to the category T of Tense-marker and differ only in that auxiliaries are *finite* (and so are overtly inflected for the past/non-past distinction), but infinitival *to* is *non-finite* (and so is not inflected for the past/non-past distinction).

After this brief digression about the status of infinitival *to*, let's return to consider the structure of speaker B's utterance *to reduce taxes* in (254). This is an infinitive phrase formed by merging the infinitival tense particle *to* with the verb phrase *to reduce taxes*. Using T as a convenient abbreviation for infinitival tense particle and TP as an abbreviation for infinitival tense phrase, we can say

that the phrase *to reduce taxes* is a TP formed by merging the infinitival tense particle (T) *to* with the verb phrase (VP) *reduce taxes* and so has the structure in (258):

(258)



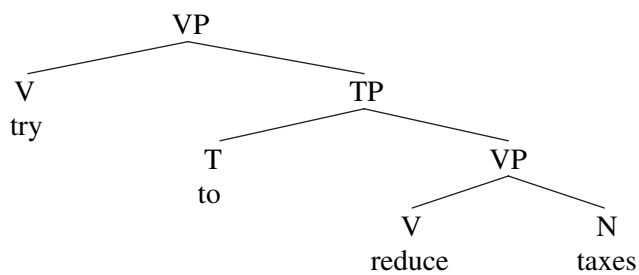
The resulting TP is headed by the T *to* (indicating that the action of reducing taxes is intended to take place at some unspecified time in the future), and the VP *reduce taxes* is the complement of *to*.

What is implicit in our discussion up to this point is the idea that we can build up complex structures by successively merging pairs of categories to form ever larger phrases. For example, by merging the infinitive phrase *to reduce taxes* with the verb *try*, we can form the phrase produced by speaker B in (259):

(259) SPEAKER A: What will the government do?
SPEAKER B: *Try to reduce taxes*.

The resulting phrase *try to reduce taxes* is headed by the verb *try*, as we see from the fact that (like a typical verb phrase) it can be used after the infinitive particle *to* in sentences like those in (250) above (*The government ought to try to reduce taxes*). This being so, the italicised phrase in (259) is a VP which has the structure in (260):

(260)



The head of the overall VP is the verb *try*, and its complement is the TP *to reduce taxes*. Now, (260) illustrates the important property of recursion, which we introduced in section 10, when discussing English compounds. Our analysis is claiming that *try to reduce taxes* is a VP which itself contains another VP, *reduce taxes*, and it is easy to see that further applications of merger will yield a larger VP–*expect to try to reduce taxes* including the VP in (260). We thus see that this simple operation of merger, as a core operation in the theory of grammar, immediately deals with the fact that English, and any other language, has a potentially *infinite* number of sentences (see the Introduction, pp. 3f.).

So far, we have restricted our discussion to the question of how phrases are formed. However, as we saw in the previous section, linguists draw a distinction

between *phrases* and *clauses*. For example, the reply given by speaker B in (261) below is a clause, containing the subject *they* and the predicate *try*:

(261) SPEAKER A: What will the government do?
SPEAKER B: *They will try to reduce taxes*.

An obvious question to ask is how clauses are formed – or, in more concrete terms, what the structure of speaker B's reply is in (261).

As already noted, there are interesting similarities between infinitival *to* and auxiliaries like *will*/*would*, *shall*/*should*, *can*/*could*, *may*/*might*, etc. For example, as illustrated earlier in relation to the sentences in (257), *to* typically occupies the same position in a clause (between subject and verb) as an auxiliary like *will*. Moreover, just as *will* requires after it a verb in the infinitive form (cf. *will show*/**will showing*/**will shown*), so too does infinitival *to* (cf. *to show*/**to showing*/**to shown*). Furthermore, infinitival *to* behaves like a typical auxiliary (e.g. *will*) but unlike a typical verb (e.g. *want*) in allowing ellipsis (i.e. omission) of its complement:

(262) a. I don't really want to go to the dentist's, but I know I eventually *will*
b. I know I should go to the dentist's, but I just don't want *to*
c. *I know I should go to the dentist's, but I just don't *want*

The fact that *to* patterns like the auxiliary *will* in several respects strengthens the case for regarding them as belonging to the same category. As noted earlier, since it is a core property of auxiliaries that they mark tense, and since a clause containing infinitival *to* often has future time reference, it has been suggested in much recent work that the two are different exponents of the category of T(ense). (It should be noted, however, that in work in the 1980s, auxiliaries and infinitival *to* were taken to belong to the category INFL/inflection, the general idea behind this label being that finite auxiliaries inflect for tense/agreement, and infinitival *to* serves much the same function in English as do infinitive inflections in languages like Italian: however, we will adopt the more recent T analysis here – see also section 10, p. 134.)

Having established that auxiliaries like *will* are exponents of the category T, let's now return to the question of how clauses like that produced by speaker B in (261) are formed. The simplest assumption (and hence the most desirable theoretically) is to posit that clauses are formed by exactly the same binary (i.e. pairwise) merger operation which leads to the formation of phrases. This being so, we can suggest that the clause *They will try to reduce taxes* is formed by first merging the T-auxiliary *will* with the verb phrase *try to reduce taxes* to form the expression *will try to reduce taxes*, and then merging this larger expression with the pronoun *they* to form the complete clause *They will try to reduce taxes*.

At first sight, it might seem plausible to claim that the expression *will try to reduce taxes* is a TP (i.e. tensed auxiliary phrase), and that when combined with the pronoun *they* it forms a pronoun phrase. But this can't be right, since it would

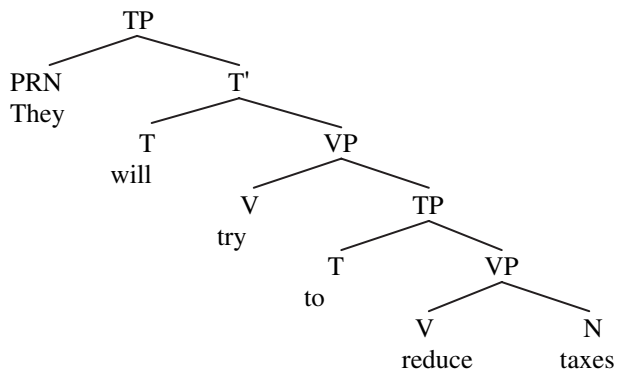
provide us with no obvious way of explaining why it is ungrammatical for speaker B to reply as in (263) below:

(263) SPEAKER A: What will the government do?
SPEAKER B: **Will try to reduce taxes.*

If complete phrases can be used to answer questions, and if *will try to reduce taxes* is a complete TP, how come it can't be used to answer A's question in (263)?

The answer which we shall give to this question here is that *will try to reduce taxes* is an *incomplete* phrase. Why? Because auxiliaries require a subject, and the auxiliary *will* doesn't have a subject in (263). More specifically, let's assume that when we merge a T-auxiliary with a verb phrase (VP), we form an incomplete tense phrase which is often denoted $\overline{\text{T}}$, pronounced T-bar. For typographical convenience, we shall follow many authors in using T′ (although readers should bear in mind that this too is pronounced T-baṛ!) and that only when we merge the relevant T-auxiliary with its subject do we form a TP (i.e. a complete tense phrase). Given these assumptions, the clause *They will try to reduce taxes* will have the structure in (264):

(264)



In a structure such as (264), the position occupied by the pronoun (PRN) *they* which serves as the subject of *will* is said to be the **specifier** position within TP. It is important to be clear that the term *specifier* (like the terms *subject* and *complement*) is the label of a grammatical *function* and not a grammatical *category*; thus, in (264) the function of specifier is fulfilled by the PRN (i.e. word belonging to the PRN category of pronoun) *they*. A specifier precedes the head of the phrase containing it, whereas a complement follows its head: so, the PRN *they* precedes *will* in (264) because it is the specifier (and also subject) of *will*, whereas the VP *try to reduce taxes* follows *will* because it is the complement of *will*; likewise in a determiner phrase (DP) such as *such a pity*, *such* is the specifier of (and so precedes) the head determiner (D) *a*, and *pity* is the complement of (and so follows) *a* – for discussion of DP structures, see section 20; similarly, in a prepositional phrase (PP) such as *right inside it*, *right* is the specifier of (and so precedes) the preposition (P) *inside* and *it* is the complement of (and so follows) *inside*.

27 Using sentences

In our introduction (pp. 2–3), we drew a fundamental distinction between competence and performance, identifying the latter with the perception and production of speech and other forms of language, and suggesting that its study falls in the domain of psycholinguistics. We have now seen ample illustration of what this study involves and the insights that it can provide. In the introduction to part III of the book (section 17), we briefly alluded to conversations and other extended sorts of text, and a moment's thought should be sufficient to persuade us that here we meet a rather different, more familiar, notion of performance that we all indulge in on a daily basis without being subject to the psycholinguist's experimental investigations. We all *use* language in a wide range of communicative contexts, and it would be remiss of us not to include discussion of some of the issues that arise if we adopt this broader perspective in an introductory book of this nature. In what follows, we introduce some of the core ideas in **pragmatics**, and we begin by looking at one rather obvious way in which context plays an important role in understanding aspects of language.

Context and pronouns

In sections 12 and 23, we introduced some of the key notions of meaning or semantics, including that of the *truth conditions* for a sentence: a sentence such as *every sheep snores* is true if and only if for every one of the sheep under consideration it is true that it snores, otherwise the sentence is false. Truth conditions are seen by many as providing the core of the meaning of a sentence, but the examples we used to illustrate this notion earlier were carefully chosen so as to avoid any explicit reference to the **context** in which a sentence might be used. In many cases, however, it is easy to see that we can begin to formulate appropriate truth conditions only by taking this context into account.

Suppose that John owns a cat, but Mary doesn't. If John utters (502), then his utterance will be true, but an utterance of the same sentence by Mary will express a falsehood:

(502) I own a cat

The reason for this shift in truth value is clear: the pronoun *I* refers to whoever happens to utter the sentence, and we can make this explicit in terms of truth conditions as in (503):

(503) a. Where the speaker of 'I own a cat' is John, 'I own a cat' is true if and only if John owns a cat.
b. Where the speaker of 'I own a cat' is Mary, 'I own a cat' is true if and only if Mary owns a cat.

Another way of thinking about this is to draw a distinction between a **sentence**, an **utterance** and a **proposition**. A sentence is a (grammatical) string of words. When a sentence is spoken or written on an occasion, we have an utterance (of that sentence). Sentences are abstract objects which exist outside of time and place. Utterances are concrete manifestations of sentences and each utterance is unique. A proposition is the meaning expressed by (some utterance) of the sentence. To get a complete specification of the proposition expressed by an utterance of a sentence containing a pronoun, such as (502), we need to take into account an aspect of the context, namely, the identity of the person making the utterance. This is summed up in (504) for the example introduced above:

(504)

Utterance	Sentence	Proposition	Truth-value
1. Mary: 'I own a cat'	I own a cat	Mary owns a cat	False
2. John: 'I own a cat'	I own a cat	John owns a cat	True

Words like personal pronouns, which require context for their interpretation, are known as **deictic** words (from the Ancient Greek word meaning 'point'). This term itself originates with another type of deictic word, the demonstratives *this* 'near to the speaker' and *that* 'distant from the speaker', and it is noteworthy that we often accompany such words with a pointing gesture. Some languages (for instance, Spanish) have a third demonstrative which is used to refer to an entity that is near the addressee and other languages have more complex systems. Inflectional categories can be deictic too. For instance, the tense category is sensitive to the context of utterance: if John says 'Mary is writing a letter' when in fact she has already finished, then the proposition expressed by John's utterance of that sentence is false; if, however, she were still writing the letter, the expressed proposition would be true. Equally, if John had said 'Mary was writing a letter' in circumstances where she had finished, the expressed proposition would have been true (***exercises 1*** and ***2***).

Topic/focus

A quite distinct sense in which context is important in understanding the structure of language and the interpretation of sentences in use is illustrated in (505):

(505) SPEAKER A: Who has written two books on linguistics?
SPEAKER B: MARY has written two books on linguistics.

The capital letters on MARY indicate that this word is pronounced with more emphasis: it's slightly louder and relatively longer than the accompanying words

and it starts at high pitch and falls rapidly to low pitch. In fact, the rest of B's utterance in (505) is completely redundant and could easily be omitted. Now consider (506), a slight variant on (505) in which speaker B emphasises a different word:

(506) SPEAKER A: Who has written two new books on linguistics?
SPEAKER B: ?Mary has written TWO books on linguistics.

Speaker B's contribution to (506) sounds very odd (indicated by the preceding question mark) and might be seen as signalling B's mishearing or misunderstanding of what A has said.

The reason for the oddness of B's utterance in (506) is intuitively clear: A and B both know that the conversation is about two books on linguistics and A wants to know the author of two such books. But the reply in (506) makes it sound as if A needs to know the precise number of books on linguistics that Mary has written. Of course, B's response in (506) would be a perfectly fine answer to the question in (507):

(507) How many books on linguistics has Mary written?

Phenomena of this sort are often studied under the heading of **information structure**. We can say that B's utterance in (505) is articulated into two components: MARY, which is **new information**, and the rest of the sentence, which is **old information** or **given information**. We can make this more explicit by 'translating' (505) into the representation in (508):

(508) SPEAKER A: Given: x has written two books on linguistics, x = ?
SPEAKER B: Given: x has written two books on linguistics, x = MARY

In (508), we use a variable *x* to represent unknown information (notice that this is a somewhat different use from that introduced in section 23), and B's reply is seen as providing a value for that unknown. Clearly, the 'given' component comprises old information and is the part that can be safely omitted. Similarly, the question in (507) can be represented as in (509):

(509) Given: Mary has written x number of books on linguistics, x = ?

We can now see what is wrong with the dialogue in (506). The answer provided by B is supplying a value for the wrong variable. (Check that you understand exactly how this works by translating the ill-formed dialogue in 506 and comparing it with an appropriate dialogue based on 507.)

Above, we've illustrated the contrast between given (old) and new information using the traditional device of question–answer pairs, sometimes called the 'commutation test' for given/new information. However, the question part can remain implicit and this is illustrated in (510):

(510) Hey, I've just heard that Mary has written ANOTHER book on linguistics.

An utterance of (510), in which *another* bears the main emphasis, is only felicitous if the speaker believes that the addressee already knows that Mary has

written at least one book on linguistics. For this reason, the 'given' portions of the representations in (508) and (509) are often known as the **presupposition** (note that this term has a number of other, slightly different, uses, as we shall see below).

By varying the position of emphasis in a sentence such as (510), we can vary the articulation into given/new information. In principle, *any* of the content words of a sentence can be emphasised in this way and thereby appropriately convey new information. However, we can emphasise more than just individual words. Consider (511):

(511) SPEAKER A: What topic has Mary written a new book on?
SPEAKER B: (Mary has written a new book on) LINGUISTICS.

The information structure appropriate for (511) is essentially the same as that for (505), except that $x =$ *linguistics*, as indicated by (512).

(512) SPEAKER A: Given: Mary has written a book on x, x = ?
SPEAKER B: Given: Mary has written a book on x, x = linguistics

But now consider (513):

(513) SPEAKER A: What has Mary written?
SPEAKER B: (Mary has written) a new book on LINGUISTICS.

Here, the new information is conveyed by the whole phrase *a new book on linguistics*. The placement of emphasis in B's utterance in (513) is exactly the same as in B's utterance in (511), but the extent of the new information in (513) is the whole phrase, not just a single word. In fact, this extent can constitute a whole utterance, as illustrated in (514):

(514) Hey, guess what! Mary has written a book on LINGUISTICS

Closely related to the notion of given information is the notion of **topic** (for the syntactic notion of topicalisation, see section 21). Broadly speaking, the topic of a sentence (or utterance of a sentence) is what the sentence is about. In English, identity of the topic tends to be implicit, though we can sometimes explicitly announce a topic, as in (515):

(515) As for Mary, she's written a book on linguistics

We can divide a sentence such as (515) into two parts, the topic, *Mary* and what we say about Mary, the **comment**:

(516) TOPIC: Mary
COMMENT: has written a book on linguistics

The division represented in (516) is known as the **topic–comment articulation**.

In some languages, marking of the topic is an obligatory part of the grammar and there are various devices for achieving this. A well-known example is that of Japanese, which uses a particle, *wa*, after a phrase to mark that phrase as the topic (in 517, *o* is similar to an accusative case suffix in languages like Turkish and Latin, as described in section 11):

(517) Mary wa gengokaku natsu ite no hon o kaita
Mary WA linguistics about book ACC wrote
'Mary wrote a book on linguistics'

It might look rather as though *wa* marks *Mary* as the subject of (517), but this is misleading. In Japanese, it's perfectly possible to omit a subject DP if the identity of the subject can be recovered from the context (see the discussion of null subjects in sections 22 and 24). The English sentence in (515) is therefore a reasonably accurate translation of (517). Japanese, like many Asian languages, is often referred to as a 'topic-centred' language, as opposed to languages such as English which are 'subject-centred'. This is because languages such as Japanese require a sentence to have an articulation into topic and comment, though they don't require that there be any grammatical relation between the topic and the rest of the sentence. This can be illustrated by a famous Japanese sentence (518) (here *ga* is viewed as a subject marker, and it is sometimes regarded as a nominative case suffix):

(518) zoo wa hana ga nagai
elephant WA nose SUBJ long
'As for an elephant, nose is long' or more idiomatically, 'Elephants have long noses'

It's very difficult to convey the true structure of a sentence such as (518) in a language like English, because English very much prefers there to be some grammatical relation between the topic and some element in the comment. Other languages don't impose such a restriction, however (***exercise 3***).

Presuppositions

In our discussion of given or old information above, we pointed out that such information is sometimes identified with presuppositions. We shall now introduce a different, though related, use of this terminology.

In section 12, we encountered the notion *entailment* in connection with such examples as (519):

(519) a. Tom managed to finish the book
b. Tom finished the book
c. Tom didn't manage to finish the book
d. Tom didn't finish the book

Here, (519a) entails (519b) – in any circumstances in which (519a) is true, (519b) is also true. Similarly, (519c) entails (519d). However, rather different entailment relationships from those we see in (519) are also possible. Consider the examples in (520):

(520) a. Tom stopped reading the book
b. Tom didn't stop reading the book
c. Tom was reading the book earlier

Here, if (520a) is true, then (520c) must also be true, i.e. (520a) entails (520c). But it might also be suggested that (520b), the negation of (520a), entails (520c), and this is a very different pattern to what we see in (519). The constellation of entailments we have just described for (520) illustrates the relation of **logical presupposition**, and a general definition of this appears in (521):

(521) A sentence S_1 logically presupposes a sentences S_2 if and only if:
  (a) S_1 entails S_2
  (b) the negation of S_1 entails S_2

Now, supposing that (520a) logically presupposes (520c), we can ask what the truth-value of (520a) is in circumstances where (520c) is false. It is easy to see that in such circumstances, (520a) is *neither true nor false*, since (520c) is entailed by both (520a) and its negation (520b). If (520a) were true, then (520c) would be true; if (520a) were false, then (520b), the negation of (520a), would be true and (520c) would also be true. But we are supposing that (520c) is false, and it follows that (520a) can be neither true nor false in these circumstances.

Are there cases of logical presupposition, as defined above, in language? The commonly held view is that there are not because, in general, sentences such as (520b) do *not* entail sentences like (520c). Notice that if this entailment obtained, it should not be possible for (520c) to be false in circumstances where (520b) is true. But this requires that (522) is a contradiction:

(522) Tom didn't stop reading the book; in fact, he never even started it

And it is clear, we maintain, that (522) is *not* contradictory.

Suppose, then, that *logical* presupposition is not a useful descriptive notion in the study of natural language. The fact remains that there is *something* odd about an utterance of (520b) in circumstances where the truth of (520c) is not assumed. This gives rise to a somewhat looser notion of presupposition, sometimes called **pragmatic presupposition**, where the truth of a presupposed proposition must *normally* be assumed or taken for granted if a presupposing proposition is to be readily intelligible. Thus, we can now maintain that (520b) (along with 520a) pragmatically presupposes (520c), since someone uttering (520b) would normally be taking the truth of (520c) for granted. From this perspective, what is unusual about (522) is that it makes it clear that the normal situation governing the utterance of the first clause is not in place.

The notion of pragmatic presupposition, understood as above, is prevalent in language use, extending to function words and even entire constructions. Thus, consider (523):

(523) Harriet fed the cat

We can readily see that an utterance of this sentence would be odd (infelicitous) if Harriet owned more than one cat (and the addressee knew she did), and on this basis we may wish to suggest that use of such phrases as *the X* is associated with the pragmatic presupposition that speaker and addressee are familiar with only one

X in the circumstances. Obviously, we would not wish to say, however, that a multiplicity of Harriet's cats suffices to make an utterance of (523) false.

Likewise, (524) would be infelicitous if Harriet didn't actually feed (any of) the cats, even if she had several cats and one of them was a ginger tom.

(524) One of the cats that Harriet fed was a ginger tom

This is because the expression *one of the cats that Harriet fed* in (524) presupposes that Harriet fed at least two cats. If we negate (524) and consider *One of the cats that Harriet fed wasn't a ginger tom*, this presupposition remains.

The type of presupposition we have been considering here is independent of information structure, being linked instead to the meaning of individual words and constructions. It is important to keep these different senses of the term in mind in considering accounts of sentence use.

Doing things with words

Around the middle of the twentieth century, the Oxford philosopher John Austin made a simple but very important point about examples such as (525) and (526):

(525) I want to read your new book

(526) I promise to read your new book

In uttering (525), speakers are simply registering a desire, while in uttering (526), they are committing themselves to doing something, namely reading the book. Just uttering (526) in appropriate circumstances constitutes a promise, and Austin designated examples such as (526) **performatives**. Further examples appear in (527), with the **performative verbs** in italics:

(527) a. I *order* you to complete the exercise
b. I *assure* you of my loyalty
c. I hereby *conclude* that the earth is flat

Austin's work sparked interest in the way that we can use language to perform certain types of act, **speech acts**.

English, like many languages, tends to distinguish certain broad classes of speech act in its grammatical system, **mood** being the traditional term for designating the relevant grammatical types. Thus, we have the correspondences set out in (528):

(528)

		Speech act	Mood
a.	John has read Mary's book	Statement	Declarative
b.	Read Mary's book	Command	Imperative
c.	Has John read Mary's book?	Question	Interrogative

However, there are other types of speech act that don't correspond to grammaticalised categories of this sort, for instance, suggestions, illustrated by (529):

(529) Why don't you read Mary's book?

Of course, (529) *can* be used to ask a question, but forms such as this are much more commonly used to make suggestions. Indeed, mismatches between the speech-act types in (528) and the standard way of expressing such speech acts are common, and this was one of the first topics in ancient and medieval linguistics (studied under the heading of 'rhetoric'). Here are some simple examples:

(530) Since when has John been able to speak Japanese?
Meaning: 'John has never been able to speak Japanese'
Type: Interrogative Mood used to make a statement – a rhetorical question

(531) Could you make a little less noise in there?
Meaning: 'Make less noise in there'
Type: Interrogative Mood used to issue a command

(532) The hat stand goes by the front door (to furniture removers)
Meaning: 'Put the hat stand by the front door'
Type: Declarative Mood used to issue a command

(533) I'm afraid I don't know your name
Meaning: 'What's your name?'
Type: Declarative Mood used to ask a question

There are also more complex instances of mismatch between form and function, as in (534), where the imperative mood is typically interpreted as a conditional statement, 'If you do that once more, I will hit you', and certainly not as an imperative:

(534) Do that once more and I'll hit you!

Speech acts of this sort in which the usual interpretation expected in conversation is at odds with the literal interpretation are often called **indirect speech acts**. Thus, to take an example, the interrogative form in (531) *can* be used literally to perform the direct speech act of asking a question but typically will be used to perform the indirect speech act of issuing a command

The logic of conversation

Consider the following four examples of language in use:

(535) a. We've had the most wonderful weather!
(written on a postcard reporting on a vacation marred by continual wind, rain and storms):

b. The weather could have been better
(written on postcard reporting the same vacation as in a):

c. SPEAKER A: Was the President lying?
SPEAKER B: Is the Pope a Catholic?

d. SPEAKER A (a journalist): Do you think the President was telling the truth?
SPEAKER B
(a government official): I have no evidence which would demonstrate conclusively that he was not telling the truth.

These examples are all a little odd in some way if taken at face value. The writer in (535a) expresses a straightforward falsehood. But is it a lie? That depends on the context. If the writer is trying to put a brave face on a bad vacation decision, it could be a deliberate attempt to mislead by telling an untruth. On the other hand, if the writer knows that the recipient of the postcard has been following the weather forecasts, it will be properly interpreted as ironic. In (535b), the writer is expressing something that, at first blush, appears to be completely uninformative. The weather 'could have been better' most days. As for (535c), we might ask what relationship there could possibly be between the President's probity and the religious affiliation of the Holy Father. And in (527d), did the official accuse the President of lying?

In a boring and logical world (Mr Spock's Vulcan world perhaps), we should replace the examples in (535) with those in (536):

(536) a. We've had very bad weather
b. We've had very bad weather
c SPEAKER A: Was the President lying?
SPEAKER B: Yes.
d. SPEAKER A (a journalist): Do you think the President was telling the truth?
SPEAKER B (official): No.

However, given the right context, the examples in (535) get across the same message as those in (536), only more vividly. How is this possible?

In the 1960s, the philosopher Paul Grice drew attention to examples like those in (535) and argued that ordinary conversation must be governed by a **Co-operative Principle** according to which interlocutors are required to be helpful to each other. This rules out lying (even white lies) and other deliberate attempts to mislead, as well as boasting, false modesty and so on. Grice maintained that the overriding Co-operative Principle is reflected by conversationalists' adherence to four **conversational maxims** governing the way we interact in conversation. These maxims are as in (537):

(537) a. **Maxim of Quality**: try to make your contribution one that is true, specifically
(i) do not say what you believe to be false;
(ii) do not say that for which you lack adequate evidence.
b. **Maxim of Quantity**:
(i) make your contribution as informative as is required for the current purposes of the exchange;
(ii) do not make your contribution more informative than is required.
c. **Maxim of Relation**: make your contributions relevant.

d. **Maxim of Manner**: be perspicuous, and specifically
(i) avoid obscurity;
(ii) avoid ambiguity;
(iii) be brief;
(iv) be orderly.

The point of the Co-operative Principle and the maxims is not to tell people how to behave, of course. The point is that speakers are permitted to *flout* the maxims in order to convey something over and above the literal meaning of their utterance. The example in (535a), in circumstances where the recipient of the postcard is assumed to be familiar with the bad weather, flouts the Maxim of Quality, and the consequence is that the intended meaning is the opposite of the literal meaning giving the effect of irony. In example (535b), the writer flouts (i) of the Maxim of Quantity, giving rise to understatement or litotes. In (535c), speaker B's response to A's query appears to be a completely irrelevant question, violating the Maxim of Relation. But *via* this flouting – an *obvious* violation – B invites A to conclude that the President was lying just as surely as the Pope is a Catholic. Finally, (535d) relies for its effect on the fact that the official's prolixity flouts the Maxim of Manner, and this again invites the addressee to seek an interpretation beyond the literal meaning of what B says.

It is useful to have some way of referring to the kinds of proposition that a speaker intends to convey in this implicit fashion, and the standard term for this is **conversational implicature**. The implicature is conversational because it only arises in an appropriate conversational context. In different contexts, the relevant utterances in (535) might be given their literal interpretations. For instance, if the official speaking in (535d) had just presided over an exhaustive and independent inquiry into the President's testimony and wished to convince the audience that the President had in fact (despite all the rumours) told the truth, the utterance in (535d) might be used to support the President (***exercises 4*** and ***5***).

Context and coherence

Earlier in this section, we saw how the context of utterance is important for determining the interpretation of deictic words such as personal pronouns. Moreover, it should be clear that context is crucial in the operation of Gricean maxims. A graphic illustration of the importance of context is illustrated by the following interchange which took place between one of the authors (A) and a colleague (D):

(538) D: Hmph! If I'd known it was going to be fish, I'd have put in my contact lenses.
A: You don't like kippers, then.

In (538), A has interpreted D's utterance in exactly the manner intended by D, because the context provided ample clues. Actually, A then continued 'Do you realise how incomprehensible your last statement would sound out of context?' The contextual knowledge needed to interpret D's utterance is that D was late

arriving for breakfast at a conference and had not put in his contact lenses in order to save time, only to discover that the only food left was something he didn't like. It will probably not surprise readers to learn that we have yet to find anyone who can construct this context without a lot of hints.

One reaction to an interaction like that in (538) is that it is incoherent. A's response does not seem to fit D's utterance. We feel that the utterances that make up a discourse should be coherent, though it's rather difficult to define exactly what we mean by that. In (539), we see another (more famous) example, which in its original form, was presented by the American sociologist, Harvey Sacks:

(539) MRS SMITH: I have a fourteen-year-old son.
MR JONES: Well, that's all right.
MRS SMITH: I also have a dog.
MR JONES: Oh I'm sorry.

This discourse seems hopelessly incoherent, until we learn that Mrs Smith is trying to rent an apartment and Mr Jones is a landlord.

Various groups of linguists, psychologists, philosophers, computer scientists and others have tried to provide a definition of textual or discourse **coherence**, and it seems that the essential feature of this property refers to what speakers and hearers believe and what they can sensibly infer. In the dialogue in (539), both participants understood perfectly well that Mrs Smith was looking to rent an apartment from Mr Jones and so Mr Jones's final response would be taken to mean something along the lines of 'I can't rent the apartment to you'. But this comes about as a result of our knowledge of the restrictions on property rentals. Notice that this sense of 'context' is more general than that we referred to in our discussion of the interpretation of deictic expressions. All that was relevant in the earlier case was readily identifiable factors such as the identity of the speaker and the time of utterance. Here, however, context seems to be embracing the full set of beliefs that speakers and hearers have and inferences that they might make on the basis of those beliefs. Importantly, however, when computing the full meaning of a discourse, we obviously don't try to deploy *everything* we know or believe about the world or all the possible inferences that we could draw. We only make use of beliefs and inferences which are relevant to us, and, as we have seen, the notion of 'relevance' is appealed to in one of Grice's maxims. Now, Grice himself devoted little time to his Maxim of Relation, but over the last twenty years, Dan Sperber and Deirdre Wilson have argued that relevance, when properly characterised, is the key to understanding coherence and utterance interpretation generally, and we shall now introduce this perspective.

Relevance Theory

The least clear of Grice's maxims is that of Relation: what does it mean for an utterance to be relevant? Utterances are typically very uninformative out of

context and can be interpreted in all sorts of different ways. For instance, if someone says (540), do they mean the power cut happened a few minutes ago, yesterday, last year? Was it here in the speaker's neighbourhood, or the hearer's neighbourhood, or place of work, or the airport at the other side of the world to which the hearer expects to be flying?

(540) There's been a power cut

However, the fact is that we use such simple utterances all the time and they can be very informative given the right context.

A central idea of Relevance Theory is that an utterance is relevant to a hearer when the hearer can gain *positive cognitive effects* from that utterance, that is some useful information. There are two aspects to this. Firstly, the most relevant interpretation of an utterance must lead to inferences that the hearer would not otherwise have been able to make. Secondly, these inferences must be accessible to the hearer in the sense that it must be possible to draw those inferences in a short space of time with relatively little effort. If the inferential process requires *too much effort*, then the inferences cannot be drawn.

Relevance Theory maintains that speakers comply with a **Communicative Principle of Relevance**, which states that when someone communicates in some way, that communicative act brings with it a guarantee of its own optimal relevance. A hearer, on the other hand, computes relevance by selecting the most obvious (accessible) interpretation, and this process stops when the hearer achieves some kind of relevant interpretation (or gives up). For instance, suppose Mary is working at her computer one sunny afternoon and the screen suddenly goes blank for no apparent reason. John then comes into the room and utters (540). The Communicative Principle of Relevance leads Mary to assume that John's utterance is maximally relevant to her, and she will therefore assume that the power cut has affected her house. She will deploy her knowledge of the world to conclude that such a power cut would affect the operation of the computer and, in fact, would account for the machine's failure. This would be very relevant information to her. For instance, it would mean she wouldn't waste time trying to re-boot the machine. Of course, speakers and hearers can make mistakes. Suppose John is very anxious about his impending flight to New York and has just learned that the airport he is to fly to has suffered a power cut, possibly jeopardising his visit. Then his utterance of (540) will have entirely different intended effects, and Mary is highly likely to be misled.

Relevance theoreticians argue that the other three Gricean maxims follow from the Principle of Relevance. Recall that the maxims have their communicative effects because hearers recognise when they are being flouted. Thus, B's response in (535c) is obviously irrelevant in the context of A's question. Yet, B's utterance is supposed to come with a guarantee of its own optimal relevance. Apparently, the maximally relevant answer to A's question would be 'Yes', and this, in fact, is the only sensible answer to B's counter-question. Why ask such a question if B is observing the Principle of Relevance? Only in order to suggest to A that the

answer 'Yes' applies to A's question, *and*, because it requires additional processing over and above that necessary for dealing with 'Yes', to impart *further (relevant)* information to A. In this case, we might suppose that is in the form of the additional suggestion that the answer is pretty obvious and doesn't brook contradiction (a way of emphasising B's confidence in his own response). Relevance-Theoretic considerations can also easily account for discourses such as (539), which aren't directly amenable to an analysis solely in terms of the flouting of maxims.

Central to Relevance Theory is the idea that we perform inferences all the time in order to understand utterances, and it is interesting that languages have special grammatical devices that can be seen as facilitating this inferencing. Thus, many languages have a grammatical category (for instance a set of verb forms) which indicates that the speaker didn't witness the event they are reporting. Such devices are called **evidentials**. And probably all languages have **conversational particles** which guide the hearer in interpreting utterances. One such particle in English is *after all*. What does this particle mean in (541)?

(541) Natasha can do the Russian interpreting. After all, she's from Moscow.

A speaker would normally use *after all* in a sentence such as (541) only if they believed that the hearer already knew the content of the proposition which *after all* introduces. This is clearly seen in (542):

(542) We MUST go out somewhere nice tonight, after all it is your birthday

It's hardly likely that the speaker would use (542) to *inform* the hearer that it was his or her birthday (or even to remind the hearer of this fact).

But why should anyone tell the hearer something they already obviously know? In particular, how can such an utterance ever be relevant to the hearer (in any sense, but especially in the technical sense of Relevance Theory)? The answer is that *after all* serves to tell the hearer that the speaker believes that this (shared) fact provides crucial evidence to back up what the speaker has just claimed. The fact that the proposition which is introduced by *after all* is presented as unequivocal shared knowledge therefore makes it difficult for the hearer to disagree. As a result, even an apparently wholly redundant utterance can be relevant (***exercises 6***, *7* and ***8***).

Taking turns

So far, our discussion in this section has involved only very short stretches of speech, and in general we've been able to make our points using constructed examples. However, there is another aspect to the act of talking which isn't covered by the perspective we gain from pragmatics. When we listen to a group of people in conversation, we generally find that the talk is *organised* in a rather efficient fashion. And yet conversation usually involves at least two people who may each want to speak, and who don't necessarily want to listen. How then

do people negotiate who is to 'have the floor' and when that privilege can be ceded to another participant in the conversation? It turns out that there is a host of more or less subtle linguistic signals that we use for this purpose. In addition, talkers often need to convey their attitude to the conversation without explicitly discussing it. For instance, there may be topics which a talker doesn't want to discuss in detail, or alternatively there may be topics which the hearer wishes to know more about. Languages have a variety of means to allow talkers to give each other information of this kind. The study of these various devices is conducted under the rubric of **Conversation Analysis (CA)**.

CA originated in the work of social psychologists and sociologists and for a long time was poorly integrated into the kinds of mainstream linguistics we have been discussing in this book. Even studies of pragmatics tended to ignore CA. However, recently specialists in a variety of areas of linguistics, including phonetics, pragmatics and language disorders, have been looking in detail at the way talk is managed (or mismanaged).

The prototypical, and in some sense simplest, kinds of interchange are paired utterances, such as pairs consisting of question–answer or offer–acceptance, but including more or less formulaic pairs such as greeting–greeting. Such pairs are called **adjacency pairs**. The key fact about such pairs is that the first utterance virtually demands a response. In other kinds of talk, however, it may not always be so obvious who should talk and for how long. To manage the progress of talk we need to manage who takes a turn at talking at various stages; in other words, we need to understand the mechanics of **turn-taking**. Talkers don't take up their turn at random places. Rather, there are **transition relevance places** (TRPs), that is, places where a second person can take up the talk. One obvious TRP is when there is a noticeable silence, but this is not the only type. Whenever such a place occurs in the talk, the current speaker has the option of selecting the next talker. If the speaker doesn't make a specific selection, then anyone can take over. If no one takes over, the speaker has the option of continuing.

One of the implications of this is that silence can be very informative. In the sequence shown in (543), speaker A offers an invitation to B, who doesn't reply at once (the numbers in parentheses designate the length of pauses in seconds):

(543) SPEAKER A: Would you like to meet now, (0.3)
SPEAKER A: [or late-
SPEAKER B: [Well, not just now. (0.1) Maybe in about ten minutes?

A's question invites an immediate response, which isn't forthcoming. In other words, B fails to take his or her turn. Therefore, A tries again with a modified version of the original invitation. The square brackets in A's second contribution and that of B indicate that A and B start talking simultaneously. This means that before B has had the chance to hear A's alternative offer, he or she makes explicit the implication of the silence after A's first turn.

A second feature of the interaction in (543) is B's use of the conversational particle *well*. Words such as this have been studied in some detail by pragmaticians

and conversation analysts. In some cases, their function is to indicate to the hearer how to process the utterance (we saw this above in our discussion of *after all*). In other cases, however, a particle may be used to indicate the speaker's attitude to some aspect of the conversation. A particle that has been studied in some detail is *oh*. This particle has a number of uses, and its precise function depends on a variety of factors, especially intonation. However, when pronounced with a high falling intonation, it generally indicates that the speaker acknowledges receipt of a piece of news. In (544), for instance, speaker B is effectively acknowledging that she didn't know before about Mary's new job:

(544) SPEAKER A: Mary's got a new job.
SPEAKER B: Oh!

On the other hand, in (545), speaker B uses a different conversational particle, *that's right*, and thereby is signalling that Mary's having got a new job is already known. In CA, this implication is known as a claim to epistemic priority (roughly, 'I got there first, actually'):

(545) SPEAKER A: Mary's got a new job.
SPEAKER B: That's right!

By using conversational particles such as *that's right* (rather than *oh*), speakers can try to manipulate their position in the conversation and make it less easy for others to disagree with them (as we saw in the case of *after all*) (***exercise 9***).

Pragmatic theories such as that of Grice or Sperber and Wilson's Relevance Theory don't have anything to say about such conversational practices as turn-taking or establishing prior rights to knowledge. On the other hand, CA doesn't deal with the matters of inference and conversational implicatures in the same degree of detail as, say, Relevance Theory. While pragmaticians and conversational analysts would not all share this optimism, taken together the pragmatic approach and the CA approach can be thought of as complementing each other and providing a rich model of the way that talkers interact with each other, a fundamental aspect of language use.

Exercises

1. Taking (503) as a model, write out explicit truth conditions for the following sentences
   (a) You own a cat
   (b) He owns a cat
   (c) She owns a cat
   (d) They own a cat
   (e) We own a cat
   (f) That girl (over there) owns a cat
   (g) These girls own a cat