LINGUISTIC SEMANTICS

An Introduction

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PART 2

Lexical meaning

CHAPTER 2

Words as meaningful units

2.0 INTRODUCTION

As we saw in the preceding chapter, it is generally agreed that the words, phrases and sentences of natural languages have meaning, that sentences are composed of words (and phrases), and that the meaning of a sentence is the product of the words (and phrases) of which it is composed.

But what is a word? And do all natural languages, in fact, have words? These questions are not as easy to answer as they might appear to be at first sight. One reason is that the term 'word' is ambiguous, both in everyday usage and also as it is employed technically by linguists. Words may be considered purely as **forms**, whether spoken or written, or, alternatively, as composite **expressions**, which combine form and meaning. To complicate matters further, the term 'form' is employed in several different, though related, senses in linguistics. One of my principal aims in this chapter is to sort out these different senses of 'word' and 'form' and to establish notational and terminological conventions for avoiding ambiguity and confusion.

Another reason why it is not as easy to say whether something is or is not a word as non-linguists might think – or to say whether all natural languages have words – is that several different criteria come into play in the definition of words, both as forms and as expressions, and these criteria are often in conflict. Moreover, some of the criteria employed by linguists, taken separately, are such that they do not sharply divide words from non-words.

In this book, we are concerned primarily with words as expressions: i.e., as composite units that have both form and meaning (more precisely, as we shall see, as units which have, typically, a set of forms and a set of meanings). Whenever the term 'word' is used without further qualification, this is the sense in which it is to be understood. In fact, as will be explained in this chapter, the term 'word' will generally be used throughout this book, and especially in Part 2, to refer to what may be called, non-technically, dictionary-words (or vocabulary-words): i.e., in the sense in which it is used in the everyday metalanguage when one says, for example, that a comprehensive dictionary of a given language contains, in the ideal, all the words in the vocabulary of that language. In this sense of 'word', all languages do have words.

The technical term that we shall be using for what I have just called dictionary-words is 'lexeme'. The noun 'lexeme' is of course related to the words 'lexical' and 'lexicon'. (We can think of 'lexicon' as having the same meaning as 'vocabulary' or 'dictionary'.) A lexeme is a lexical unit: a unit of the lexicon. The lexical structure of a language is the structure of its lexicon, or vocabulary; and the term 'lexical meaning', which has been used as the title of Part 2, is therefore equivalent to the commonly used, less technical (but ambiguous), term 'word-meaning'. The reasons for extending our metalanguage by introducing the more technical terms 'lexeme' and 'lexical meaning' (in accordance with the principles outlined in section 1.2) will be explained in this chapter. As we shall see, not all words are lexemes and, conversely, not all lexemes are words. We shall also see that, far from being novel or paradoxical, this is something which anyone who consults a conventional dictionary simply takes for granted, without necessarily reflecting upon its implications for semantic (and grammatical) theory.

When we look at words (and phrases) as meaningful units we also have to deal with the fact that, on the one hand, a single form may be combined with several meanings and, on the other, the same meaning may be combined with several word-forms. This fact is well recognized in traditional grammar and lexicography and will be discussed here from a fairly traditional

point of view, in terms of the concepts of **homonymy**, **polysemy** and **synonymy**.

Finally, as far as this chapter is concerned, we shall look at the distinction between lexical and grammatical meaning, which derives from the distinction that is traditionally drawn between the vocabulary of a language and its grammar. The way in which this distinction is developed and formalized will vary according to the particular theoretical framework within which it is elaborated. There will be a major difference, for example, between formulations of the distinctions that operate with a morpheme-based grammar and those that operate with the more traditional word-based grammar (which we are using). But at the relatively elementary level at which we are discussing the question in this book, nothing is seriously affected by the differences between these two different models, or theories, of grammatical structure; and it would be a useful exercise for students who have a sufficient background in grammatical theory, traditional and modern, to check that this is so and to reformulate what I have to say about form and meaning with reference to morphemes (and combinations of morphemes), rather than words.

As to the effect of adopting a model of linguistic analysis which draws the distinction between the vocabulary (or lexicon) and the grammar at a different place from the place at which it is drawn in traditional grammar and lexicography, this too is relatively unimportant in the context of the present book. Adjustments can easily be made by those who are familiar with current developments in grammatical theory. The really important point is that, however one draws the distinction between grammar and vocabulary, in general linguistic theory and in the description of particular languages, the two must be seen as complementary and interdependent. That this is so will be made clear as we move from Part 2 to Part 3.

2.1 FORMS AND EXPRESSIONS

One of the assumptions that was made explicit in Chapter 1 was that the meaning of a sentence depends, in part, upon the

meaning of the words of which it is composed (1.6). This assumption now needs to be considered more carefully. We have already noted that the word 'word' is ambiguous: that words may be considered either as forms or as expressions (1.5). Let us begin then by asking in what sense of 'word' it is true to say that sentences are composed of words.

There are, in fact, two quite different distinctions to be taken into account, as we address this question. It is important not to confuse the one with the other. The first is what the American philosopher C. S. Peirce (1839-1914) referred to as the distinction between words as **tokens** and words as **types**. This is readily explained by means of a simple example. Consider the following sentence:

(1) 'He who laughs last laughs longest'.

From one point of view, it can be said to contain six words: it is six words long. From another point of view, however, it can be said to contain only five words, since two of the words – the third and the fifth (*laughs*) – are identical: they are different tokens (or **instances**) of the same type. Put like this, the notion of type/token identity is not difficult to grasp. And, generally speaking, it is clear enough in everyday life when the term 'word' is to be understood in the one sense rather than the other with respect to Peirce's distinction.

There is, however, a second distinction to be taken into account, which is more relevant to our present concerns. This distinction too may be explained by means of a simple example. How many words are there in the following sentence:

(2) 'If he is right and I am wrong, we are both in trouble'?

Once again, there are two correct answers to the question. But the fact that this is so has nothing to do with the type/token distinction (although it is sometimes confused with it in general works on semantics). It rests upon the difference between words as **forms** and words as **expressions**. There are thirteen forms in the sentence in question, and each of them **instantiates** (is an instance, or token, of) a different type. From this point of view, however, three of the words – *is*, *am*,

and *are* – would traditionally be regarded as different forms of the same word. In one sense of 'word', therefore, sentence (2) is composed of thirteen words; in another, equally common and equally correct, sense of the term, it is composed of only eleven words. Let us express this difference in the meaning of 'word' by saying that the sentence is composed of thirteen **word-forms** and eleven **word-expressions**. It is word-expressions, not word-forms, that are listed and defined in a conventional dictionary. And they are listed, as we saw in Chapter 1, according to an alphabetic ordering of their **citation-forms**: i.e., what are commonly referred to as the **headwords** of dictionary entries (1.5).

In order to assign a meaning to the word-forms of which a sentence is composed, we must be able to identify them, not merely as tokens, or instances, of particular types, but as forms of particular expressions. And tokens of the same type are not necessarily forms of the same expression. For example, in the sentence

(3) 'They have found it impossible to found hospitals or charitable institutions of any kind without breaking the law',

the third and seventh word-tokens (*found*) are tokens of the same type, but not forms of the same expression.

It is the distinction between forms and expressions, rather than the distinction between forms as tokens and forms as types, which I had in mind when I drew attention to the ambiguity of the word 'word'. As I have already mentioned, whenever it is used without further qualification, 'word' will mean "word-expression", rather than "word-form", throughout the present work.

Not all the expressions listed in a dictionary, however, are words. Some of them are what are traditionally called **phrases**; and phrasal expressions, like word-expressions, must be distinguished in principle from the form or forms with which they are put into correspondence by the inflectional rules of the language. For example, 'pass muster' is a phrasal expression, whose forms are *pass muster*, *passes muster*, *passed muster*, etc. It is tokens of these forms that occur in utterances of the language.

The expressions of a language fall into two sets. One set, finite in number, is made up of **lexically simple** expressions:

lexemes. These are the expressions that one would expect to find listed in a dictionary: they are the vocabulary-units of a language, out of which the members of the second set, **lexically composite** expressions, are constructed by means of the grammatical (i.e., syntactic and morphological) rules of the language. In terms of this distinction, 'pass muster' is a lexeme, whereas 'pass the examination' is lexically composite. Most word-expressions, in all languages that have words, are lexically simple. However, in many languages, there are productive (**derivational**) rules for what is traditionally called **word-formation**, which enable their users to construct new word-expressions out of pre-existing lexically simpler expressions. For example, 'politeness' is constructed from the lexically simpler expression, 'polite', by means of a productive rule of English word-formation. Although many conventional dictionaries do in fact list 'politeness' as a vocabulary-unit (i.e., provide for it a separate entry with its own headword and definition), it is unnecessary to do so, since both its meaning and its grammatical properties (as well as its pronunciation) are fully predictable by rule.

Most phrasal expressions, in contrast with word-expressions, are lexically composite. Indeed, all natural languages would appear to contain rules for the construction of an infinite number of lexically composite phrasal expressions. And, as we shall see later, it is an important principle of modern formal semantics that the meaning of all such lexically composite expressions should be systematically determinable on the basis of the meaning of the simpler expressions of which they are composed. Lexically simple phrasal expressions (i.e., phrasal lexemes) include, not only such examples as 'pass muster' mentioned above (which has no corresponding lexically composite homonym formed by productive rules of the language), but also idiomatic phrasal lexemes such as 'red herring', which is formally identical with the lexically composite phrase 'red herring' (formed by the productive rules of the language) meaning "herring which is red". The meaning of the lexically simple, idiomatic, phrase (let us call it 'red herring$_1$'), like that of 'pass muster', but unlike that of the lexically composite, non-idiomatic, phrases 'red herring$_2$'

and 'pass the examination', is not systematically determinable (by rule) from the meaning of its constituent lexemes.

The distinction that has just been drawn between lexically simple expressions (lexemes) and lexically composite expressions is not as straightforward, in practice, as I have made it appear. Just where the distinction is drawn will depend upon the model or theory of grammar with which the linguist is operating. But at whatever point the distinction is drawn between the grammar of a language and its vocabulary (or lexicon), there will always be borderline cases of expressions which can be classified, with equal justification, as lexically simple or lexically composite. But some such distinction is, and must be, drawn in the grammatical and semantic analysis of natural languages.

It is lexemes and lexical meaning that will be at the centre of our attention in this and the next two chapters. But forms, in so far as they are forms of particular lexemes, are also of concern to the semanticist. Different forms of the same lexeme will generally, though not necessarily, differ in meaning: they will share the same **lexical meaning**, but differ in respect of their **grammatical meaning**. For example, the forms *girl* and *girls* have the same lexical meaning (or meanings); but they differ in respect of their grammatical meaning, in that one is the singular form (of a noun of a particular subclass) and the other is the plural form (of a noun of a particular subclass); and the difference between singular forms and plural forms, or – to take another example – the difference between the past, present and future forms of verbs, is semantically relevant: it affects sentence-meaning. The meaning of a sentence, it will be recalled, is determined partly by the meaning of the words (i.e., lexemes) of which it is composed and partly by its grammatical meaning.

As we shall see in Part 3, the relation between lexical and grammatical meaning varies from language to language: what is encoded lexically (**lexicalized**) in one language may be encoded grammatically (**grammaticalized**) in another. The grammaticalization of meaning, as we shall also see later, is not simply, or primarily, a matter of inflection (even in languages which, unlike English, have a very rich inflectional system). Far

more important are the **syntactic** differences between one grammatical construction and another.

At this point, however, it may be noted that, when word-forms are considered, not just as forms, but as forms invested with grammatical meaning, yet another sense both of 'form' and of 'word' comes to light. Consider, for example, the following sentences:

(4) 'That sheep over there belongs to the farmer next door'
(5) 'Those sheep over there belong to the farmer next door'.

Is the second word-form of (4) the same as the second word-form of (5)? The distinction that we have drawn between forms and expressions does not, of itself, suffice to answer the question in a case like this. Let us grant immediately that the two word-forms are identical in respect both of their phonological form (in the spoken language) and of their orthographic form (in the written language): they are **formally identical**. But they are not **grammatically identical**. Whether we say that the second word-form of (4) is the same as the second word-form of (5) depends, therefore, on whether, in putting this question, we are concerned with formal identity alone – phonological or orthographic, as the case may be – or with both formal and grammatical identity. The two word-forms that occur in the second position of (4) and (5) are formally identical, but grammatically distinct, forms of the same lexeme. More precisely, they are inflectionally, or **morphosyntactically**, distinct forms of the same lexeme. The way in which this phenomenon is handled by grammarians will differ according to the model of grammar which they adopt.

What has been said in this section about Peirce's type/token distinction, about the different senses in which 'word' is used both technically and non-technically in linguistics, about the distinction between forms and expressions and about lexical and grammatical meaning is sufficient for the time being. It may seem at first sight that, in this section, I have been unnecessarily pedantic in my regimentation and extension of the everyday metalanguage. This is not so. Whatever terms we use to draw the distinctions that have been drawn here, the distinctions

themselves must be drawn if we are to avoid the confusion and equivocation which is almost inevitably associated with what I referred to in the Preface as the pseudo-simplicity of so-called plain English.

All the points that I have made could be developed at great length, and would need to be, in a fuller account of what is commonly, but imprecisely, referred to as word-meaning. They would also need to be formulated somewhat differently in relation to particular theories of phonology, syntax and morphology. I have deliberately adopted a rather traditional view of the grammatical and lexical structure of languages. There are two reasons why I have done this. The first is that this view is the one that is reflected in the most widely used authoritative dictionaries and reference grammars of English and other languages and is also the view that is taught or taken for granted in most schools: it may therefore be assumed to be a view which is familiar to most readers of this book (even if they are not in command of all the technical terminology). The second reason is that, although various refinements and qualifications have to be made to this traditional view in the light of developments in modern grammatical theory, so-called traditional grammar (with the necessary refinements and qualifications to which I have referred) serves better than any alternative so far available as an established standard system into which and out of which other competing systems can be translated. Students who have already had some training in modern grammatical theory will find it instructive to carry out this exercise in translation from one metalanguage to another as we proceed through this and the following chapters.

2.2 HOMONYMY AND POLYSEMY; LEXICAL AND GRAMMATICAL AMBIGUITY

What is traditionally described as **homonymy** was illustrated in Chapter 1 by means of the no less traditional examples of 'bank$_1$' and 'bank$_2$', the former meaning "financial institution" and the latter "sloping side of a river". The examples are

appropriate enough. But the traditional definition of homonymy is, to say the least, imprecise.

Homonyms are traditionally defined as different words with the same form. We can immediately improve this definition, in the light of what was said in the preceding section, by substituting 'lexeme' for 'word'. But the definition is still defective in that it fails to take account of the fact that, in many languages, most lexemes have not one, but several, forms. Also, it says nothing about grammatical equivalence.

Let us begin, therefore, by establishing a notion of **absolute homonymy**. Absolute homonyms will satisfy the following three conditions (in addition to the necessary minimal condition for all kinds of homonymy – identity of at least one form):

(i) they will be unrelated in meaning;
(ii) all their forms will be identical;
(iii) the identical forms will be grammatically equivalent.

Absolute homonymy is common enough: cf. 'bank$_1$', 'bank$_2$'; 'sole$_1$' ("bottom of foot or shoe"), 'sole$_2$' ("kind of fish"); etc.

But there are also many different kinds of what I will call **partial homonymy**: i.e., cases where (a) there is identity of (minimally) one form and (b) one or two, but not all three, of the above conditions are satisfied. For example, the verbs 'find' and 'found' share the form *found*, but not *finds*, *finding*, or *founds*, *founding*, etc.; and *found* as a form of 'find' is not grammatically equivalent to *found* as a form of 'found'. In this case, as generally in English, the failure to satisfy (ii) correlates with the failure to satisfy (iii). However, it is important to realize that the last two conditions of absolute homonymy made explicit in the previous paragraph are logically independent. They are usually taken for granted without discussion in traditional accounts of the topic.

It is particularly important to note the condition of grammatical equivalence, and the fact that this is a matter of degree. Although *found* as a form of 'find' is not grammatically equivalent to *found* as a form of 'found', it is in both cases a transitive-verb form. Consequently, there are certain contexts in which

found may be construed, grammatically, either as a form of 'found' or as form of 'find'. For example (see (3) in section 2.1):

(6) *They found hospitals and charitable institutions*

can be construed as a present-tense sentence containing a form of the verb 'found' or, alternatively, as a past-tense utterance containing a form of 'find'. The fact that 'found' and 'find' are transitive verbs – and to this degree (though not fully) grammatically equivalent – means that they can both take a noun-phrase such as 'hospitals and charitable institutions' as their direct object. And since 'hospitals and charitable institutions' is, not only grammatically, but also semantically, acceptable as the direct object of both verbs, (6) is ambiguous.

The ambiguity of (6) is partly lexical and partly grammatical. It is lexically ambiguous in so far as its ambiguity depends upon a difference in the lexical meaning of the two partially homonymous lexemes 'found' and 'find'. It is grammatically ambiguous in so far as its ambiguity depends upon the (semantically relevant) grammatical non-equivalence of *found* construed as a form of 'found' and of *found* construed as a form of 'find'.

The reason why it is important for the semanticist to take note of grammatical equivalence, is that in general, it is this which determines whether homonymy (absolute or partial as the case may be) results in ambiguity. If *have* is inserted before *found* in (6), to yield

(7) *They have found hospitals and charitable institutions*,

the ambiguity disappears. The effect of putting the form *have* before the form *found* is to change the morphosyntactic identity of the latter: on the assumption that (7) is indeed fully grammatical in English, *found* must now be construed as a past participle. The past-participle form of 'find' happens to be formally identical with the past-tense form of 'find' (both phonologically and orthographically). The past-participle form of 'found', on the other hand, is formally identical with its past-tense form: *founded*. (In this respect, 'found' is like most other English verbs; 'find', in contrast, belongs to a particular subclass of what are traditionally described as irregular, or strong, verbs.)

The ambiguity that is manifest in (6) also disappears if *he* or *she* is substituted for *they*:

(8) *He/she found hospitals and charitable institutions.*

The reason now is that in English, whereas there is formal identity (except for the verb 'be') between singular and plural forms in all simple past-tense verb-forms, what are traditionally called third-person singular and plural forms are formally distinct in the simple present tense of the indicative (in all verbs other than modals, such as 'may' or 'can'): cf. *finds* : *find* and *founds* : *found*. It follows that in (8) *found* must be construed as a form of 'find' and therefore as a past-tense form. To be contrasted with (6) are, on the one hand,

(9) *He/she founds hospitals and other charitable institutions*

and, on the other,

(10) *He/she founded hospitals and other charitable institutions.*

Ambiguity which results from absolute homonymy cannot be eliminated by manipulating the grammatical environment in this way. But, it is quite possible for the partial homonymy of two lexemes rarely or never to result in ambiguity: ambiguity is forestalled, as it were, if the shared forms are prohibited from occurring in the same grammatical environments. For example, the partial homonymy of the adjective 'last$_1$' (as in 'last week') and the verb 'last$_2$' (as in 'Bricks last a long time') rarely produces ambiguity. Their sole shared form, *last*, is almost always readily identifiable as a form of the one or the other by virtue of the grammatical environment in which it occurs.

We shall return to the question of ambiguity in a later chapter. We shall then see that the kind of grammatical ambiguity (combined with lexical ambiguity) which has been exemplified here in connexion with the traditional notion of homonymy is just one kind of grammatical ambiguity. It has been mentioned at this point because many general accounts of homonymy, both traditional and modern, fail to draw attention to the complexity and variety of the grammatical conditions that must be satisfied if partial homonymy is to result in ambiguity.

Many accounts of homonymy also fail to point out that partial homonymy does not necessarily involve identity of either the citation-forms or the underlying base-forms of the lexemes in question. For example, the noun 'rung' and the verb 'ring' are partial homonyms:

(11) *A rung of the ladder was broken;*
(12) *The bell was rung at midnight.*

The reason why this kind of partial homonymy is often not recognized in standard treatments, traditional or modern, is that the former tend to concentrate on citation-forms, whereas the latter frequently restrict their discussion of homonymy to base-forms. It so happens, of course, that in English the citation-form coincides with the base-form in all morphologically regular lexemes. But this is not so in all languages, as far as the traditional ordinary-language citation-forms of lexemes are concerned. For the semanticist, as we have seen, the question at issue is whether and to what degree homonymy produces ambiguity. From this point of view there is nothing special about either citation-forms or base-forms.

Let us now turn to **polysemy**. Whereas homonymy (whether absolute or partial) is a relation that holds between two or more distinct lexemes, polysemy ("multiple meaning") is a property of single lexemes. This is how the distinction is traditionally drawn. But everyone who draws this distinction also recognizes that the difference between homonymy and polysemy is not always clear-cut in particular instances. It has been demonstrated, for English, that there is a good deal of agreement among native speakers, in most cases, as to what counts as the one and what counts as the other. But there are also very many instances about which native speakers will hesitate or be in disagreement. What, then, is the difference in theory between homonymy and polysemy?

The two criteria that are usually invoked in this connexion have already been mentioned in Chapter 1: etymology (the historical source of the words) and relatedness of meaning. In general, the etymological criterion supports the native speaker's untutored intuitions about particular lexemes. For example,

most native speakers of English would probably classify 'bat_1' ("furry mammal with membranous wings") and 'bat_2' ("implement for striking a ball in certain games") as different lexemes; and these two words do indeed differ in respect of their historical source, 'bat_1' being derived from a regional variant of Middle English 'bakke', and 'bat_2' from Old English 'batt' meaning "club, cudgel".

To say that etymology generally supports the intuitions of native speakers is not to say that this is always the case. It sometimes happens that lexemes which the average speaker of the language thinks of as being semantically unrelated have come from the same source. The homonyms '$sole_1$' ("bottom of foot or shoe") and '$sole_2$' ("kind of fish"), which I mentioned above, constitute a much-quoted example; and there are others, no less striking, to be found in the handbooks. Less common is the converse situation where historically unrelated meanings are perceived by native speakers as having the same kind of connexion as the distinguishable meanings of a single polysemous lexeme. But there are several examples of what, from a historical point of view, is quite clearly homonymy being reinterpreted by later generations of speakers as polysemy. It falls within the scope of what is commonly referred to by linguists as **popular etymology**. Today, for example, a number of speakers assume that '$shock_1$' as in 'shock of corn' is the same as '$shock_2$' as in 'shock of hair'. Yet historically, they have different origins.

There are exceptions, then, of both kinds. Nevertheless, the generalization that I have just made is undoubtedly correct: in most cases, etymology supports the average native speaker's intuitive sense of the distinction between homonymy and polysemy. And we shall see presently that there are good reasons why this should be so. One of the principal factors operative in semantic change is metaphorical extension, as when 'foot' meaning "terminal part of a leg" also came to mean "lowest part of a hill or mountain". And it is metaphorical extension as a synchronic process that is at issue when one refers to the related meanings of polysemous lexemes. There are, of course, other kinds of relatedness of meaning which are relevant in this connexion. But metaphorical creativity (in the broadest sense of

'metaphorical') is part of everyone's linguistic competence. In the last resort, it is impossible to draw a sharp distinction between the spontaneous extension or transfer of meaning by individual speakers on particular occasions and their use of the pre-existing, or institutionalized, extended and transferred meanings of a lexeme that are to be found in a dictionary. This fact has important implications for linguistic theory that go way beyond the traditional, and perhaps insoluble, problem of distinguishing polysemy from homonymy.

2.3 SYNONYMY

Expressions with the same meaning are **synonymous**. Two points should be noted about this definition. First it does not restrict the relation of synonymy to lexemes: it allows for the possibility that lexically simple expressions may have the same meaning as lexically complex expressions. Second, it makes identity, not merely similarity, of meaning the criterion of synonymy.

In this latter respect, it differs from the definition of synonymy that will be found in many standard dictionaries and the one with which lexicographers themselves customarily operate. Many of the expressions listed as synonymous in ordinary or specialized dictionaries (including *Roget's Thesaurus* and other dictionaries of synonyms and antonyms) are what may be called **near-synonyms**: expressions that are more or less similar, but not identical, in meaning. Near-synonymy, as we shall see, is not to be confused with various kinds of what I will call **partial synonymy**, which meet the criterion of identity of meaning, but which, for various reasons, fail to meet the conditions of what is generally referred to as absolute synonymy. Typical examples of near-synonyms in English are 'mist' and 'fog', 'stream' and 'brook', and 'dive' and 'plunge'.

Let me now introduce the notion of **absolute synonymy**, in contrast not only with near-synonymy, but also with the broader notion of synonymy, just defined, which covers both absolute and partial (i.e., non-absolute) synonymy. It is by now almost a

truism that absolute synonymy is extremely rare – at least as a relation between lexemes – in natural languages. (It is not rare of course as a relation between lexically composite expressions.) Two (or more) expressions are absolutely synonymous if, and only if, they satisfy the following three conditions:

(i) all their meanings are identical;
(ii) they are synonymous in all contexts;
(iii) they are semantically equivalent (i.e., their meaning or meanings are identical) on all dimensions of meaning, descriptive and non-descriptive.

Although one or more of these conditions are commonly mentioned in the literature, in discussions of absolute synonymy, it is seldom pointed out that they are logically independent of one another; and non-absolute, or partial, synonymy is not always clearly distinguished from near-synonymy.

This being so, I wish to insist upon the importance of: (a) not confusing near-synonyms with partial synonyms; and (b) not making the assumption that failure to satisfy one of the conditions of absolute synonymy necessarily involves the failure to satisfy either or both of the other conditions. Let us take each of the conditions of absolute synonymy in turn.

Standard dictionaries of English treat the adjectives 'big' and 'large' as polysemous (though they vary in the number of meanings that they assign to each). In one of their meanings, exemplified by

(13) 'They live in a big/large house',

the two words would generally be regarded as synonymous. It is easy to show, however, that 'big' and 'large' are not synonymous in all of their meanings: i.e., that they fail to satisfy condition (i) and so are only partially, not absolutely, synonymous. The following sentence,

(14) 'I will tell my big sister',

is lexically ambiguous, by virtue of the polysemy of 'big', in a way that

(15) 'I will tell my large sister'

is not. All three sentences are well-formed and interpretable. They show that 'big' has at least one meaning which it does not share with 'large'. There are many such examples of polysemous lexemes that are synonymous in one or more, but not all, of their meanings.

Let us now turn to condition (ii). What is at issue here is the **collocational range** of an expression: the set of contexts in which it can occur (its **collocations**). It might be thought that the collocational range of an expression is wholly determined by its meaning, so that synonyms must of necessity have the same collocational range. But this does not seem to be so. Once again, 'big' and 'large' will serve as an example. There are many contexts in which 'large' cannot be substituted for 'big' (in the meaning which 'big' shares with 'large') without violating the collocational restrictions of the one or the other. For example, 'large' is not interchangeable with 'big' in

(16) 'You are making a big mistake'.

The sentence

(17) 'You are making a large mistake'

is, presumably, not only grammatically well-formed, but also meaningful. It is however collocationally unacceptable or unidiomatic. And yet 'big' seems to have the same meaning in (16) as it does in phrases such as 'a big house', for which we could, as we have seen, substitute 'a large house'.

It is tempting to argue, in cases like this, that there must be some subtle difference of lexical meaning which accounts for the collocational differences, such that it is not synonymy, but near-synonymy, that is involved. Very often, undoubtedly, collocational differences can be satisfactorily explained, in terms of independently ascertainable differences of meaning. But this is not always so. We must be careful therefore not to assume that the collocational range of a lexeme is predictable from its meaning. Indeed, there are cases where it can be argued that the collocations of a lexeme are part of its meaning. This, regrettably, is

one of many aspects of lexical semantics that cannot be dealt with in this book.

The third of the conditions of absolute synonymy listed above was identity on all dimensions of meaning. The most widely recognized dimension of meaning that is relevant to this condition is descriptive (or propositional) meaning (see section 1.7). In fact, many theories of semantics would restrict the notion of synonymy to what I will call **descriptive synonymy**: identity of descriptive meaning. What precisely is meant by identity of descriptive meaning is a question that will be taken up in Part 3. For the present, it will be sufficient to say that two expressions have the same descriptive meaning (i.e., are descriptively synonymous) if, and only if, propositions containing the one necessarily imply otherwise identical propositions containing the other, and vice versa. By this criterion (which will be reformulated in Part 3 in terms of the truth-conditional equivalence of sentences), 'big' and 'large' are descriptively synonymous (in one of their meanings and over a certain range of contexts). For instance, one cannot without contradiction simultaneously assert that someone lives in a big house and deny that they live in a large house.

One of the classic examples of descriptive synonymy is the relation that holds (or perhaps used to hold) in English between 'bachelor' (in one of the meanings of 'bachelor') and 'unmarried man'. (There are those who would deny that these two expressions are descriptively synonymous, nowadays, on the grounds that a divorced man, though unmarried, is not a bachelor. The point is debatable; and, since it can be exploited for more general theoretical purposes, I will return to it in a later chapter. But the principle that the example is intended to illustrate is clear enough.) One tests for descriptive synonymy, in this case, by investigating whether anyone truly, or correctly, described as a bachelor is truly describable as an unmarried man, and vice versa. It may well be that for some speakers the expressions are synonymous and for others they are not, and that for a third group the situation is unclear. (Those who hold that 'unmarried' means, not simply "not married", but "never having been married", and cannot be correctly applied to divorcees – together

with those, if any, who would readily apply both 'bachelor' and 'unmarried' to divorcees – will presumably treat 'bachelor' and 'unmarried man' as descriptively synonymous.)

When it comes to **expressive** (or socio-expressive) **meaning** – and this is the only kind of non-descriptive meaning that we will take into account here – there is no readily available and reasonably objective criterion which enables us to decide between identity and difference. But it is none the less possible, in particular instances, to determine that two or more descriptively synonymous expressions differ in respect of the degree or nature of their expressive meaning. For example, it is intuitively obvious that a whole set of words including 'huge', 'enormous', 'gigantic' and 'colossal' are more expressive of their speakers' feelings towards what they are describing than 'very big' or 'very large', with which they are perhaps descriptively synonymous. It is more difficult to compare 'huge', 'enormous', 'gigantic' and 'colossal' among themselves in terms of their degree of expressivity. But speakers may have clear intuitions about two or more of them; and the question is, in principle, decidable by means of relatively objective psychological tests.

As to expressions which differ in the nature of their expressive meaning, the most obvious difference is between those which imply approval or disapproval and those which are neutral with respect to expressivity. Textbooks of linguistic semantics are full of examples, such as 'statesman' versus 'politician', 'thrifty' versus 'mean', 'stingy' versus 'economical', 'stink' versus 'stench' versus 'fragrance' versus 'smell', 'crafty' versus 'cunning' versus 'skilful' versus 'clever', and so on. In many cases, the fact that an expression implies approval or disapproval is much more readily ascertainable than is its descriptive meaning (if it has any). This is true, for example, of words such as 'bitch' or 'swine' used in what was once, but is perhaps no longer for most speakers of English, their metaphorical sense. Under what conditions can one truly describe a person as a bitch or swine? In cases like this it is surely the expressive, rather than the descriptive, component of meaning that is dominant.

Most of the lexemes in everyday use have both a descriptive and an expressive meaning. Indeed, as certain philosophers of

language have pointed out in respect of the vocabulary of moral and aesthetic statements, it may be even theoretically impossible at times to separate the descriptive from the expressive. However that may be, knowing the expressive (or socio-expressive) meaning of a lexeme is just as much part of one's competence in a language as knowing its descriptive meaning. This point should be constantly borne in mind throughout this book, even though we shall be concerned almost exclusively with descriptive meaning in our discussion of lexical structure in Chapter 3 and in several of the later chapters.

Synonymy has been discussed and richly exemplified, from many points of view, not only in works devoted to linguistic semantics as such, but also in handbooks of stylistics, rhetoric and literary criticism. My main purpose, in the brief account that has been given here, has been to emphasize the theoretical importance of distinguishing the several kinds of partial, or non-absolute, synonymy from one another and from near-synonymy. In doing so, I have been obliged to gloss over a number of difficulties and complications that a more comprehensive discussion of synonymy would require us to deal with. Some of these will be mentioned in Chapter 4, as far as descriptive synonymy is concerned, in connexion with the notion of entailment.

2.4 FULL AND EMPTY WORD-FORMS

The word-forms of English, like the word-forms of many languages, can be put into two classes. One class consists of full forms such as *man*, *came*, *green*, *badly*; the other of empty forms such as *the*, *of*, *and*, *to*, *if*. The distinction between the two classes is not always clear-cut. But it is intuitively recognizable in the examples that I have just given. And it has been drawn on non-intuitive grounds by grammarians, by applying a variety of criteria. Essentially the same distinction was drawn, centuries ago, in the Chinese grammatical tradition; at the end of the nineteenth century, by the English grammarian Henry Sweet; and at the height of post-Bloomfieldian structuralism, in the 1950s, by the American linguist C. C. Fries (1952). It subsequently found its way into many of the textbooks of applied linguistics

and practical teaching-grammars of English and other languages in the period preceding the rise of Chomskyan generative grammar in the 1960s. It correlates with the distinction between **open-class** and **closed-class** word-forms which is drawn (in these or other terms) in many modern schools of grammatical theory.

The terms that I have chosen, taken from the Chinese tradition, emphasize the intuitively evident semantic difference between typical members of one class and typical members of the other. Empty word-forms may not be entirely devoid of meaning (though some of them are in certain contexts). But, in an intuitively clear sense of 'meaningful', they are generally less meaningful than full word-forms are: they are more easily predictable in the contexts in which they occur. Hence their omission in headlines, telegrams, etc., and perhaps also in the utterances of very young children as they pass through early stages of language-acquisition. Full word-forms in English are forms of the major parts of speech, such as nouns, verbs and adjectives; empty word-forms (in languages that have them) belong to a wide variety of classes – such as prepositions, definite and indefinite articles, conjunctions, and certain pronouns and adverbs – which combine with the major parts of speech in grammatically well-formed phrases and sentences and which (unlike the major parts of speech) tend to be defined mainly in terms of their syntactic function, rather than semantically.

Other terms found in the literature, more or less equivalent to 'empty word-form', are 'form word', 'function word', 'grammatical word' and 'structural word'. All these terms reflect the view that what I am here calling empty word-forms differ grammatically and semantically from full word-forms. They are usually defined within the framework of Bloomfieldian and post-Bloomfieldian (including Chomskyan) morpheme-based grammar on the basis of Bloomfield's definition of the word (in the sense of 'word-form') as a minimal free form. We are operating throughout this book within the more traditional framework of what has been called word-and-paradigm grammar. But what I have to say here, and indeed throughout this book, could be reformulated without difficulty in the terminology of any of several different schools of grammatical theory, old and new, and is intended to be, as far as possible, theory-neutral. I have chosen to use 'empty word-form' and 'full word-form' because these terms emphasize the semantic dimension of the difference between the two classes.

Looked at from a grammatical point of view, empty word-forms can be seen as playing much the same role in non-inflecting, or lowly inflecting, languages as do prefixes, suffixes, etc. in highly inflecting languages. For example, a prepositional phrase such as *to John* when it occurs in the indirect-object position after the verb 'give' in English can be matched, semantically and grammatically, in many highly inflecting languages, such as Latin or Russian (and many other languages belonging to many different language-families throughout the world), with what is traditionally referred to as the dative (or allative) form of the noun, which contrasts with other syntactically and/or semantically distinct forms of the same lexeme in having the dative (or allative) suffix, rather than the nominative, accusative, genitive, etc. suffix, attached to the base-form. Similarly, for the definite article *the*. The vast majority of the languages of the world do not have a separate word-form which can be identified grammatically and semantically with the English definite article.

Indeed, most natural languages do not encode a category of definiteness as such at all, either grammatically or lexically. Some languages which do encode definiteness (in so far as this is identifiable and separable from other semantic categories across languages) do so inflectionally, in much the same way that the indirect-object function is expressed inflectionally by the dative case in Latin. In view of the attention that twentieth-century English-speaking logicians, beginning with Russell (1905), have given to the analysis of noun-phrases containing the definite article, it is worth noting the non-universality, not just of the definite article, but also of anything that might be called a semantic category of definiteness, in natural languages. But this is an issue which does not concern us for the moment. I have mentioned the English definite article at this point as an example of the class of what I am calling empty word-forms.

It will be noted that, although I have referred to empty word-forms as word-forms, I have not said that they are forms of lexemes (as *dog* is a form of 'dog', *ran* is a form of 'run', and so on). It is a moot point whether forms such as *the* or *to* (in its indirect-object function or its infinitive-forming function at least) should be listed in the dictionary of a language or accounted for within the grammar. This is an issue which cannot be settled except within the framework of one grammatical theory or another. But whatever view is taken on this issue, the main point to be made here is that, even if they are listed in dictionaries of the language (whether for reasons of practical convenience or on the basis of a theoretically defensible notion of the distinction between grammar and lexicon), empty word-forms, such as *the*, *of*, *and*, *to* and *if* in English, are not fully lexical. They may be words in the sense of 'word-form', but they are not words in the full sense.

Not only do empty word-forms tend to be less meaningful than full word-forms. Their meaning seems to be different from, and more heterogeneous than, that of full word-forms. The difference between the two classes of word-forms comes out immediately in relation to some of the theories of meaning mentioned in Chapter 1. For example, it might seem reasonable enough to say that the meaning of 'dog' is some kind of concept or behavioural response, which can be described or explicated without taking into account the phrases and sentences of English in which 'dog' can occur. But it hardly makes sense to discuss the meaning of *the*, *of*, *and*, *to* and *if* in such terms. Nor does it seem reasonable to say that their meaning, however we describe or explicate it, is independent of their grammatical function. This difference between full forms and empty forms is consistent with the fact that (as was mentioned above) the major parts of speech – especially nouns and verbs – are traditionally defined, either wholly or mainly, in terms of their meaning and independently of one another, whereas the minor parts of speech – the definite and indefinite articles, prepositions, conjunctions, etc. – are always defined in terms of their grammatical function and in relation to their potential for combining with one or other of the major parts of speech or with such higher-level units as phrases and clauses.

The grammatical distinction between full word-forms and empty word-forms that I have explained informally and non-technically in this section is, in fact, the product of several more technical distinctions, for which readers may consult the text books referred to in the Bibliography.

Since we are not concerned here with grammatical theory for its own sake, we shall not go into the details. What is really at issue, as far as we are concerned, is the distinction between the **grammar** of a language and its vocabulary, or **lexicon**, and the distinction between grammatical and lexical meaning, which depends upon it. This is a topic that will be taken up in the following section.

There is one point that can be usefully made, however, before we proceed, on the basis of the distinction drawn in this section between full word-forms and empty word-forms. This has to do with one of the questions raised in section 1.6: which is more basic than, or logically prior to, the other, the meaning of words or the meaning of sentences? One argument for the logical priority of sentence-meaning over word-meaning, which is often presented by advocates of truth-conditional semantics, runs as follows.

(i) The meaning associated with such words as *if*, *to* and *and* in English cannot be defined otherwise than in terms of the contribution that they make to the meaning of the larger units – phrases, clauses and sentences – in which they occur. The meaning of such words at least is logically secondary to (i.e., dependent upon) the meaning of the sentences in which they occur.

(ii) But the meaning of a sentence is the product of the meaning of the words of which it is composed. So, all words, both empty and full, can (and must) be brought within the scope of the general principle that the meaning of a form is the contribution it makes to the meaning of the sentences in which it occurs.

(iii) It is methodologically preferable to have a single notion of word-meaning applicable to all words.

(iv) If the meaning of words such as *if*, *to* and *and*, whose meaning is defined as the contribution that they make to the meaning of the sentences in which they occur, is logically secondary to sentence-meaning, the meaning of all words is logically secondary to sentence-meaning, for the meaning of all words can be (and by methodological decision is) defined as the contribution that they make to the meaning of the sentences in which they occur.

Now, it may or may not be the case that sentence-meaning is logically prior to, or more basic than, what is here being referred to as word-meaning. But the argument that is commonly presented to support this conclusion is fallacious. It rests upon the spurious methodological principle that so-called word-meaning is homogeneous: that the meaning associated with empty word-forms such as *if*, *to* and *and* is in all relevant respects comparable with that of full word-forms. It also trades upon the fact that the term 'word' denotes both forms and expressions and that some forms are, as it were, more fully words than others. Fullness and emptiness, in the sense in which I have been using these terms in the present section, are, in any case, a matter of degree. The emptiest of word-forms, such as *if*, *the* and *and* in English, are neither expressions nor forms of expressions: as we have seen, they are semantically and, to a certain extent grammatically, comparable with the morphologically bound prefixes and suffixes of inflected word-forms. To call them 'words' and then to make generalizations about word-meaning on the basis of this classification merely confuses the issue.

Confusion is further confounded by what is arguably an equivocal use of the term 'word-meaning'. As we shall see in the following section, 'word-meaning' does not necessarily mean the same as 'lexical meaning'. The meaning of full word-forms combines both lexical and grammatical meaning. Empty word-forms may not have any lexical meaning at all; and this is what is implied by saying that they are semantically empty. It may also be mentioned here that, as we shall see later, much of the discussion of the logical priority of sentence-meaning over word-meaning that is to be found in otherwise reliable and authoritative works on linguistic semantics, traditional and modern, is further confused by the failure to draw the distinction between sentences and utterances. For example, it is often asserted that sentences, not words, are from the outset – in the period of language-acquisition as also in adulthood – the basic units of communication. This assertion must be challenged. Utterances, not sentences (in the relevant sense), are the units by means of which speakers and hearers – interlocutors – communicate with one another. Some of these utterances, being grammatically complete and well-formed, are traditionally called sentences, in what, as we shall see in Part 3, is a secondary and derivative sense of 'sentence'. Increasingly complex utterances are produced by children as they pass through the several distinguishable stages of language-acquisition; but it is a long time before any of the child's utterances can reasonably be described as sentences (in what is, in any case, an irrelevant sense of the ambiguous term 'sentence').

It is lexical meaning that we are discussing in Part 2. Grammatical meaning, not all of which can be assigned to word-forms, is largely a matter of sentence-meaning, and will therefore be dealt with in Part 3.

2.5 LEXICAL MEANING AND GRAMMATICAL MEANING

As was noted in the preceding section, what were there referred to as full word-forms are forms of the major parts of speech, such as nouns, verbs and adjectives. Empty word-forms, in contrast, in English (and in other languages which in this respect are typologically similar to English) belong to a wide variety of smaller form-classes, which are defined, traditionally, in terms of their syntactic function, rather than semantically.

It is for this reason that empty word-forms are traditionally described by logicians, not as independent terms or **categories**, but as **syncategorematic**: i.e., as forms whose meaning and logical function derives from the way in which they combine

with (*syn-*) the independently defined major categories. I have deliberately introduced the traditional term 'category' here (together with its less familiar derivative 'syncategorematic') because in later chapters I shall be appealing frequently to an updated version of the traditional notion of **categorial meaning**. (The term 'categorial' bears the same sense here as it does in the phrase 'categorial ambivalence', which was employed in the preceding chapter.) As we shall see, categorial meaning is one part of grammatical meaning: it is that part of the meaning of lexemes (and other expressions) which derives from their being members of one category rather than another (nouns rather than verbs, verbs rather than adjectives, and so on).

The distinction between full word-forms and empty word-forms has served its purpose. I now want to introduce the distinction between the **grammar** of a language and its vocabulary, or **lexicon**. Grammar and lexicon are complementary; every grammar presupposes a lexicon, and every lexicon presupposes a grammar.

The grammar of a language is traditionally regarded as a system of rules which determines how words are put together to form (grammatically well-formed) phrases, how phrases are put together to form (grammatically well-formed) clauses, and how clauses are put together to form (grammatically well-formed) sentences. Grammatically ill-formed combinations of words, phrases and clauses – i.e., combinations which break the rules of the grammar – are traditionally described as ungrammatical. One of the major issues that has divided twentieth-century theorists in their discussion of the relation between semantics and grammar is the degree to which **grammaticality** (grammatical well-formedness) is determined by **meaningfulness**. This issue will be addressed in Chapter 5.

Modern linguistic theory has produced a large set of more or less traditional, alternative approaches to the grammatical analysis of natural languages, which differ from one another in various ways. Some of these are morpheme-based (rather than word-based), in that they take the morpheme to be the basic unit of grammatical analysis (for all languages). Some recognize no distinction between clauses and sentences (and use the term 'sentence' for both). Some respect the traditional bipartite analysis of all clauses into a subject and a predicate; others do not, or, if they do, make this a matter of secondary, rather than primary, determination. This list of differences between rival approaches could be extended almost indefinitely. The differences are by no means unimportant. But most of them are irrelevant to the issues that will confront us in this book. Such of them as are both important and relevant will be identified as we proceed.

The lexicon may be thought of as the theoretical counterpart of a dictionary, and it is frequently so described. Looked at from a psychological point of view, the lexicon is the set (or network) of all the lexemes in a language, stored in the brains of competent speakers, with all the linguistic information for each lexeme that is required for the production and interpretation of the sentences of the language. Although the so-called mental lexicon has been intensively studied in recent years from a psychological (and neuropsychological) point of view, relatively little is known so far about the way in which it is stored in the brain or about the way it is accessed in the use of a language. Relatively little is known, similarly, about the mental grammar that all speakers of a language, presumably, also carry around with them in their heads. In particular, it is not known whether there is a clear-cut psychological distinction to be drawn between grammar and lexicon.

Linguists have so far found it impossible to draw any such distinction sharply in the description of particular languages. And this is one reason for the controversy and lack of consensus that currently exists among linguists as to the way in which grammar and lexicon should be integrated in the systematic description of languages. This is one of the controversies that we do not need to get involved with in a book of this kind. For simplicity of exposition, I will adopt a deliberately conservative view of the relation between grammar and lexicon: the view that is reflected in standard textbooks of linguistics and in conventional dictionaries of English and other languages. Adjustments can easily be made by those readers who are familiar with recent grammatical theory (which, in this and other respects, has in

any case not completely superseded traditional grammar and can still profitably draw upon it for many of the concepts that it seeks to formalize and explicate).

Although we are not concerned with grammatical theory as such in this book, we are concerned with the way in which meaning is encoded in the grammatical (i.e., the syntactic and the morphological) structure of languages. It was in that connexion that, in the preceding section, I introduced the distinction between what I called full word-forms and empty word-forms. Some, though not all, empty word-forms, in English and other typologically similar languages, will have a purely grammatical meaning (if they have any meaning at all). All full word-forms, on the other hand, will have both a lexical and a grammatical, and more particularly a categorial, meaning. For example, *child* and *children*, being forms of the same lexeme ('child') have the same lexical meaning (which I am symbolizing, notationally, as "child"). In so far as the lexeme has certain semantically relevant grammatical properties (it is a noun of particular kind), the two word-forms also share some part of their categorial meaning. But they differ, of course, grammatically (more precisely, morphosyntactically) in that the one is a singular and the other a plural noun-form. The difference between singular and plural (in those languages in which it is grammaticalized) is another part of the categorial component of grammatical meaning. And it is of course accounted for traditionally, both grammatically and semantically, in terms of what may be thought of as the **secondary** grammatical category of **number**. Other such semantically relevant secondary grammatical categories (not all of which are to be found in all languages) are **tense**, **mood**, **aspect**, **gender** and **person**. Reference will be made to some of these categories in later chapters.

CHAPTER 3

Defining the meaning of words

3.0 INTRODUCTION

How does one set about defining the meaning of words? In this chapter, we shall see that different answers can be given to this question. We shall also see that different answers can be given for different kinds of words.

For some words, especially nouns such as 'table' or 'chair' in English, one might think that a version of the so-called referential theory of meaning, mentioned in Chapter 1, is perfectly satisfactory: one might think that they can be readily defined by identifying what they stand for. Some theorists have taken this view; and it is well represented in the literature of both linguistic and philosophical semantics. It is undoubtedly a reasonable view to take, at least for words that stand for such things as dogs and cats, or tables and chairs; and it is commonly such words that are used to exemplify, not only the referential theory, but also complementary or alternative theories of lexical meaning.

But how does one define or identify what a word stands for? Is it possible to say what one word stands for without employing other semantically related words in doing so and without saying in what respect these semantically related words are similar to one another in meaning and in what respects they differ? And what exactly does the traditional expression 'stand for' mean in this context? As we shall see in the following section, we have to distinguish what expressions denote from what they can be used

to refer to: we have to distinguish **denotation** from **reference**. These two ways in which words (and other expressions) can stand for things are commonly confused in presentations of the so-called referential theory of lexical meaning. They are, in fact, two quite different ways in which (to use a fashionable metaphor) language hooks on to the world. We shall also see that there is another dimension of the lexical meaning of words such as 'table' and 'chair', which I will call their **sense**, and that sense and denotation are interdependent.

Another question that needs to be addressed is whether some words in the vocabularies of natural languages are more basic than others. Once again, it is a reasonable view to take that they are, and that less-basic words can be defined in terms of more-basic words. For example, 'puppy' is intuitively less basic than 'dog': one would not normally define 'dog' by saying that it means "grown-up puppy", whereas, in the appropriate context, it would be quite normal to define 'puppy' by saying that it means "young dog". This is the way in which one might explain the meaning of puppy to a young child learning English (on the assumption that he or she already knows the meaning of the defining words 'dog' and 'young'). Similarly, for 'kitten', 'lamb', 'calf', 'foal', etc., in relation to 'cat', 'sheep', 'cow', 'horse', etc. In cases like this, it is intuitively clear that one of a pair of semantically related words is more basic than the other. But is this intuition valid? And, if it is, how do we know that it is?

Granted that some words are more basic than others, is there in natural languages a relatively small set of what might be referred to as absolutely basic words: a set of words in terms of which it is theoretically possible to define the meaning of all other words in the vocabulary? And, if there is, is the meaning of these absolutely basic words qualitatively different from the meaning of the non-basic words? Questions of this kind will occupy us in section 3.2.

We shall then move on, in section 3.3, to consider another apparent difference between words: the difference between words which (independently of whether they are absolutely basic, or more or less basic) denote what are traditionally called **natural kinds** and those that do not. What is meant by this

traditional term will be explained later. Here it is sufficient to note that a strong case can be made for the view that such words, which include 'dog', cannot be satisfactorily defined by means of the classic type of genus-and-species definition: i.e., in terms of the common properties of what they stand for. We shall also see that, in linguistic semantics, there is no reason to distinguish so-called natural-kind words, in respect of the kind of meaning they have, from words such as 'table' or 'chair' (or 'king', 'priest', etc.): i.e., words that denote culture-specific classes of things (including persons, animals, etc.) that are not given in nature and would not be classified as they are (and might not be held to exist) if it were not for the prior existence of particular languages operating in particular cultures.

A currently popular theory of lexical meaning, as we shall see in section 3.4, is the theory of **semantic prototypes**. This was first invoked in connexion with the definition of natural-kind words, but it has now been applied more widely and has inspired a good deal of interesting research on various areas of the vocabulary in several languages.

The general purpose of this chapter is to show that, although many proposals for the definition of words (or, to be more precise, lexemes) have been proposed in the literature, none of them to the exclusion of the others is acceptable. Each of them has its problems. Nevertheless, we can still learn a lot from them, and more particularly from trying to formulate them precisely within the framework of modern theories of the grammatical and lexical structure of languages.

3.1 DENOTATION AND SENSE

Standard monolingual dictionaries of a language explain the meaning of words by providing them with metalinguistic definitions in which the object language is used as its own metalanguage (see 1.2). The format of these definitions will vary somewhat from dictionary to dictionary. It will also vary from one class of words to another, especially in the case of so-called function words, or lexically empty word-forms, such as prepositions (*of*, *in*, etc.) or the definite and indefinite articles (*the*, *a*): it

is notoriously difficult to devise satisfactory dictionary definitions for such forms, whose meaning is primarily grammatical, rather than lexical (see 2.4). In this chapter we are concerned with lexically full words: lexemes that belong to the major parts of speech (nouns, verbs and adjectives, and some subclasses of adverbs).

In the definition of such words, bilingual dictionaries rely heavily on the notion of interlingual synonymy: e.g., by saying, in an English–French dictionary, that (the English word) 'dog' has (more or less) the same meaning as (the French word) 'chien'. Monolingual dictionaries also make use of the notion of synonymy (intralingual, rather than interlingual). But monolingual-dictionary definitions will usually combine paraphrase, in terms of partial intralingual synonymy, with analysis and description. For example, in defining the word 'dog' (in one of its meanings) a dictionary entry might tell us that dogs are animals belonging to a particular genus and species and that they are carnivorous, have been domesticated, and so on. We shall look at two examples of such definitions in the following section. Here I want to point out that traditional dictionary definitions can be seen as defining (in the case of words such as 'dog') two different, but complementary, aspects of lexical meaning: denotation and sense.

To say what the word 'dog' **denotes** is to identify all (and only) those entities in the world that are correctly called dogs. How one goes about identifying, in practice, everything and anything that is denoted by 'dog' is a question that we will take up presently. The important point for the moment is that some (though not all) words may be put into correspondence with classes of entities in the external world by means of the relation of **denotation**.

Denotation, as we shall see later, is intrinsically connected with **reference**. Indeed, many authors (especially those who subscribe to a referential theory of meaning: see section 1.7) draw no distinction between them, subsuming both under a broader notion of reference than the one which we shall be adopting. However, it is intuitively obvious that 'dog' does not stand for the class of dogs (or, alternatively, for some defining property of this class) in quite the same way that 'Fido' can be used to **stand for**, or **refer to**, some particular dog.

The crudest version of the referential theory of meaning, which has been aptly dubbed the 'Fido'-Fido theory, will not work for anything other than proper names; and, as we shall see later, it does not work all that well even for proper names. There are more sophisticated and philosophical versions of the referential theory of meaning, which would justify the adoption of a broader notion of reference than the one we shall be employing in this book. But whatever terms are used and whatever theory of meaning is adopted, it is important to take account of the difference in the two ways in which language hooks on to the world. This difference, which I am associating with a terminological distinction between 'reference' and 'denotation', is all too often obscured by a loose use of the term 'reference'.

The crucial difference between reference and denotation is that the denotation of an expression is invariant and **utterance-independent**: it is part of the meaning which the expression has in the language-system, independently of its use on particular occasions of utterance. Reference, in contrast, is variable and **utterance-dependent**. For example, the word 'dog' always denotes the same class of animals (or, alternatively, the defining property of the class), whereas the phrases 'the dog' or 'my dog' or 'the dog that bit the postman' will refer to different members of the class on different occasions of utterance. Reference, as distinct from denotation, will be dealt with (as part of utterance-meaning) in a later chapter. The important point to note, for the present, is that lexemes, as such, do not have reference, but may be used as referring expressions or, more commonly, as components of referring expressions in particular contexts of utterance.

The lexeme 'dog', then, denotes a class of entities in the external world. But it is also related, in various ways, to other lexemes and expressions of English, including 'animal', 'hound', 'terrier', 'spaniel', etc. Each such relation that holds between 'dog' and other expressions of the same language-system, may be identified as one of its **sense-relations**. Descriptive synonymy, which we discussed in the last chapter, is one kind of sense-

relation. We shall look briefly at some of the other sense-relations exemplified above for 'dog' in Chapter 4. Meanwhile, the examples themselves will suffice for the purpose of explaining both the distinction between denotation and sense and, no less important, their interdependence.

The **sense** of an expression may be defined as the set, or network, of sense-relations that hold between it and other expressions of the same language. Several points may now be made in respect of this definition.

First, sense is a matter of **interlexical** and **intralingual** relations: that is to say, of relations which hold between a lexical expression and one or more other lexical expressions in the same language. Sense, as I have defined it here, is wholly internal to the language-system. This distinguishes it clearly from denotation, which relates expressions to classes of entities in the world.

What has just been said is not invalidated by the existence, in all natural languages, of various kinds of metalinguistic expressions; and this point must be emphasized (see 1.2). The distinction between sense and denotation applies to metalinguistic expressions such as 'lexeme', 'word' or 'linguistic expression' in exactly the same way as it applies to other expressions. Admittedly, it is much harder to keep one's thinking straight in the case of metalinguistic expressions than it is in respect of expressions that denote dogs and cats (or shoes, ships, sealing wax, cabbages and kings) and other such denizens of the external world. Nevertheless, it should be clear that linguistic expressions such as 'linguistic expression' and 'lexeme' are related to one another in terms of sense exactly as 'animal' and 'dog' are, whereas 'linguistic expression' and 'lexeme' are related to one another in terms of denotation in the same way as 'animal' is related to some particular dog or other animal. For example, just as 'animal' denotes a class of entities whose members are the dogs Fido, Rover, etc., as well as other subclasses of the class of animals (cows, tigers, camels, etc.), so the English-language expression 'linguistic expression' denotes a class of entities whose members are the linguistic expressions 'linguistic expression', 'lexeme', 'word', etc., as well as, say, 'dog', 'animal', etc.

Denotation, as we have seen, is a relation which holds primarily, or basically, between expressions and physical entities in the external world. But many, if not all, natural languages also contain expressions which denote various kinds of non-physical entities. Although metalinguistic expressions are not the only such expressions, they are of particular interest to the semanticist.

The second point that needs to be made explicit about sense and denotation is that both notions apply equally to lexically simple and lexically composite expressions. For example, 'domesticated canine mammal' is a lexically composite expression, whose sense and denotation is determined by the sense and denotation of its component lexemes. To make the point more technically: the sense and denotation of the composite expression is a **compositional function** of the sense and denotation of its component parts. What is meant by this will be explained in Chapter 4.

A third point, which is perhaps obvious but, like the preceding one, will be important later and needs to be clearly stated, is that sense and denotation are, in general, interdependent in that (in the case of expressions that have both sense and denotation) one would not normally know the one without having at least some knowledge of the other. This raises the possibility that either sense or denotation should be taken to be logically or psychologically more basic than the other. I will take up this question in the following section.

Sense and denotation are not only interdependent: they are inversely related to one another. The nature of this inverse relation can be explained informally as follows: the larger the denotation, the smaller the sense, and conversely. For example, the denotation of 'animal' is larger than, and includes, that of 'dog' (all dogs are animals, but not all animals are dogs), but the sense of 'animal' is less specific than, and is included in, that of 'dog'.

A comparable inverse relation is well recognized in traditional logic in terms of the difference between extension and intension. Roughly speaking, the **extension** of a term, or expression, is the class of entities that it defines, and the **intension** is the defining property of the class. Modern formal

semantics, as we shall see later, has exploited and developed the distinction between extension and intension in various ways. And some scholars have actually identified the sense of an expression with its intension. For reasons which become clearer later, I prefer to treat extension and intension as complementary aspects of denotation. Regardless of the view that one takes of the ontological status, or reality, of properties, it is convenient to be able to say that an expression denotes (extensionally) a class of entities and (intensionally) its defining property (i.e. the property which all members of the class share and by virtue of which they are members of the class in question). For example, it is convenient to be able to say that the word 'red' denotes, not only the class of red things, but also the property of redness. This is intended to be a philosophically neutral way of talking: neutral with respect to the long-standing philosophical controversy between nominalists and realists and neutral with respect to the typically empiricist thesis of extensionality, which has been so influential in twentieth-century logic and philosophical semantics.

Finally, as far as this section is concerned, it must be emphasized that nothing said here about sense and denotation is to be taken as implying that either the one or the other is fully determinate in the case of all, or even most, lexemes in the vocabularies of natural languages. On the contrary, the sense of most lexemes, and therefore of most lexically composite expressions, would seem to be somewhat fuzzy at the edges. Similarly, it is very often unclear whether a particular entity falls within the denotation of an expression or not. What then does it mean to say that someone knows the descriptive meaning of particular expressions in his or her native language? Indeed, how do we manage to communicate with one another, more or less successfully, by means of language, if the descriptive meaning of most lexemes – their sense and denotation – is inherently fuzzy or indeterminate? This question will be taken up in section 3.4.

3.2 BASIC AND NON-BASIC EXPRESSIONS

About half-a-century ago, Bertrand Russell drew a distinction, which has subsequently been much discussed by semanticists (in these or other terms), between what he called object-words and dictionary-words. The distinction itself was by no means original. But Russell expressed himself with characteristic lucidity, and the way in which he developed the underlying, initially appealing, principle makes his formulation of the distinction particularly interesting. Object-words, he tells us, "are defined logically as words having meaning in isolation, and psychologically as words which have been learnt without its being necessary to have previously learnt any other words". Dictionary-words, in contrast, "are theoretically superfluous", since they are definable, and may be learned, in terms of the logically and psychologically more basic object-words (Russell, 1940: 62–3).

Leaving the non-basic dictionary words on one side for the moment, we may now ask how one comes to know the descriptive meaning of the allegedly basic object-words. Russell is quite clear on this point. Object-words are learned by demonstration or, as philosophers say, **ostension**: that is, by showing the learner a sufficient number of entities that fall within the denotation, or extension, of each object-word. At its most explicit, **ostensive definition** – definition by ostension – would involve pointing at one or more entities denoted by the word in question and saying,

(1) *That is a(n) X.*

For example, pointing at one or more dogs, one might say,

(2) *That is a dog.*

Ostensive definition plays a prominent role, in theory if not always in practice, in the empiricist tradition, to which Russell belonged. So too does denotation. And Russell's definition of object-words makes it clear that their meaning, in contrast with that of dictionary words, is wholly a matter of denotation.

But the notion of ostensive definition has come in for a lot of criticism. In fact, it is readily shown to be indefensible in the

form in which Russell and other empiricist philosophers have assumed it to operate. First of all, those for whom an expression is being defined ostensively must understand the meaning of the demonstrative pronoun 'that' in the utterance *That is a(n) X*, or alternatively of the gesture that serves the same purpose. They must also realize what more general purpose is being served by the utterance or gesture in question; it is easy to overlook the importance of this component of the process of ostensive definition. Finally, they must not only appreciate that the entity to which their attention is being drawn, ostensively, is to be considered as an example of some class, but also either know in advance or infer the intension (defining property) of the class that is being exemplified. Every entity exemplifies a potentially infinite set of classes. For example, given that Fido is a member of the class of dogs, it is also a member of indefinitely many of its subclasses (spaniels, dogs with drooping ears, dogs with short legs, dogs with a doleful expression, dogs with reddish-brown hair, etc.); of indefinitely many of the larger classes of entities of which dogs are a subclass (mammals, four-legged creatures, animals, physical entities, etc.); and, most important of all, of indefinitely many classes of entities to which few, if any, other dogs, but lots of non-dogs may belong (e.g., the class of mobile entities that make a recognizable sound and cause little Johnny to coo with pleasure: a class which also includes Mummy, Daddy, the cat, the vacuum cleaner, etc.). How can one tell just which of this potentially infinite set of classes is the one that is being defined?

The problem is not insoluble, if we assume that the person learning the extension of an expression (the class of entities it denotes) has prior knowledge of what its intension is likely to be. For the out-and-out – ***tabula rasa*** – empiricist, however, who assumes that the mind is initially an empty slate (a *tabula rasa* in Latin) upon which post-natal experience, and more especially sensation, writes what it will, the problem does seem to be insoluble. And Russell was an out-and-out empiricist, as have been most philosophers who have made ostensive definition the foundation stone of lexical semantics.

Let us now drop what I will refer to as Russell's **condition of atomicity**: the condition imposed upon basic expressions that

their meaning should be logically and psychologically independent of the meaning of other expressions. It is much easier to get people to see what is being pointed to and to give them some idea of the class that is intended to be exemplified by the entity indicated, if one is allowed to use other expressions, basic or non-basic, that are related in sense to the word that is being defined. For example, if one says, not (2), but

(3) *That animal is a dog,*

one is less likely to be taken to be pointing at the vacuum cleaner or the hearth rug. If one says

(4) *That is a dog – not a cat,*

one thereby draws the addressee's attention to those features, both **phenomenal** and **functional**, which distinguish dogs from cats. In short, ostensive definition is much more likely to be successful if the condition of atomicity is dropped.

Anyway, regardless of whether it is in principle possible to learn the denotation of one expression without knowing (or simultaneously learning) the denotation of other expressions to which it is related in sense, it seems clear that human beings do not operate in this way in practice. They do not, as children, first learn the full extension of, let us say, 'red' without knowing anything of the extension of 'brown' or 'pink'. They do not learn the full extension of 'dog' without knowing anything of the extension of some of the more commonly occurring expressions that are related to it in sense. Russell claimed, it will be recalled, that basic words "are defined ... psychologically, as words which have been learnt without its being necessary to have previously learnt any other words". If 'psychologically' in Russell's definition is understood to make reference to the acquisition of languages by children under normal conditions, then the sense and denotation of what Russell and others might think of as basic words are certainly not psychologically independent of one another. (Incidentally, Russell's own examples, from English, include 'man', 'dog', 'yellow', 'hard', 'sweet', 'walk', 'run', 'eat', 'drink', 'up', 'down', 'in', 'out', 'before', 'after'. All of these are plausibly regarded by rationalists, in the

rationalism-versus-empiricism debate, as words whose meaning might well be acquired on the basis of innate, biologically transmitted, knowledge, interacting with experience.) The acquisition of language by children has been intensively investigated in recent years, and it is clear that children do not learn the meaning of words atomistically (one at a time) in the way that Russell suggests. They generally learn the denotation of one word only by simultaneously learning the denotation of other, semantically related, words and over a period of time making adjustments to their understanding of the sense and denotation of sets of semantically related words.

Where does this leave us, then, as far as the distinction between basic and non-basic expressions is concerned? It has a long history and, as I said earlier, it is intuitively appealing. Obviously, if the argument of the last few paragraphs is accepted, we cannot go along with Russell and say that basic expressions are those whose sense is fully determined by their denotation and that non-basic expressions are those whose sense (which subsequently determines their denotation) is fully determined by the sense of the basic expressions used to define them.

But this does not mean that the distinction itself falls to the ground. After all, it is the very foundation stone of the eminently practical system known as Basic English, invented by C. K. Ogden in the 1930s and intended as an international second language. Basic English has a vocabulary of 850 lexemes; and these are held to be sufficient for the definition of the other lexemes of other languages. And Basic English is one of several such systems which derive ultimately from the philosophical speculations of Leibniz, Bishop Wilkins and other seventeenth-century scholars, whose works inspired the tradition of logical empiricism to which Russell belonged and exerted a powerful influence upon Roget, when he compiled his famous *Thesaurus of English Words and Phrases* in 1852. Also, without making any philosophical claims for the allegedly basic vocabulary with which they operate, many foreign-language manuals deliberately restrict themselves to what they consider to be basic, in the sense of being necessary and sufficient for everyday purposes. In some

countries, and for some languages, lists of basic words of this kind have been officially promulgated, and textbooks and examinations are geared to them.

As for so-called dictionary-words, it is interesting to return now to the lexically composite expressions taken from the entries for 'dog' in two recent dictionaries of English: 'domesticated canine mammal' and 'common four-legged flesh-eating animal'. The former comes from the *Collins Dictionary of the English Language* (1979); the latter from the *Longman Dictionary of Contemporary English* (1978). The most striking difference between them is that the Longman definition is written in words selected from "a controlled vocabulary of approximately 2000 words which were selected by a thorough study of a number of frequency and pedagogic lists" and conforms to the principle that "definitions are always written using simpler terms than the words they describe" (pp. viii-ix), whereas the Collins definition is written with respect to the different, but not incompatible, principle that the definition should be "in lucid English prose" and should be written with words each of which "is itself an entry in the dictionary" (p. vx). Another difference, which will be relevant in the following section, is that the Collins expression is closer to being synonymous with 'dog' (in one of its meanings) than the Longman expression is.

Here I want to emphasize the fact that there are at least two different senses of 'basic' (or 'simple') in which one lexeme may be more basic (or simpler) than another. The more obvious sense of 'basic' is that which depends upon frequency of occurrence in everyday, non-technical, usage. By this criterion the Longman entry clearly contains more basic (and simpler) words than the Collins entry does – though it also requires the user to interpret the lexically composite expressions 'four-legged' and 'flesh-eating'. The deliberately restricted vocabulary of the foreign-language manuals referred to above can be called basic in the same sense.

In principle, however, there is another sense of 'basic'. In this second sense, it is by no means clear that familiar, everyday words, such as 'dog' or 'wolf', are necessarily more basic than less familiar words, such as 'mammal' or 'domesticated'. Some

words might be more basic than others in that they can be used to define a greater proportion of the total vocabulary or can be used to construct a more elegant and systematic set of interconnected definitions. And they might be thought to be more directly associated with what Leibniz and other seventeenth-century philosophers have thought of as **atomic concepts**: the building blocks, as it were, of the conceptual system which guides and constrains all thinking and rational discourse. This is the sense of 'basic', or 'primary', that is dominant in the philosophical tradition, though Russell and others frequently talk as if the two senses will determine much the same class of expressions. It is also this second sense of 'basic' that has been dominant, as we shall see in Chapter 4, in a good deal of recent theorizing in linguistic semantics. There is no reason to believe that the two senses of 'basic' should be applicable to exactly the same lexemes. But it is perhaps reasonable to assume that many of the lexemes in the vocabularies of all natural languages should be basic in both senses. We shall keep this point in mind in our discussion of natural kinds and semantic prototypes.

In this section, I have deliberately introduced and emphasized some philosophical ideas which are rarely mentioned in introductions to semantics written by linguists. I have done this because, in my view, it is impossible to evaluate even the most down-to-earth and apparently unphilosophical works in descriptive semantics unless one has some notion of the general philosophical framework within which they are written. This holds true regardless of whether the authors themselves are aware of the philosophical origins or implications of their working principles.

It remains to add that the empiricist tradition has been immensely important in the development of modern formal semantics and continues to influence the thinking of many who declare themselves to be rationalists and are most vociferous in their rejection of empiricism. Empiricist philosophers have always tended to give priority to the **phenomenal** attributes of entities in their discussion of denotation: i.e., to those attributes that can be known or perceived through the senses. We must be careful not to accept this point of view uncritically, simply

because it has been passed on to us, often no less uncritically, by tradition. The **functional** attributes – those attributes that make things useful to us for particular purposes – are no less important in the determination of what is, or might be, basic in the vocabulary of human languages. For example, edibility is likely to be as important as colour or shape, and just as likely to serve as one of the properties which we recognize as criterial in establishing the denotation of whole sets of lexemes; and edibility for human beings is not only biologically, but also culturally, determined. I have chosen edibility as an example because edibility – i.e., culturally determined edibility – demonstrably serves as a major determinant of the lexical structure of all natural languages.

It may also be added, though I will not go into this here, that edibility, together with shape, size, animacy, sex, etc., is often grammatically (or semi-grammatically) encoded in the **classifiers** or **genders** of languages that have such categories. One can hardly discuss the question of basic and non-basic expressions in natural languages properly without doing so in relation to what is grammaticalized, as well as lexicalized, in particular languages.

3.3 NATURAL (AND CULTURAL) KINDS

Naive monolingual speakers of English, or of any other language, are often surprised when they are told that there are lexemes in their language that cannot be matched with descriptively equivalent lexemes in other languages. And yet it is true. Nor should it be thought that it is only words denoting culturally or geographically restricted classes of entities (e.g., 'shrine', 'boomerang', 'monsoon', 'willow', etc.) that lack their descriptive equivalents in other languages. There is plenty of snow in Greenland; there is no dearth of sand in the Australian desert; and camels are ubiquitous in most of the Arabic-speaking countries. Nevertheless, there is no single, general word for snow in Eskimo, no word for sand in many of the aboriginal languages of Australia, no word for camels as such in Arabic.

Examples like this have now become commonplace and are widely cited in textbooks of linguistics.

But we do not have to take our examples from what many would regard as exotic languages. Despite the impression that might be given by standard bilingual dictionaries, such common English words as 'brown', 'monkey', 'chair', 'jug', 'carpet' – to take but a few – cannot be translated into French, out of context, without making more or less arbitrary choices. According to context, 'brown' is to be translated into French sometimes with 'brun' and sometimes with 'marron', not to mention 'beige' and similar more specific words. There are even occasions, notably with reference to men's shoes, when 'brown' (if we know that it refers to a particularly light shade) might well be translated with 'jaune', which we usually think of as meaning "yellow". And there are numerous other examples cited in the literature. These lexical differences between languages are frequently summarized by linguists in the following generalization: every language divides up the world, or reality, in its own way. A more controversial formulation of the same point, associated in recent years with the names of the American linguists Edward Sapir and Benjamin Lee Whorf, is that what we think of as the world, or reality, is very largely the product of the categories imposed upon perception and thought by the languages we happen to speak. Essentially the same view was taken, at the turn of the century, by the Swiss linguist Ferdinand de Saussure, and is a common, though not essential, component in various kinds of **structuralism**, both European and American.

Structuralism may be contrasted, in this respect, with **atomism** (note the condition of atomicity and the notion of atomic concepts mentioned in the previous section): structuralism emphasizes the interdependence of entities, rather than their individual and separate existence. Indeed, structuralism as a philosophical doctrine maintains in its extreme form that entities have no essence or existence independently of the structure that is imposed by thought or language upon some otherwise undifferentiated world-stuff. It is a heady doctrine, and many semanticists have been intoxicated by it. Diluted with a sufficient measure of naive realism, it is not only philosophically and

psychologically defensible, but provides, in my view, an empirically sounder basis for linguistic semantics than does any atomistic theory of meaning.

Naive realism may differ from philosophical realism. But supporters of each are at one in their belief that the external world exists independently of the mind and of language. Moreover, many philosophical realists would agree with naive realists in saying that the external world is made up of physical entities whose existence is similarly independent of the mind and of language and that some or all of these entities (human beings, animals, things) can be grouped into what are traditionally called **natural kinds**: i.e., classes whose members have the same nature or essence. ('Kind' in this context is to be understood as meaning "genus" or "class".) The most obvious candidates for the status of natural kinds are, of course, living species, which reproduce themselves, as the traditional expression has it, each according to its kind. It is a matter of experience that human beings beget and give birth to human beings; tigers produce new tigers; oak trees reproduce their kind essentially unchanged; and so on. According to the naive realist, the external world also contains (in addition to different kinds of entities) aggregates of different kinds of matter or stuff – water, gold, salt, etc. – such that any two aggregates of stuff are wholly or partly of the same kind or not. Traditional grammar, which was strongly realist in philosophical inspiration throughout most of its history, would say that, whereas proper names denote individual entities, common (i.e., non-proper) nouns denote natural kinds. English, like some but not all languages, draws a grammatical distinction between entity-denoting words, so-called **count nouns** ('man', 'tiger', 'oak tree') and stuff-denoting words, **mass nouns** ('water', 'gold', 'salt'). We have already invoked the distinction between count nouns and mass nouns, it will be recalled, in connexion with the two senses of the English word 'language' (see 1.4).

Until recently, most philosophers of language who have subscribed to the traditional doctrine of natural kinds have interpreted it in terms of the distinction between intension and extension (see 1.3). They have said that to know the meaning of

any expression that denotes a natural kind (i.e., to know its sense) is to know its intension: its defining property, or, in philosophical terms, the necessary and sufficient conditions that must be satisfied by any entity or stuff that falls within the extension of the expression in question. In the last few years, an interestingly new version of the doctrine of natural kinds has been proposed, notably by Saul Kripke (1972) and Hilary Putnam (1975), which severs the connexion between intension and essence. We need not go further into the philosophical issues in this book. It may be noted, however, that the theory of natural-kind expressions, as developed by Putnam and Kripke, transcends the age-old dispute between nominalism and realism: it is like nominalism in that it identifies meaning with naming and takes the association between a natural-kind expression and its extension to be, in all crucial respects, identical with the association between a proper name and its bearer; it is like realism in that it does not deny that members of the same natural kind share the same properties. The arguments deployed by Putnam, Kripke and their followers are subtle and (up to a certain point at least) persuasive. They have been very influential, not only in philosophy, but also in linguistic semantics.

Ideally, any good theory of semantics should fit in with everyday, non-technical accounts of descriptive meaning; it should not be in conflict with commonsense accounts of the kind which non-philosophers and non-linguists give; and it should be empirically plausible and should – to use a traditional expression – **save the appearances**. In one important respect, the Kripke–Putnam approach, mentioned above, does indeed meet these conditions: it does not require that the intension of common natural-kind words (whose meaning, on a commonsense view of the matter, is known to all ordinary native speakers) should be determinate and known to everyone competent in the language. If knowing the descriptive meaning of 'dog' involves knowing the defining characteristics of the natural kind that it denotes, few, if any, speakers of English can be said to know the meaning of 'dog'. There are experts, recognized as such in the culture to which we belong, who can arbitrate for us in dubious cases. For example, if one is prosecuted on the grounds that one has wilfully allowed one's dog to foul the pavement or sidewalk and one denies that it is a dog, an expert witness can be called to settle the matter or, in the last resort, the judge trying the case can give a ruling either arbitrarily or in terms of precedent.

A further important point made by Kripke and Putnam has to do with the conditions under which one is prepared to revise one's previously held view of the meaning of words in the light of new information or of scientific discoveries which change one's view of the world. Let us suppose (to adapt a by now famous example) that biologists one day discover that what we currently think of as the natural kind, or class, of dogs is not a unitary class distinguishable from, let us say, foxes, badgers and cats, or even, more radically, that dogs are not in fact animals, despite all appearances to the contrary, but inanimate automata, skilfully contrived by some supernatural or extraterrestrial being in order to deceive us. Will the word 'dog' have changed its meaning if speakers of English continue to use it in order to refer to what they now know is a heterogeneous class of inanimate entities?

The answer to this question is not self-evident. But one thing is clear. On the assumption that the word 'dog' continues to denote all and everything that it previously denoted, at least this part of its meaning is unchanged. It follows that anyone who subscribes to a purely referential, or denotational, theory of lexical meaning will say that there has been no change in the meaning of the word 'dog'. And this is what Kripke and Putnam, and their followers, say. Those who draw a distinction between denotation and sense in the way that we have drawn it in this chapter can say that, although the denotation of 'dog' has not changed, its sense has: it is no longer related to 'animal' (and other lexemes) in the vocabulary of English as it was previously.

Fanciful examples of the kind that I have just presented may seem, at first sight, to be too far-fetched for serious consideration. But there are plenty of test-cases of a less fanciful kind on record which have been debated by semanticists over the years. Did the English lexeme 'whale' change its meaning when it was discovered that the whale is not a fish, but a mammal? Did the word 'atom' change its meaning when the atom was split? Does

the noun 'sunrise', or the verb 'rise' used of the sun, mean something different now from what it (and its translation-equivalents in other languages) used to mean in pre-Copernican times (and still means for some people)? We shall have occasion to return to questions of this kind from time to time in later chapters. Such questions have been raised here because the discussion of natural kinds by philosophers has been of such importance in linguistic semantics in recent years.

The discussion of natural kinds has been of particular importance when it has also included, or has been combined with, the discussion of what have come to be called **prototypes** (which will be dealt with in the following section). The main philosophical thrust of the discussion of natural kinds is to cast doubt on what might be referred to as the classical view of definition in terms of the specification of the necessary and sufficient conditions for class-membership. As we shall see later, it has also had the effect of rehabilitating, or updating and rendering more plausible, a particular version of ostensive definition.

Before we take up the question of semantic prototypes, in the following section, it should be pointed out that the term 'natural kind', and my presentation of the topic so far, is misleading in one respect. In view of the traditional associations of the term 'natural kind' and its philosophical underpinnings in current discussion, words denoting natural kinds in the traditional sense might be thought to differ semantically from words denoting what I will call **cultural kinds**, like 'dirt' or 'chair'. There is no reason to believe that they do. We have prototypes of the one as we have prototypes of the other and we give the same kind of open-ended definitions combining both phenomenal and functional criteria. In fact, natural kinds in the traditional sense are often combined and divided by languages, in just the way that structuralists have suggested, sometimes arbitrarily, but often for culturally explicable reasons. For example, 'fruit' and 'vegetable' each cover several different kinds, and in their most common, everyday, sense are fuzzy and indeterminate. In so far as their denotation is clear in their prototypical, nuclear or focal, sense the principal criterion which serves to classify a particular natural kind as being either a fruit or a vegetable is

culinary: whether it is eaten, in English-speaking communities, as part of a main meal with meat or fish; whether it is used to make soup; and so on. The truth of the matter seems to be that the cultural and the natural are so intimately associated in the vocabularies of human languages that it is often impossible to say, in most cases, that the one is more basic than the other, in either of the two senses of 'basic' discussed in the preceding section.

This fact emerges very clearly from research that has been carried out on a wide variety of languages, in selected areas of the vocabulary, by anthropologists, psychologists and linguists. Much of this research has been inspired, in recent years, by the important and seminal work on the vocabulary of colour by Berlin and Kay (1969). Other areas of vocabulary that have been investigated from the same point of view include those of shape, botanical and biological nomenclature, and cooking. In general reviews of this work it is customary for authors to emphasize the cross-cultural validity of certain focal categories. It is no less important, however, to insist upon the fact that there is also a good deal of culture-dependent variation across languages. What I said about the meaning of 'fruit' and 'vegetable' in the previous paragraph is typical of all lexical fields, including those of colour and shape. For example, the fact that 'red' and 'white' are used to distinguish two broad categories of wine is something that cannot be accounted for in terms of the focal meanings of these words. It is a culturally established convention, and one that must be learned as one learns to use 'red' and 'white' in a range of characteristic situations and characteristic collocations.

It must also be emphasized that what has been said in this section about the meaning of lexemes which denote natural (and cultural) kinds applies not only to lexemes denoting entities and substances in the physical world, but also to abstract terms and to expressions denoting mythical or imaginary entities and substances. In short, there is no reason to believe that there is anything special, from the point of view of linguistic semantics, about those words whose focal meaning is determined by the

properties of the physical world and by the perceptual mechanisms of human beings.

3.4 SEMANTIC PROTOTYPES

It was pointed out in the preceding section that most speakers of English would have difficulty in specifying the defining characteristics of the natural kind denoted by the word 'dog'; that the denotation of 'dog' is, like that of other words denoting natural (and cultural) kinds, somewhat fuzzy and indeterminate; and that when it is important to decide whether an individual entity (or a particular class of entities) is a member (or subclass) of the natural kind in question – e.g., in a court of law or for scientific purposes – the decision is commonly entrusted to experts. But even experts – including lexicographers – often disagree among themselves or find it difficult, in the last resort, to decide non-arbitrarily whether something does or does not fall within the denotation of a so-called natural-kind expression. The denotation (if not the sense) of natural-kind expressions, it has been argued, is inherently indeterminate.

But, if this is so, how is it that speakers of a language seem to use such natural-kind expressions as 'dog' for the most part successfully and without difficulty? One answer to this question is that they only rarely find themselves operating in the fuzzy or indeterminate area of a word's meaning. Speakers of a language normally operate with what have come to be called **prototypes** (or stereotypes); and usually what they want to refer to conforms to the prototype. For example, the prototype for 'dog' might be rather like the Longman definition, which was contrasted with the Collins definition in section 3.2: "a common four-legged flesh-eating animal, especially any of the many varieties used by man as a companion or for hunting, working, guarding, etc.". I have now quoted the definition in full; and it will be observed that the additional part of the definition, running from "especially" to "etc.", indicates that there are several varieties of dogs and that some of these fall within the **nuclear extension** or **focal extension** of 'dog' (that is, they are more typical subclasses of the class than other, non-nuclear or non-focal, varieties are). As for the varieties, most native speakers of English could, no doubt, name a few, and dog-fanciers a lot more: spaniels, terriers, poodles, etc. When it is said that someone knows the meaning of 'dog', it is implied that they have just this kind of knowledge. As I pointed out earlier, the Longman definition unlike the Collins definition ("domesticated canine mammal") does not claim to be synonymous with what it defines. But this is not necessarily a flaw. Sometimes the descriptive meaning of a lexeme can be explained by means of a more or less synonymous paraphrase; in other cases, it can be best conveyed by means of an admittedly imperfect and open-ended definition of the prototype.

The notion of semantic prototypes that has just been explained originated in psycholinguistics and can be related historically to psychological research on the way cognitive categories are learned by infants and children in the course of their development into adults. It has long been clear, of course, that cognitive development proceeds simultaneously and in step with the acquisition of language and that the two developmental processes are not only temporally, but also, at least to some degree, causally connected. The exact nature of this causal connexion, or interdependence, between linguistic and cognitive development is not so clear. As we have seen, on one interpretation of what was referred to earlier as the Sapir–Whorf hypothesis, it is language that is seen as determining thought (3.3); according to the more traditional view of what causes what, it is the structure and operation of the mind that determines the grammatical and semantic structure of languages. Any linguistic theory that is based on the traditional view of the direction of causation between the mind and language I will here refer to, broadly, as **cognitivism**.

Cognitivism, which, as I have defined it, is an eminently traditional doctrine, has recently become very influential in linguistics, both in semantics and in grammar. Indeed, the terms 'cognitive grammar' and 'cognitive semantics' are now used quite widely in linguistics to refer to a variety of theories which have developed the basic principles of cognitivism in particular directions. And given the historical background that I have

outlined in the previous paragraph, it is not surprising that the notion of semantic prototypes should have been developed, in the first instance, by cognitivists. It is important to realize, however, that there is no necessary connexion between cognitivism and the notion of semantic prototypes. Cognitivism (which comes in various forms) does not carry with it a commitment to the use of the notion of semantic prototypes and, conversely, the use of semantic prototypes does not carry with it a commitment to cognitivism.

Since the notion of semantic prototypes is often coupled with that of natural kinds (and I have introduced it in this context in the preceding section) and the term 'natural kind' is historically associated with philosophical realism, there is a similar point to be made about cognitivism and realism. Cognitivists are often realists (in the philosophical sense of this term), but, in principle, they need not be: i.e., they may, but they need not, take the view that the structure of the world is essentially as it is perceived and categorized by the mind and that, since (according to the cognitivist) the grammatical and semantic structure of languages is determined by the categories of cognition, the grammatical and semantic structure of languages is determined, indirectly, by the structure of the world in terms of such ontological categories as natural kinds. Conversely, it is possible for someone to take the view (and many do) that what counts is not the ontological structure of the world as such, but representations of the world (independently of whether these representations are faithful representations or not).

In what follows, not only in this chapter, but throughout the whole book, I am adopting a naively realist view of the relation between language and the world. It is a view which is compatible with, but not dependent upon, various kinds of cognitivism and is presented throughout within the framework of what is sometimes called autonomous linguistics. It is also compatible with (though not logically dependent on) the assumption, which has long been accepted (though, as we have seen, it was challenged by what I call *tabula rasa* empiricists), that both linguistic and cognitive development are controlled by innate, genetically transmitted mechanisms.

As we have seen, the notion of semantic prototypes was invoked initially, in lexical semantics, in the definition of words denoting natural kinds, such as 'dog', 'tiger' or 'lemon'. But, as we have also seen in this chapter, there is no reason to say that the meaning of natural-kind words differs qualitatively from the meaning of words denoting cultural kinds. And the notion of semantic prototypes has been applied by linguists, not only to nouns denoting cultural kinds (such as 'bachelor', 'cup', or 'chair'), but to various subclasses of verbs and adjectives, including colour-terms.

The effect of the adoption of the notion of semantic prototypes in lexical semantics has been the rejection by many linguists of what is sometimes referred to as the checklist theory of definition. According to this theory, which derives from the classical, Aristotelian, notion of essential and accidental properties, every member of a class – and, more especially, every member of a natural kind – must possess (in equal measure) all those properties which, being individually necessary and jointly sufficient, constitute the intension of the class and subclass (the genus and the species) to which it belongs. These properties, in contrast with an entity's accidental properties, are essential in that they constitute its essence (or nature). Moreover, for each such property, the entity in question either has it or does not have it; there is no indeterminacy; and there is no question of more or less. Hence, the term 'checklist': to decide whether something does or does not fall within the scope of a definition – whether something is or is not a dog, a fish, a lemon, etc. – one checks the list of defining properties for the class to which it is thought to belong; and the question whether it does or does not belong to the class is always, at least in principle, decidable.

For further discussion of the implications of replacing the classical theory of lexical definition with a theory based on the notion of semantic prototypes, reference should be made to the works cited in the 'Suggestions for further reading' (several of these works contain a wealth of examples from several languages and from many different areas of the vocabulary). What has been said here about the so-called checklist theory of lexical meaning will be of particular relevance to componential

analysis, which is dealt with in the following chapter. But it should be clear that traditional lexicographical practice has been strongly influenced by the classical, or Aristotelian, theory of definition in terms of the essential properties of things.

Rejection of the traditional view of lexical definition has also led many linguists to reject the no less traditional distinction between a dictionary and an encyclopaedia: to put it in psychological terms, between two kinds of knowledge, linguistic and non-linguistic. It is easy enough to draw this distinction in the abstract, especially in psychological terms. One can say that knowing the meaning of a word is a part of linguistic competence (in the Chomskyan sense of 'competence': see section 1.4) and is stored in the brain, in what is commonly referred to in the current literature of psycholinguistics as the mental lexicon, whereas non-linguistic, encyclopaedic, knowledge is stored elsewhere in the brain, may be qualitatively different as knowledge, and, unlike linguistic knowledge, may vary from individual to individual. The problem is that, although a certain amount of progress has been made by psycholinguists in the study of the mental lexicon in recent years, it is still by no means clear whether linguistic knowledge is qualitatively different from other kinds of knowledge (or belief) and stored, neurophysiologically, in another part of the brain.

As to other ways of drawing a distinction between a dictionary and an encyclopaedia that have been proposed in lexical semantics, they too must be treated with caution. Everything that has been said so far in Part 2 of this book tends to support the view that one's knowledge of language and one's knowledge of the world (including the culture in which the language operates) are interdependent. We can draw a distinction, as far as descriptive meaning is concerned, between sense and denotation. We can also say, legitimately, that the former is more definitely linguistic in that it is wholly language-internal, whereas the latter relates the language to the world. In doing so, we can accept that the lexical linkage of languages to the world, at least for some kinds of words, may very well involve knowledge (or belief) about the world. If we are guided by lexicographical practice, rather than simply by linguistic or psycholinguistic theory, we

shall certainly take this view. As we have seen in our discussion of typical dictionary definitions for the natural-kind noun 'dog', it is not only dictionaries that are explicitly described as encyclopaedic which supply what might be described as encyclopaedic information about what such words (prototypically) denote. It may be added that many conventional reference dictionaries provide for such words pictures of what they (prototypically) denote (as well as definitions which, as was noted above, derive historically from the classical theory of definition); and that those who consult dictionaries of this kind usually find the pictures helpful, if not essential. Theories of lexical meaning that invoke the notion of natural (and cultural) kinds, and more especially those that also invoke the notion of prototypes, can be seen as providing philosophical and psycholinguistic support for this part of traditional lexicographical practice.

In what follows, we shall leave on one side the question whether the distinction between linguistic and non-linguistic (encyclopaedic) meaning is viable (as far as the denotation of all words that have denotation is concerned). We shall concentrate instead on the way in which the language-internal part of lexical meaning has been handled in recent linguistic semantics: we shall concentrate on sense, rather than denotation; on word-to-word, rather than word-to-world relations.