

chapter 3

Word Meaning

3.1 Introduction

In this chapter we turn to the study of word meaning, or **lexical semantics**.¹ The traditional descriptive aims of lexical semantics have been: (a) to represent the meaning of each word in the language; and (b) to show how the meanings of words in a language are interrelated. These aims are closely related because, as we mentioned in chapter 1, the meaning of a word is defined in part by its relations with other words in the language. We can follow structuralist thought and recognize that as well as being in a relationship with other words in the same sentence, a word is also in a relationship with other, related but absent words.² To take a very simple example, if someone says to you:

3.1 I saw my mother just now.

you know, without any further information, that the speaker saw a woman. As we will see, there are a couple of ways of viewing this: one is to say that this knowledge follows from the relationship between the uttered word *mother* and the related, but unspoken word *woman*, representing links in the vocabulary. Another approach is to claim that the word *mother* contains a semantic element WOMAN³ as part of its meaning.

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Whatever our particular decision about this case, it is easy to show that lexical relations are central to the way speakers and hearers construct meaning.⁴ One example comes from looking at the different kinds of conclusions that speakers may draw from an utterance. See, for example, the following sentences, where English speakers would probably agree that each of the b sentences below follows automatically from its a partner (where we assume as usual that repeated nominals have the same reference), whereas the c sentence, while it might be a reasonable inference in context, does not follow in this automatic way:

- 3.2 a. My bank manager has just been murdered.
 b. My bank manager is dead.
 c. My bank will be getting a new manager.
- 3.3 a. Rob has failed his statistics exam.
 b. Rob hasn't passed his statistics exam.
 c. Rob can't bank on a glittering career as a statistician.
- 3.4 a. This bicycle belongs to Sinead.
 b. Sinead owns this bicycle.
 c. Sinead rides a bicycle.

The relationship between the a and b sentences in (3.2–4) was called **entailment** in chapter 1, and we look at it in more detail in chapter 4. For now we can say that the relationship is such that if we believe the a sentence, then we are automatically committed to the b sentence. On the other hand, we can easily imagine situations where we believe the a sentence but can deny the associated c sentence. As we shall see in chapters 4 and 7, this is a sign that the inference from a to c is of a different kind from the entailment relationship between a and b. This entailment relationship is important here because in these examples it is a reflection of our lexical knowledge: the entailments in these sentences can be seen to follow from the semantic relations between *murder* and *dead*, *fail* and *pass*, and *belong* and *own*.

As we shall see, there are many different types of relationship that can hold between words, and investigating these has been the pursuit of poets, philosophers, writers of laws, and others for centuries. The study of word meanings, especially the changes that seem to take place over time, are also the concern of philology, and of lexicology. As a consequence of these different interests in word meaning there has evolved a large number of terms describing differences and similarities of word meaning. In this chapter we begin by discussing the basic task of identifying words as units, and then examine some of the problems involved in pinning down their meanings. We then look at some typical semantic relations between words, and examine the network-like structure that these relations give to our mental lexicon. Finally we discuss the search for lexical universals. The topics in this chapter act as a background to chapter 9, where we discuss some specific theoretical approaches to word meaning.

3.2 Words and Grammatical Categories

It is clear that grammatical categories like noun, preposition, and so on, though defined in modern linguistics at the level of syntax and morphology, do reflect

semantic differences: different categories of words must be given different semantic descriptions. To take a few examples: names, common nouns, pronouns, and what we might call **logical words** (see below and chapter 4) all show different characteristics of reference and sense:

- | | | |
|-----|------------------|-----------------------------|
| 3.5 | a. names | e.g. Fred Flintstone |
| | b. common nouns | e.g. dog, banana, tarantula |
| | c. pronouns | e.g. I, you, we, them |
| | d. logical words | e.g. not, and, or, all, any |

Looking at these types of words, we can say that they operate in different ways: some types may be used to refer (e.g. names), others may not (e.g. logical words); some can only be interpreted in particular contexts (e.g. pronouns), others are very consistent in meaning across a whole range of contexts (e.g. logical words); and so on. It seems too that semantic links will tend to hold between members of the same group rather than across groups. So that semantic relations between common nouns like *man*, *woman*, *animal*, and so on, are clearer than between any noun and words like *and*, *or*, *not*, and vice versa.

Note too that this is only a selection of categories: we will have to account for others like verbs, adjectives, adverbs, prepositions, and so on. Having said this, we deal mainly with nouns and verbs in this chapter; the reader should bear in mind that this is not the whole story.

3.3 Words and Lexical Items

We will follow general linguistic tradition and assume that we must have a list of all the words in a language, together with idiosyncratic information about them, and call this body of information a **dictionary** or **lexicon**. Our interest in semantics is with **lexemes** or **semantic words**, and as we shall see there are a number of ways of listing these in a lexicon. But first we should examine this unit **word**. Words can be identified at the level of writing, where we are familiar with them being separated by white space, where we can call them **orthographic words**. They can also be identified at the levels of phonology, where they are strings of sounds that may show internal structuring which does not occur outside the word, and syntax, where the same semantic word can be represented by several grammatically distinct variants. Thus *walks*, *walking*, *walked* in 3.6 below are three different **grammatical** words:

- | | |
|-----|------------------------------|
| 3.6 | a. He walks like a duck. |
| | b. He's walking like a duck. |
| | c. He walked like a duck. |

However, for semantics we will want to say these are instances of the same lexeme, the verb **walk**. We can then say that our three grammatical words share the meaning of the lexeme. This abstraction from grammatical words to semantic words is already familiar to us from published dictionaries, where lexicographers use abstract entries like **go**, **sleep**, **walk**, and so on for purposes of explaining word meaning, and we don't really worry too much what grammatical status the reference form has. In Samuel Johnson's *A Dictionary of the English Language*, for example, the infinitive is used as the entry form, or **lemma**, for verbs, giving us entries like *to walk*, *to sleep*,

and so on (Johnson 1983), but now most of us are used to dictionaries and we accept an abstract dictionary form to identify a semantic word.

Our discussion so far has assumed an ability to identify words. This doesn't seem too enormous an assumption in ordinary life, but there are a number of well-known problems in trying to identify the word as a well-defined linguistic unit. One traditional problem was how to combine the various levels of application of word, mentioned above, to an overall definition: what is a word? As Edward Sapir noted, it is no good simply using a semantic definition as a basis, since across languages speakers package meaning into words in very different ways:

- 3.7 Our first impulse, no doubt, would have been to define the word as the symbolic, linguistic counterpart of a single concept. We now know that such a definition is impossible. In truth it is impossible to define the word from a functional standpoint at all, for the word may be anything from the expression of a single concept – concrete or abstract or purely relational (as in *of* or *by* or *and*) – to the expression of a complete thought (as in Latin *dico* “I say” or, with greater elaborateness of form, as in a Nootka verb form denoting “I have been accustomed to eat twenty round objects [e.g. apples] while engaged in [doing so and so]”). In the latter case the word becomes identical with the sentence. The word is merely a form, a definitely molded entity that takes in as much or as little of the conceptual material of the whole thought as the genius of the language cares to allow. (Sapir 1949: 32)

Why bother then attempting to find a universal definition? The problem is that in very many languages, words do seem to have some psychological reality for speakers; a fact also noted by Sapir from his work on native American languages:

- 3.8 Linguistic experience, both as expressed in standardized, written form and as tested in daily usage, indicates overwhelmingly that there is not, as a rule, the slightest difficulty in bringing the word to consciousness as a psychological reality. No more convincing test could be desired than this, that the naive Indian, quite unaccustomed to the concept of the written word, has nevertheless no serious difficulty in dictating a text to a linguistic student word by word; he tends, of course, to run his words together as in actual speech, but if he is called to a halt and is made to understand what is desired, he can readily isolate the words as such, repeating them as units. He regularly refuses, on the other hand, to isolate the radical or grammatical element, on the ground that it “makes no sense.” (Sapir 1949: 33–4)

One answer is to switch from a semantic definition to a grammatical one, such as Leonard Bloomfield's famous definition:

- 3.9 A word, then, is a free form which does not consist entirely of (two or more) lesser free forms; in brief, a word is a *minimum free form*.

Since only free forms can be isolated in actual speech, the word, as the minimum of free form, plays a very important part in our attitude toward language. For the purposes of ordinary life, the word is the smallest unit of speech. (Bloomfield 1984: 178)

This distributional definition identifies words as independent elements, which show their independence by being able to occur in isolation, that is to form one-word

utterances. This actually works quite well for most cases, but leaves elements like *a*, *the*, and *my* in a gray area. Speakers seem to feel that these are words, and write them separately, as in *a car*, *my car*, and so on, but they don't occur as one word utterances, and so are not words by this definition. Bloomfield was of course aware of such problem cases:

- 3.10 None of these criteria can be strictly applied: many forms lie on the borderline between bound forms and words, or between words and phrases; it is impossible to make a rigid distinction between forms that may and forms that may not be spoken in absolute position.⁵ (Bloomfield 1984: 181)

There have been other suggestions for how to define words grammatically: Lyons (1968) for example, discusses another distributional definition, this time based on the extent to which morphemes stick together. The idea is that the attachments between elements within a word will be firmer than will the attachments between words themselves. This is shown by numbering the morphemes as in 3.11, and then attempting to rearrange them as in 3.12:

- 3.11 Internal cohesion (Lyons 1968: 202–04)

the₁ + boy₂ + s₃ + walk₄ + ed₅ + slow₆ + ly₇ + up₈ + the₉ + hill₁₀

- 3.12 a. slow₆ + ly₇ + the₁ + boy₂ + s₃ + walk₄ + ed₅ + up₈ + the₉ + hill₁₀
 b. up₈ + the₉ + hill₁₀ + slow₆ + ly₇ + walk₄ + ed₅ + the₁ + boy₂ + s₃
 c. *s₃ + boy₂ + the₁
 d. *ed₅ + walk₄

This works well for distinguishing between the words *walked* and *slowly*, but as we can see also leaves *the* as a problem case. It behaves more like a bound morpheme than an independent word: we can no more say **boys the* than we can say just *the* in isolation.

We can leave the debate at this point: that words seem to be identifiable at the level of grammar, but that there will be, as Bloomfield said, borderline cases. As we said earlier, the usual approach in semantics is to try to associate phonological and grammatical words with semantic words or lexemes. Earlier we saw an example of three grammatical words representing one semantic word. The inverse is possible: several lexemes can be represented by one phonological and grammatical word. We can see an example of this by looking at the word *foot* in the following sentences:

- 3.13 a. He scored with his left **foot**.
 b. They made camp at the **foot** of the mountain.
 c. I ate a **foot**-long hot dog.

Each of these uses has a different meaning and we can reflect this by identifying three lexemes in 3.13. Another way of describing this is to say that we have three **senses** of the word *foot*. We could represent this by numbering the senses:

- 3.14 **foot**¹: part of the leg below the ankle;
foot²: base or bottom of something;
foot³: unit of length, one third of a yard.

Once we have established our lexemes, the lexicon will be a listing of them with a representation of:

1. the lexeme's pronunciation;
2. its grammatical status;
3. its meaning;
4. its meaning relations with other lexemes.⁶

Traditionally, each entry has to have any information that cannot be predicted by general rules. This means that different types of information will have to be included: about unpredictable pronunciation; about any exceptional morphological behavior; about what syntactic category the item is, and so on, and of course, the semantic information that has to be there: the meaning of the lexeme, and the semantic relations it enters into with other lexemes in the language.

One point that emerges quite quickly from such a listing of lexemes is that some share a number of the properties we are interested in. For example the three lexemes in 3.13 all share the same pronunciation ([fʊt]), and the same syntactic category (noun). Dictionary writers economize by grouping senses and listing the shared properties just once at the head of the group, for example:

- 3.15 **foot** [fʊt] noun. 1. part of the leg below the ankle. 2. base or bottom of something. 3. unit of length, one third of a yard.

This group is often called a **lexical entry**. Thus a lexical entry may contain several lexemes or senses. The principles for grouping lexemes into lexical entries vary somewhat. Usually the lexicographer tries to group words that, as well as sharing phonological and grammatical properties, make some sense as a semantic grouping, either by having some common elements of meaning, or by being historically related. We will look at how this is done in section 3.5 below when we discuss the semantic relations of **homonymy** and **polysemy**. Other questions arise when the same phonological word belongs to several grammatical categories, for example the verb *heat*, as in *We've got to heat the soup*, and the related noun *heat*, as in *This heat is oppressive*. Should these belong in the same entry? Many dictionaries do this, sometimes listing all the nominal senses before the verbal senses, or vice versa. Readers can check their favorite dictionary to see the solution adopted for this example.

There are traditional problems associated with the mapping between lexemes and words at other levels, which we might mention but not investigate in any detail here. One example, which we have already mentioned, is the existence of multi-word units, like **phrasal verbs**, for example: *throw up* and *look after*; or the more complicated *put up with*. We can take as another example **idioms** like *kick the bucket*, *spill the beans*, and so on. Phrasal verbs and idioms are both cases where a string of words can correspond to a single semantic unit.

3.4 Problems with Pinning Down Word Meaning

As every speaker knows if asked the meaning of a particular word, word meaning is slippery. Different native speakers might feel they know the meaning of a word, but then come up with somewhat different definitions. Other words they might have

only the vaguest feel for and have to use a dictionary to check. Some of this difficulty arises from the influence of context on word meaning, as discussed by Firth (1957), Halliday (1966) and Lyons (1963). Usually it is easier to define a word if you are given the phrase or sentence it occurs in. These contextual effects seem to pull word meanings in two opposite directions. The first, restricting influence is the tendency for words to occur together repeatedly, called **collocation**. Halliday (1966), for example, compares the collocation patterns of two adjectives *strong* and *powerful*, which might seem to have similar meanings. Though we can use both for some items, for instance *strong arguments* and *powerful arguments*, elsewhere there are collocation effects. For example we talk of *strong tea* rather than *powerful tea*; but a *powerful car* rather than a *strong car*. Similarly *blond* collocates with *hair* and *addle* with *eggs*. As Gruber (1965) notes, names for groups act like this: we say a *herd of cattle*, but a *pack of dogs*.

These collocations can undergo a fossilization process until they become fixed expressions. We talk of *hot and cold running water* rather than *cold and hot running water*; and say *They're husband and wife*, rather than *wife and husband*. Such fixed expressions are common with food: *salt and vinegar*, *fish and chips*, *curry and rice*, *bangers and mash*, *franks and beans*, and so on.⁷ A similar type of fossilization results in the creation of **idioms**, expressions where the individual words have ceased to have independent meanings. In expressions like *kith and kin* or *spick and span*, not many English speakers would be able to assign a meaning here to *kith* or *span*.

Contextual effects can also pull word meanings in the other direction, toward creativity and semantic shift. In different contexts, for example, a noun like *run* can have somewhat different meanings, as in 3.16 below:

- 3.16
- a. I go for a run every morning.
 - b. The tail-end batsmen added a single run before lunch.
 - c. The ball-player hit a home run.
 - d. We took the new car for a run.
 - e. He built a new run for his chickens.
 - f. There's been a run on the dollar.
 - g. The bears are here for the salmon run.

The problem is how to view the relationship between these instances of *run* above. Are these seven different senses of the word *run*? Or are they examples of the same sense influenced by different contexts? That is, is there some sketchy common meaning that is plastic enough to be made to fit the different context provoked by other words like *batsmen*, *chickens*, and *the dollar*? The answer might not be simple: some instances, for example 3.16b and c, or perhaps, a, b, and c, seem more closely related than others. Some writers have described this distinction in terms of **ambiguity** and **vagueness**. The proposal is that if each of the meanings of *run* in 3.16 is a different sense, then *run* is seven ways ambiguous; but if 3.16a–g share the same sense, then *run* is merely vague between these different uses. The basic idea is that in examples of vagueness the context can add information that is not specified in the sense, but in examples of ambiguity the context will cause one of the senses to be selected. The problem, of course, is to decide, for any given example, whether one is dealing with ambiguity or vagueness. Several tests have been proposed, but they are difficult to apply. The main reason for this is once again context. Ambiguity is usually

more potential than real since in any given context one of the readings is likely to fit the context and be automatically selected by the participants; they may not even be aware of readings that they would naturally prefer in other contexts. This means that we have to employ some ingenuity in applying ambiguity tests: usually they involve inventing a sentence and a context where both readings could be available. We can briefly examine some of the tests that have been proposed.

One test proposed by Zwicky and Sadock (1975) and Kempson (1977) relies on the use of abbreviatory forms like *do so*, *do so too*, *so do*. These are short forms used to avoid repeating a verb phrase, for example:

- 3.17 a. Charlie hates mayonnaise and **so does** Mary.
b. He took a form and Sean **did too**.

Such expressions are understandable because there is a convention of **identity** between them and the preceding verb phrase: thus we know that in 3.17a Mary hates mayonnaise and in 3.17b Sean took a form. This test relies on this identity: if the preceding verb phrase has more than one sense, then whichever sense is selected in this first full verb phrase must be kept the same in the following *do so* clause. For example 3.18a below has the two interpretations in 3.18b and 3.18c:

- 3.18 a. Duffy discovered a mole.
b. Duffy discovered a small burrowing mammal.
c. Duffy discovered a long-dormant spy.

This relies of course on the two meanings of *mole*, and is therefore a case of **lexical ambiguity**. If we add a *do so* clause as in 3.18d:

- d. Duffy discovered a mole, and so did Clark.

whichever sense is selected in the first clause has to be repeated in the second, that is, it is not possible for the first clause to have the *mammal* interpretation and the second the *spy* interpretation, or vice versa. By contrast where a word is vague, the unspecified aspects of meaning are invisible to this *do so* identity. Basically, they are not part of the meaning and therefore are not available for the identity check. We can compare this with the word *publicist* that can be used to mean either a male or female, as 3.19 below shows:

- 3.19 a. He's our publicist.
b. She's our publicist.

Is *publicist* then ambiguous? In a sentence like 3.20 below:

- 3.20 They hired a publicist and so did we.

it is quite possible for the publicist in the first clause to be male and in the second, female. Thus this test seems to show that *publicist* is unspecified, or "vague," for gender. We can see that vagueness allows different specifications in *do so* clauses, but the different senses of an ambiguous word cannot be chosen.

This *do so* identity test seems to work, but as mentioned earlier, its use relies on being able to construct examples where the same sentence has two meanings. In our *run* examples earlier, the different instances of *run* occur in different contexts and it is difficult to think of an example of a single sentence that could have two interpretations of *run*, say the cricket interpretation and the financial one.

A second type of test for ambiguity relies on one sense being in a network of relations with certain other lexemes and another sense being in a different network. So, for example, the *run* of 3.16a above might be in relation of near synonymy to another noun like *jog*, while *run* in 3.16e might be in a similar relation to nouns like *pen*, *enclosure*, and so on. Thus while the b sentences below are fine, the c versions are bizarre:

- 3.21 a. I go for a run every morning.
 b. I go for a jog every morning.
 c. ?I go for an enclosure every morning.
- 3.22 a. He built a new run for his chickens.
 b. He built a new enclosure for his chickens.
 c. ?He built a new jog for his chickens.

This **sense relations test** suggests that *run* is ambiguous between the 3.16a and 3.16e readings.

A third test employs **zeugma**, which is a feeling of oddness or anomaly when two distinct senses of a word are activated at the same item, that is in the same sentence, and usually by conjunction, for example ?*Jane drew a picture and the curtains*, which activates two distinct senses of *draw*. Zeugma is often used for comic effect, as in *Joan lost her umbrella and her temper*. If zeugma is produced, it is suggested, we can identify ambiguity, thus predicting the ambiguity of *run* as below:

- 3.23 ?He planned a run for charity and one for his chickens.

This test is somewhat hampered by the difficulty of creating the appropriate structures and because the effect is rather subjective and context-dependent.

There are a number of other tests for ambiguity, many of which are difficult to apply and few of which are uncontroversially successful; see Cruse (1986: 49–83) for a discussion of these tests. It seems likely that whatever intuitions and arguments we come up with to distinguish between contextual coloring and different sense, the process will not be an exact one. We'll see a similar problem in the next section, when we discuss **homonymy** and **polysemy**, where lexicographers have to adopt procedures for distinguishing related senses of the same lexical entry from different lexical entries.

In the next section we describe and exemplify some of the semantic relations that can hold between lexical items.

3.5 Lexical Relations

There are a number of different types of lexical relation, as we shall see. A particular lexeme may be simultaneously in a number of these relations, so that it may be more accurate to think of the lexicon as a **network**, rather than a listing of words as in a published dictionary.

An important organizational principle in the lexicon is the **lexical field**. This is a group of lexemes that belong to a particular activity or area of specialist knowledge, such as the terms in cooking or sailing; or the vocabulary used by doctors, coal miners, or mountain climbers. One effect is the use of specialist terms like *phoneme* in linguistics or *gigabyte* in computing. More common, though, is the use of different senses for a word, for example:

- 3.24 **blanket**¹ verb. to cover as with a blanket.
 blanket² verb. *Sailing*. to block another vessel's wind by sailing close to it on the windward side.
- 3.25 **ledger**¹ noun. *Bookkeeping*. the main book in which a company's financial records are kept.
 ledger² noun. *Angling*. a trace that holds the bait above the bottom.

Dictionaries recognize the effect of lexical fields by including in lexical entries labels like *Banking*, *Medicine*, *Angling*, and so on, as in our examples above.

One effect of lexical fields is that lexical relations are more common between lexemes in the same field. Thus **peak**¹ "part of a mountain" is a near synonym of *summit*, while **peak**² "part of a hat" is a near synonym of *visor*. In the examples of lexical relations that follow, the influence of lexical fields will be clear.

3.5.1 Homonymy

Homonyms are unrelated senses of the same phonological word. Some authors distinguish between **homographs**, senses of the same written word, and **homophones**, senses of the same spoken word. Here we will generally just use the term homonym. We can distinguish different types depending on their syntactic behavior, and spelling, for example:

1. lexemes of the same syntactic category, and with the same spelling: e.g. *lap* "circuit of a course" and *lap* "part of body when sitting down";
2. of the same category, but with different spelling: e.g. the verbs *ring* and *wring*;
3. of different categories, but with the same spelling: e.g. the verb *bear* and the noun *bear*;
4. of different categories, and with different spelling: e.g. *not*, *knot*.

Of course variations in pronunciation mean that not all speakers have the same set of homonyms. Some English speakers for example pronounce the pairs *click* and *clique*, or *talk* and *torque*, in the same way, making these homonyms, which are spelled differently.

3.5.2 Polysemy

There is a traditional distinction made in lexicology between homonymy and **polysemy**. Both deal with multiple senses of the same phonological word, but polysemy is invoked if the senses are judged to be related. This is an important distinction

for lexicographers in the design of their dictionaries, because polysemous senses are listed under the same lexical entry, while homonymous senses are given separate entries. Lexicographers tend to use criteria of “relatedness” to identify polysemy. These criteria include speakers’ intuitions, and what is known about the historical development of the items. We can take an example of the distinction from the *Collins English Dictionary* (Treffry 2000: 743) where, as 3.26 below shows, various senses of *hook* are treated as polysemy and therefore listed under one lexical entry:

- 3.26 **hook** (hʊk) *n.* 1. a piece of material, usually metal, curved or bent and used to suspend, catch, hold, or pull something. 2. short for fish-hook. 3. a trap or snare. 4. *Chiefly U.S.* something that attracts or is intended to be an attraction. 5. something resembling a hook in design or use. 6.a. a sharp bend or angle in a geological formation, esp. a river. b. a sharply curved spit of land. 7. *Boxing.* a short swinging blow delivered from the side with the elbow bent. 8. *Cricket.* a shot in which the ball is hit square on the leg side with the bat held horizontally. 9. *Golf.* a shot that causes the ball to swerve sharply from right to left. 10. *Surfing.* the top of a breaking wave, etc.

Two groups of senses of *hooker* on the other hand, as 3.27 below shows, are treated as unrelated, therefore a case of homonymy, and given two separate entries:

- 3.27 **hooker**¹ (ˈhʊkə) *n.* 1. a commercial fishing boat using hooks and lines instead of nets. 2. a sailing boat of the west of Ireland formerly used for cargo and now for pleasure sailing and racing.
- hooker**² (ˈhʊkə) *n.* 1. a person or thing that hooks. 2. *U.S. and Canadian slang.* 2a. a draft of alcoholic drink, esp. of spirits. 2b. a prostitute. 3. *Rugby.* the central forward in the front row of a scrum whose main job is to hook the ball.

Such decisions are not always clear-cut. Speakers may differ in their intuitions, and worse, historical facts and speaker intuitions may contradict each other. For example, most English speakers seem to feel that the two words *sole* “bottom of the foot” and *sole* “flatfish” are unrelated, and should be given separate lexical entries as a case of homonymy. They are however historically derived via French from the same Latin word *solea* “sandal.” So an argument could be made for polysemy. Since in this case, however, the relationship is really in Latin, and the words entered English from French at different times, dictionaries side with the speakers’ intuitions and list them separately. A more recent example is the adjective *gay* with its two meanings “lively, light-hearted, carefree” and “homosexual.” Although the latter meaning was derived from the former, for current speakers the two senses are quite distinct, and are thus homonyms.

3.5.3 Synonymy

Synonyms are different phonological words that have the same or very similar meanings. Some examples might be the pairs below:

- 3.28 couch/sofa boy/lad lawyer/attorney toilet/lavatory large/big

Even these few examples show that true or exact synonyms are very rare. As Palmer (1981) notes, the synonyms often have different distributions along a number of parameters. They may have belonged to different dialects and then become synonyms for speakers familiar with both dialects, like Irish English *press* and British English *cupboard*. Similarly the words may originate from different languages, for example *cloth* (from Old English) and *fabric* (from Latin). An important source of synonymy is taboo areas where a range of euphemisms may occur, for example in the English vocabulary for sex, death, and the body. We can cite, for example, the entry for *die* from Roget's *Thesaurus*:

- 3.29 *die*: cease living: de cease, demise, depart, drop, expire, go, pass away, pass (on), perish, succumb. *Informal*: pop off. *Slang*: check out, croak, kick in, kick off. *Idioms*: bite the dust, breathe one's last, cash in, give up the ghost, go to one's grave, kick the bucket, meet one's end (or Maker), pass on to the Great Beyond, turn up one's toes. (Roget 1995)

As this entry suggests, the words may belong to different **registers**, those styles of language, colloquial, formal, literary, and so on, that belong to different situations. Thus *wife* or *spouse* is more formal than *old lady* or *missus*. Synonyms may also portray positive or negative attitudes of the speaker: for example *naive* or *gullible* seem more critical than *ingenuous*. Finally, as mentioned earlier, one or other of the synonyms may be collocationally restricted. For example the sentences below might mean roughly the same thing in some contexts:

3.30 She called out to the young lad.

3.31 She called out to the young boy.

In other contexts, however, the words *lad* and *boy* have different connotations; compare:

3.32 He always was a bit of a lad.

3.33 He always was a bit of a boy.

Or we might compare the synonymous pair 3.34 with the very different pair in 3.35:

3.34 a big house: a large house

3.35 my big sister: my large sister.

As an example of such distributional effects on synonyms, we might take the various words used for the police around the English-speaking world: *police officer*, *cop*, *copper*, and so on. Some distributional constraints on these words are regional, like Irish English *the guards* (from the Irish *garda*), British English *the old Bill*, or American English *the heat*. Formality is another factor: many of these words are of course slang terms used in colloquial contexts instead of more formal terms like *police officer*. Speaker attitude is a further distinguishing factor: some words, like *fuzz*, *flatfoot*, *pigs*, or *the slime*, reveal negative speaker attitudes, while others like *cop* seem neutral.

Finally, as an example of collocation effects, one can find speakers saying *a police car* or *a cop car*, but not very likely are *?a guards car* or *?an Old Bill car*.

3.5.4 Opposites (antonymy)

In traditional terminology, **antonyms** are words which are opposite in meaning. It is useful, however, to identify several different types of relationship under a more general label of **opposition**. There are a number of relations that seem to involve words which are at the same time related in meaning yet incompatible or contrasting; we list some of them below.

Complementary antonyms

This is a relation between words such that the negative of one implies the positive of the other. The pairs are also sometimes called **contradictory**, **binary**, or **simple antonyms**. In effect, the words form a two-term classification. Examples would include:

- 3.36 dead/alive (of e.g. animals)
 pass/fail (a test)
 hit/miss (a target)

So, using these words literally, *dead* implies *not alive*, and so on, which explains the semantic oddness of sentences like:

- 3.37 ?My pet python is dead but luckily it's still alive.

Of course speakers can creatively alter these two-term classifications for special effects: we can speak of someone being *half dead*; or we know that in horror films the *undead* are not alive in the normal sense.

Gradable antonyms

This is a relationship between opposites where the positive of one term does not necessarily imply the negative of the other, for example *rich/poor*, *fast/slow*, *young/old*, *beautiful/ugly*.⁸ This relation is typically associated with adjectives and has two major identifying characteristics: firstly, there are usually intermediate terms so that between the gradable antonyms *hot* and *cold* we can find:

- 3.38 hot (warm tepid cool) cold

This means of course that something may be neither hot nor cold. Secondly, the terms are usually relative, so *a thick pencil* is likely to be thinner than *a thin girl*; and *a late dinosaur fossil* is earlier than *an early Elvis record*. A third characteristic is that in some pairs one term is more basic and common, so for example of the pair *long/short*, it is more natural to ask of something *How long is it?* than *How short is it?* For other pairs there is no such pattern: *How hot is it?* and *How cold is it?* are equally natural depending on context. Other examples of gradable antonyms are: *tall/short*, *clever/stupid*, *near/far*, *interesting/boring*.

Reverses

The characteristic **reverse** relation is between terms describing movement, where one term describes movement in one direction, \rightarrow , and the other the same movement in the opposite direction, \leftarrow ; for example the terms *push* and *pull* on a swing door, which tell you in which direction to apply force. Other such pairs are *come/go*, *go/return*, *ascend/descend*. When describing motion the following can be called reverses: (go) *up/down*, (go) *in/out*, (turn) *right/left*.

By extension, the term is also applied to any process that can be reversed: so other reverses are *inflate/deflate*, *expand/contract*, *fill/empty*, or *knit/unravel*.

Converses

These are terms which describe a relation between two entities from alternate viewpoints, as in the pairs:

- 3.39 own/belong to
 above/below
 employer/employee

Thus if we are told *Alan owns this book* then we know automatically *This book belongs to Alan*. Or from *Helen is David's employer* we know *David is Helen's employee*. Again, these relations are part of a speaker's semantic knowledge and explain why the two sentences below are **paraphrases**, that is can be used to describe the same situation:

- 3.40 My office is above the library.
 3.41 The library is below my office.

Taxonomic sisters

The term **antonymy** is sometimes used to describe words which are at the same level in a taxonomy. Taxonomies are hierarchical classification systems; we can take as an example the color adjectives in English, and give a selection at one level of the taxonomy as below:

- 3.42 red orange yellow green blue purple brown

We can say that the words *red* and *blue* are sister-members of the same taxonomy and therefore incompatible with each other. Hence one can say:

- 3.43 His car isn't red, it's blue.

Other taxonomies might include the days of the week: *Sunday*, *Monday*, *Tuesday*, and so on, or any of the taxonomies we use to describe the natural world, like types of dog: *poodle*, *setter*, *bulldog*, and so on. Some taxonomies are **closed**, like days of the week: we can't easily add another day, without changing the whole system. Others are **open**, like the flavors of ice cream sold in an ice cream parlor: someone can always come up with a new flavor and extend the taxonomy.

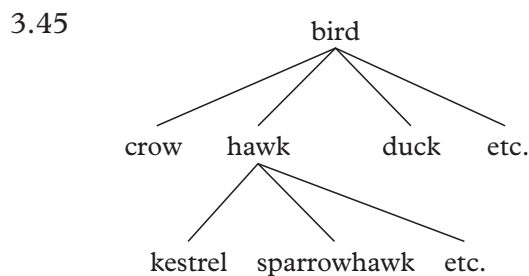
In the next section we see that since taxonomies typically have a hierarchical structure, we will need terms to describe vertical relations, as well as the horizontal “sisterhood” relation we have described here.

3.5.5 Hyponymy

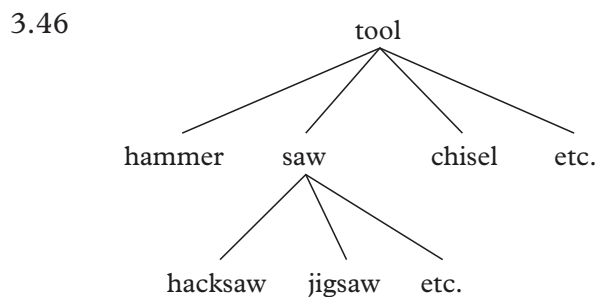
Hyponymy is a relation of inclusion. A **hyponym** includes the meaning of a more general word, for example:

- 3.44 *dog* and *cat* are hyponyms of *animal*
sister and *mother* are hyponyms of *woman*

The more general term is called the **superordinate** or **hypernym** (alternatively **hyponym**). Much of the vocabulary is linked by such systems of inclusion, and the resulting semantic networks form the hierarchical taxonomies mentioned above. Some taxonomies reflect the natural world, like 3.45 below, where we only expand a single line of the network:



Here *kestrel* is a hyponym of *hawk*, and *hawk* a hyponym of *bird*. We assume the relationship is transitive so that *kestrel* is a hyponym of *bird*. Other taxonomies reflect classifications of human artifacts, like 3.46 below:



From such taxonomies we can see both hyponymy and the taxonomic sisterhood described in the last section: hyponymy is a vertical relationship in a taxonomy, so *saw* is a hyponym of *tool* in 3.46, while taxonomic sisters are in a horizontal relationship, so *hacksaw* and *jigsaw* are sisters in this taxonomy with other types of saw. Such classifications are of interest for what they tell us about human culture and mind. Anthropologists and anthropological linguists have studied a range of such folk taxonomies in different languages and cultures, including color terms (Berlin and Kay 1969, Kay and McDaniel 1978), folk classifications of plants and animals

(Berlin, Breedlove, and Raven 1974, Hunn 1977) and kinship terms (Lounsbury 1964, Tyler 1969, Goodenough 1970). The relationship between such classifications and the vocabulary is discussed by Rosch et al. (1976), Downing (1977), and George Lakoff (1987).

Another lexical relation that seems like a special sub-case of taxonomy is the ADULT–YOUNG relation, as shown in the following examples:

3.47	dog	puppy
	cat	kitten
	cow	calf
	pig	piglet
	duck	duckling
	swan	cygnet

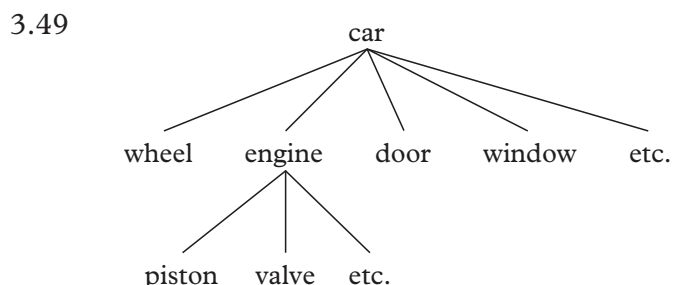
A similar relation holds between MALE–FEMALE pairs:

3.48	dog	bitch
	tom	?queen
	bull	cow
	boar	sow
	drake	duck
	cob	pen

As we can see, there are some asymmetries in this relation: firstly, the relationship between the MALE–FEMALE terms and the general term for the animal varies: sometimes there is a distinct term, as in *pig–boar–sow* and *swan–cob–pen*; in other examples the male name is general, as in *dog*, while in others it is the female name, for example *cow* and *duck*. There may also be gaps: while *tom* or *tomcat* is commonly used for male cats, for some English speakers there doesn't seem to be an equivalent colloquial name for female cats (though others use *queen*, as above).

3.5.6 Meronymy

Meronymy⁹ is a term used to describe a part–whole relationship between lexical items. Thus *cover* and *page* are meronyms of *book*. The whole term, here *book*, is sometimes called the **holonym**. We can identify this relationship by using sentence frames like *X is part of Y*, or *Y has X*, as in *A page is part of a book*, or *A book has pages*. Meronymy reflects hierarchical classifications in the lexicon somewhat like taxonomies; a typical system might be:



Meronymic hierarchies are less clear cut and regular than taxonomies. Meronyms vary for example in how necessary the part is to the whole. Some are necessary for normal examples, for example *nose* as a meronym of *face*; others are usual but not obligatory, like *collar* as a meronym of *shirt*; still others are optional like *cellar* for *house*.

Meronymy also differs from hyponymy in transitivity. Hyponymy is always transitive, as we saw, but meronymy may or may not be. A transitive example is: *nail* as a meronym of *finger*, and *finger* of *hand*. We can see that *nail* is a meronym of *hand*, for we can say *A hand has nails*. A non-transitive example is: *pane* is a meronym of *window* (*A window has a pane*), and *window* of *room* (*A room has a window*); but *pane* is not a meronym of *room*, for we cannot say *A room has a pane*. Or *hole* is a meronym of *button*, and *button* of *shirt*, but we wouldn't want to say that *hole* is a meronym of *shirt* (*A shirt has holes!*).

One important point is that the networks identified as meronymy are lexical: it is conceptually possible to segment an item in countless ways, but only some divisions are coded in the vocabulary of a language. There are a number of other lexical relations that seem similar to meronymy. In the next sections we briefly list a couple of the most important.

3.5.7 Member–collection

This is a relationship between the word for a unit and the usual word for a collection of the units. Examples include:

3.50	ship	fleet
	tree	forest
	fish	shoal
	book	library
	bird	flock
	sheep	flock
	worshipper	congregation

3.5.8 Portion–mass

This is the relation between a mass noun and the usual unit of measurement or division. For example in 3.51 below the unit, a count noun, is added to the mass noun, making the resulting noun phrase into a count nominal. We discuss this process further in chapter 9.

3.51	drop	of	liquid
	grain	of	salt/sand/wheat
	sheet	of	paper
	lump	of	coal
	strand	of	hair

3.6 Derivational Relations

As mentioned earlier, our lexicon should include derived words when their meaning is not predictable. In the creation of real dictionaries this is rather an idealized

principle: in practice lexicographers often find it more economical to list many derivatives than to attempt to define the morphological rules with their various irregularities and exceptions. So while in principle we want to list only unpredictable forms in individual entries, in practice the decision rests on the aims of the lexicon creators.

We can look briefly at just two derivational relations as examples of this type of lexical relation: causative verbs and agentive nouns.

3.6.1 Causative verbs

We can identify a relationship between an adjective describing a state, for example *wide* as in *the road is wide*; a verb describing a beginning or change of state, *widen* as in *The road widened*; and a verb describing the cause of this change of state, *widen*, as in *The City Council widened the road*. These three semantic choices can be described as a **state**, **change of state** (or **inchoative**), and **causative**.

This relationship is marked in the English lexicon in a number of different ways. There may be no difference in the shape of the word between all three uses as in: *The gates are **open***; *The gates **open** at nine*; *The porters **open** the gates*. Despite having the same shape, these three words are grammatically distinct: an adjective, an intransitive verb, and a transitive verb, respectively. In other cases the inchoative and causative verbs are morphologically derived from the adjective as in: *The apples are **ripe***; *The apples are **ripening***; *The sun is **ripening** the apples*.

Often there are gaps in this relation: for example we can say *The soil is **rich*** (state) and *The gardener **enriched** the soil* (causative) but it sounds odd to use an inchoative: *?The soil is **enriching***. For a state adjective like *hungry*, there is no colloquial inchoative or causative: we have to say *get hungry* as in *I'm getting hungry*; or *make hungry* as in *All this talk of food is making me hungry*.

Another element in this relation can be an adjective describing the state that is a result of the process. This **resultative** adjective is usually in the form of a past participle. Thus we find examples like: *closed*, *broken*, *tired*, *lifted*. We can see a full set of these relations in: *hot* (state adjective)–*heat* (inchoative verb)–*heat* (causative verb)–*heated* (resultative adjective).

We have concentrated on derived causatives, but some verbs are inherently causative and not derived from an adjective. The most famous English example of this in the semantics literature is *kill*, which can be analysed as a causative verb “to cause to die.” So the semantic relationship state–inchoative–causative for this example is: *dead*–*die*–*kill*. We can use this example to see something of the way that both derivational and non-derivational lexical relations interact. There are two senses of the adjective *dead*: **dead**¹: not alive; and **dead**²: affected by a loss of sensation. The lexeme **dead**¹ is in a relationship with the causative verb *kill*; while **dead**² has a morphologically derived causative verb *deadened*.

3.6.2 Agentive nouns

There are several different types of agentive nouns.¹⁰ One well-known type is derived from verbs and ends in the written forms *-er* or *-or*. These nouns have the meaning “the entity who/which performs the action of the verb.” Some examples

are: *skier, walker, murderer, whaler, toaster, commentator, director, sailor, calculator, escalator*. The process of forming nouns in *-er* is more productive than *-or*, and is a good candidate for a regular derivational rule. However, dictionary writers tend to list even these forms, for two reasons. The first is that there are some irregularities: for instance, some nouns do not obey the informal rule given above: *footballer*, for example, is not derived from a verb *to football*. In other cases, the nouns may have several senses, some of which are quite far from the associated verb, as in the examples in 3.52 below:

3.52	lounger	a piece of furniture for relaxing on
	undertaker	mortician
	muffler	<i>US</i> a car silencer
	creamer	<i>US</i> a jug for cream
	renter	<i>Slang.</i> a male prostitute

A second reason for listing these forms in published dictionaries is that even though this process is quite regular, it is not possible to predict for any given verb which of the strategies for agentive nouns will be followed. Thus, one who depends upon you financially is not a **depender* but a *dependant*; and a person who cooks is a *cook* not a *cooker*. To cope with this, one would need a kind of default structure in the lexical entries: a convention that where no alternative agentive noun was listed for a verb, one could assume that an *-er* form is possible. This kind of convention is sometimes called an **elsewhere condition** in morphology: see Spencer (1991: 109–11) for discussion.

Other agentive nouns which have to be listed in the lexicon are those for which there is no base verb. This may be because of changes in the language, as for example the noun *meter* “instrument for making measurements” which no longer has an associated verb *mete*.¹¹

3.7 Lexical Typology

Our discussion so far has concentrated on the lexicon of an individual language. As we mentioned in chapter 2, translating between two languages highlights differences in vocabulary. We discussed there the hypothesis of linguistic relativity and saw how the basic idea of language reflecting culture can be strengthened into the hypothesis that our thinking reflects our linguistic and cultural patterns. **Semantic typology** is the cross-linguistic study of meaning and, as in other branches of linguistic typology, scholars question the extent to which they can identify regularities across the obvious variation. One important branch is **lexical typology**, which is of interest to a wide range of scholars because a language’s lexicon reflects interaction between the structures of the language, the communicative needs of its speakers and the cultural and physical environment they find themselves in. We can identify two important avenues of inquiry. One is the comparison of lexical organization or principles, and the other is the comparison of lexical fields and individual lexical items. The former includes patterns of lexical relations, for example the cross-linguistic study of polysemy: how related senses of a lexeme can pattern and change over time. We look briefly at this in the next section. The latter can be seen as the investigation of the

ways in which concepts are mapped into words across languages. Cross-language comparisons have investigated words for kinship (Read 2001, Kronenfeld 2006), number (Gordon 2004), spatial relations (Majid et al. 2004), and time (Boroditsky 2001, Boroditsky, Fuhrman, and McCormick 2010). Perhaps the best-known area of investigation however has been of color terms and we look at this in section 3.7.2 below. A related issue is whether some lexemes have correspondences in all or most of the languages of the world. We discuss two proposals in this area in 3.7.3 and 3.7.4.

3.7.1 Polysemy

It seems to be a universal of human language that words have a certain plasticity of meaning that allows speakers to shift their meaning to fit different contexts of use. In this chapter we have used the term **polysemy** for a pattern of distinct but related senses of a lexeme. Many writers have identified this polysemy as an essential design feature of language: one that aids economy.¹² Such shifts of meaning also play an important role in language change as they become conventionalized. In chapter 1 we briefly discussed how metaphorical uses can over time change the meaning of words by adding new senses. There have been a number of cross-linguistic studies of polysemy, for example Fillmore and Atkins (2000), Viberg (2002), Riemer (2005), Vanhove (2008), which investigate regularities in the patterns of word meaning extensions. Some studies has focused on specific areas of the lexicon, for example Viberg (1984) investigates perception verbs in fifty-two languages, studying extensions of meanings from one sense modality to another, such as when verbs of seeing are used to describe hearing. In a related area other writers such as Sweetser (1990) and Evans and Wilkins (2000) have discussed cross-linguistic patterns of verbs of perception being used for comprehension, as in the English *I see what you mean* or when speakers say *I hear you* for *I understand/I sympathize*. Boyeldieu (2008) investigates cross-linguistic pattern where animal lexemes have animal and meat senses, as in English when speakers use a count noun to refer to the animal (*He shot a rabbit*) and a mass noun to refer to its meat (*She doesn't eat rabbit*). Newman (2009) contains studies of cross-linguistic polysemy with verbs of eating and drinking, for example in languages that use the verb of drinking for voluntarily inhaling cigarette smoke as in the Somali example below:

3.53 Sigaar ma cabtaa?
 cigarette(s) Q drink+you.SING.PRES
 “Do you smoke?” (lit. Do you drink cigarettes?)

This use of a verb of drinking is reported for Hindi, Turkish, and Hausa among other languages.

Other systematic patterns of polysemy seem to show cross-linguistic consistency, such as when words for containers are used for their contents, as in English *I will boil a kettle*, or places used for the people that live there, such as *Ireland rejects the Lisbon Treaty*. These along with lexical meaning shifts such as animal/meat have traditionally been termed metonymy, which we mentioned in chapter 1. Metonymy along with metaphor has been identified as an important producer of polysemy across languages, as when the word for a material becomes used for an object made from it, as in English *iron* (for smoothing clothes), *nylons* (stockings), and *plastic* (for

credit cards). We shall discuss attempts to characterize metonymy in more detail in chapter 11.

3.7.2 Color terms

One of the liveliest areas of discussion about cross-language word meaning centers on color terms. While we might readily expect differences for words relating to things in the environment such as animals and plants, or for cultural systems like governance or kinship terms, it might be surprising that terms for colors should vary. After all we all share the same physiology. In an important study Berlin and Kay (1969) investigated the fact that languages vary in the number and range of their basic color terms. Their claim is that though there are various ways of describing colors, including comparison to objects, languages have some lexemes which are basic in the following sense:

- 3.54 Basic color terms (Berlin and Kay 1969)
- a. The term is monolexemic, i.e. not built up from the meaning of its parts. So terms like *blue-gray* are not basic.
 - b. The term is not a hyponym of any other color term, i.e. the color is not a kind of another color. Thus English *red* is basic, *scarlet* is not.
 - c. The term has wide applicability. This excludes terms like English *blonde*.
 - d. The term is not a semantic extension of something manifesting that color. So *turquoise*, *gold*, *taupe*, and *chestnut* are not basic.

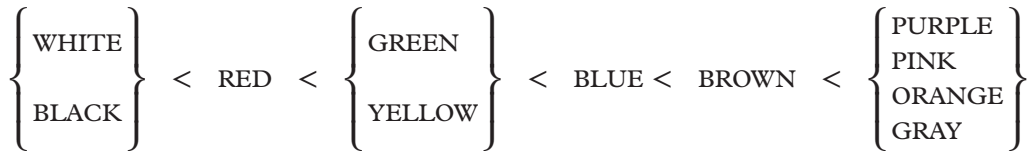
The number of items in this basic set of color terms seems to vary widely from as few as two to as many as eleven; examples of different systems reported in the literature include the following:

- 3.55 Basic color term systems¹³
- Two terms: Dani (Trans-New Guinea; Irin Jaya)
 - Three: Tiv (Niger-Congo; Nigeria), Pomo (Hokan; California, USA)
 - Four: Ibibio (Niger-Congo; Nigeria), Hanunóo (Austronesian; Mindoro Island, Philippines)
 - Five: Tzeltal (Mayan; Mexico), Kung-Etoka (Khoisan; Southern Africa)
 - Six: Tamil (Dravidian; India), Mandarin Chinese
 - Seven: Nez Perce (Penutian; Idaho, USA), Malayalam (Dravidian; India)
 - Ten/eleven: Lebanese Arabic, English¹⁴

While this variation might seem to support the notion of linguistic relativity, Berlin and Kay's (1969) study identified a number of underlying similarities which argue for universals in color term systems. Their point is that rather than finding any possible division of the color spectrum into basic terms, their study identifies quite a narrow range of possibilities, with some shared structural features. One claim they make is that within the range of each color term there is a basic focal color that speakers agree to be the best prototypical example of the color. Moreover, they claim that this focal color is the same for the color term cross-linguistically. The conclusion drawn in this and subsequent studies is that color naming systems are based on the

neurophysiology of the human visual system (Kay and McDaniel 1978). A further claim is that there are only eleven basic categories; and that these form the implicational hierarchy below (where we use capitals, WHITE etc., to show that the terms are not simply English words):

3.56 Basic color term hierarchy (Berlin and Kay 1969)



This hierarchy represents the claim that in a relation $A < B$, if a language has B then it must have A, but not vice versa. As in implicational hierarchies generally, leftward elements are seen as more basic than rightward elements.¹⁵ A second claim of this research is that these terms form eight basic color term systems as shown:

3.57 Basic systems

<i>System</i>	<i>Number of terms</i>	<i>Basic color terms</i>
1	Two	WHITE, BLACK
2	Three	WHITE, BLACK, RED
3	Four	WHITE, BLACK, RED, GREEN
4	Four	WHITE, BLACK, RED, YELLOW
5	Five	WHITE, BLACK, RED, GREEN, YELLOW
6	Six	WHITE, BLACK, RED, GREEN, YELLOW, BLUE
7	Seven	WHITE, BLACK, RED, GREEN, YELLOW, BLUE, BROWN
8	Eight, nine, ten, or eleven	WHITE, BLACK, RED, GREEN, YELLOW, BLUE, BROWN, PURPLE +/- PINK +/- ORANGE +/- GRAY

Systems 3 and 4 show that either GREEN or YELLOW can be the fourth color in a four-term system. In system 8, the color terms PURPLE, PINK, ORANGE, and GRAY can be added in any order to the basic seven-term system. Berlin and Kay made an extra, historical claim that when languages increase the number of color terms in their basic system they must pass through the sequence of systems in 3.57. In other words the types represent a sequence of historical stages through which languages may pass over time (where types 3 and 4 are alternatives).

In her experimentally based studies of Dani (Heider 1971, 1972a, 1972b) the psychologist Eleanor Rosch investigated how speakers of this Papua New Guinea language compared with speakers of American English in dealing with various color memory tasks. Dani has just two basic color terms: *mili* for cold, dark colors and *mola* for warm, light colors; while English has eleven. Both groups made similar kinds of errors and her work suggests that there is a common, underlying conception of color relationships that is due to physiological rather than linguistic constraints. When Dani speakers used their kinship terms to learn a new set of color names they agreed on the best example or focal points with the English speakers. This seems to be evidence that Dani speakers can distinguish all the focal color distinctions that English speakers can. When they need to, they can refer to them linguistically by

circumlocutions, the color of mud, sky, and so on and they can learn new names for them. The conclusion seems to be that the perception of the color spectrum is the same for all human beings but that languages lexicalize different ranges of the spectrum for naming. As Berlin and Kay's work shows, the selection is not arbitrary and languages use the same classificatory procedure. Berlin and Kay's work can be interpreted to show that there are universals in color naming, and thus forms a critique of the hypothesis of linguistic relativity.

This universalist position has been challenged by scholars who have investigated other languages with small inventories of color terms, for example Debi Roberson and her colleagues' work on Berinmo, spoken in Papua New Guinea, which has five basic color terms (Roberson and Davidoff 2000, Roberson et al. 2005, Roberson and Hanley 2010). Berinmo's color terms divide up the blue/green area differently than English and experiments showed that speakers' perception and memory of colors in this zone are influenced by differences in the lexical division. Thus words seem to influence speakers' perception of colors. However, other studies, for example Kay et al. (2005) and Regier et al. (2010), have supported the important idea of universal focal colors or universal best examples. Research continues in this area, and it seems a more complicated picture may emerge of the relationship between the perception of colors and individual languages' systems of naming them.

3.7.3 Core vocabulary

The idea that each language has a core vocabulary of more frequent and basic words is widely used in foreign language teaching and dictionary writing. Morris Swadesh, a student of Edward Sapir, suggested that each language has a core vocabulary that is more resistant to loss or change than other parts of the vocabulary. He proposed that this core vocabulary could be used to trace lexical links between languages to establish family relationships between them. The implication of this approach is that the membership of the core vocabulary will be the same or similar for all languages. Thus comparison of the lists in different languages might show **cognates**, related words descended from a common ancestor language. Swadesh originally proposed a 200-word list that was later narrowed down to the 100-word list below:

3.58 Swadesh's (1972) 100-item basic vocabulary list

1. I	14. long	27. bark	40. eye
2. you	15. small	28. skin	41. nose
3. we	16. woman	29. flesh	42. mouth
4. this	17. man	30. blood	43. tooth
5. that	18. person	31. bone	44. tongue
6. who	19. fish	32. grease	45. claw
7. what	20. bird	33. egg	46. foot
8. not	21. dog	34. horn	47. knee
9. all	22. louse	35. tail	48. hand
10. many	23. tree	36. feather	49. belly
11. one	24. seed	37. hair	50. neck
12. two	25. leaf	38. head	51. breasts
13. big	26. root	39. ear	52. heart

53. liver	65. walk	77. stone	89. yellow
54. drink	66. come	78. sand	90. white
55. eat	67. lie	79. earth	91. black
56. bite	68. sit	80. cloud	92. night
57. see	69. stand	81. smoke	93. hot
58. hear	70. give	82. fire	94. cold
59. know	71. say	83. ash	95. full
60. sleep	72. sun	84. burn	96. new
61. die	73. moon	85. path	97. good
62. kill	74. star	86. mountain	98. round
63. swim	75. water	87. red	99. dry
64. fly	76. rain	88. green	100. name

To give one example, the Cushitic language Somali has for number 12 “two” the word *laba* and for 41 “nose” *san* while the Kenyan Cushitic language Rendille has 12 *lama* and 41 *sam*. Other cognates with consistent phonological alternations in the list will show that these two languages share a large proportion of this list as cognates. Swadesh argued that when more than 90 percent of the core vocabulary of two languages could be identified as cognates then the languages were closely related. Despite criticisms, this list has been widely used in comparative and historical linguistics.

The identification of semantic equivalences in this list is complicated by semantic shift. Cognates in two languages may drift apart because of historical semantic processes, including narrowing and generalization. Examples in English include *meat*, which has narrowed its meaning from “food” in earlier forms of the language and *starve*, which once had the broader meaning “die.” The problem for the analyst is deciding how much semantic shift is enough to break the link between cognates. The idea that this basic list will be found in all languages has been contested. Swadesh’s related proposal that change in the core vocabulary occurs at a regular rate and therefore can be used to date the splits between related languages has attracted stronger criticism.¹⁶

3.7.4 Universal lexemes

Another important investigation of universal lexical elements is that undertaken by Anna Wierzbicka and her colleagues (Wierzbicka 1992, 1996, Goddard and Wierzbicka 1994, 2002, 2013, Goddard 2001). These scholars have analyzed a large range of languages to try and establish a core set of universal lexemes. One feature of their approach is the avoidance of formal metalanguages. Instead they rely on what they call “reductive paraphrase in natural language.” In other words they use natural languages as the tool of their lexical description, much as dictionary writers do. Like dictionary writers they rely on a notion of a limited core vocabulary that is not defined itself but is used to define other lexemes. Another way of putting this is to say that these writers use a subpart of a natural language as a natural semantic metalanguage, as described below:

3.59 Natural Semantic Metalanguage (Goddard 2001: 3)

... a “meaning” of an expression will be regarded as a paraphrase, framed in semantically simpler terms than the original expression, which is

substitutable without change of meaning into all contexts in which the original expression can be used... The postulate implies the existence, in all languages, of a finite set of indefinable expressions (words, bound morphemes, phrasemes). The meanings of these indefinable expressions, which represent the terminal elements of language-internal semantic analysis, are known as “semantic primes.”

A selection of the semantic primes proposed in this literature is given below, informally arranged into types:

3.60	Universal semantic primes (from Wierzbicka 1996, Goddard 2001)
	Substantives: I, you, someone/person, something, body
	Determiners: this, the same, other
	Quantifiers: one, two, some, all, many/much
	Evaluators: good, bad
	Descriptors: big, small
	Mental predicates: think, know, want, feel, see, hear
	Speech: say, word, true
	Actions, events, movement: do, happen, move, touch
	Existence and possession: is, have
	Life and death: live, die
	Time: when/time, now, before, after, a long time, a short time, for some time, moment
	Space: where/place, here, above, below, far, near, side, inside
	“Logical” concepts: not, maybe, can, because, if
	Intensifier, augmentor: very, more
	Taxonomy: kind (of), part (of)
	Similarity: like

About sixty of these semantic primes have been proposed in this literature. They are reminiscent of Swadesh’s notion of core vocabulary but they are established in a different way: by the in-depth lexical analysis of individual languages. The claim made by these scholars is that the semantic primes of all languages coincide. Clearly this is a very strong claim about an admittedly limited number of lexical universals.

3.8 Summary

In this chapter we have looked at some important features of word meaning. We have discussed the difficulties linguists have had coming up with an airtight definition of the unit *word*, although speakers happily talk about them and consider themselves to be talking in them. We have seen the problems involved in divorcing word meaning from contextual effects and we discussed lexical ambiguity and vagueness. We have also looked at several types of lexical relations: homonymy, synonymy, opposites, hyponymy, meronymy, and so on; and seen two examples of derivational relations in the lexicon: causative verbs and agentive nouns. These represent characteristic examples of the networking of the vocabulary that a semantic description must reflect.¹⁷ Finally we discussed how lexical typology investigates cross-linguistic

patterns of word meaning. In chapter 9 we will look at approaches that try to characterize the networking of the lexicon in terms of semantic components.

EXERCISES

- 3.1 We saw that lexicographers group **lexemes**, or **senses**, into **lexical entries** by deciding whether they are related or not. If they are related (i.e. **polysemous**) then they are listed in a single lexical entry. If they are not related (i.e. **homonymous**) they are assigned independent entries. Below are groups of senses sharing the same phonological shape; decide for each group how the members should be organized into lexical entries.

port ¹	noun. a harbor.
port ²	noun. a town with a harbor.
port ³	noun. the left side of a vessel when facing the prow.
port ⁴	noun. a sweet fortified dessert wine (<i>originally from Oporto in Portugal</i>).
port ⁵	noun. an opening in the side of a ship.
port ⁶	noun. a connector in a computer's casing for attaching peripheral devices.
mold ¹ (<i>Br. mould</i>)	noun. a hollow container to shape material.
mold ² (<i>Br. mould</i>)	noun. a furry growth of fungus.
mold ³ (<i>Br. mould</i>)	noun. loose earth.
pile ¹	noun. a number of things stacked on top of each other.
pile ²	noun. a sunken support for a building.
pile ³	noun. a large impressive building.
pile ⁴	noun. the surface of a carpet.
pile ⁵	noun. <i>Technical.</i> the pointed head of an arrow.
pile ⁶	noun. the soft fur of an animal.
ear ¹	noun. organ of hearing.
ear ²	noun. the ability to appreciate sound (<i>an ear for music</i>).
ear ³	noun. the seed-bearing head of a cereal plant.
stay ¹	noun. the act of staying in a place.
stay ²	noun. the suspension or postponement of a judicial sentence.
stay ³	noun. <i>Nautical.</i> a rope or guy supporting a mast.
stay ⁴	noun. anything that supports or steadies.
stay ⁵	noun. a thin strip of metal, plastic, bone, etc. used to stiffen corsets.

When you have done this exercise, you should check your decisions against a dictionary.

- 3.2 In the chapter we noted that **synonyms** are often differentiated by having different **collocations**. We used the examples of *big/large* and *strong/powerful*. Below is a list of pairs of synonymous adjectives. Try to find a collocation for one adjective that is impossible for the other. One factor you should be aware of is the difference between an **attributive** use of an adjective, when it modifies a noun, e.g. *red in a red face*, and a **predicative** use where the adjective follows a verb, e.g. *is red, seemed red, turned red*, etc. Some adjectives can only occur in one of these positions (*the man is unwell, *the unwell man*), others change meaning in the two positions (*the late king, the king is late*), and synonymous adjectives may differ in their ability to occur in these two positions. If you think this is the case for any of the following pairs, note it.

safe/secure quick/fast near/close dangerous/perilous wealthy/rich
 fake/false sick/ill light/bright mad/insane correct/right

- 3.3 In section 3.4 we discussed three tests for ambiguity: the **do so identity**, **sense relations**, and **zeugma** tests. Try to use these tests to decide if the following words are ambiguous:

case (noun) fair (adjective) file (verb)

- 3.4 Below is a list of incompatible pairs. Classify each pair into one of the following types of relation: **complementary antonyms**, **gradable antonyms**, **reverses**, **converses**, or **taxonomic sisters**. Explain the tests you used to decide on your classifications and discuss any shortcomings you encountered in using them.

temporary/permanent monarch/subject advance/retreat
 strong/weak buyer/seller boot/sandal
 assemble/dismantle messy/neat tea/coffee
 clean/dirty open/shut present/absent

- 3.5 Using nouns, provide some examples to show the relationship of **hyponymy**. Use your examples to discuss how many levels of hyponymy a noun might be involved in.
- 3.6 Try to find examples of the relationship of **hyponymy** with verbs. As in the last exercise, try to establish the number of levels of hyponymy that are involved for any examples you find.
- 3.7 Give some examples of the relationship of **meronymy**. Discuss the extent to which your examples exhibit **transitivity**.
- 3.8 Below are some nouns ending in *-er* and *-or*. Using your intuitions about their meanings, discuss their status as **agentive nouns**. In particular, are they derivable by regular rule or would they need to be listed in the lexicon? Check your decisions against a dictionary's entries.

author, blazer, blinker, choker, crofter, debtor, loner, mentor, reactor, roller

3.9 How would you describe the semantic effect of the suffix *-ist* in the following sets of nouns?

- | | |
|---------------|-----------|
| a. socialist | b. artist |
| Marxist | scientist |
| perfectionist | novelist |
| feminist | chemist |
| optimist | dentist |
| humanist | satirist |

For each example, discuss whether the derived noun could be produced by a general rule.

3.10 For each sentence pair below discuss any meaning relations you identify between the verbs marked in bold:

- 1 a. Freak winds **raised** the water level.
b. The water level **rose**.
- 2 a. Fred **sent** the package to Mary.
b. Mary **received** the package from Fred.
- 3 a. Ethel **tried** to win the cookery contest.
b. Ethel **succeeded** in winning the cookery contest.
- 4 a. She didn't **tie** the knot.
b. She **untied** the knot.
- 5 a. Vandals **damaged** the bus stop.
b. The women **repaired** the bus stop.
- 6 a. Harry didn't **fear** failure.
b. Failure didn't **frighten** Harry.
- 7 a. Sheila **showed** Klaus her petunias.
b. Klaus **saw** Sheila's petunias.

FURTHER READING

John Lyons's *Semantics* (1977) discusses many of the topics in this chapter at greater length. Cruse (1986) is a useful and detailed discussion of word meaning and lexical relations. Lipka (2002) provides a survey of English lexical semantics. Lehrer and Kittay (1992) contains applications of the concept of lexical fields to the study of lexical relations, and Aitchison (2012) introduces current ideas on how speakers learn and understand word meanings. Nerlich et al. (2003) brings together studies on polysemy from a number of theoretical approaches. Lakoff (1987) is an enjoyable and stimulating discussion of the relationship between conceptual categories and words. Landau (2001) is an introduction to the practical issues involved in creating dictionaries. Fellbaum (1998) describes an important digital

lexicon project: WordNet. Malt and Wolff (2010) contains cross-linguistic studies of word meanings, including kinship and color terms.

NOTES

- 1 In this chapter we talk only of whole-word meaning. Strictly speaking, lexical semantics is wider than this, being concerned both with the meaning of **morphemes** and **multi-word units**. Morphemes are the minimal meaningful units that make up words and larger units. So we can identify the word *hateful* as being composed of the two morphemes *hate* and *ful*, each of which has meaning. Some morphemes are words, traditionally called **free morphemes**, like *sleep*, *cat*, *father*. Others are **bound morphemes**: parts of word like *un-*, *re-*, and *pre-* in *unlikely*, *reanalyze*, and *prebook*. These elements exhibit a consistent meaning but do not occur as independent words. For reasons of space, we ignore here the question of the status of bound morphemes in the lexicon. See Aronoff and Fudeman (2005) and Booij (2007) for very accessible descriptions of morpheme theory. Lexical semanticists must also account for multi-word units: cases where a group of words have a unitary meaning which does not correspond to the compositional meaning of their parts, like the idiomatic phrases: *pass away*, *give up the ghost*, *kick the bucket*, *snuff it*, *pop one's clogs*, all of which mean *die*. Again, for reasons of space we won't pursue discussion of these multi-word semantic units here; see Cruse (1986) for discussion.
- 2 Ferdinand de Saussure called the relationship between a word and other accompanying words a **syntagmatic** relation, and the relationship between a word and related but non-occurring words, an **associative** relationship. This latter is also sometimes called a **paradigmatic** relationship. So the meaning of a phrase like *a red coat*, is partly produced by the syntagmatic combination of *red* and *coat*, while *red* is also in a paradigmatic relationship with other words like *blue*, *yellow*, etc.; and *jacket* is in a relationship with words like *coat*. The idea is that these paradigmatically related words help define the meaning of the spoken words. See Saussure (1974: 122–34) for discussion.
- 3 Here we follow the convention of writing postulated semantic elements in small capitals to distinguish them from real words. We discuss the hypothesis that words are composed of such semantic elements in chapter 9.
- 4 It is also possible to argue that this knowledge is not linguistic at all but knowledge about the world. Such an approach is consistent with the view that there is no distinction between linguistic and factual knowledge: it is all knowledge about the world. See Wilson (1967) for similar arguments and Katz (1972: 73ff) for counterarguments. One of Katz's arguments is that you still have to have a division among knowledge to distinguish what would be the two following facts or beliefs:
 - a. Women are female.
 - b. Women are under fifty-feet tall.
 We know both a and b from our experience of the world but there is a difference between them. If you met a fifty-foot woman, you would probably say that you had met a woman, albeit an unusual one. However if you meet a woman who is not female, there is some doubt: did you meet a woman at all? This difference is evidence for a conceptual/linguistic category of *woman*. See our earlier discussion of concepts and necessary and sufficient conditions in chapter 2.
- 5 By "absolute position" here Bloomfield means in isolation.
- 6 It is often proposed that the ideal lexicon would also include a fifth point: the lexical rules for the creation of new vocabulary, e.g. for just about any adjective X ending in *-al*, you can form a verb meaning "to cause to become X" by adding *-ize*: *radical* → *radicalize*; *legal* → *legalize*. However, it is clear that the results of derivational morphology are often semantically unpredictable: e.g. as Allan (1986, 1: 223) points out, this *-ize*

- morpheme sometimes doesn't have this "cause to become" meaning, as in *womanize*, "to chase women." It seems that some forms formed by derivational processes, including compounding, are predictable in meaning, like *dog food*, *cat food*, *fish food*, etc., while others are not, like *fullback* or *night soil*. The latter type will have to be listed in the lexicon. See Allan (1986, 1: 214–56) for discussion.
- 7 These pairs are called *irreversible binomials* by Cruse (1986: 39), after Malkiel (1959). Cruse discusses their fossilization in terms of increasing degrees of *semantic opacity*, where the constituent elements begin to lose their independent semantic value.
 - 8 Some authors use the term **antonymy** narrowly for just this class we are calling **gradable antonyms**. Cruse (1986), for example, calls this class **antonyms** and uses the cover term **opposites** for all the relations we describe in section 3.5.4.
 - 9 This term should not be confused with **metonymy**. Metonymy, as will see briefly later in this chapter and in more detail in chapter 7, describes a referential strategy where a speaker refers to an entity by naming something associated with it. If, for example, in a mystery novel, one detective at a crime scene says to another: *Two uniforms got here first*, we might take the speaker to be using the expression *two uniforms* to refer to two uniformed police officers. This is an example of metonymy. Note that since a uniform could by extension be seen as part of a police officer, we can recognize some resemblance between metonymy and the part-whole relation **meronymy**. However we can distinguish them as follows: metonymy is a process used by speakers as part of their practice of referring; meronymy describes a classification scheme evidenced in the vocabulary.
 - 10 We discuss the semantic role of AGENT in chapter 6. As we shall see there, AGENT describes the role of a voluntary initiator of an action, while ACTOR describes an entity that simply performs an action. Since the *-er/-or* nouns are used both for people, e.g. *teacher*, *actor*, and for machines, e.g. *blender*, *refrigerator*, a term like **actor nouns** would be more suitable than **agentive nouns**. Since this latter is well established though, we continue to use it here.
 - 11 Of course a noun may just coincidentally have the appearance of an agentive noun, and not contain a productive English *-er* or *-or* suffix at all, like *butler*, *porter*, or *doctor*, which were borrowed as units already possessing French or Latin agentive endings.
 - 12 See for example Ullmann's comment: "polysemy is an indispensable resource of language economy. It would be altogether impracticable to have separate terms for every referent" (Ullmann 1959: 18).
 - 13 The source for these languages' color systems is Berlin and Kay (1969), except Dani (Heider 1971, 1972a, 1972b). This research became the World Color Survey project (Kay et al. 2009).
 - 14 English has ten or eleven items depending on whether *orange* is included as a basic term. Wierzbicka (1990) noted that twelve-term systems exist in Russian, which has two terms corresponding to BLUE, and in Hungarian, which has two for RED.
 - 15 See Croft (1990) for discussion of such hierarchies in typological studies.
 - 16 This counting of percentages of cognates between languages is known as **lexicostatistics**, while the attempt to date languages by lexical changes is called **glottochronology**. See Swadesh (1972), Anttila (1989), and Trask (1996) for discussion.
 - 17 There are differing views in the literature on how many lexical relations we should identify. For a very full list of relations, see Mel'čuk and Zholkovsky (1988).

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