

The words *Fire Department* make it sound like they're the ones who are starting fires, doesn't it? It should be called the "Extinguishing Department". We don't call the police the "Crime Department". Also, the "Bomb Squad" sounds like a terrorist gang. The same is true of *wrinkle cream*. Doesn't it sound like it causes wrinkles? And why would a doctor prescribe pain pills? I already *have* pain! I need relief pills! **Carlin (1997)**

Semantics is the study of the meaning of words, phrases and sentences. In semantic analysis, there is always an attempt to focus on what the words conventionally mean, rather than on what an individual speaker (like George Carlin) might want them to mean on a particular occasion. This technical approach is concerned with objective or general meaning and avoids trying to account for subjective or local meaning. Linguistic **semantics** deals with the conventional meaning conveyed by the use of words, phrases and sentences of a language.

## Conceptual and associative meaning

When we investigate the meaning of words in a language, we are normally interested in characterizing the **conceptual** meaning and less concerned with the **associative** meaning of the words. Conceptual meaning covers those basic, essential components of meaning that are conveyed by the literal use of a word. Some of the basic components of a word like *needle* in English might include 'thin, sharp, steel instrument'. These components would be part of the conceptual meaning of *needle*. However, different people might have different associations or connotations attached to a word like *needle*. They might associate it with 'pain', or 'illness', or 'blood', or 'drugs', or 'thread', or 'knitting', or 'hard to find', and these associations may differ from one person to the next. These types of associations are not treated as part of the word's conceptual meaning. In a similar way, some people may associate the expression *low-calorie*, when used to describe a product, with 'healthy', but this is not part of the basic conceptual meaning of the expression (i.e. 'producing a small amount of heat or energy'). Poets, novelists, advertisers and lovers may be very interested in using words in such a way that certain associative meanings are evoked and literary critics often write about this aspect of language use. In this chapter, however, we will be more concerned with trying to describe what constitutes conceptual meaning.

## Semantic features

One obvious way in which the study of basic conceptual meaning might be helpful in the study of language would be as a means of accounting for the ‘oddness’ we experience when we read sentences such as the following:

*The hamburger ate the boy.*

*The table listens to the radio.*

*The horse is reading the newspaper.*

We should first note that the oddness of these sentences does not derive from their syntactic structure. According to the basic syntactic rules for forming English sentences (as presented in chapter 9), we have well-formed structures.

NP	V	NP
<i>The hamburger</i>	<i>ate</i>	<i>the boy</i>

This sentence is syntactically good, but semantically odd. Since the sentence *The boy ate the hamburger* is perfectly acceptable, we may be able to identify the source of the problem. The components of the conceptual meaning of the noun *hamburger* must be significantly different from those of the noun *boy*, thereby preventing one, and not the other, from being used as the subject of the verb *ate*. The kind of noun that can be the subject of the verb *ate* must denote an entity that is capable of ‘eating’. The noun *hamburger* does not have this property and the noun *boy* does.

We can make this observation more generally applicable by trying to determine the crucial element or feature of meaning that any noun must have in order to be used as the subject of the verb *ate*. Such an element may be as general as ‘animate being’. We can then use this idea to describe part of the meaning of words as having either plus (+) or minus (–) that particular feature. So, the feature that the noun *boy* has is ‘+animate’ (= denotes an animate being) and the feature that the noun *hamburger* has is ‘–animate’ (= does not denote an animate being).

This simple example is an illustration of a procedure for analyzing meaning in terms of **semantic features**. Features such as ‘+animate, –animate’; ‘+human, –human’, ‘+female, –female’, for example, can be treated as the basic elements involved in differentiating the meaning of each word in a language from every other word. If we had to provide the crucial distinguishing features of the meanings of a set of English words such as *table, horse, boy, man, girl, woman*, we could begin with the following diagram.

	<i>table</i>	<i>horse</i>	<i>boy</i>	<i>man</i>	<i>girl</i>	<i>woman</i>
animate	–	+	+	+	+	+
human	–	–	+	+	+	+
female	–	–	–	–	+	+
adult	–	+	–	+	–	+

From a feature analysis like this, we can say that at least part of the meaning of the word *girl* in English involves the elements [+human, +female, –adult]. We can also characterize the feature that is crucially required in a noun in order for it to appear as the subject of a particular verb, supplementing the syntactic analysis with semantic features. The \_\_\_\_\_ is reading the newspaper.

N [+human]

This approach would give us the ability to predict which nouns make this sentence semantically odd. Some examples would be *table*, *horse* and *hamburger*, because none of them have the required feature [+human].

The approach just outlined is a start on analyzing the conceptual components of word meaning, but it is not without problems. For many words in a language it may not be as easy to come up with neat components of meaning. If we try to think of the components or features we would use to differentiate the nouns *advice*, *threat* and *warning*, for example, we may not be very successful. Part of the problem seems to be that the approach involves a view of words in a language as some sort of ‘containers’ that carry meaning components. There is clearly more to the meaning of words than these basic types of features.

## Semantic roles

Instead of thinking of words as ‘containers’ of meaning, we can look at the ‘roles’ they fulfill within the situation described by a sentence. If the situation is a simple event, as in *The boy kicked the ball*, then the verb describes an action (*kick*). The noun phrases in the sentence describe the roles of entities, such as people and things, involved in the action. We can identify a small number of **semantic roles** (also called ‘thematic roles’) for these noun phrases.

## Agent and theme

In our example sentence, one role is taken by the noun phrase *The boy* as ‘the entity that performs the action’, technically known as the **agent**. Another role is taken by *the ball* as ‘the entity that is involved in or affected by the action’, which is called the **theme** (or sometimes the ‘patient’). The theme can also be an entity (*The ball*) that is simply being described (i.e. not performing an action), as in *The ball was red*.

Agents and themes are the most common semantic roles. Although agents are typically human (*The boy*), they can also be non-human entities that cause actions, as in noun phrases denoting a natural force (*The wind*), a machine (*A car*), or a creature (*The dog*), all of which affect *the ball* as theme.

*The boy kicked the ball.*  
*The wind blew the ball away.*  
*A car ran over the ball.*  
*The dog caught the ball.*

The theme is typically non-human, but can be human (*the boy*), as in *The dog chased the boy*. In fact, the same physical entity can appear in two different semantic roles in a sentence, as in *The boy cut himself*. Here *The boy* is agent and *himself* is theme.

## Instrument and experiencer

If an agent uses another entity in order to perform an action, that other entity fills the role of **instrument**. In the sentences *The boy cut the rope with an old razor* and *He drew the picture with a crayon*, the noun phrases *an old razor* and *a crayon* are being used in the semantic role of instrument.

When a noun phrase is used to designate an entity as the person who has a feeling, perception or state, it fills the semantic role of **experiencer**. If we *see*, *know* or *enjoy* something, we're not really performing an action (hence we are not agents). We are in the role of experiencer. In the sentence *The boy feels sad*, the experiencer (*The boy*) is the only semantic role. In the question, *Did you hear that noise?*, the experiencer is *you* and the theme is *that noise*.

## Location, source and goal

A number of other semantic roles designate where an entity is in the description of an event. Where an entity is (*on the table*, *in the room*) fills the role of **location**. Where the entity moves from is the **source** (*from Chicago*) and where it moves to is the **goal** (*to New Orleans*), as in *We drove from Chicago to New Orleans*. When we talk about transferring money *from savings to checking*, the source is *savings* and the goal is *checking*.

All these semantic roles are illustrated in the following scenario. Note that a single entity (e.g. *George*) can appear in several different semantic roles.

<i>Mary</i>	<i>saw</i>	<i>a fly</i>	<i>on the wall.</i>
EXPERIENCER		THEME	LOCATION
<i>She</i>	<i>borrowed</i>	<i>a magazine</i>	<i>from George.</i>
AGENT		THEME	SOURCE
<i>She</i>	<i>squashed</i>	<i>the bug</i>	<i>with the magazine.</i>
AGENT		THEME	INSTRUMENT.
<i>She</i>	<i>handed</i>	<i>the magazine</i>	<i>back to George.</i>
AGENT		THEME	GOAL
<i>"Gee thanks," said</i>	<i>George.</i>		
	AGENT		

## Lexical relations

Not only can words be treated as ‘containers’ of meaning, or as fulfilling ‘roles’ in events, they can also have ‘relationships’ with each other. In everyday talk, we often explain the meanings of words in terms of their relationships. If we’re asked the meaning of the word *conceal*, for example, we might simply say, “It’s the same as *hide*”, or give the meaning of *shallow* as “the opposite of *deep*”, or the meaning of *daffodil* as “a kind of *flower*”. In doing so, we are characterizing the meaning of each word, not in terms of its component features, but in terms of its relationship to other words. This approach is used in the semantic description of language and treated as the analysis of **lexical relations**. The lexical relations we have just exemplified are synonymy (*conceal/hide*), antonymy (*shallow/deep*) and hyponymy (*daffodil/flower*).

## Synonymy

Two or more words with very closely related meanings are called **synonyms**. They can often, though not always, be substituted for each other in sentences. In the appropriate circumstances, we can say, *What was his answer?* or *What was his reply?* with much the same meaning. Other common examples of synonyms are the pairs: *almost/nearly*, *big/large*, *broad/wide*, *buy/purchase*, *cab/taxi*, *car/automobile*, *couch/sofa*, *freedom/liberty*.

We should keep in mind that the idea of ‘sameness’ of meaning used in discussing synonymy is not necessarily ‘total sameness’. There are many occasions when one word is appropriate in a sentence, but its synonym would be odd. For example, whereas the word *answer* fits in the sentence *Sandy had only one answer correct on the test*, the word *reply* would sound odd. Synonymous forms may also differ in terms of formal versus informal uses. The sentence *My father purchased a large automobile* has virtually the same meaning as *My dad bought a big car*, with four synonymous replacements, but the second version sounds much more casual or informal than the first.

## Antonymy

Two forms with opposite meanings are called **antonyms**. Some common examples are the pairs: *alive/dead*, *big/small*, *fast/slow*, *happy/sad*, *hot/cold*, *long/short*, *male/female*, *married/single*, *old/new*, *rich/poor*, *true/false*.

Antonyms are usually divided into two main types, ‘gradable’ (opposites along a scale) and ‘non-gradable’ (direct opposites). **Gradable antonyms**, such as the pair *big/small*, can be used in comparative constructions like *I’m bigger than you* and *A pony is smaller than a horse*. Also, the negative of one member of a gradable pair does not necessarily imply the other. For example, the sentence *My car isn’t old*, doesn’t necessarily mean *My car is new*.

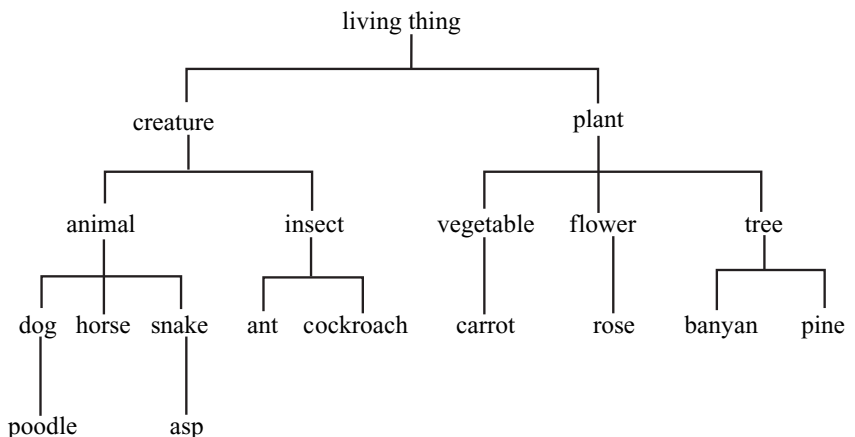
With **non-gradable antonyms** (also called ‘complementary pairs’), comparative constructions are not normally used. We don’t typically describe someone as *deader* or *more dead* than another. Also, the negative of one member of a non-gradable pair does imply the other member. That is, *My grandparents aren’t alive* does indeed mean *My grandparents are dead*. Other non-gradable antonyms in the earlier list are the pairs: *male/female*, *married/single* and *true/false*.

Although we can use the ‘negative test’ to identify non-gradable antonyms in a language, we usually avoid describing one member of an antonymous pair as the negative of the other. For example, while *undress* can be treated as the opposite of *dress*, it doesn’t mean ‘not dress’. It actually means ‘do the reverse of dress’. Antonyms of this type are called **reversives**. Other common examples are *enter/exit*, *pack/unpack*, *lengthen/shorten*, *raise/lower*, *tie/untie*.

## Hyponymy

When the meaning of one form is included in the meaning of another, the relationship is described as **hyponymy**. Examples are the pairs: *animal/dog*, *dog/poodle*, *vegetable/carrot*, *flower/rose*, *tree/banyan*. The concept of ‘inclusion’ involved in this relationship is the idea that if an object is a *rose*, then it is necessarily a *flower*, so the meaning of *flower* is included in the meaning of *rose*. Or, *rose* is a hyponym of *flower*.

When we consider hyponymous connections, we are essentially looking at the meaning of words in some type of hierarchical relationship. We can represent the relationships between a set of words such as *animal*, *ant*, *asp*, *banyan*, *carrot*, *cockroach*, *creature*, *dog*, *flower*, *horse*, *insect*, *living thing*, *pine*, *plant*, *poodle*, *rose*, *snake*, *tree* and *vegetable* as a hierarchical diagram.



Looking at the diagram, we can say that “*horse* is a hyponym of *animal*” or “*cockroach* is a hyponym of *insect*”. In these two examples, *animal* and *insect* are called the **superordinate** (= higher level) terms. We can also say that two or more words that share the same superordinate term are **co-hyponyms**. So, *dog* and *horse* are co-hyponyms and the superordinate term is *animal*.

The relation of hyponymy captures the concept of ‘is a kind of’, as when we give the meaning of a word by saying, “an *asp* is a kind of *snake*”. Sometimes the only thing we know about the meaning of a word is that it is a hyponym of another term. That is, we may know nothing more about the meaning of the word *asp* other than that it is a kind of *snake* or that *banyan* is a kind of *tree*.

It is worth emphasizing that it is not only words for ‘things’ that are hyponyms. Words such as *punch*, *shoot* and *stab*, describing ‘actions’, can all be treated as co-hyponyms of the superordinate term *injure*.

## Prototypes

While the words *canary*, *cormorant*, *dove*, *duck*, *flamingo*, *parrot*, *pelican* and *robin* are all equally co-hyponyms of the superordinate *bird*, they are not all considered to be equally good examples of the category ‘bird’. According to some researchers, the most characteristic instance of the category ‘bird’ is *robin*. The idea of ‘the characteristic instance’ of a category is known as the **prototype**. The concept of a prototype helps explain the meaning of certain words, like *bird*, not in terms of component features (e.g. ‘has feathers’, ‘has wings’), but in terms of resemblance to the clearest example. Thus, even native speakers of English might wonder if *ostrich* or *penguin* should be hyponyms of *bird* (technically they are), but have no trouble deciding about *sparrow* or *pigeon*. These last two are much closer to the prototype.

Given the category label *furniture*, we are quick to recognize *chair* as a better example than *bench* or *stool*. Given *clothing*, people recognize *shirts* quicker than *shoes*, and given *vegetable*, they accept *carrot* before *potato* or *tomato*. It is clear that there is some general pattern to the categorization process involved in prototypes and that it determines our interpretation of word meaning. However, this is one area where individual experience can lead to substantial variation in interpretation and people may disagree over the categorization of a word like *avocado* or *tomato* as fruit or vegetable. These words seem to be treated as co-hyponyms of both *fruit* and *vegetable* in different contexts.

## Homophones and homonyms

When two or more different (written) forms have the same pronunciation, they are described as **homophones**. Common examples are *bare/bear*, *meat/meet*, *flour/flower*, *pail/pale*, *right/write*, *sew/so* and *to/too/two*.

We use the term **homonyms** when one form (written or spoken) has two or more unrelated meanings, as in these examples:

*bank* (of a river) – *bank* (financial institution)

*bat* (flying creature) – *bat* (used in sports)

*mole* (on skin) – *mole* (small animal)

*pupil* (at school) – *pupil* (in the eye)

*race* (contest of speed) – *race* (ethnic group)

The temptation is to think that the two types of *bank* must be related in meaning. They are not. Homonyms are words that have separate histories and meanings, but have accidentally come to have exactly the same form.

## Polysemy

When we encounter two or more words with the same form and related meanings, we have what is technically known as **polysemy**. Polysemy can be defined as one form (written or spoken) having multiple meanings that are all related by extension. Examples are the word *head*, used to refer to the object on top of your body, on top of a glass of beer, person at the top of a company or department, and many other things. Other examples of polysemy are *foot* (of person, of bed, of mountain) or *run* (person does, water does, colors do).

If we aren't sure whether different uses of a single word are examples of homonymy or polysemy, we can check in a dictionary. If the word has multiple meanings (i.e. it's polysemous), then there will be a single entry, with a numbered list of the different meanings of that word. If two words are treated as homonyms, they will typically have two separate entries. In most dictionaries, *bank*, *mail*, *mole*, and *sole* are clearly treated as homonyms whereas *face*, *foot*, *get*, *head* and *run* are treated as examples of polysemy.

Of course, it is possible for two forms to be distinguished via homonymy and for one of the forms also to have various uses via polysemy. The words *date* (= a thing we can eat) and *date* (= a point in time) are homonyms. However, the 'point in time' kind of *date* is polysemous in terms of a particular day and month (= on a letter), an arranged meeting time (= an appointment), a social meeting (= with someone we like), and even a person (= that person we like). So the question *How was your date?* could have several different interpretations.

## Word play

These last three lexical relations are the basis of a lot of word play, usually for humorous effect. In the nursery rhyme *Mary had a little lamb*, we think of a small animal, but in the comic version *Mary had a little lamb, some rice and vegetables*, we think of a small amount of meat. The polysemy of *lamb* allows the two interpretations. We make sense of the riddle *Why are trees often*



*mistaken for dogs?* by recognizing the homonymy in the answer: *Because of their bark*. And if you are asked the following question: *Why is 6 afraid of 7?*, you can understand why the answer is funny (*Because 789*) by identifying the homophones.

## Metonymy

The relatedness of meaning found in polysemy is essentially based on similarity. The *head* of a company is similar to the *head* of a person on top of and controlling the body. There is another type of relationship between words, based simply on a close connection in everyday experience. That close connection can be based on a container–contents relation (*bottle/water, can/juice*), a whole–part relation (*car/wheels, house/roof*) or a representative–symbol relationship (*king/crown, the President/the White House*). Using one of these words to refer to the other is an example of **metonymy**.

It is our familiarity with metonymy that makes it possible for us to understand *He drank the whole bottle*, although it sounds absurd literally (i.e. he drank the liquid, not the glass object). We also accept *The White House has announced . . .* or *Downing Street protested . . .* without being puzzled that buildings appear to be talking. We use metonymy when we talk about *filling up the car*, *answering the door*, *boiling a kettle*, *giving someone a hand*, or *needing some wheels*.

Many examples of metonymy are highly conventionalized and easy to interpret. However, other examples depend on an ability to infer what the speaker has in mind. The metonymy in *Get your butt over here* is easier to understand if you are used to informal talk in the United States, *the strings are too quiet* if you're familiar with orchestral music, and *I prefer cable* if you have a choice in how you receive television programs (in the USA). Making sense of such expressions often depends on context, background knowledge and inference. These are all topics we'll explore in the [next chapter](#).

## Collocation

One final aspect of our knowledge of words has nothing to do with any of the factors considered so far. We know which words tend to occur with other words. If you ask a thousand people what they think of when you say *hammer*, more than half will say *nail*. If you say *table*, they'll mostly say *chair*, and *butter* elicits *bread*, *needle* elicits *thread* and *salt* elicits *pepper*. One way we seem to organize our knowledge of words is simply on the basis of **collocation**, or frequently occurring together.

In recent years, the study of which words occur together and their frequency of co-occurrence has received a lot more attention in **corpus linguistics**. A corpus is a large collection of texts, spoken or written, typically stored as a database

in a computer. Those doing corpus linguistics can then use the database to find out how often specific words or phrases occur and what types of collocations are most common.

One investigation looked at 84 occurrences of the phrase *true feelings* in a corpus (only a small sample is shown here). After looking at the types of verbs (e.g. *deny*, *try to communicate*) used with this phrase, the investigator noted that “English speakers use the phrase with *true feelings* when they want to give the meaning of reluctance to express deeply felt emotions” (Sinclair, 2003: 148).

- 1 more accustomed to denying our *true feelings*, avoiding reflection and
- 2 We try to communicate our *true feelings* to those around us, and we are
- 3 the ability to express our *true feelings* and creativity because we are
- 4 we appease others, deny our *true feelings*, and conform, I suspected the
- 5 more of us in there, of our *true feelings*, rather than just ranting on

This type of research provides more evidence that our understanding of what words and phrases mean is tied to the contexts in which they are typically used. We will look at other aspects of the role of context in the [next chapter](#).

## ■ Study questions

- 1 How is the term ‘prototype’ used in semantics?
- 2 Using semantic features, how would you explain the oddness of these sentences?
  - (a) *The television drank my water.*
  - (b) *His dog writes poetry.*
- 3 Identify the semantic roles of the seven noun phrases in this sentence.

*With her new golf club, Anne Marshall whacked the ball from the woods to the grassy area near the hole and she suddenly felt invincible.*

- 4 What is the basic lexical relation between each pair of words listed here?
  - (a) *damp/moist*
  - (c) *furniture/table*
  - (e) *move/run*
  - (b) *deep/shallow*
  - (d) *married/single*
  - (f) *peace/piece*
- 5 Which of the following opposites are gradable, non-gradable, or reversible?
  - (a) *absent/present*
  - (c) *fail/pass*
  - (e) *fill it/empty it*
  - (b) *appear/disappear*
  - (d) *fair/unfair*
  - (f) *high/low*
- 6 Are these underlined words best described as examples of polysemy or metonymy?
  - (a) *The pen is mightier than the sword.*
  - (b) *I had to park on the shoulder of the road.*
  - (c) *Yes, I love those. I ate a whole box on Sunday!*
  - (d) *The bookstore has some new titles in linguistics.*
  - (e) *Computer chips created an important new technology.*

### ■ Research tasks

- A What is the connection between an English doctor called Peter Mark Roget and the study of lexical relations?
- B In this chapter, we discussed metonymy, but not metaphor. What is the difference between these two ways of using words?
- C What is ‘markedness’ and which of the following pairs would be described as the ‘unmarked’ member?

*big/small, expensive/inexpensive, fast/slow, few/many, happy/unhappy, long/short, old/young, possible/impossible, strong/weak, thick/thin*

- D Which of these pairs of words are examples of ‘reciprocal antonymy’ (also known as ‘converseness’)?

*above/below, asleep/awake, brother/sister, buy/sell, doctor/patient, dry/wet, enter/exit, follow/precede, husband/wife, true/false*

### ■ Discussion topics/projects

- I One way to analyze the semantic structure of sentences is to start with the verb as the central element and define the semantic roles required by that verb. (This is sometimes called ‘theta assignment’.) For example, a verb like *kill* requires an agent and a theme, as in *The cat [agent] killed the mouse [theme]*. A verb like *give* requires an agent, a theme and a goal, as in *The girl [agent] gave the flowers [theme] to her mother [goal]*. We can represent these observations in the following way:

KILL [*Agent* \_\_\_\_\_ *Theme*]  
 GIVE [*Agent* \_\_\_\_\_ *Theme*, *Goal*]

How would you define the set of semantic roles for the following verbs, using the format illustrated? Are there required roles and optional roles?

*break, build, die, eat, fear, kiss, like, occupy, offer, open, put, receive, send, sneeze, steal, taste, teach, understand, want, write*

(For background reading, see chapter 10 of Brinton, 2000.)

- II The words in the following list are all related in terms of the superordinate form *tableware*. How would you go about determining what the prototype item of ‘tableware’ must be? Is a hierarchical diagram illustrating hyponymous relations useful? Would it be helpful to list some (or all) of the words beside a scale from 5 (= ‘excellent example of tableware’) to 1 (= ‘not really an example of tableware’) and ask people to indicate their choices on the scale? Do you think that the word with the highest score would indicate the prototype?

<i>bowl</i>	<i>flatware</i>	<i>ladle</i>	<i>soup spoon</i>
<i>crockery</i>	<i>fork</i>	<i>mug</i>	<i>spoon</i>
<i>cup</i>	<i>glass</i>	<i>plate</i>	<i>teaspoon</i>
<i>cutlery</i>	<i>glassware</i>	<i>platter</i>	<i>tumbler</i>
<i>dish</i>	<i>knife</i>	<i>saucer</i>	<i>wineglass</i>

(For background reading, see chapter 1 of Ungerer & Schmid, 1996.)

### ■ Further reading

For another short introduction to semantics, try chapter 6 of Finegan (2004) or chapter 5 of Fromkin *et al.* (2003). An introductory textbook is Hurford & Heasley (1983). Other textbooks are Cruse (2004), Hofmann (1993), Kearns (2000), Kreidler (1998), Löbner (2002), Lyons (1996) and Saeed (2003). More detailed treatments can be found in Frawley (1992) and Lyons (1977). More specifically, on the basis of conceptual meaning, see Aitchison (2003), on associative meaning, see Leech (1974), on semantic roles, see Palmer (1994), on lexical relations, see Cruse (1986) or Murphy (2003), on antonymy, see Jones (2002) and on prototypes, see Taylor (2004). For more on collocation and corpus linguistics, see McEnery & Wilson (2001), Meyer (2002) or Sinclair (1991, 2003).