# 8  Word Meaning

**KEY CONCEPTS**
Dictionary entries
Sense relations
Models of word meaning
Mental dictionaries

## INTRODUCTION

In this chapter we discuss word meaning. While it's uncontroversial that words mean, it is far from clear how they mean, or indeed what meaning is. Because dictionaries are so familiar, we begin our discussion from the point of view of dictionary entries, which are designed primarily to describe the meanings of words, though they do much else besides. We discuss two approaches to modeling word meaning, and then move to a discussion of the meanings of words as they might be stored in human minds and of the ways in which book and mental dictionaries are alike and different.

We would be surprised if anyone reading this book had never consulted a dictionary; however, our experience over several decades of teaching about language is that very few people read the introductions (front matter) of dictionaries they may have had for many years. Indeed, our experience strongly suggests that most people believe in the myth of "*The* Dictionary," a unique, authoritative, and accurate source of information on words, their spellings, meanings, and histories, of which actual dictionaries are merely longer or shorter versions.

Everyone, especially teachers, should be aware that dictionaries are not all cut from the same cloth. Rather, they differ in substantial ways, which their users ignore at the cost of misinterpreting what they read. The goals of the exercise just below are to raise your awareness of the differences among dictionaries, to show you that it is essential to adopt as critical a stance toward dictionaries as you would toward any other commercial product, and to encourage you to examine dictionaries carefully as you buy them for yourselves, have them bought for your schools, or recommend them to your students.

More generally, teachers and students should have some appreciation of the complexity of issues regarding linguistic meaning, a topic that has challenged western thinking for over two and a half millennia. We have included several items in our References and Resources to this chapter that we hope will help develop that appreciation. The chapter will give you a basic vocabulary for use in conceptualizing and discussing meaning, as well as concepts

to augment our discussion of morphology and parts of speech.

## DICTIONARY ENTRIES

Dictionaries are probably the sources of information on words you are most familiar with, so we begin our discussion of words by exploring the information dictionaries provide and the ways in which they present it.

## Exercise

1. Just to see how much you may have been taking for granted, and how much of that was right and how much was mistaken, write a 6-7 page critical review comparing/contrasting two reasonably substantial dictionaries (i.e., compact, collegiate or larger; pocket dictionaries are too small) suitable for your purposes, e.g., for your own personal or professional uses or to recommend to the kinds of students you may teach. We think you will learn a lot about dictionaries by comparing/contrasting a learner's dictionary with one for native English speakers. Make sure to give their full names, editions, publishers, dates of publication, and sizes. Indicate the size of the dictionaries by number of pages or entries. Your instructor should approve your choice of dictionaries before you begin. As this is to be a critical review, you should clearly articulate for yourself and your readers the criteria you use to evaluate the dictionaries.

Compare/contrast their front matters (i.e., everything from the front cover to the beginning of the alphabetical listing of words) and their back matters (i.e., everything from the end of the alphabetical listings to the inside back cover). Pay particular attention to:

a. the dictionaries' range of contents (e.g., illustrations, proper names, maps, etc.);

b. the information included in the entries (e.g., pronunciation [what systems are used to describe it, e.g., IPA or some other system?], syllabication [what is meant by this in the dictionaries?], etymology, part(s) and subcategories of speech [what range of these is used in the dictionaries?], definitions, etc.);

c. the ways in which definitions are organized (e.g., earlier to later, most general to most particular, most frequent to least, etc.);

d. the ways in which your dictionaries deal with expressions related to the head word, including derivationally related forms, compounds, phrases, idioms, homographs, etc.;

e. the ways in which your dictionaries deal with controversial usage

   issues (e.g., the use of *hopefully* as a sentence adverb or the modification of *unique*);
f. (for learners' dictionaries) the defining vocabulary, if a special one is used;
g. (for learners' dictionaries) the grammatical information included and how it is presented;
h. who the publishers say the dictionaries are designed for. Discuss the ways in which the dictionaries are or are not appropriate for your purposes (e.g., for students you might imagine yourself teaching);
i. the databases on which the dictionaries are based (e.g., are they based on large, computerized, collections of texts? What kinds of texts are included?).

Illustrate your review with appropriate examples from the dictionaries. A very useful source of information and ideas on both native speaker and learner dictionaries is Howard Jackson's *Words and their Meanings,* but there are many more books on lexicography worth reading for this project.

2. Imagine a class of students that you might reasonably expect to teach. What criteria would you use to select a dictionary for the classroom? To ask students to buy for themselves? For yourself?

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Dictionaries are designed to provide readily accessible information about the words of one or more languages. Many dictionaries provide far more information than that. They may include lists of colleges and universities, US presidents, the US constitution, and the like. While they may expand their domains in certain respects, they may narrow them in others. Some dictionaries are designed for college students and include words that the editors believe are most relevant to that market segment (and we must never forget that dictionaries are commercial products and that there is no such thing as *The Dictionary*); other dictionaries are devoted to slang; still others to technical fields such as medicine or linguistics (useful ones to complement this book would be Crystal's *A Dictionary of Linguistics and Phonetics*, Matthews' *Concise Oxford Dictionary of Linguistics*, and Johnson and Johnson's *Encyclopedic Dictionary of Applied Linguistics*).

Other dictionaries are for people learning English (or some other language) as a second or foreign language, like the *Cambridge International Dictionary* (CIDE), Random House *English Learner's Dictionary*, and Harp-

er Collins *Beginners ESL Dictionary*/Collins CoBuild *New Student's Dictionary*, Longman *Dictionary of Contemporary English* (also available online), and the American Heritage *Dictionary for Learners of English*. Many learner's dictionaries provide simplified definitions, often by using a limited "defining vocabulary" of about 2,000 of the most frequently used English words. They also typically provide considerably more grammatical information and examples of the uses of the words than dictionaries prepared for native speakers. For example, in addition to the grammatical information provided in its entries, the HarperCollins *Beginner's ESL Dictionary* provides a very useful 220 page synoptic "English grammar guide." Bilingual dictionaries provide definitions in one language for words in another.

To make our discussion concrete and specific we will make use of the following entry from *The American Heritage Dictionary of the English Language* (AHD) (Fourth Edition).

> **jeal·ous** (jĕl´əs) *adj.* **1.** Fearful or wary of being supplanted; apprehensive of losing affection or position. **2a.** Resentful or bitter in rivalry; envious: *jealous of the success of others.* **b.** Inclined to suspect rivalry. **3.** Having to do with or arising from feelings of envy, apprehension, or bitterness: *jealous thoughts.* **4.** Vigilant in guarding something: *We are jealous of our good name.* **5.** Intolerant of disloyalty or infidelity; autocratic: *a jealous God.* [Middle English *jelous*, from Old French *gelos*, jealous, zealous, from Vulgar Latin *\*zēlōsus*, from Late Latin *zēlus*, zeal. See ZEAL]—**jeal´ous·ly** *adv.*—**jeal´ous·ness** *n.*

Dictionaries differ in the categories of information they include in their entries and in the ways in which they organize that information. Editors try to chose the most readable presentation for each entry. But practices vary, and teachers should be aware of the variations and choose appropriate dictionaries for themselves and their students.

## *Entry and entry-word*

The entire paragraph quoted above is called an **entry**; the first (bolded) word of the entry is its **head-** or **entry-word**. Ordinary dictionaries facilitate finding information about the headwords by arranging them alphabetically.

## Exercise
What advantages and disadvantages might come from arranging the entries of a dictionary alphabetically?

A typical native speaker dictionary provides substantial information in each entry. In the entry above, the conventional **spelling** is given by the entry word; if there had been another well-accepted spelling, it would have been included after the entry word. The spelling includes **syllabication** information, in this dictionary by means of a raised dot in the entry word. Syllabication in the entry word tells writers where they may hyphenate the word at the end of a line of type; it is only indirectly related to pronunciation and is becoming irrelevant as we rely on the justification programs in our word processors to space letters for us.

### *Pronunciation*
The **pronunciation** of the word is given in parentheses after the headword. AHD uses a mix of ordinary English letters, letters with diacritics, joined letters (**ligatures**), and one letter, ə, from the International Phonetic Alphabet (IPA). The sound value of each letter in the pronunciation guide is indicated by reference to an English word. This kind of system works if you know how to pronounce the reference words as the lexicographers expect, but if you don't know how that word is pronounced, or if you pronounce it in an unusual way (for example, according to a non-standard dialect), then the dictionary's pronunciation guide may be quite misleading. AHD, like many dictionaries, repeats the list of reference words on each second page.

Syllabication (or **syllabification**) in the pronunciation section separates the word into its component spoken syllables and typically also indicates stress. AHD inserts a hyphen or stress mark between each syllable in the pronunciation and marks the syllable with the main stress by a following ´. For example, the most usual pronunciation of *Mongolia* is given as (mŏng-gō´-lē-ə, . . .).

Learners' dictionaries typically use IPA symbols to indicate pronunciation. These symbols have fixed sound values, independent of anyone's native language, dialect, or idiosyncrasies, so they avoid some of the problems associated with native speaker dictionary pronunciation guides. However, if, like most American students, you don't know the sound values of the IPA symbols, they are quite unhelpful. It is important to understand your dictionary's way of indicating pronunciation, and perhaps to learn a relevant set of the IPA symbols.

## *Parts of speech*

After the pronunciation comes the headword's **part of speech**. AHD uses the nine traditional parts of speech: adjective, adverb, article, conjunction, interjection, noun, preposition, pronoun, and verb. It distinguishes definite and indefinite articles and transitive, intransitive, and auxiliary verbs. It also marks some singular and plural nouns and lists prefixes and suffixes. Some dictionaries may use terms that are unfamiliar to you, such as the Oxford English Dictionary's (OED) *substantive* (abbreviated *sb.*). OED is also unusually fine-grained as it designates nouns as either of action or of agent (*n. of action/agent*).

Many entry words belong to several different parts of speech, and different dictionaries have different ways of handling this. Some include them all in a single entry, called a **combined entry** by AHD. Others give a separate entry to each different part of speech that the word belongs to, essentially treating each different part of speech associated with a spelling as a homograph (see below).

Learners' dictionaries tend to give more grammatical information than native speaker dictionaries. They try to provide the grammatical information that is particularly helpful for learners. English learners tend to have difficulty with the count/non-count distinction in English nouns, so for each noun, CIDE indicates whether it is count [C] or non-count [U]. Similarly, while most adjectives may occur before the noun they modify as well as in the predicate of a subject complement clause such as *Frederika is very tall*, some adjectives may occur only before their nouns (e.g., *former*, *live*) and some only in the predicate (e.g., *aghast*, *alive*, *asleep*, *awake*). Generally native speaker dictionaries, such as Webster's New World Dictionary (WNWD), do not provide this information, but learners' dictionaries typically do. CIDE uses [before n] for the former and [after n] (somewhat misleadingly) for the latter. WNWD merely provides a very few illustrative examples of the predicative use, which, of course, do not tell a reader whether he or she may use the adjective before a noun.

## *Run-ons*

Dictionaries also differ in how they deal with words and other expressions that are related to the headword. AHD adds the adverb and noun forms at the end of the entry for *jealous* because their meanings are straightforwardly inferable from the headword's meaning and their forms. However, if the meanings of the derived words are not readily predictable from the meaning of the entry word and the derivation, then the derived word may get its own entry. For example, AHD separates *hereditarian* from *hereditary*.

Dictionary practices are not always consistent. While AHD lists *retaliation*, *retaliative*, *retaliatory*, and *retaliator* as **run-ons** at the end of the entry for *retaliate*, it gives *retrench* and *retrenchment* separate entries, even though the meanings of the latter are readily derivable from those of the former. Check your dictionary for its policies.

## *Etymology/word history*

After the definitions of the word, AHD provides a brief sketch of the history or **etymology** (not *entomology*) of the word. In this case, modern English *jealousy* is descended from Middle English *jelous*, which was borrowed from the Old French word *gelos*, which in turn came from Vulgar (i.e., ordinary spoken) Latin \**zēlōsus* (\* indicates that the form does not occur in any manuscript but has been reconstructed according to generally accepted linguistic principles of language change), which descended from Late Latin *zēlus*. (Many dictionaries abbreviate the names of languages and historical stages of languages; check your dictionary's list of abbreviations for expressions like ML and ME.) AHD is unusually helpful in providing for many words a paragraph-length ***Word History*** separate from the etymological sketch within the entry.

Typically, learners' dictionaries do not include etymological information, though some language teachers believe that such information can be useful.

## *Usage*

Usage is the study of the ways in which expressions of a language are used by the speakers of that language, especially in formal speaking and writing. Linguists view usage descriptively, that is, they study how expressions are actually used. Others adopt a prescriptive approach to usage, that is, they seek to impose rules of correctness based on criteria other than the practices of the users of the language. English dictionary users expect guidance on how expressions are (or should be) used, especially when usages are controversial. And indeed, many dictionary editors see it as their duty to provide authoritative advice on the usage of the headwords or of particular senses. For many words whose usage is controversial, AHD provides a very useful, critical, paragraph-length ***Usage Note***, based on comments by its usage panel leavened by the linguistic expertise of its Usage Consultant, Geoffrey Nunberg.

Other dictionaries use other devices to provide usage information. Typical is Webster's New World Dictionary's use of short **Usage Labels**. For example, WNWD attaches the rubric [Now Rare] to its version of AHD's sense 5 of *jealous*. As dictionaries differ on whether they include usage advice as such, as well as on the number of usage labels and their meanings,

their readers are best advised to read their front matters.

Some dictionaries embed usage information as though it were grammatical information. A dictionary that ignores or treats a controversial usage issue as a straightforward grammatical one misinforms its readers. For example, CIDE says that *unique* is grammatically [*not gradable*], "being the only existing one of its type . . ." According to this grammatical categorization, expressions such as *almost unique* and *very unique* should be ungrammatical, though they are widely used by native English speakers, including highly educated ones. This puts the grammatical horse before the usage cart. Languages change, and one way in which they change is by extending the range of ways in which words may be used, for instance by broadening the scope of a non-gradable adjective by allowing it to be modified. *Unique* is only a non-gradable adjective if speakers of English treat it consistently that way. But they don't, and no dictionary can put that genie back in its bottle. What CIDE ought to have done was alert its users to the fact that under some circumstances, some people will object to modified *unique*. What it actually does, somewhat contradictorily, is add "more generally, unusual or special in some way." Note that *unusual* and *special* are gradable adjectives. It is best to read the front matter to find out what your lexicographers have been up to, though they are not always consistent. You might compare the CIDE entry for *unique* with that in AHD, especially its Usage Note for that word.

## Exercise

Check your dictionary for how it deals with usage issues, and then check *unique, hopefully, infer, irregardless.* Compare your dictionary's approach with the AHD's Usage Notes on each of these; you might also consult a usage dictionary such as the *Harper Dictionary of Contemporary Usage* (Morris and Morris 1985) to see what it says about these words.

Dictionaries tend to lump several different linguistic categories together under Usage Labels. WNWD usage labels include a word's frequency of use (archaic, obsolete, rare), its level of formality (colloquial, slang), its field (poetic), and its region (dialect, British, Canadian).

### *Lexical fields*

Words may have different (though related) meanings in different **fields**; that is, in different topics, disciplines, work and play domains, and the like. For

example, the word *morphology* is used in linguistics, biology, and various other sciences. Dictionaries have a variety of ways of dealing with field information. The following partial entry from *Webster's New Twentieth Century Dictionary Unabridged* (2nd Edition) (WNTC) illustrates how editors may use the separation of senses to separate fields by embedding the field name (bolded) in the definition.

> **mor·phol′o·gy . . .**
> 1. the branch of **biology** that deals with the form and structure of animals and plants, without regard to function.
> 2. the branch of **linguistics** that deals with the internal structure and forms of words: with syntax, it forms a basic division of grammar.
> 3. any **scientific** study of forms and structure, as in physical geography, etc.
> 4. (a) form and structure, as of an organism, regarded as a whole; (b) morphological features collectively, as of a language. (WNTC: 1170; emphasis added)

Other dictionaries, such as WNWD, use italicized labels like *Chem.* that precede the definition:

> **bi·na·ry . . . 4.** *Chem*. composed of two elements or radicals, or of one element and one radical (WNWD: 141)

## Cross referencing

To indicate the relations that words develop, maintain, and break off with other words, dictionaries **cross-reference** words in various ways. WNWD uses "see," "also," *same as*, and several other expressions for this purpose.

> **au·to·mat·ic . . .** *SYN* see SPONTANEOUS (WNWD: 95)
> **coffee klatch** (or **klatsch**) *same as* KAFFEEKLATSCH (WNWD: 275)

## Inflections

All dictionaries provide some information about the **inflections** of major parts of speech, generally only those that are irregular either in spelling or in pronunciation (though some dictionaries, including AHD and *Webster's*, provide all verb inflections). The inflections are typically abbreviated by omitting the unchanged part of the word, for example:

> **a·lum·na** . . . *n., pl.* **-nae**
> **a·lum·nus** . . . *n., pl.* **-ni** (WNWD p. 41)
> **ser·aph** . . . *n., pl.* -**aphs**, -**aphim** (WNWD p. 1299)

AHD lists verb inflections in the following order: past tense (-ed form), past participle (-en form), present participle (-ing form), and third person, singular, present tense (-s form). Where individual inflected forms would occur at some distance from the main entry in the alphabetical listing, they may be cross referenced to it, as in WNWD:

> **sang** . . . *alt. pt. of* SING (WNWD p. 1261)
> **sing** . . . **sang** or now rarely **sung**, **sung**, **sing'ing** (WNWD p. 1329)
> **sung** . . . *pp. & rare pt. of* SING (WNWD p. 1427)

## Senses

**Senses** are the definitions associated with the entry word. In AHD, they follow the part of speech label. In WNWD, they follow the etymology. Definitions are the lexicographers' attempts to represent the meanings associated with the head word. These are typically given in words, though there are pictorial dictionaries for children and many dictionaries include illustrations of various sorts. The definitions given for a word in one dictionary are likely to be very similar to the definitions given for that word in other dictionaries. This is because modern English dictionaries are representatives of a lexicographical tradition that is many centuries old; it is also because crafting definitions within the conventions imposed by that tradition is constraining and difficult, and because lexicographers look to see how their competitors have crafted their definitions. We will look at some of the devices lexicographers use to craft definitions below.

If every form were associated with only a single meaning, and if every different meaning were associated with only a single form, then the lexicographer's task would be considerably simplified, although dictionaries might be rather larger than they are now. However, as our examples have shown (and as a quick flick through a dictionary will confirm), many, if not most, entry words are associated with multiple meanings. Given that, lexicographers have to decide on the best strategy to represent the form-meaning connection. Should there be one entry with lots of senses? Or should there be multiple entries whose headwords are spelled identically but whose meanings differ?

Lexicographers have developed strategies for dealing with such situations. Generally, if the meanings associated with a single spelling are his-

torically descended from the same earlier form, and are clearly closely related to each other, then they will be grouped under a single headword. Such a headword is **polysemous**. *Morphology* is presented as a polysemous word in AHD, WNWD, and WNTC, though not in CIDE.

Once dictionaries allow polysemous entries, the editors have to decide on how to order the senses in an entry. Webster's groups them so that the most similar are presented together under the same number, separated if necessary by letters. As most words have more than a single meaning, most entries will be organized in this way.

> **read**[1] . . . **1.** *a*) to get the meaning of (something written, printed, embossed, etc.) by using the eyes, or for Braille, the finger tips, to interpret its characters or signs *b*) *clipped form of* PROOFREAD (WNWD p. 1181)

> **par·a·site** . . . **1.** a person, as in ancient Greece, who flattered and amused his host in return for free meals **2.** a person who lives at the expense of another or others without making any useful contribution or return; hanger-on **3.** *Biol.* a plant or animal that lives on or in an organism of another species from which it derives sustenance or protection without benefiting the host and usually doing harm. (WNWD p.1031)

Dictionaries differ in the principles they use to order the senses in an entry. WNWD uses a mix of historical and logical ordering:

> The senses of an entry have, wherever possible, been arranged in semantic order from the etymology to the most recent sense so that there is a logical, progressive flow showing the development of the word and the relationship of its senses to one another. (p. xii)

This principle is clearly evidenced by the entry for *parasite* above. The first sense is the original and the others derive from that both logically and historically.

AHD orders senses "with the central and often the most commonly sought meaning first."

CIDE gives each separate set of closely related senses its own entry and labels each entry with a GUIDE WORD chosen to help the user home in on the entry s/he wants:

> **oc·cu·py** . . . ⌐FILL⌐
> **oc·cu·py** . . . ⌐TAKE CONTROL⌐ (CIDE p. 973)

Dictionaries may provide separate, cross-referenced entries for separate spellings of words, even where the meanings are identical. Usually only one head word will be provided with a full entry. For example, WNWD has the entries **je·had** and **ji·had**, but the entry for **je·had** has a *same as* cross reference to **ji·had**, where the full entry is given.

If both spellings and meanings have diverged, then alphabetization will separate the entries, and any cross reference may be in the historical section of the entry. *Flower* and *flour* were both spelled *flour* earlier in English, and both derive from Latin *flor-* ("flower"). *Flower* means the blossom and seed-producing parts of plants, but *flour* has specialized and now means the ground "flower," or best part of a grain, mainly of wheat. The separate spellings usefully separate the meanings for us. Note, however, that *flower* and *flour* are pronounced identically, so they are **homo*phones***.

If a single spelling has two or more quite unrelated meanings, then lexicographers will typically assign a separate entry for each (set of) unrelated meaning(s). WNWD distinguishes **homo*graphs*** by superscript numerals:

> **dam**[1]**. . . 1.** a barrier built to hold back flowing water
> **dam**[2]**. . . 1.** the female parent of any four-legged animal (WNWD p. 356)

Both homophones and homographs may be grouped together under the term **homo*nym***.

## Sense relations

So far we have looked at the overall organization of entries. Let's now look at how the meanings of words are expressed.

If the dictionary is not a bilingual one, then the definitions are expressed in the same language as the headword, so there is a built-in circularity. For example, the first sense of **salt** in WNWD is "sodium chloride," (p. 1257) and the definition WNWD gives for **sodium chloride** is "common salt" (p. 1352).

If you don't know the words used in the definition, you can't figure out the meaning of the headword. English learners' dictionaries attempt to deal with this problem by using a defining vocabulary of words they assume to be known to all or most high-beginner or intermediate learners of the language, often the 2,000 most frequently used words of the language. CIDE uses several criteria besides frequency in choosing words for its defining vocabulary: the words must have the same meaning in both US and British English, be easy for learners to understand, be up-to-date, not be easily confused with other English words, not be easily confused with foreign words, and be useful

for explaining other words (CIDE p. 1702).

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Native speaker dictionaries assume that their users have a much larger vocabulary, although the fact that modern dictionaries typically include even the most basic words means that they must define these words in less basic terms. For example:

> **hole . . . 1.** a hollow or hollowed-out place; cavity; specif., *a*) an excavation or pit . . . (WNWD p. 668)

If possible, a single word equivalent, that is, a **synonym**, may be used:

> **to boot** besides (WNWD p. 163)
> **apteryx . . .** *same as* KIWI (WNWD p. 69)
> **agree . . . 1**. to consent or accede (WNWD p. 27)

Synonymy is usually defined as words that have the same meaning, though it is very unlikely that any two words will have exactly the same meaning. In her lively and lucid study *Words in the Mind*, Jean Aitchison (2003, 3rd ed.) observes that we tend to *pursue* something desirable (e.g., knowledge, a career) but *chase* things such as runaway horses (p. 94). For some speakers, chasing evokes the notion of speed, while pursuing does not necessarily do so. Synonyms thus have to be thought of as two "circles of meaning" that overlap to a greater or lesser extent.

Partial synonymy is much more common than full synonymy. Typically, synonyms are distinguished by subtle meaning differences that challenge lexicographers, linguists, and second language learners, though generally not native speakers. Usage labels may help to distinguish among partial synonyms: words may differ in style (*to stick to something* is neutral, *to cleave to something* is poetic), or in the places where they are typically used (*elevator* is US usage, *lift* is British).

## Exercise

The following sets of words are partial synonyms. Identify how they are similar and how they differ: *car-automobile; silver-argent; crux-cross; disconcert-rattle; truck-lorry; soda-pop-soft drink; cat-kitty; make-fabricate; facile-skillful; irritate-annoy-aggravate; woodchuck-groundhog; buy-purchase.* Putting the words in sentences will help you distinguish among them. So will consulting a good dictionary.

WNWD and WNTC provide lists of synonyms distinguished by comments after the main body of the entry. After the synonyms, they provide lists of antonyms. **Antonyms** are traditionally defined as words with opposite meanings, such as *up* and *down*, *good* and *bad*, and the like, though they must share some important aspect of their meanings. For instance, *large* and *small* share the notion of size. However, *apple* and *eraser* are not antonyms because they share little, if any, meaning aside from "physical object." We distinguish several types of antonym (Cruse, 1986, 2001).

**Complementary** antonyms are pairs of words such that if one word applies the other cannot, for example, *alive* and *dead*. If a person is alive, he or she cannot be dead, and vice versa. Other examples are *hit-miss*, *pass-fail*, *open-closed*.

**Gradable** antonyms denote opposing positions on some scale; for example, *hot* and *cold* indicate opposite positions on a temperature scale. Because scales are continuous phenomena, we can indicate varying positions on them by modifying the words, e.g., *hotter*, *hottest*, *awfully hot*, *miserably cold*. The values between and beyond the antonyms may also be lexicalized. In between *hot* and *cold* we have *warm*, *tepid*, *cool*, and beyond *hot* and *cold* there is *burning*, *scalding*, and *freezing*, among others. Other gradable pairs include *tall-short*, *wide-narrow*, *big-small*, *strong-weak*, *heavy-light*, *high-low*.

You probably noticed that the members of these pairs are not entirely parallel; one seems to be more basic, or **unmarked**, than the other. We use the basic, unmarked form to ask questions when we have no specific expectation that the marked form describes the situation, i.e., when the question is not loaded toward the marked form. For example, ordinarily if we want to know how strong someone is we simply ask *How strong is he or she?* If, however, we assume that this person is weaker than some norm, then we use the marked member of the word pair: *How weak is he or she?* (The marked/unmarked distinction is important in certain literary theories; see Barthes' *S/Z.*)

You probably also noticed that the scales we use depend on what we're

measuring; for instance, a small pumpkin is very likely to be much larger than a big pea.

**Non-gradable** antonyms cannot be modified, often because they denote absolute differences; e.g., *metabolic* is non-gradable: it does not accept the comparative or the superlative or modification by degree adverb or intensifier (* *more metabolic*, **most metabolic*, **excessively metabolic*, **very metabolic*). Other non-gradables include *absolute*, *sonic, utter*.

**Reversive** antonyms are words that represent movement in opposite directions, such as *advance-retreat*, *go (away)-come (back)*, *ascend-descend*, *rise-fall*, *go-return*, *fill-empty*, *open-close*.

**Conversive** antonyms represent the same situation from two points of view. For example, if the cat is *higher* than the bird, then the bird is *lower* than the cat. The vertical relationship between the bird and the cat can be viewed from two points of view: *lower than* and *higher than*. Another example is *wife-husband*: if Tarzan is Jane's husband, then Jane is Tarzan's wife. Other examples include *buy-sell*, *give-receive*, *own-belong to*, *above-below*.

While synonyms and antonyms are words at the same semantic level, word meanings may also be hierarchically related to each other. For example, a mallard is *a kind of* duck which is *a kind of* bird. We can represent this relation as a tree:
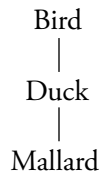
Bird
|
Duck
|
Mallard

The meaning "bird" is included in the meaning "duck," which in turn is included in the meaning "mallard." Or from the bottom up: the meaning "mallard" includes the meaning "duck," which includes the meaning "bird." This relationship is called **hyponymy**. The lower terms are the **hyponyms** of the higher terms, which are the **superordinates** or **hypernyms** of the lower terms. Similarly, the meaning of *rose* includes the meaning of *flower*. Consequently, if something is a rose then it must also be a flower. Conversely, the set of things we call roses is included in the set of things we call flowers.

A superordinate term may have many subordinate terms, called **co-hyponyms** or **coordinates**:

Saw

Chop saw    Miter saw    Table saw    Ripsaw    Hand saw    Hacksaw
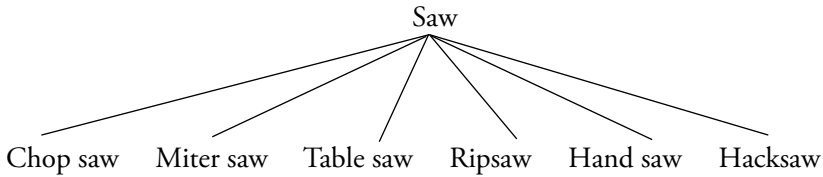
In this instance, the meaning and the form *saw* occur in each of the hyponyms, which, in spite of their spellings, are all compound words. We must mention here that not all groups of words that could be regarded as constituting a set of coordinates have a lexical superordinate. As far as we know, there is no single term that encompasses doors and windows, even though these are openings in walls for light, air, people, and refrigerators to pass through.

Dictionaries make extensive use of hyponymy to define words. For instance, WNTC defines *orator* as "a **person** who delivers an oration." (p. 1257) and an *oration* as "an elaborate **speech** or discourse . . ." (p. 1257). So an orator is a kind of person and an oration is a kind of speech. The remaining parts of the definition tell us what kind of person an orator is and what kind of speech an oration is, as well as how orators are distinct from other kinds of persons, and orations from other kinds of speeches.

Dictionaries also make use of part/whole and part/part relationships to define words. There are several types of these. When these relationships apply to unified objects, they are called **partonymy**, or less transparently, **meronymy**. For example, the *covers* and *pages* are parts of *books*; the *engine*, *trunk*, *carburetor*, and *fan belt* are parts of *cars*. The *crankshaft* is a part of the *engine* of a *car*. WNWD defines **cap·i·tal**[2] as "the top **part** of a column or pilaster" (p. 210). Meronymic relationships apply not only to physical objects but extend to temporal relationships (*day/week*), events (*inning/baseball game*), and even to quite abstract entities (*self-control/maturity*).

Because hyponymy and partonymy differ in the semantics of the relationships—*kind of* vs. *part of*—they differ in how lower order terms relate to superordinates of superordinates. In hyponymy, the lower order term is a kind of its superordinate and of its superordinate's superordinate; for instance, a *standard poodle* is a kind of *poodle*, and a *poodle* is a kind of *dog*. But a *standard poodle* is also a kind of *dog*. On the other hand, a lower order term in a partonymy may or may not be a part of the superordinate; for instance, a *page* is a part of a *book* and a *book* may be part of a *library*, but it would certainly be odd to claim that a *page* is part of a *library*.

Other part/whole relations refer not to parts and wholes of unified ob-

jects but to entities associated with each other in a situation. **Metonymy** is the basis for many shifts of meaning. It involves the use of an expression denoting one person or thing to refer to someone or something associated with it. The use of a restaurant customer's order to refer to the customer is a very productive source of metonymy. For instance, a waiter might say, *The fishburger wants more French fries*, to identify a particular customer and their request. The use of personal names to refer to events that the individual named is responsible for is also productive: *Bush invaded Iraq*. Metonymy is occasionally the basis for permanent shifts of meaning; look up *bead* in a comprehensive dictionary with etymological information such as AHD.

**Metaphor** is yet another relationship among words. It is based on perceived similarities between entities, and word meanings are often extended to denote entities similar in some ways to the ones more typically denoted by the word. Many metaphors are based on body parts; for example, AHD (p. 807) includes in its meanings for *head* the head of a boil, the head of a tool such as a hammer, a head of cabbage, the head of a group, the head of a phrase, and lots of others, all metaphorically derived from the central meaning of *head*, namely that mass of bone and brain that sits atop your neck. *Mouth* and *foot* also have multiple metaphoric meanings, which your dictionary should list.

Because metaphorical senses are extensions of the basic senses of words, they develop historically later than them. Some extensions may be haphazard; for instance, we do not think of the nose of a river or a bottle. But there may be some general principles in language for metaphorical creation. For instance, English seems to have a principle by which color words may be extended to psychological states: e.g., *blue* (sad), *red* (with anger), *green* (with envy), *yellow* (cowardly), *black* (mood). (See Lakoff and Johnson 1980.)

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## Exercise

1. Compare and contrast a regular dictionary with a thesaurus, paying particular attention to the ways in which both are organized and the ways in which meanings are represented. What purposes do you think each was designed for?

2. Rhetoricians, literary critics, and others interested in figures of speech (tropes) have distinguished many types and subtypes. Those related to metonymy are particularly interesting. You might investigate synecdoche and antonomasia and discuss their implications for word meaning. Lakoff and Johnson (1980) is a thought-provoking discussion

of figures of speech, especially of metaphor.

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**How do we know words have meaning?**

By posing this question, we do not intend to cast doubt on the proposition that words have meanings. Rather, we want to spell out some good reasons to believe it. In our chapter on Concepts of Language, we observed that our linguistic competence allows us to do many things. (Recall that competence is unconscious linguistic knowledge, which includes knowledge of the meanings of words; examples such as the ones below tell us only that such knowledge must exist, not what it actually is.) Our competence enables us to distinguish between well- and ill-formed strings of words and to detect grammatical structure. Crucially for our current discussion, it enables us to detect meaning relations among expressions, including, whether an expression has a coherent meaning or not (1a), whether expressions paraphrase each other, that is, whether they are synonymous (1b), whether words are related by hyponymy (1c), partonymy (1d), antonymy (1e), whether a word (*fan*) is ambiguous (1f), and whether a word is used metaphorically (1g), as well as all the other meaning relations we identified above. These abilities are strong evidence that word meanings are real and not just figments of linguists' imaginations.

(1)  a. Colorless green ideas sleep furiously.
　　 b. groundhog—woodchuck
　　 c. lizard—reptile
　　 d. elbow—arm
　　 e. big—small; above—below; open—closed
　　 f. That fan is very annoying.
　　 g. I'll dig with it.

Sentence (1g) is from Seamus Heaney's poem "Digging." In the minimal context given in (1g), *it* would probably be understood as a spade or some other such implement, and *dig* would be interpreted as turning over soil in a garden or the like. However, in the larger context of the entire poem, *it* refers to a pen in the poet's hand and *dig* must be interpreted metaphorically; consequently, the sentence is ambiguous between a literal and a metaphorical meaning.

Examples such as those in (1) could easily be multiplied, but these few should make clear a simple idea: *linguistic competence includes an unconscious knowledge of the literal meanings of words*. While this conclusion might seem trivial, it conceals several less-than-obvious points. First, it suggests that

speakers carry around in their minds something like a dictionary of their language. However, there is good evidence that speakers' mental dictionaries are quite different from the book dictionaries of a language. For instance, no book dictionary will tell you that the words *idea* and *sleep* cannot literally be combined as subject and predicate. (Linguists often use the terms *lexicon* or *mental lexicon* to refer to this aspect of our linguistic competence and to emphasize its difference from written dictionaries.) In fact, the nature of the mental lexicon is still unclear; we will explore some of its characteristics below.

Second, you should not confuse knowing the meaning of a word with being able to give it a satisfactory definition. Definition-stating is a learned ability and is only marginally necessary in most communication; it is also far beyond the normal capacities of people. The eminent lexicographer Sidney Landau expresses the point simply (by "general definer," he means one versed in common, rather than technical, vocabulary):

> It is difficult to find highly skilled general definers. Such people are about as rare as good poets . . . there are probably fewer than a hundred experienced general definers in the whole of the United States. (Landau 1984: 235)

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**Exercise**
Without consulting a dictionary, state the meaning(s) of the words below:
   a. situation
   b. pong (as in "ping-pong ball")
   c. if
   d. of
   e. vacillate
What problems did you run into? How did you solve them?

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Third, whatever the nature of the mental lexicon, it clearly must show that *words are related to one another*. To put it negatively, words are not just *listed* in our competence, in alphabetical or any other simple order. Rather, they are, as we have seen, interconnected in complex ways. These interconnections determine which words can and cannot occur together in grammatical constructions—e.g., as in (1a). Interconnections relate families of words related by polysemy, synonymy, meronymy, antonymy, and other sense relations.

## Some models and explanations of word meaning

Since published dictionaries do not offer a very useful model of our lexical competence, linguists have struggled to present more plausible ones. Besides having to account for the observations noted above, they must also explain the fact that, while the human brain is finite, an individual's vocabulary may be very large. Estimates for an educated person's vocabulary run anywhere from 50,000 to 250,000 words. The largest unabridged dictionaries of English contain well over half a million entries. Clearly, however, no two individual speakers of a language have exactly the same vocabulary. If this is so, how can we hope to describe the vastness and variability of lexical competence? A general solution is to describe not the vocabulary of a single individual or the entire word-hoard of English, but instead to envisage the *general properties* according to which the vocabulary of any individual—or of any language—can be constructed. There are two basic models of lexical structure, the network model and the componential model.

## The network model

The **network model** (N-model) posits that semantic competence is to be explained on the assumption that words have certain **primitive semantic relations** with each other. In other words, our semantic competence does not consist of knowing definitions at all, but rather of knowing how words relate to each other. You may recall from your literary theory classes that this is close to the Saussurean/structuralist approach. The primitive relations most commonly explored in the N-model are the ones we've been discussing and are listed and exemplified again in Table 1.

| RELATIONSHIP | CHARACTERISTICS | EXAMPLES |
|---|---|---|
| Synonymy | extensive overlap in meaning | large/big chase/pursue |
| Antonymy | oppositeness of meaning along related dimensions | large/small strong/weak |
| Hyponymy | meaning inclusion | rose/flower |
| Partonymy/Meronymy | part-whole relationship | keyboard/laptop |
| Metonymy | co-elements in a situation | writer/book |
| Metaphor | similarity | foot of person/ foot of bed |

TABLE 1. LEXICAL RELATIONS RECOGNIZED IN THE NETWORK-MODEL

Although there are many other lexical relations, these are the most fre-

quently mentioned in the network literature. For further elaboration, see Cruse (1986, 2001).

The network model characterizes not just the semantic relations among separate words, it can also describe the relationships between the senses of individual words. For instance, if you look up the noun *order* in a dictionary, you will find its meanings broken down by numerals and letters to include such different notions as: 1. a condition of arrangement, 2. customary procedure, 3. something requested for purchase, 4. a monastic group, etc. Each one of these senses enters into different network relations with the senses of other words. For instance, sense 1 of *order* would be an antonym of one sense of *disorder*; sense 3 might refer to a whole of which the word *entrée* (in a restaurant) represents a part.

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### Exercise

1. Using the N model, indicate how each of the following word pairs are related. Write down any difficulties you have in coming to a decision.
   a. forward—backward
   b. casual—formal
   c. car—wheels
   d. car—passenger
   e. journey (verb)—travel (verb)
   f. week—semester
   g. freshman—sophomore
   h. turkey (fowl)—turkey (undesirable person)
   i. brain (body part)—brain (very intelligent person)

2. Using the N model, indicate the semantic relations among the words in each of the groups below. To simplify your work, write the group of words in a circle and draw lines between related words; label each line with one of the network relations. Later, redraw your diagram to show relations clearly.
   a. car, truck, locomotive, wheels, trunk, hood, horn, vehicle
   b. delay, linger, loiter, procrastinate, hasten, hurry, stampede (all as intransitive verbs)
   c. selfish, egocentric, altruistic, giving

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### *The componential model*

The **componential model** (C-model) is based on the premise that word

meanings are complex and can be viewed as composed of basic, indivisible units of meaning. These units are usually called **components**, though sometimes you will see them referred to as **features** or **sememes**. Components are often regarded as *pure concepts*, not to be equated with the words of any language, which is why they are typically written in capital letters. From this point of view, a word is essentially a shorthand way of grouping a set of concepts under a single label. Some of the concepts that have been proposed by various linguists as components are listed in Table 2.

| | | |
|---|---|---|
| ANIMATE (ALIVE) | BECOME | CAUSE |
| CURVED | FEMALE | FLAT |
| HORIZONTAL | HUMAN | INGEST |
| INTENTION | KNOW | MALE |
| MARRIED | NOT | OLD |
| PLACE | SELF | SIZE |
| VERTICAL | YOUNG | |

TABLE 2. SOME PROPOSED UNIVERSAL SEMANTIC COMPONENTS

The components listed in Table 2 are just a sample of those that have been proposed, but they are adequate to illustrate the thrust of the C-model. For instance, in this model the word *alive* is shorthand for the component ANIMATE; *dead* is shorthand for NOT, ALIVE; *die* for BECOME, NOT, ALIVE. *Kill* adds the component CAUSE, and *suicide* adds SELF. (The components are independent of the parts of speech of the words to which they apply.)

You might object that such definitions are grossly oversimplified. A valid concern. At the very least, how the components are related to each other is a very important aspect of word meaning. Simplistically adding the components BECOME, NOT, and ALIVE together does not adequately define *die*. These issues raise technicalities which need not detain us here. For ways to deal with them you might read work on this topic, e.g., Ch. 2 of Jackendoff (1995).

It is important to distinguish between the universality of the list of components and their language specific uses. The features mentioned in Table 2 are quite likely to be universal, that is, having the potential to be used in the creation of word meanings in any and all languages. While there may be components that are specific to individual languages, there are linguists who claim to have identified a universal set of semantic primitives. (Anna Wierzbicka probably makes the strongest claim in that regard—see Wierzbicka 1992, for

example; Goddard 1998 is an accessible introduction to that style of doing semantics.)

While linguists may claim that the sets of primitives they propose are universal, no one claims that they are bundled together in the same way in all languages. For instance, while both English and French both make use of the component FEMALE, they use it in different ways. Both languages indicate the female member of certain pairs of words morphologically: *lion*, *lioness*; *lion*, *lionne*. However, the two languages differ in that French has separate (though related) words for MALE and FEMALE cousins (*cousin*, *cousine*); English does not. (For an amusing compilation of words with remarkable meanings see de Boinod 2006.)

We must also distinguish between central and more marginal aspects of a word's meaning. You might argue that *cannibal* suggests primitiveness, warfare, initiation, or absorption of the characteristics of the person devoured. However, these are not *essential* components of the meaning of *cannibal*; a cannibal is still a cannibal even if he is a highly educated rugby player. The marginal aspects of the meaning of *cannibal* can be regarded as its **connotations**. The connotations of words are often variable across speakers of a language and typically express emotional associations. Different words that may be used for the same things may convey different feelings about them; for example, *woman* and *lady* may refer to the same entities, but they convey rather different attitudes toward them.

## Exercise

1. (a) Using the components in Table 2 and any others you might need, identify the meaning components shared by the words in each of the sets below and the components that distinguish the members of the sets:
   - a. ram, ewe, lamb
   - b. boar, sow, piglet
   - c. stag, doe, fawn
   - d. bull, cow, calf
   - e. stallion, mare, foal, filly, colt
   - f. man, woman, child, girl, boy

(b) Using the components you identified, characterize the meanings of *ewe, fawn, man, filly*.

2. Examine the words below. Which of the components from Table 2 might the words represent? For each word, identify one component not

in Table 2.
   a. bachelor
   b. spinster
   c. teach
   d. skyscraper
   e. table
   f. thicken

3. Identify words whose meanings are represented by the following combinations of components. If no such word exists in English, indicate that fact. If you know a language besides English, identify words in that language that correspond to the set of components.
   a. YOUNG + HUMAN + FEMALE
   b. YOUNG + HUMAN + MALE
   c. YOUNG + NOT + HUMAN
   d. YOUNG + NOT + HUMAN + EQUINE
   e. YOUNG + NOT + HUMAN + FELINE
   f. NOT + HUMAN + MALE + EQUINE
   g. NOT + HUMAN + FEMALE + EQUINE
   h. CAUSE + NOT + INGEST

4. Examine your answers to Exercises (1), (2), and (3). What technical problems arose in applying the C model? Consider the use of NOT.

5. Examine your analyses in Exercises (1) and (2). Do you see any cultural bias in your analysis or in the C model in general? If so, what is that bias? How would you go about correcting it within the framework of the C model?

6. Describe the connotational differences among the members of the following sets of words:
   a. violin–fiddle
   b. careful–scrupulous
   c. curious–inquisitive–nosey
   d. politician–statesman
   e. thin–slender–skinny

So, how effectively does the C-model account for lexical competence? Actually, reasonably well (though we would have to specify how the components

can be combined). First, we can use it to explain why some sentences are semantically anomalous. For example, in sentence (1), *Colorless green ideas sleep furiously*, the head of the subject, *ideas,* has the components NOT + ANIMATE; in contrast, the predicate *sleep* requires that its subject have the component ANIMATE. This shows that in addition to using components to define individual words, we can also use them to specify how words can combine with each other. Such specifications are called **selectional restrictions**; they identify the semantic (literal) limitations on the components of words put together in close grammatical relationships such as subject and predicate, verb and object, head and modifier, etc. Semantic anomaly, in short, will result when selectional restrictions are violated.

Sense relations also can be described in terms of components. Words are synonymous to the extent that they share components. In simple cases, antonyms share all components except perhaps just one; e.g., *alive* and *dead* share the component ANIMATE, although the latter also has the component NOT.

Finally, lexical ambiguity is represented in the C-model by assigning to the same word two different sets of components. Polysemy is explained as having at least one common component and at least one different component. So the various senses of *mouth* will share the component of OPENING and will be distinguished by such components as ANIMATE, SIZE, FLAT, and CURVED.

## Exercise

1. Explain the following semantic oddities by noting the selectional restrictions that the sentence violates. Do not hesitate to use components beyond those mentioned in Table 2.
   a. ?Monica elapsed.
   b. ?John accidentally resembled his sister.
   c. ?I lost my dog a grief ago.

2. For each pair of words, indicate which components they share and which components distinguish them. (Again, use components beyond those noted in Table 2 as you need to.)
   a. car—automobile
   b. chase—follow
   c. huge—humongous
   d. building—skyscraper

3. Write down as many meanings as you can think of for each of the following words. (Do not use a dictionary.) Which of the meanings are related and which are not? How can you show this difference using semantic components?
   a. ring
   b. order (noun)
   c. order (verb)
   d. of

## Relationships between the N-model and the C-model

Which of the two approaches to word meaning is better? One might favor the N-model on the grounds that, when asked for the meaning of a word, people tend to provide synonyms rather than fully specified definitions. As we saw, the ability to state adequate definitions is beyond the capabilities of most speakers; recall Landau's remark above. Psycholinguistic experiments likewise favor the N-model as the more natural. (See Aitchison 2003: Chapters 7 and 8.) On the other hand, there seems to be some overlap between the two approaches: synonymy and antonymy, at least, suggest that two (or more) words share aspects of meaning.

Both approaches fall short of fully describing the meanings of words. The fact that synonyms are rarely if ever perfect poses a challenge to the N-model, and subtle meaning differences require positing ever more semantic components. We encourage you to review work by Goddard, Jackendoff, and Wierzbicka for ways to deal with such problems.

Some problems might be addressed by combining the two approaches, in the form of a "componentially-augmented network," which would draw on the strengths of both approaches. For example, such an augmented network model might allow us to reduce repetition of components in the specifications of related words. For instance, the fact that anything with the component HUMAN is also ANIMATE is a major redundancy that might be represented in people's minds through a taxonomy of animate beings as hyponyms of the superordinate category of animacy. Put diagrammatically:
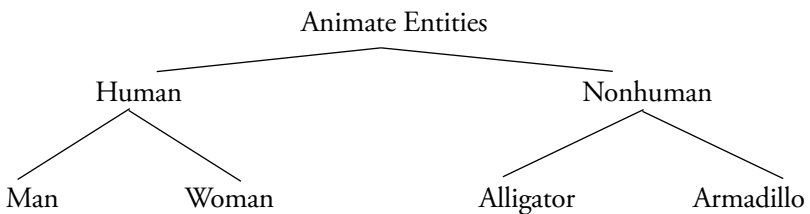
So, a lower category inherits or includes the characteristics of all the categories above it on the tree. For example, *woman* is *human* and *animate* while *armadillo* is *nonhuman* but *animate* by virtue of their relationships with other words and by virtue of the meaning components associated with those other words. Abbreviatory rules like these are called **redundancy rules**.

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## Exercise

1. The vast number of lexical items in any language makes it unlikely that a small set of lexical relationships or components will suffice to differentiate all words. For example, we know that *high* and *deep* have a great deal of meaning in common—e.g., vertical measurement—but nonetheless they are semantically distinct, as is shown by the anomalies in (a) and (b):
   a.  The river is 50 feet deep/*high.
   b.  The mountain is 14,000 feet *deep/high.

*High* and *deep* and their derivatives are thus not synonyms; the first indicates "measurement to the top"; the second denotes "measurement to the bottom" from some vantage point (Room, 1981, p.62). However unable speakers might be to articulate this difference, the consistency of their semantic judgments in cases such as (a) and (b) indicate that they do know the meanings of these items. Create sentence pairs like (a) and (b) that clearly distinguish between the pairs of words below (from Room) and on the basis of your sentences accurately characterize the meaning differences between the word pairs.
   a.  astronomy—astrology
   b.  crime—offense
   c.  regret—remorse

2. Standard dictionaries (and style manuals) often attempt to distinguish the following word pairs.
   a.  infer—imply
   b.  include—comprise

Does your dictionary distinguish them? How? Does this distinction match your use of these words and your observations about how they are used?

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## MENTAL DICTIONARIES

At this point we must ask whether the book dictionaries we are accustomed to are accurate models of the dictionaries we have in our minds/brains, which allow us to perform as speakers of a language. While we know a great

deal about book dictionaries, the research on mind dictionaries is, in comparison, in its infancy.

First, do our mental dictionaries use the same strategy as book dictionaries to allow speedy access to words? Remember that this is accomplished in book dictionaries by alphabetization. We probably have between 50,000 and 250,000 words tucked away in our minds, most of which we can access fairly easily. We can recognize a word in about a fifth of a second (often even before we have heard the entire word), consequently, searching such a large data base requires that it be structured so as to allow rapid searching.

Second, do book dictionaries include all the information about individual words and the relations they enter into that our mental dictionaries include? We saw that hyponymy is the major relation used by book dictionaries to define words. Psycholinguistic research shows that where a superordinate term is well-established, it comes readily to mind in word-search errors and in word-association tasks. However, this research also shows that co-hyponymy/coordination is the most important psychological bond among words. In word-association tests, coordinates are very frequently elicited; in word-selection errors, the wrong word is far more likely to be a coordinate of the intended word than otherwise (Aitchison 2003). How often do we say *left* when we mean *right*, or *up* when we mean *down*?

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## Exercise

1. List the first five words that come to your mind upon hearing/reading the word *spoon*. For each of these words determine its sense relation to *spoon,* that is, whether it is a coordinate, superordinate, subordinate, and so on. If one of your words bears a relationship to *spoon* that we have not mentioned, try to articulate what that relationship might be. What do these relationships tell you about your mental representation of *spoon?*

2. Keep a list of lexical errors you make. Include both the intended word and the one produced in error. After you've collected 20 or so, identify the semantic relationships between the right and wrong words. Why do you think you made those particular errors and not some possible others? What might these errors tell you about how your mental dictionary is organized? There's a large research literature on this topic. Look in your university library for items on slips of the tongue; look at work on this topic by Victoria Fromkin.

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Book dictionaries are designed primarily to support reading and writing. (What are thesauruses designed for?) Mental dictionaries evolved primarily to support speaking and hearing. For instance, when we "have a word on the tip of our tongue," we have most of the word, just not all of it. Besides its meaning, we are likely to have some but not all of its pronunciation, usually a sort of skeleton that may include the number of syllables in it, where the main stress falls, and perhaps its first and last syllables.

The syntactic information in our heads is far richer than the syntactic information in even the most elaborate learner's dictionary, and even in the most comprehensive modern grammar. For example, native speaker book dictionaries typically make a two-way distinction between transitive and intransitive verbs, that is, between those that do and those that do not take a direct object. But some verbs take an indirect object as well as a direct one (e.g., *give*), so the book dictionary fails to make a distinction among verbs that our mental ones make. In fact, even this three-way distinction between intransitive, transitive, and bitransitive verbs barely scratches the surface of what we know about the syntactic frames that verbs fit into. Native speaker book dictionaries generally provide no more information about the **syntactic frame**, or grammatical context, that specific words require. Learner's dictionaries are often far more elaborate in this respect. CIDE, for example, distinguishes among verbs that take an object followed by an adjective or adjectival phrase (e.g., *drive X crazy*), verbs that take an object followed by a noun or noun phrase (e.g., *crown her empress*), and verbs that take an object followed by a noun or adjective phrase (e.g., *consider him incompetent/a quack*), to mention but a few. (See CIDE's front matter discussion of its grammar labels.)

As we saw, book dictionaries make extensive use of hyponymy in their definitions. Remember that saying that one word is a hyponym of another is to say that the referents of the hyponym are a subset of the referents of the superordinate word. Another, more contorted way to say this is to say that the members of the category represented by the hyponym are a subset of the members of the category represented by the superordinate word. At this point we should take a closer look at how categories and words are related and what it means to belong to a category.

We'll make the simplest possible assumption about the relation between words and categories: words name categories—of entities, events, qualities, relationships, and the like. One version of the traditional school definition of "noun" is "a noun is the name of a person, place, thing, or idea." One problem with this is that nouns (except proper nouns), like all other words, name categories of persons, places, things, and ideas, not just individual

ones: *dog* represents all dogs, not just Lassie or Snoopy.

Categories need discussion. Let's imagine that we are in a context in which we are talking about technical matters and that we are expected to be technically correct. A simple example of such a context might be a discussion about plane figures in a geometry course. In such a context, when we use the word *square*, we mean "a plane figure having four equal sides and four right angles" (WNWD p. 1381), no more and no less. The elements of the definition, "plane figure," "four equal sides," and "four right angles," are all **necessary** to define *square* and together they are **sufficient** for its definition. When scholars try to define technical concepts they generally try to define them in terms of necessary and sufficient conditions. If they succeed, then, in principle it is possible to decide for any item whether it is a representative of that category or not. Given our definition of *square*, we can decide for anything whether it is a square or not. The world, however, is not always as rigid as a geometry class.

Imagine now that we have been rescued from the math discussion, and we go to a birthday party where there is a flat layer cake cut into *squares*. If you noticed that the pieces did not meet the mathematical definition, could you reasonably object that the pieces are not really squares? Anyone objecting on those grounds wouldn't deserve any cake. As far as we know, there is no English word for the almost square pieces that a flat cake is cut into, so until someone invents such a word and it is widely accepted, we can use *square* and our audience will **accommodate** us. These kinds of accommodations lead to rampant polysemy in much of the vocabulary. So it is important to remember that polysemy, accommodation, and context are inextricably intertwined.

If words and categories were all defined in necessary and sufficient terms, then categories could be kept clearly distinct, as squares and triangles are in geometry. But if we can bend these definitions, or if we cannot provide necessary and sufficient definitions for categories, then the boundaries between categories may get quite fuzzy. In fact, many natural categories are like this. Where exactly does red end and orange begin? Where do animals end and plants begin? We are unlikely to get unanimous agreement on the answers to such questions. Indeed an article in the June 2008 issue of Scientific American grapples with the problem of defining "species" (Zimmer 2008). Nonetheless, in ordinary, non-technical company, we cut each other some slack by not expecting words always to be used with technical rigidity. We can also indicate when we are using words imprecisely by using **hedges**, such as *like* or *sort of*; or we can indicate that we are being technically correct by including expressions such as *technically—Technically, a phoneme is a*

*contrastive sound unit.*

Many dictionary definitions are expressed in terms of the **function** that something serves. For example, WNWD defines *hinge* as "a joint or device on which a door, gate, lid, etc. swings" (p. 664). Suppose that no one had oiled the hinge in decades and it could no longer swing—is it still a hinge? The answer is undoubtedly "yes," just as a dog with no tail is still a dog. These may be **defective members** of their categories, but they are still members. How much change must be endured before something is no longer accepted as a member of its original category? What does a dog have to give up before it is no longer a dog? Whatever the answer to that question is, it is clear that we can adjust our assumptions about what it takes to be a member of a category to accommodate defective members.

As we have seen, categories typically have many members, in fact, potentially indefinitely many. The more general categories have multiple subcategories, which in turn may have their own subcategories. However, some category members are viewed as better members of the category than others. For instance, chairs and sofas are regarded as better items of furniture than refrigerators; robins and sparrows are better birds than penguins or ostriches; shirts and skirts are better pieces of clothing than shoes and socks. This layering of category members extends even to things defined in terms of necessary and sufficient conditions, such as prime numbers: for example, 3 is a better prime number than 23, even though both fit the technical definition. It has been argued that categories are structured around a central, most typical member, or **prototype**, e.g., chairs in the case of furniture, robins in the case of birds, and so on.

## Exercise

Let's try to determine the prototypical member of a category. As quickly as you can, write out a list of ten vegetables. Then compile the lists of all the students in your class. Order the vegetable names according to their frequency in the lists. Then take the three most frequent words and check how early they occur in the lists. Generally, the most frequent ones will occur early. The earliest and most frequent word probably represents the most prototypical member of the category of vegetables.

Dictionaries indicate certain aspects of prototypicality in their definitions. For example, WNWD (p. 1051) describes a penguin as a "flightless

bird." This negative definition suggests that the typical bird is not flightless; similarly, WNWD describes dodoes (p. 414) as having "rudimentary wings useless for flying" and ostriches (p. 1007) as "having small, useless wings." Presumably prototypical wings are not useless for flying.

Book and mental dictionaries differ also in the amount of information they provide about the **collocational** properties of words. For example, if we leave fat, bacon, butter, or oil sitting around long enough it will become *rancid*, e.g., *rancid bacon*; however, if we leave fruit, vegetables, or eggs sitting, they will become *rotten*, e.g., *rotten apple*. So *rancid* collocates with the words for fatty or oily substances, and *rotten* collocates with words for fruits, vegetables, and the like.

One word collocates with another if they occur together in phrases more frequently than their meanings alone would predict. For example, *green* collocates with *envy*, as in *green with envy*, far more frequently than other color names, for example *blue*. Likewise, *blue* collocates with *face*, as in *blue in the face*, far more frequently than other color names (except perhaps for *red*, as in *red in the face*). So, collocations are relatively predictable co-occurrences of words in phrases. Mental dictionaries include far richer collocational information than book dictionaries do.

The interpretation of a word may depend on what it collocates with. So *dirty* means "unfair" when it collocates with *fight*, but "soiled" when it collocates with *clothes*, and is ambiguous with *hands*.

## Exercise

1. What words collocate with *sweet?* How does the meaning of *sweet* change as its collocates change?

2. Think of three other words besides *dirty* and *sweet* and their collocates, and describe how your words change meaning as their collocates change.

We can look at collocation as largely a matter of field. When the polysemous word *morphology* collocates with words like *derivational* and *inflectional*, then we know we are in the field of linguistics and that it is to be interpreted as denoting word-structure. Until recently linguists paid relatively little attention to collocation. But with the development of very large computerized databases of spoken and written language (**corpora**) and the programs to search them (**concordancers**), we can expect collocation to be-

come an important area of research and to provide significant insights into how words and larger expressions are organized in our minds. Book dictionaries are more and more dependent on such databases and will incorporate more collocational information as time goes on.

Collocational expectation is a matter of degree. Some collocational restrictions are quite narrow, others are more liberal. Collocates may become rigidly fixed, in which case they have calcified into **idioms**, expressions whose meanings are not derivable from their words and syntax. Examples include *kick the bucket* for "die," *tie the knot* for "marry." Note that these expressions have both a literal and an idiomatic meaning. The audience has to work out which meaning is intended in a particular context.

It should come as no surprise that because the psychological bonds between collocates may be very strong, words regularly elicit their collocates in word association tests.

Dictionaries differ in how they treat idioms. Some may not include them at all. WNTC and WNWD include idioms at the end of the entry for one or more of the main words of the idiom (*kick the bucket* is listed under *bucket*, though not under *kick*).

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## Exercise

1. What words collocate with *blond, false, artificial, herd, flock, ream, spick, husband, deal, bumper?* Some of these words allow only one or two collocates; the remainder allow for (far) more. Identify as many collocates as each word allows, up to a maximum of five. Check a pair of dictionaries, including a learner's, to see if and how collocational information is included.

2. Make a list of 10 idioms. What are their meanings? Can all of them be taken both literally and idiomatically? Do your examples suggest any connection between idiom and metaphor? Check a pair of dictionaries, including a learner's, to see if and how idioms are included. If you know some people learning English as a second language, ask them if they understand the idioms you have chosen.

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### CONCLUDING REMARKS

We saw in this chapter that dictionaries, especially larger, more comprehensive ones, provide enormous amounts of information about the words of a language. We also saw that learner's dictionaries tend to provide more infor-

mation about the grammatical structures associated with individual words than native-speaker dictionaries do. We investigated lexical relations such as synonymy, antonymy, hyponymy, and the like, and the ways in which dictionaries make use of these relations in their definitions. Our discussion of mental dictionaries showed that they are not alphabetically organized, and that for all the information contained in even the most comprehensive dictionary, our mental dictionaries include even more information for each entry. We discovered that word meanings tend to be fuzzy and prototypically organized.

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## GLOSSARY

**ACCOMMODATION**: adjusting our linguistic expectations and practices to specific circumstances.

**ANTONYMS**: words representing opposing values on some dimension. See **COMPLEMENTARY ANTONYMS, CONVERSE ANTONYMS, GRADABLE ANTONYMS, NONGRADABLE ANTONYMS, REVERSIVE ANTONYMS.**

**CO-HYPONYM**: See **COORDINATES.**

**COMBINED ENTRY**: a dictionary entry that includes all the parts of speech to which the entry word belongs.

**COMPLEMENTARY ANTONYMS**: pairs of words such that if one applies the other cannot, e.g., *alive/dead*.

**COMPONENTIAL MODEL** (C-model): model of lexical meaning that assumes that word meanings are complex and can be viewed as composed of smaller units of meaning called **SEMANTIC COMPONENTS, SEMANTIC FEATURE**, and **SEMEME**.

**CONCORDANCER**: computer program for doing linguistic analysis on a **CORPUS**.

**CONNOTATIONS**: aspects of the meanings of words that indicate the speaker's/writer's attitude toward the word's referent(s).

**CONVERSIVE ANTONYMS**: words that represent a situation from different points of view, e.g., if X is Y's *husband* then Y is X's *wife*.

**COORDINATES**: expressions that have a common **HYPONYM**, e.g., *phonebook* and *textbook* are coordinates of *book*.

**CORPUS/ORA**: computerized collections of texts designed to allow computerized linguistic analysis. See **CONCORDANCER**.

**CROSS-REFERENCE**: notation in dictionaries that directs readers from one entry to another.

**DEFECTIVE MEMBERS**: members of a category that do not meet one or more of the characteristics typical of members of the category, e.g., flightless birds.

**ENTRY**: the block of text in a dictionary that includes the **ENTRY WORD** or **HEADWORD** and all the information associated with it.

**ENTRY WORD**: the highlighted expression at the beginning of a dictionary entry about which the remainder of the entry provides linguistic information.

**ETYMOLOGY**: the information in a dictionary entry that describes the history of the entry word.

**GRADABLE ANTONYMS**: words that represent opposing values on a continuous dimension, e.g., *tall/short*.

**HEADWORD**: See **ENTRY WORD**.

**HEDGES**: expressions that allow communicators to weaken their commitment to the truth of a claim, e.g., ***I believe*** *that Darwin is correct*.

**HOMOGRAPHS**: two or more separate words with the same spelling but unrelated meanings. See **HOMOPHONES, HOMONYMS**.

**HOMOPHONES**: two or more separate words with the same pronunciation but unrelated meanings. See **HOMOGRAPHS, HOMONYMS**.

**HOMONYMS**: two or more separate words with the same pronunciation or spelling but with two or more unrelated meanings, e.g., *date* meaning type of fruit and arrangement to meet. See **HOMOPHONE, HOMOGRAPH**.

**HYPERNYM**: see **SUPERORDINATE**.

**HYPONYM**: the less inclusive word in **HYPONYMY**, e.g., *scalpel* is a hyponym of *surgical instrument* because it is a kind of surgical instrument.

**HYPONYMY**: a **SENSE RELATION** between expressions such that the entities denoted by one expression are included among the entities denoted by another, e.g., *teaspoon/spoon*. The relationship can be paraphrased as *X is a kind of Y*, thus a *teaspoon* is a kind of *spoon*. See **COORDINATE, HYPERNYM, HYPONYM, SUPERORDINATE**.

**CO-HYPONYM**: see **COORDINATE**.

**IDIOM**: expression whose meaning cannot be determined simply from the meaning of its component words and their syntactic organization, e.g., the proverbial meaning of *Every cloud has a silver lining*.

**INFLECTION**: markers on words to indicate such grammatical information as tense, person, and number, e.g., the {-s} suffix added to English verbs to indicate third person, singular, present tense.

**LEXICAL FIELD**: set of expressions in a language having to do with concepts in a single domain, e.g., the set of technical terms in linguistics.

**LIGATURE**: a letter created by combining two or more characters, e.g., æ.

**MARKED**: the member of a pair of related expressions that is more complex semantically and/or formally than the other member, e.g., *stallion* is marked in relation to *horse* because the former includes the meaning male, whereas a horse may be either male or female. See **UNMARKED**.

**MENTAL DICTIONARY**: mental store of words and word-like expressions, including information on their phonological, morphological, syntactic, semantic, discourse, and pragmatic properties. Also called **MENTAL LEXICON** or just **LEXICON**.

**MERONYMY**: see **PARTONYMY**.

**METAPHOR**: a figure of speech in which an expression that is typically used to denote one thing is used to denote another thing similar in some way to the first. Metaphor may be the basis for certain meaning extensions, e.g., the *foot* of a mountain.

**NECESSARY CONDITIONS**: the conditions that must be met for something to be a member of a category, e.g., in geometry a triangle must be a plane figure, must have three sides, and the ends of the three sides must meet to create three angles**.** See **SUFFICIENT CONDITIONS**.

**NETWORK MODEL** (N-model): model or theory of word meanings that specifies the sense relations among words.

**NON-GRADABLE ANTONYMS**: antonyms, typically adjectives, that typically do not allow degree modification, e.g., *clockwise* in *clockwise motion* cannot be modified by expressions such as *very*, cf. *\*very clockwise*.

**PARTONYMY**: a **SENSE RELATION** between expressions such that the entities denoted by one expression represent parts of the entity denoted by another, e.g., *blade/knife*. The relationship can be paraphrased as *X is a part of Y*, thus a *blade* is a part of a *knife*.

**POLYSEMY**: situation in which one expression has two or more clearly related meanings.

**PROTOTYPE**: theory of categorization that posits that membership in categories is a matter of degree rather then of **NECESSARY** and **SUFFICIENT** conditions and that members of a category are ranked according to their degree of similarity to the prototype or best example of the category.

**REDUNDANCY RULES**: rules that aim to eliminate repetition of information among words that are hyponymically related.

**REVERSIVE ANTONYMS**: words that represent movement in opposite directions.

**RUN-ONS/INS**: expressions related to the entry word that are included at the end of a dictionary entry but are undefined because their interpretations are deemed to be predictable from their forms.

**SELECTIONAL RESTRICTIONS**: semantic requirements that must be met for expressions to go together without anomaly in close grammatical relationships

such as subject and predicate, verb and object, head and modifier, etc.

**SEMANTIC COMPONENT**: basic, indivisible unit of linguistic meaning.

**SEMANTIC FEATURE**: see **SEMANTIC COMPONENT**.

**SEMANTIC RELATIONS**: see **SENSE RELATIONS**.

**SEMEME**: see **SEMANTIC COMPONENT**.

**SENSES**: distinguishable meanings of expressions.

**SENSE RELATIONS**: relations based on the senses of expressions. See **ANTONYM**, **HYPONYMY**, **METAPHOR**, **METONYMY**, **PARTONYMY**, **SYNONYM**.

**SUFFICIENT CONDITIONS**: the set of conditions such that if something meets them, then that is enough to determine that it belongs to a category, e.g., if something is a plane geometrical figure and has three sides whose ends meet to create three angles, then that is sufficient to classify that figure as a triangle.

**SUPERORDINATE**: the more inclusive expression in **HYPONYMY**, e.g., *chair* is superordinate to *armchair* because an armchair is a kind of chair.

**SYLLABICATION**: indications in the spelling of an entry word (usually raised dots) of where the word may be divided at the end of a line of type; also, indications in the pronunciation of an entry word of where the word divides into spoken syllables.

**SYLLABIFICATION**: indications in the pronunciation of an entry word of where the word divides into spoken syllables.

**SYNONYMY**: a **SENSE RELATION** in which two or more expressions have the same meaning.

**SYNTACTIC FRAME**: a representation of the syntactic context(s) into which an expression may be inserted, e.g., a transitive verb must occur in a verb phrase that contains a direct object.

**UNMARKED**: the member of a pair of related expressions that is less complex semantically or formally than the other member, e.g., *horse* is unmarked in relation to *stallion* because the former includes no information about the animal's sex whereas the latter includes the meaning male. See **MARKED**.

**USAGE**: from a descriptive point of view, the ways in which expressions in a language are actually used in discourses; from a prescriptive point of view, the ways in which commentators claim expressions ought (or more typically, ought not) to be used in discourses.

**USAGE LABELS**: expressions in dictionary entries designed to inform users about the entry word's usage.

**USAGE NOTE**: short, critical essays appended to a dictionary entry when the usage of the entry word is particularly controversial.

**WORD HISTORY**: short essay appended to a dictionary entry when the history of the entry word is particularly noteworthy.