Cambridge Textbooks in Linguistics

Lexical Meaning

M. Lynne Murphy

CAMBRIDGE

Lexical Meaning

M. LYNNE MURPHY

University of Sussex

CAMBRIDGE UNIVERSITY PRESS
Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore,
São Paulo, Delhi, Dubai, Tokyo, Mexico City

Cambridge University Press
The Edinburgh Building, Cambridge CB2 8RU, UK

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org
Information on this title: www.cambridge.org/9780521677646

First published 2010

Printed in the United Kingdom at the University Press, Cambridge

A catalogue record for this publication is available from the British Library

Library of Congress Cataloguing in Publication data
Murphy, M. Lynne.
Lexical meaning / M. Lynne Murphy.
p. cm. – (Cambridge textbooks in linguistics)
Includes bibliographical references and index.
ISBN 978-0-521-86031-4 (hardback) – ISBN 978-0-521-67764-6 (paperback)
1. Semantics. 2. Lexicology. I. Title. II. Series.
P325.M824 2010
401′.43 – dc22 2010024388

ISBN 978-0-521-86031-4 Hardback
ISBN 978-0-521-67764-6 Paperback

Contents

List of figures

Preface: using this book

Lexical semantics is approached by students of linguistics at various points in their undergraduate and graduate curricula, and this book is intended to suit anyone who has had some introduction to linguistics, but who has not yet studied lexical semantics in any depth. Given such a broad audience, it is inevitable that at some points in the text some readers will consider the material difficult and others will consider it a bit basic. My aim is to present problems of word meaning in all their messy glory – showing where there are interesting problems to be solved and considering multiple viewpoints on those problems. The big questions of how meanings work have been pondered for centuries, but the answers remain elusive, since how these questions can be answered depends upon the background assumptions about the nature of language, meaning, and mind that different approaches bring to them. In order to limit the range of background assumptions, this book is biased toward componential theories that are compatible with generative approaches to grammar. For readers who already have some general knowledge about linguistic theories, this book demonstrates how those approaches tackle issues of word meaning. Readers for whom these theories are not yet familiar will discover how their perspectives vary when it comes to the lexicon and meaning. If this leaves you wanting more information about the theories generally, the "Further reading" section near the end of each chapter plots out a proposed course of reading to broaden and deepen your knowledge of these subjects.

Adopt-a-word

Two types of exercise are provided at the end of each chapter. The general exercises provide problems to think about and new data with which to practice the concepts introduced in the chapter. In addition to these, each chapter has some "Adopt-a-word" assignments. These assignments allow you to explore the concepts introduced in the text through the perspective of a single word. We will cover a variety of topics and theoretical perspectives in a limited number of pages, but if you specialize in a particular word, you will be able to explore those topics in some depth and build on the knowledge you gain from chapter to chapter, rather than just flitting from one topic to the next. While you may

cover a lot of linguistic ground, you will follow a coherent theme – the study of a particular word.

You may choose a word that interests you for Adopt-a-word, or, if you have no word in mind, you can choose one of the adoptable words at the end of this preface.

If you would like to choose your own word, keep the following in mind:

- Ideally, your word should be established enough to have been covered in standard dictionaries, otherwise it will be difficult to do some of the assignments.
- Your word should have three to seven senses in such a dictionary – anything more and you may find yourself writing a book rather than a short essay for any particular assignment.
- Be sure to consider words other than nouns, particularly verbs and adjectives.
- In my own course, I have disallowed certain swear words – not out of any sense of prudishness, but because there has been enough interest in these words that whole books have been written on them, and thus there is little left for the student to discover on her own.
- While the words I suggest below are from English, you can do Adopt-a-word assignments with words from any language with which you are sufficiently familiar (or have sufficient resources to study).

Until chapter 8, most assignments will suit most words, but after that point we start looking at particular types of meanings. So, for example, if your word is a noun and never used as a verb, it is unlikely that the assignments in chapter 10 will be relevant to it, but the ones in chapter 8 will be particularly interesting to do. If you do not adopt a particular word for the whole of the course, then the Adopt-a-word assignments can still be done with different words in different chapters – choose from any of the words at the end of the preface.

A note for instructors

The Adopt-a-word scheme lends itself well to portfolio assessment, since it results in a group of assignments with a coherent theme. The portfolio can be comprised of the best three or so of the student's written assignments. This can be especially useful for developing a course that is strong on writing and revision, as required in many universities. The Adopt-a-word scheme also ensures that students are doing active and original research from the outset of their lexicological study. You can customize the assignments to the level and requirements of your course by including additional requirements, such as the number or type of bibliographic sources to be used. The Adopt-a-word assignments also make good topics for small-group discussions. Additional Adopt-a-word assignments

can also be invented for broader lexicology courses for issues like morphology, etymology, usage controversies, social variation, acquisition, and so forth.

Some words for adoption

These words have been tried and tested in Adopt-a-word courses. Some of these may be more interesting for students of British English than of American (or other) English, or vice versa. Before making a final decision, do a little research on the word in order to see if it suits you and your dialectal interests.

adult	*band*	*blond(e)*
buff	*bug*	*camp*
care	*clap*	*cool*
dark	*dice*	*diet*
fiddle	*flow*	*fret*
fringe	*funk*	*gamble*
glamo(u)r	*gray/grey*	*guess*
guy	*hip*	*kit*
lad	*lodge*	*log*
mad	*meat*	*mint*
moist	*pants*	*partner*
poor	*punk*	*purse*
sad	*sneak*	*spin*
stuff	*talent*	*tattoo*
text	*true*	*wave*
wild	*zero*	*zip*

Acknowledgments

I am very grateful to colleagues and students for their generosity in giving feedback on various parts of the manuscript that led to this book. Many thanks to: Lynne Cahill, Seongsook Choi and her students, Richard Coates, Vyv Evans, Cliff Goddard, Georgia Green, Melanie Green, Sascha Griffiths, Ray Jackendoff (who provided some interesting examples for chapters 8–10), Steven Jones, Anu Koskela, Diana McCarthy, Carita Paradis, Roberta Piazza, Elena Tribushinina, Christian Uffmann, Max Wheeler, Anna Wierzbicka, the students on Approaches to Meaning (in English), Language and Linguistics, Semantics and Structure of English II at Sussex University, and the anonymous reviewers of the proposal and manuscript. The usual disclaimers apply; I hope that I have done well by the comments given to me.

Anu Koskela, who at various times has been my co-teacher on most of the semantics courses at Sussex, deserves special mention. She has provided and facilitated many kinds of feedback on the work presented here, and has also contributed the drawings in chapters 3, 4, 8, and 11, and the Wittgenstein/Wierzbicka exercise in chapter 3. I thank her for her generosity and her intellectual and visual precision.

Thanks to the Department of Linguistics and English Language at Sussex for the leave time that got this book started and the general support of my colleagues there.

I cannot fail to acknowledge Arden Lily Murphy Viner, whose arrival in this world (dramatic as it was) terrifically slowed down the completion of the manuscript – but, boy, was she worth it. Lots of love and gratitude to her dad and my partner, Phil, who was instrumental in the finishing of this book, in spite of the obvious distractions.

Typographical conventions

*	marks ungrammatical examples.
#	marks semantically or pragmatically anomalous (odd) examples.
? or ??	marks examples that are grammatically or semantically difficult to process or subject to an atypical interpretation. These are slightly "better" than examples marked by #. The more ?s, the more questionable the example is.
italics	signal a "metalinguistic" use of an expression – that is, use of the expression to refer to itself as an expression, rather than in its normal sense. For example, the word *water* is italicized when it refers to the word *water* and not when it refers to actual water.
'single'	Single quotation marks enclose a gloss (description of the meaning) of an expression or of aspects of an expression.
SM CAPS	Small capital letters signal reference to a concept, ontological category (see chapter 7), or semantic component.

PART I

Meaning and the lexicon

1 The lexicon – some preliminaries

Key words: LEXICAL SEMANTICS, LEXICON, LEXIS, MENTAL LEXICON, LEXEME, CONVENTIONAL, (NON-)COMPOSITIONAL, ARBITRARY, LEXICAL UNIT, WORD, IDIOM, COLLOCATION, OPEN/CLOSED CLASS, LEXICOGRAPHY, CORPUS, NATIVE SPEAKER INTUITION

1.1 Overview

In order to set the stage for exploring lexical semantics, this chapter defines basic terms and ideas in the field, particularly the notions of LEXICON, LEXEME, and WORD. It then describes and evaluates four methods for investigating the lexicon: dictionaries, corpora, intuition, and experimentation.

1.2 What is a lexicon?

Word meanings are notoriously difficult to pin down – and this is well demonstrated in defining the basic terminology of lexical semantics. **Semantics** is the study of linguistic meaning, but it will take the next three chapters to discuss what *meaning* might mean in any particular theory of semantics. The *lexical* in *lexical semantics* refers to the **lexicon**, a collection of meaningful linguistic expressions from which more complex linguistic expressions are built. Such lexical expressions are often, but not always, words, and so **lexical semantics** is often loosely defined as 'the study of word meaning,' although the word *word*, as we shall see, is not the most straightforward term to use.

While many of the details of the structure and content of the lexicon are discussed in detail in later chapters, some general discussion of what the lexicon is and what it contains must come first. A **lexicon** is a collection of information about words and similar linguistic expressions in a language. But which information? Which expressions? What kind of collection? Whose collection? We'll cover these issues in the following subsections, but first we must acknowledge the polysemy (the state of having multiple meanings) of the word *lexicon*. **Lexicon** can refer to:

- a dictionary, especially a dictionary of a classical language; or
- the vocabulary of a language (also known as **lexis**); or
- a particular language user's knowledge of her/his own vocabulary.

For our purposes, we can disregard the first meaning and leave the study of such dictionaries to students of classical languages. The last two definitions are both relevant to the study of lexical semantics. In speaking of *the lexicon*, different scholars and theories assume one or the other or the interrelation of both, as the next subsection discusses.

1.2.1 Where is the lexicon?

Some traditional approaches to the lexicon generally make claims about the vocabulary of a language, its **lexis**. Taking this perspective on vocabulary, the lexicon is "out there" in the language community – it is the collection of anything and everything that is used as a word or a set expression by the language community. Other linguistic perspectives, including those discussed in this book, focus on vocabulary "in here" – in the mind of a language user. The term **mental lexicon** is used in order to distinguish this more psychological and individualistic meaning of *lexicon*.

Clearly though, we have to take into account the fact that the "out there" and "in here" lexicons are interrelated; in order to communicate with each other, speakers of a language must aim to have reasonably similar ways of using and understanding the words they know – otherwise, if you said *banana*, I'd have no reason to believe that you didn't mean 'robot' or 'hallelujah.' The lexicon of the language "out there" in our culture is the lexicon that we, as individuals, aim to acquire "in here" and use. This is not the same as saying that the lexicon of a language is a union of all the lexicons of all the language's speakers. When linguists study a language's lexicon, they tend to idealize or standardize it. For instance, say there's an English speaker somewhere who, ever since being hit on the head with a mango, mistakenly uses the word *goat* to mean 'pencil.' Just because there's someone who uses the language in this way does not mean that this fact about the use of the language needs to be accounted for in a model of the English lexicon – his use is clearly a mistake. So, in order to study the lexicon of a language, one needs to have a sense of what does and does not count as part of that language. Sometimes these decisions are somewhat arbitrary, but they are not simply decisions made on the basis of what is "correct" English in some school-teacherish (that is, **prescriptive**) sense. Non-standard words and uses of words are also part of the language that we want to explain, and we can pursue interesting questions by looking at them. For example, some people use *wicked* as slang for 'especially good,' which might lead us to ask: how is it that a word's meaning might change so much that it is practically the opposite of what it originally meant?

Similarly, although mental lexicons exist in individual speakers' minds, in studying the mental lexicon we do not necessarily want to investigate any one

particular speaker's lexicon (otherwise, we would have another few billion lexicons to investigate after we finish the first one). Instead, the focus is usually on an imagined "ideal" speaker of the language, which again brings us back to the notion of a language's lexicon. For an "ideal" mental lexicon, we imagine that a speaker has at her disposal the knowledge necessary to use the language's lexis.

Most current approaches to the lexicon attempt to find a balance between the "out there" and the "in here." While particular models of lexical meaning will be evaluated in this book on the basis of their psychological plausibility, part of what makes a theory psychologically plausible is whether it is consistent with (and engages with) the social facts of language acquisition and use. My continued use of the ambiguous term *lexicon* is an acknowledgment of the dual nature of the object of our study, but the terms *mental lexicon* and *lexis* are used wherever disambiguation is needed.

1.2.2 What's in a lexicon?

Having discussed the *where* of the lexicon, we move on to the *what*. The things that one knows when one knows a language can be divided into two categories: the lexical and the grammatical. A **grammar** is a system of rules or regularities in a language, and a **lexicon** is (at the very least) a collection of linguistic knowledge that cannot be captured by rules. The grammar accounts for linguistic issues like word order and regular morphological and phonological processes. For instance, our grammar tells us the difference between the sentences *Bears trouble bees* and *Bees trouble bears*, and that this is the same kind of difference as the difference between *The kangaroo ate a flower* and *A flower ate the kangaroo*. What the grammar cannot tell us is what *bear* and *bee* and *trouble* bring to the sentence. At some point in our acquisition of English, we learned that the sound [bi] and the spelling *b-e-e* are paired with a particular set of linguistic and semantic properties – like being a noun and denoting a kind of insect. The lexicon is the collection of those associations between pronunciations, meanings, and grammatical properties that had to be learned rather than produced by grammatical rules.

The lexicon is organized into **lexical entries**, much as a dictionary is organized into entries that pull together all the information on a headword (the word, typically in boldface type, at the start of a dictionary entry). Each of these lexical entries collects the appropriate information about a particular linguistic expression, called a **lexeme**. (Later we look at why it is more precise to use the term *lexeme* rather than *word* in the study of lexical meaning.) In the remainder of this subsection, we consider which expressions are lexemes and belong in the lexicon, then in §1.2.3 we'll consider what information goes in a lexeme's lexical entry. Section 1.2.4 goes into more detail on the notion of a lexeme as an abstract representation and the relationship between a lexeme (and its lexical entry) and actual uses of an expression. Let's start with this description of *lexeme*:

- **morphologically complex words** whose meaning is not predictable from the meanings of the parts, including compounds like *greenhouse* ('a glass building for growing plants in') and *needlepoint* ('a method of embroidery onto canvas');
- **set phrases** whose meaning is not compositional, such as phrasal verbs like *throw up* ('vomit') and *give up* ('quit') and idioms like *having the world on one's shoulders* and *fly off the handle*.

Are all lexemes non-compositional?

While linguists agree that a lexicon contains conventional, non-compositional form–meaning pairings, opinions differ as to whether one's mental lexicon also contains some compositional expressions. In other words, just because we *could* understand the meaning of a complex expression from the meanings of its parts, doesn't mean that we necessarily always go through the process of composing that complex expression every time we use it. In cases like those in (3), the expressions are so well-worn that they seem like idioms, in spite of having conventional meanings.

(3) a. happiness (happy + ness)
b. How are you?
c. It's not whether you win or lose, it's how you play the game.

Should the items in (3) be considered to be lexemes? One argument for including compositional expressions in the lexicon is that it is advantageous for a language user to have ready access to commonly used expressions. So, in a particular individual's mind it might be convenient if complex and frequent but predictable expressions, like *How are you?* or *I love you*, were stored in the mental lexicon. Having such expressions available both through grammatical assembly and through ready-made lexemes is redundant – and thus it appears to require needless extra effort to learn and store the expression in the mental lexicon. But while non-redundant models of language are more streamlined and elegant, they are not necessarily more realistic. After all, representing the same expression (or access to the same expression) in different ways or different places in one's mind could make language production and comprehension processes less likely to break down, since if one route to the expression fails, another might succeed.

Another argument for including compositional expressions in the lexicon is that some of them are particularly conventionalized – that is to say, people sometimes rely on "ready-made" compositional expressions instead of composing new ones. The extremes of such conventionalization are seen in compositional clichés like *in this day and age*, *cry like a baby*, or the example in (3c), but conventionalization of compositional expressions can be subtler too, as studies of **collocations** (particularly frequent word combinations) have shown. A case in point is example (4), which shows how the meaning 'without milk added' is indicated by different modifiers, depending on what is being modified.

(4) *black coffee*
black tea – however, this can also mean non-herbal tea, so people often prefer to say *tea without milk* or *tea with no milk*
plain chocolate, dark chocolate
dry cereal

Logically speaking, there is no particular reason why milkless coffee is *black* and not *plain*, nor why *dark chocolate* is not called *black chocolate* (after all, it is about the same color as black coffee). As English speakers, we've just learned that these adjectives and nouns are best used in some combinations and not others. Similarly, some nouns go with particular verbs. For example, in English one *asks* (or *poses*) a question, but one *poses* a riddle (one does not *ask* it) and one *makes* a query (one neither *asks* nor *poses* it). Such facts lead some to argue that we should be thinking of the lexicon as including larger and looser combinations than just single words and set idiomatic phrases, or that we should see the lexicon as a network of syntactic (grammatical) and semantic relations among lexemes. While these are very interesting issues, the focus in this book is particularly on the non-compositional forms (mostly words) that **must** be in the lexicon, as the emphasis on non-compositional meanings is what makes lexical semantics distinct from other kinds of semantics. Information about collocations is still of interest to us, though, as it may be used to determine differences in particular words' meanings.

1.2.3 What is in a lexical entry?

Within the lexicon, the collection of information pertaining to a lexeme is said to be its **lexical entry**, analogous to a dictionary entry. The information that must be stored about a lexeme is precisely that which is unpredictable, or arbitrary. At the very least, this means that we need to know the basics of the lexeme's form and what meaning(s) it is associated with. When speaking of a word's **form** we usually mean its pronunciation, but if we know it as a written word, then its spelling is part of its form, and if it is a part of a sign language, then its "pronunciation" is gestural rather than vocal. We only need to store in the lexicon the details of the lexeme's form that are not predictable; so, for example, we do not need to store the facts that *cat* is made possessive by adding *'s* or that the *c* in *cat* is usually pronounced with a slight puff of air – these facts are predictable by rules in the language's grammar and phonology. As we shall see in the coming chapters, theories differ in what information about meaning is (or is not) included in the lexicon. For many modern theories, meaning is not **in** the lexicon, but is a part of general, conceptual knowledge (chapter 4). That is to say, the linguistic form is represented in the lexicon, but instead of its definition being in the lexicon as well, the lexical entry "points" to a range of concepts conventionally associated with that word. Other theories (e.g. in chapter 3) view the lexicon more like a dictionary, which provides basic definitions for words.

What other information is included in a lexical entry, again, differs from theory to theory. Most would say that a lexical entry includes some grammatical information about the word, for example its **word class** (or *part of speech*: noun, verb, etc.), and the grammatical requirements it places on the phrases it occurs in. For instance, the lexical entry for *dine* includes the information that it is a verb and that it is intransitive in that it takes no direct object, as shown in (5). *Devour*, on the other hand, is recorded as a verb that is transitive, so that it is grammatical with a direct object, but not without one, as shown in (6). Asterisks (*) signal ungrammaticality.

(5) a. We dined.
b. *We dined a big bowl of pasta.

(6) a. *We devoured.
b. We devoured a big bowl of pasta.

We come back to these issues in chapter 7, where we consider whether the meanings of words might determine their word classes, or whether they are entirely arbitrary and need full specification in the lexicon.

We may also need information in the lexicon about which words go with which other words – for instance, the fact that *stark* collocates with *naked* but not with *nude* or the fact that the conventional antonym of *alive* is *dead* and not *expired*. We come back to some of these issues below and in chapter 6.

1.2.4 The abstract nature of lexemes

The last thing to say in this preliminary tour of the lexicon is that a lexeme is not the same as a word in real language use. Lexemes are, essentially, abstractions of actual words that occur in real language use. This is analogous to the case of phonemes in the study of phonology. A phoneme is an abstract representation of a linguistic sound, but the **phone**, which is what we actually say when we put that phoneme to use, has been subject to particular linguistic and physical processes and constraints. To take a psycholinguistic view, a phoneme is a bit of language in the mind, but a phone is a bit of language on one's tongue or in one's ear. So, the English phoneme /l/ is an abstract mental entity that can be realized in speech variously as, say, a "clear" [l] in *land*, or a "dark" [ɫ] in *calm*. The phoneme is, so to speak, the potential for those two phones.

Similarly, when we use a word in a sentence, it is not the lexeme in the sentence, but a particular **instantiation** (i.e. instance of use) of that lexeme. Those instantiations are called **lexical units**. Take, for example, the lexeme *cup*. It is associated with a range of meanings, so that we can use it to refer to:

(a) any drinking vessel, or
(b) a ceramic drinking vessel with a handle whose height is not out of proportion to its width, or

(c) a hand shaped so that there is a depression in its upward facing palm, or

(d) the part of a brassiere that covers a breast.

But in a particular use, as in sentence (7), the lexical unit *cup* is assigned just one of those meanings – in this case, meaning (b).

(7) I prefer my coffee in cups, not mugs.

In (7), *cup* also occurs with a particular orthographic form and it is morphologically marked as a plural. So, in this case we can say that the lexical unit *cups* in (7) is an instantiation of the lexeme *cup*, which has the plural form, the standard spelling and the (b) meaning associated with that lexeme.

The lexical entry provides the information needed to use the lexeme as a lexical unit; that is, it sets the parameters of that lexeme's potential. So, as speakers or writers, we select particular lexemes to be realized as lexical units in our utterances because the parameters set in the lexical entry are consistent with what we want to do with that word – for example, for it to have a particular meaning and fill the verb slot in a sentence. As listeners or readers we recognize the lexical unit as being an instantiation of a particular lexeme and interpret the meaning of the lexeme in ways that are consistent with the lexical entry and the context in which the lexical unit occurs.

1.3 What is a word?

1.3.1 Defining *word*

While the loose definition of *lexical semantics* is 'the study of word meaning,' the focus of this textbook is more precisely lexeme meaning. Nevertheless, as a matter of fact, most of the cases discussed in this book (and most of what is traditionally considered to be lexical semantics) involve lexemes that are words rather than bound morphemes or multi-word lexemes (such as idioms). So, it is worthwhile to say a word about what words are. I have already hinted at one problem with using the term *word* as a technical term: *word* is ambiguous in that it could mean 'lexeme' as in (8) or 'lexical unit' as in (9):

(8) Colour and color are two spellings of the same word.

(9) There are eight words in the sentence *Jo's pet ferret hates Jo's mother's pet ferret*.

But aside from the lexeme/lexical unit ambiguity of *word*, it can be tricky to determine which lexemes count as words in a particular language. Part of the reason for this is that the notion *word* can be defined in a number of ways, including:

- **orthographically** – based on the written form
- **semantically** – based on the meaning
- **phonologically** – based on the word's pronunciation
- **grammatically** – based on positions in phrases

Ask random English speakers what a word is, and you are likely to hear definitions based on orthographic or semantic criteria. Probably the most common belief is that words are bits of language that have a space on either side of them in print. The most obvious problem with this **orthographic definition** is that it employs circular logic. The reason that we put spaces in writing is to signal the beginnings and ends of words; one must already know which bits of language are words before one can know where to put the spaces. For instance, we know to put a space between *cat* and *nip* in (10), but to run the two together in (11).

(10) Tom saw the cat nip the baby.

(11) Fluffy loves catnip.

Notice too that the spaces in writing do not necessarily represent spaces in speech. *Cat+nip* can be pronounced in just about the same way in sentences (10) and (11). Something other than spaces must be telling us which bits are words in these sentences. Another problem with the 'space' definition is that some orthographic systems do not put spaces between words. In writing the southeast Asian language Lao, for instance, spaces are only left at the ends of sentences. Nevertheless Lao speakers can identify the words in those sentences. If we want to talk about the bits of language with spaces on either side, we can call them **orthographic words**, but the orthographic definition doesn't get to the essence of wordhood.

Once you give up on the orthographic definition of word, you might try the **semantic definition**, which states that words represent single, complete concepts. In that case, you could tell that *cat+nip* is two words in (10) because two meanings or ideas are represented, whereas in (11) *catnip* refers to just one thing. But this definition doesn't work for a couple of reasons. First of all, how can one tell what a complete meaning is? For instance, one might think that *policeman* involves two concepts – being police and being a man – or that it is one concept involving the entire state of being a male police officer. Similarly, the same concept can be described by various numbers of words. For example, in comparing languages it is often the case that the same meaning is variously realized in different numbers of orthographic words, such as English *post office* versus Swedish *postkontor* versus French *bureau de poste*. The "semantic" definition of word thus leads us either to the illogical conclusion that these expressions meaning 'post office' must involve different numbers of meanings, since they involve different numbers of words, or to the conclusion that some languages have more spaces in their words than others. While the second conclusion might be true, we can do better than this definition.

A **phonological word** is a unit of language that is subject to the language's particular word-based phonotactic constraints (i.e. which sounds can go next to which other ones) and phonological processes (e.g. variations in pronunciation

hints: for example, whether they are referring to animate or inanimate things or to males or females. Other closed-class words such as *the*, *of*, and *but* are even harder to define because they are not used to refer to things in the world at all. A useful diagnostic is that open-class words typically can be used meaningfully on their own. For example, *chocolate*, *grumpy*, and *moo* can be seen to be meaningful in their own right because we could use each on its own to describe something we have experienced or as answers to questions, as in (16):

(16)

What do you want?	Chocolate.
How do you feel?	Grumpy.
What do you want the cow to do?	Moo.

In contrast, it is hard to think of a context in which a closed-class word like *of* or *the* or *could* would be used on its own, since those words act as the glue that holds sentences together rather than the contributors of meaning in a sentence.

You might object that *of* could be used on its own as the answer to a question like *What is a two-letter word that starts with 'o'?* But notice that in that answer we would not be using *of* to mean whatever *of* means; we would be using it to be the name of the word *of*. This is a **metalinguistic** use of the word – use of the word to refer to itself. In writing, metalinguistic use of words is marked by putting quotation marks around the word (as done outside linguistics) or underlining or italicizing it, as is done in this and other linguistics texts. Those typographical markings are necessary to point out that the word is being used as a representation of itself.

Since closed-class words play important roles in grammar, they tend to be studied as part of non-lexical rather than lexical semantics. Lexical semanticists typically concentrate on the lexical, open-class words, which make particularly rich semantic contributions to their phrases. Whether grammatical words are represented in the lexicon, just as lexical words are, is another matter that divides theoretical opinion. Psycholinguistically and neurolinguistically speaking, there is evidence that grammatical words are stored and processed separately from lexical words. For example, grammatical words and lexical words tend to be the victims of different types of speech errors, and people with aphasia (language loss due to brain injury) often lose the ability to use grammatical words while their lexical abilities remain more or less intact, or vice versa.

That being said, the idea that some word classes are semantically contentful and others are not is oversimplistic. Members of the preposition category, for example, vary considerably in how semantically rich they are. While *of* is a good example of a grammatical preposition with little semantic content (in phrases like *the publication of this book*), other prepositions, like *above* or *outside*, have more semantic content and can be used to describe various kinds of relations between two things. From a semantic point of view, it is often more interesting to consider what semantic contributions words make to sentences rather than to consider their word class, as members of different word classes can carry similar meanings. For example, the preposition *above* makes a similar contribution in sentence (17a) as

the adjective *superior (to)* does in (17b) or that the noun *superior* does in (17c), or that the verb *top* contributes in (17d).

(17) a. The manager is **above** the other employees in the organizational chart.
b. The manager is **superior** to the other employees in the organizational chart.
c. The manager is the other employees' **superior** in the organizational chart.
d. The manager **tops** the other employees in the organizational chart.

While one can find differences in the meanings of these sentences and the bold words in them, the bold words have in common that they all indicate a 'higher than' relation, despite the fact that they belong to different word classes. Chapter 2 explores what meanings are and what types of meanings exist.

1.3.3 Lexicalization

Whereas grammatical words come into being via grammaticalization, lexical words are the result of **lexicalization**, the assignment of a lexeme to a meaning in a particular language. *Lexicalization* can refer either to the process by which a meaning comes to have a form associated with it, or to the existence of such a form–meaning association. In the latter case, we can say that different languages **lexicalize** the world differently, meaning that different languages pick out different parts of human experience to name. For example, English has different words for toes and fingers while Italian doesn't lexicalize these body parts separately, calling both *dita*. Speakers of either language can, of course, talk about these parts of the body together or separately; for instance, in English we can say *fingers and/or toes* or *digits* if we don't want to discriminate between the two, and Italian speakers can use *dita del piede* ('digits of the foot') to refer specifically to toes and not fingers. One could say that what is different about the two languages in this case is that by lexicalizing one meaning rather than another, the language prioritizes a particular view of the body.

1.3.4 Where do words come from?

New lexicalizations can arise either through the addition of new words to the language or through semantic change in old words. We'll look at the latter case in chapter 5. **Neologisms**, or new words, come about in a number of ways, including:

- **Coining** – A new word is invented from previously meaningless sounds. Sometimes words are invented that resemble in sound what they symbolize. Such cases of **onomatopoeia** (from the Greek roots for 'name' and 'make') include *bang* for the sound a gun makes and *cuckoo* as the name of a bird that makes that sound. More rarely, words are just created out of thin air, though this mostly happens for proper names. For example, the brand name *Kodak* and the US state

name *Idaho* were coined because someone liked the look and sound of them.[2]

- **Derivation** – Affixes (such as prefixes or suffixes) are added to a word to make a new word, such as *disobey* from *obey*, *resignation* from *resign* or *teacher* from *teach*. This type of affixation changes the word class (part of speech) and/or the meaning of the base word. (This is opposed to **inflection**, in which affixes are used to change a word's grammatical subclass – for instance the tense of a verb or the number of a noun. Inflection is not a word-formation device, in that it does not create a new lexeme, but creates an instantiation of an existing lexeme.)
- **Compounding** – Two existing words are joined to make a new word that combines their meanings, as in *backlash* or *bluebell*.
- **Blending** – Parts of two words are combined in a way that combines their meanings. For example, *brunch* takes its *br* from *breakfast* and its *unch* from *lunch*, and *urinalysis* comes from *urine* + *analysis*. These are sometimes called **portmanteau words**.
- **Clipping** – The new word is created by shortening an existing word – for example, *fax* from *facsimile* or *flu* from *influenza*. Such cases may not at first involve the introduction of a new meaning into the lexicon, but the original and clipped forms may gradually drift apart in meaning. For instance, *fax* came to be used as a verb (*I faxed her the contract*), but *facsimile* does not have that use.
- **Borrowing** – A word or phrase from one language is adopted by a different language. For example, *chauvinism* was borrowed into English from French. Frequently, borrowed words undergo some changes in form and meaning in the new language. In the case of *chauvinism*, the original French *chauvinisme* has lost its final <e>, and its meaning has changed over time so that it is less likely in English to refer to 'patriotism' (particularly loyalty to Napoleon) as it first did in French, and more likely to refer to 'sexism.'
- **Calque**, or **loan translation** – A concept is imported from another language and the name for it is literally translated. For example, when French needed a word for 'skyscraper,' the English word was translated into French as *gratte-ciel* ('scrapes sky'). English, in turn, translated the French *marché aux puces* ('market of the fleas') into *flea market* when it needed a term for that kind of market.
- **Acronyms** – A new word is created from the initials of a phrase. These may be "true" acronyms, which are pronounced as they are spelt, such as *laser* (from *light amplification by simulated emission*

[2] George Eastman coined the name *Kodak* for his company. Many people believe that *Idaho* is a Native American word, but this is a myth. Someone invented it and then claimed it was Native American, in order to give it some credibility (see www.idahohistory.net/ES2_idahosname.pdf).

of radiation), or **alphabetisms**, which are pronounced as a series of letters – for example *DIY* for 'do it yourself.'

- **Backformation** – A word is created by removing perceived affixes from an existing word. In this case, the original word looks as if it was derived from a simpler word, but it wasn't. For example, *orientation* existed in English as a noun derived from the verb *orient*. But since we are used to seeing verbs with *-ate* and related nouns that end in *-ation* (like *narrate/narration* and *evaluate/evaluation*), some English speakers perceived *-ion* as the suffix on *orientation* and "back-formed" the verb *orientate*.

Our concerns in this book are more to do with how new meanings come into the language rather than new word forms – since the latter is more a subject for a morphology course. But as we can see above, new word forms are often created because we wish to lexicalize meanings that have not yet been lexicalized in our language.

1.4 How to research words and their meanings

There are four ways to research word meaning. One is to make use of already existing research on word meanings, namely **dictionaries** and other lexicographical products. The other three methods can be used both in creating new dictionaries and in determining the accuracy of existing ones. These are **corpus methods**, **introspection**, and **experimentation**. All four are discussed in turn in this section.

1.4.1 Dictionaries

Dictionaries of various types can be useful starting points if one is interested in the meaning of a particular word or set of words. Standard desk dictionaries include information on the word's orthography, pronunciation, meanings, and word class. They may also include information on the word's historical roots, or **etymology**, and lists of related words, such as morphological derivations, synonyms, and antonyms. Some dictionaries provide information on usage, including the dialect or sociolect that the word belongs to, its level of formality (**register**), and any prescriptive rules about how the word "should" or "should not" be used in particular contexts. Finally, some dictionaries also include examples of the word's use in quotations or invented examples and/or further encyclopedic information about whatever the word refers to. Learners' dictionaries, monolingual dictionaries written for learners of the language, tend to include more grammatical information and examples, but often skip the less common uses of words – for example, the word's meaning/use in a particular profession or a particular game. Some learners' dictionaries also give information

about the word's frequency of occurrence in speech and writing. Thesauruses are dictionaries organized on semantic rather than alphabetical principles, and show meaning relations among words.

People often talk about "the dictionary" as if there is only one, saying things like *I looked it up in the dictionary* or *That's not in the dictionary*. This phrasing reflects an assumption that all dictionaries give the same information, and it may even imbue them with a certain mystical quality – note how people speak of THE *dictionary*, much as they would speak of THE *Bible* or THE *Koran*. The definite article *the* before *dictionary* implies that there is one version of the language that is represented in the same way in anything that is called *dictionary*. However, any particular dictionary gives its own snapshot of the language, as there is no way that a single book or CD-ROM – or even a shelf full of them – could do justice to the myriad ways in which the language and its words are used . . . and have been used in the past and will be used in the future.

Puzzle 1–1

The following two definitions are taken from very similar dictionaries; both the *Collins Concise Dictionary of English* (CCDE) and the *Concise Oxford Dictionary* (COD) are desktop dictionaries of standard British English produced in the 1990s. See how many differences you can spot between their entries for **gratuity** (see end of chapter for answers):

gratuity /grətju:ɪtɪ/ *n. pl.* **-ties** **1**. a gift or reward, usually of money, for services rendered; tip. **2**. *Mil.* a financial award granted for long or meritorious service. (CCDE)

gratuity /grətju:ɪtɪ/ *n.* (*pl.* **-ies**) money given in recognition of services; a tip [OF *gratuité* or med.L *gratuitas* gift f. L *gratus* grateful] (COD)

As well as representing different information about particular words, different dictionaries include different words. For example, of the words that begin with the letters *n-i-d*, both CCDE and COD include four words, but only one of those words is in both dictionaries: CCDE has *Nidaros*, *nidicolous*, *nidifugous*, and *nidify*, while COD has *nide*, *nidificate*, *nidify*, and *nidus*. The moral of this story is that if you use a dictionary as a research aid for lexical semantics, you get only a partial picture of a language's lexicon or of any particular lexeme in it, for several reasons. **Lexicographers** (dictionary writers) must fit the information that they have about a word into a finite space and prepare the information in a finite amount of time. Thus lexicographers constantly make conscious and subconscious choices about what information should be left out of their dictionaries. These decisions depend in part on the purpose of the dictionary and the audience it is aimed at. Most everyday dictionaries focus on representing the "standard" language, so they tend not to include much slang, regional usage, or jargon. The methods that dictionaries use to collect information (see the discussion of corpora, below)

that made them differ from the *tall* nouns. The corpus cannot tell us that; that's what semanticists are for.

And then we have the problem that not everything about meaning is plainly evident from a corpus. For example, if a word has several meanings (as most do) it can be difficult in many contexts to determine which of those meanings is in use in a particular bit of corpus material. Furthermore, a corpus can tell you part of what is possible in a language, but it cannot tell you what is impossible in the language – it can only tell you what does and what does not occur in a particular corpus.

1.4.3 Semantic intuitions

Corpus methodology thus needs to be supplemented by introspection, that is, **native speaker intuition** – the judgment of a native speaker of a language as to what words mean, what sentences are meaningless or ungrammatical, which words or phrases mean the same thing, which contradict each other, and so forth. Often the native speaker in question is the linguist doing the research, but one can study languages other than one's own by interviewing native speakers and asking for their judgments of the words or phrases (so long as you two have a means of communicating with each other, that is). This is necessary if you are studying the semantics of a language other than your native tongue. Non-native English speakers using this book might find it useful to consult native English speakers who can check your intuitions about word meanings and uses. (Just be sure to check with your instructor before consulting with anyone in reference to work that you will submit for a credit on your course.)

Puzzle 1–3

Try doing a bit of introspective research on adjectives that can be modified by measure phrases, by asking yourself (or another English speaker):

Can one say *six centimeters long*?
What does it mean when someone says *The string is six centimeters long*?
Does it mean that the string is long?
Can one say *six centimeters short*?
If so, does it mean the same thing as *long* in *The string is six centimeters long*?
If not, what is the difference?
Can one say *30 degrees warm*, *Twelve kilos heavy* (and so forth)?
What generalizations can you make about adjectives that can or cannot be modified using measure phrases?

While they have been a mainstay of linguistic research, native speaker judgments have come under serious scrutiny, not least due to the advent of corpus linguistics, which often demonstrates that word combinations or uses that have been judged

impossible by native speakers can sometimes be found in the writing or speech of native speakers of the language. Thus, the intuitive method and the corpus method can provide checks and balances on each other.

What neither method does is answer the question *Why?* For example, if we determine that *long*, *short*, and *warm* occur or do not occur with different types of measure phrases, then we have discovered something interesting, but the more interesting thing to do is to determine what patterns can be found in this information and to try to explain these patterns by providing a theory of adjective meaning that accounts for the differences in how these adjectives "behave" in the language.

1.4.4 Experimentation

The last kind of evidence that is used in studying lexical semantics is psycholinguistic experimentation, which more particularly reveals the nature of the mental lexicon and of meanings as stored in the mind. This can involve asking a group of people for their intuitions about word meaning, as was done in a famous experiment by William Labov (1973). Labov showed pictures of vessels of various shapes to a number of English speakers and asked them to say what they would call those objects. Using such an experiment, one can discover where the boundaries of a word's applicability are – or one might find (as Labov did) that no such boundaries are easily discerned (see §3.4). For example, a vessel that is sometimes called *a bowl* might be cup-like enough that it is sometimes called *a cup*.

Other experiments take more indirect routes to finding out about meanings. For example, lexical priming experiments determine the ease with which subjects identify words after they have seen (or heard) words that are more or less semantically related to that word. Such experiments have determined that, for instance, people recognize that *banana* is a word faster if they have recently seen the word *apple*. This leads to the hypothesis that the two words are somehow linked in the mental lexicon such that **activating** one of them enables easier access to the other – by **priming** the mental pathway to it. A wide range of often-ingenious experiments has provided much insight into the mental lexicon.

But, as with any method, caution must be used in planning, executing, and interpreting psycholinguistic experiments. While we have identified an "ideal speaker" as the subject of mentalistic studies of lexical semantics, there is no ideal speaker to experiment upon. We could try to develop models of an individual's mental lexicon by doing a series of experiments on a single subject, but the results are unlikely to give a clear picture of the subject's lexical knowledge, since our view will be hampered by performance factors like the subject's state of alertness or his preoccupations at any particular moment. Instead, experimenters usually test a range of individuals (while controlling for particular variables like age, sex, and educational level), but since no two individuals have the same vocabulary and no two have acquired their vocabularies in the same way, the

picture that emerges is of an average speaker more than an ideal one. Interpreting experimental results is laden with uncertainties. For example, does *apple*'s lexical priming of *banana* indicate that the two lexemes are related in the mind, or simply that their meanings (irrespective of their forms) are related in the mind? Does the fact that two subjects draw different boundaries for a word's meaning mean that the two have different understandings of the word, or that the meaning of the word is not fixed in anyone's mind?

Puzzle 1–4

Imagine an experiment in which you asked several people to look at pictures of various pieces of outerwear and assign them one of two names: *coat* or *jacket*. In this experiment, everyone agreed that pictures A, E, and F should be called *coats* and pictures B and D should be called *jackets*, but people gave different answers about C and G, some calling both *jackets*, some calling both *coats*, and some considering C a *coat* and G a *jacket*. What hypotheses about the meanings of these (and similar) words would you propose on the basis of these results? What further experimentation could you do in order to choose among these hypotheses?

1.5 Structure of this book

This book is divided into three parts. In chapters 1 through 4, we look at the question of what meaning is and give the basics of several theories of meaning. This provides a basis for discussing the more contemporary theories' approaches to various lexical semantic issues in later chapters. Part II (chapters 5–6) considers relations among meanings and among words. Part III starts with a discussion of the relation between meaning and word classes (chapter 7), then turns to particular semantic issues for nouns (chapter 8), verbs and other predicates (chapters 9 and 10), and adjectives (chapter 11).

1.6 Further reading

While much vocabulary has been introduced and defined in this chapter, I have taken for granted that the reader knows the meanings of grammatical terms like *noun* and *verb*. Readers who would like some support on these terms should consult a dictionary of linguistic terms such as Trask (2000) or Crystal (2003). Good reference grammars of English are (in ascending order of difficulty) Biber *et al.* (1999), Quirk *et al.* (1985), and Huddleston and Pullum (2002).

Larry Trask's (2004) essay "What is a word?" goes over the various definitions of word (and their pros and cons) in further detail. On the argument that

compositional (as well as non-compositional) items must be included in the lexicon, chapter 6 of Ray Jackendoff's *Foundations of Language* (2002) is good place to start. This position is central to the theory (or set of theories) called Construction Grammar – see, for example, Fillmore, Kay, and O'Connor (1988) and Goldberg (1996). The division of vocabulary into open and closed class has also become controversial. For another perspective, see chapter 1 of Leonard Talmy's *Toward a Cognitive Semantics*, vol. I (2000).

This chapter introduced a fair amount of morphological terminology, which is indispensible in the discussion of lexicology. Some useful introductions to morphology are Heidi Harley's *English Words* (2006), Geert Booij's *The Grammar of Words* (2007), and Francis Katamba and John Stonham's *Morphology* (2006).

Howard Jackson's *Words and Meaning* (1988) provides a dictionary-based perspective on lexical semantics, and so is a good source on how dictionaries work. An excellent source on the methods of dictionary making is Sidney Landau's *Dictionaries: The Art and Craft of Lexicography* (2001). For an overview of English dictionaries and lexicographical practice, see Henri Béjoint's *Modern Lexicography* (2000).

A good guide for beginning to use corpora is Michael Stubbs' *Words in Phrases* (2002). Charles Meyer's *English Corpus Linguistics* (2002) gives more detail on how to make a corpus. Reeves *et al.* (1998) summarize various experimental psycholinguistic methods of learning about the mental lexicon and give a few experiments to try out for yourself. John Field's *Psycholinguistics: A Resource Book for Students* (2003) gives some of the basics of psycholinguistic approaches to the lexicon.

1.7 Answers to puzzles

1–1

As one would expect, much is similar about the two dictionary entries. The presentation of the headword (in bold) and the pronunciation are exactly the same, and they both indicate that it is a noun with a spelling change in the plural. But here we see our first little difference: CCDE shows how the last syllable (*ty* → *ties*) changes in the plural, whereas COD shows us just the letters that are different in the plural. The definitions of the general sense of the word (sense 1 in CCDE) are very similar, with both noting the synonym *tip*, but according to COD a gratuity is made of money, whereas CCDE leaves open the possibility that it might take some other form – for example, a bottle of wine or box of chocolates given to one's hairdresser or letter carrier. The most obvious difference is that CCDE records a specific military use of the word as a second sense. Either the writers of COD did not come across this meaning, or (more likely) they considered it to be just a specific type of gratuity that is covered by the definition they have given. Finally, COD gives a detailed

etymology of the word, while CCDE gives none, although it does give etymologies for other words.

1–2

(a) = containing/made with apples;
(b) = scented like apples;
(c) = an image of an apple.

1–3

Answering these questions, you should discover that:

(a) when one says *6 centimeters long*, it means *6 centimeters in length* – the thing that is measured is not necessarily long (it might be short);
(b) *6 centimeters short* is a bit different. It might sound like a wrong or humorous way of saying *6 centimeters long*. If you can say it with a straight face, then the usual interpretation of *The string is six centimeters short* would be that it is six centimeters *too* short, not that the string measures six centimeters in total. For instance, it needs to be a meter, but it is only 94 centimeters long.
(c) Some other positive single-dimension and time adjectives can occur with measure phrases, like *6 meters tall*, *6 meters wide*, *6 hours late*, *6 years old*, but not (in English) adjectives from other semantic fields such as temperature (**30 degrees warm*), weight (**30 kilos heavy*), or multi-dimensional size (**30 acres big*) – unless they are interpreted as 30 units *too* warm/heavy/ big.

1–4

These results suggest at least two hypotheses. One is that different people have different understandings of these words – that is, there are different varieties of the language (dialects or idiolects) in which *coat* and *jacket* mean slightly different things. The other hypothesis is that there is no firm division of meanings between *coat* and *jacket* and that people are just picking one or the other for the difficult cases because the experiment requires them to. Perhaps if left to their own devices they would call G both *coat* and *jacket*, or perhaps it is the context (e.g. what kind of weather it is worn in) that determines whether it is called *coat* or *jacket*. The first hypothesis holds that the language differs among people, but the second holds that the language is probably the same, but the meaning of the words is not easily delimited. One way to assess which hypothesis is more likely would be to test the same group of people again and see if their answers are consistent with their previous answers. (It would be good to alter the order of the pictures or to include some pictures other than the ones they had seen before, so that they have to think anew about the problem rather than just remembering what they did before.) If their answers are consistent, then the "different varieties" hypothesis is not ruled out, but if their answers are different each time they take the test, it suggests that the boundaries between the two words' meanings are not absolute and firmly fixed in mind.

2 What do we mean by *meaning*?

Key words: PRAGMATICS, INFERENCE, ENTAILMENT, DENOTATION, CONNOTATION, SOCIAL MEANING, AFFECT, SENSE, REFERENCE, REFERENTIAL THEORY, EXTENSION, IMAGE THEORY

2.1 Overview

While the last chapter defined the *lexical* in *lexical meaning*, in this chapter we start to consider the meaning of *meaning*. While the term *meaning* is used in many ways inside and outside the discipline of linguistics, the semantic approach in this book is particularly concerned with denotative meaning. The next section compares denotative meaning to other meaning types and looks at the questions lexical semanticists ask and why they ask them. After that, we look at how to define denotative meaning, focusing on defining the difference between what a word refers to and what a word "means."

Before we go any further, however, it is important to acknowledge that it is rare for a word to have a single meaning. For instance, *shoe* can refer to an object that protects the foot, but it can also be a verb that means 'to put shoes onto,' or a noun that designates a part of a brake mechanism, or part of the idiom *put yourself in someone else's shoes*, in which case some might argue that *shoes* means 'situation.' This is to say that the word *shoe* is **polysemous**, that is, multi-meaninged. Polysemy is a major issue in lexical semantics, but before going into the issue of multiple meanings, we want to look first at the nature of meanings. This means that we will turn a (mostly) blind eye to polysemy until chapter 5 and ignore, for the sake of argument and illustration, meanings of words that are other than the one presently being discussed.

2.2 The boundaries of lexical semantics

As Puzzle 2–1 demonstrates, *mean* is polysemous, and a single thing or word can "be meaningful" in many different ways. This section distinguishes semantic kinds of meaning from pragmatic ones and denotative meaning from connotative and social meaning.

Puzzle 2–1

Show that *means* means something different in each of the following sentences by substituting another word or phrase for each instance of *means*.

(a) *Happiness* means 'the state of being happy.'
(b) Happiness means never having to frown.
(c) *Happiness* means *gladness*.
(d) *Happiness* means what I'm feeling right now.
(e) *Glädje* means *happiness* in Swedish.
(f) *Happiness* means something more ordinary than *ecstasy*.

2.2.1 Semantics vs. pragmatics

Lexical semantics involves the study of lexical words (and other lexemes) and how they lexicalize particular meanings. The first thing we need to do before going any further is to delimit the realm of lexical meaning – that is, what aspects of meaning count as "lexical semantics," and what aspects do not. As an exercise, think about what *shoe* describes in example (1) before reading any further.

(1) Cinderella was going to be late for the ball because she couldn't find her other shoe.

After reading this sentence, you can imagine the scenario and say a lot about the missing shoe. It seems to be one half of a pair of shoes. It belongs to Cinderella, so it is probably of a style that is appropriate to a woman. Since not being able to find it is causing her to be late for a ball, it might be a shoe that she intends to wear to the ball, and since balls are dressy occasions, it is probably a dressy shoe. If you know the story of Cinderella, you might expect that this shoe is a glass slipper.

You do not know any of these things from the word *shoe*, however. This is information that the **context** provides. We assume quite a bit about the shoe in question based on what the sentence tells us and on what we know in general about shoes (that people wear them, that they come in pairs, that women and men wear different styles), about balls (that they are dressy occasions), and about Cinderella (that she is female and that a glass shoe was pivotal to her fate), among other things. This information about the shoe in the sentence is not part of what *shoe* itself brings semantically to the sentence, but a series of **inferences** we have made based on the information available to us in the context. Such inferences are part of the realm of **pragmatics**, the study of context-bound meaning. While some theories make less of a distinction between context-bound and context-independent meaning than others, all the information that arises

from these inferences is **defeasible**; that is, able to be cancelled out by further information, as it is in (2).

(2) The mare was almost ready to pull the carriage, but Cinderella was going to be late for the ball because she couldn't find her other shoe. She had three of them piled on the table in the blacksmith's shop, but where was that fourth one?

In this case, the mention of a mare (a female horse) changes our expectations about interpreting *shoe* at the end of the sentence. In this case, the *her* in *her shoe* is not necessarily Cinderella – it could be the horse. And once we know from the next sentence that there are three other shoes and that the action is taking place in a blacksmith's shop, we're ready to dismiss the possibility that the shoe is one that Cinderella would wear and thus we do not make any of the inferences about the shoe being dressy or made of glass.

In both (1) and (2), then, we make pragmatic inferences about the shoe based on our knowledge of the context. Contextual information can include the **co-text**, the rest of the linguistic material surrounding the word, plus **background knowledge** (sometimes called **encyclopedic** or **world knowledge**) about shoes and balls, and knowledge about the discourse situation at hand – for instance, whether we are hearing about the shoe in the context of a news report or a fairy tale, in which case we would more readily believe that it might have magical properties. Where we are provided with less contextual information, as in (1), we rely on inference in order to fill in the gaps in our mental picture of the situation. In cases in which we have been given more information, we use inferences to make the connections between the bits of information we have (e.g. if a mare, a shoe, and a blacksmith's shop have been mentioned, then the shoe is probably a horseshoe). In studying lexical semantics, we are interested in the question of what the word *shoe* brings to this and other sentences, rather than in how much we can figure out about the actual shoe that is relevant to this particular context.

In other words, semanticists are usually less interested in the pragmatic inferences that we can glean from bits of language and more interested in semantic **entailments** – that is, what conclusions necessarily follow from that particular use of the word. For example, that we call something a *shoe* entails that it is footwear. At this point, I am oversimplifying matters – pragmatic inferences like *It must be a pretty shoe if Cinderella would wear it* and semantic entailments like *If it is a shoe, then it is footwear* are the extremes of a range of different kinds of inferences. In between are inferences like *if it's a shoe, it's* (*probably*) *not made of liver*, and one of the questions we need to ask is whether the information that's necessary for that kind of inference is part of the meaning of the word *shoe* or not. (These issues are discussed in chapter 3.)

For the meantime, let's look a bit more carefully at the nature of the logical relation of entailment. Entailment is a relation between **propositions**, that is to say, statements that can be true or false. The entailment relation can be phrased as an *if A then B* statement joining two such propositions. If *A* is true, then *B is*

necessarily true as well. Starting from the assumption that we can single out a 'footwear' meaning of the noun *shoe* (and ignore verb or adjective meanings of *shoe* and those to do with car brakes, etc.), we can ask: "Which of the following statements expresses an entailment?" In other words, is any of these sentences necessarily and always true?

(3) If it is a shoe, then it is made to be worn on a foot.

(4) If it is a shoe, then it is made for humans to wear.

(5) If it is a shoe, then it is made of leather.

(6) If it is a shoe, then it is size 10.

For a statement like these to be an entailment, the *then* statement must always be true when the *if* statement (*it is a shoe*) is true. So, in order to judge whether these sentences are entailments, we have to ask: "Can it ever be the case that something that is a shoe is *not* made to be worn on a foot/made for humans to wear/etc.?" You have probably already determined that (3) is the only entailment here, since there exist shoes that are not for humans (e.g. horseshoes), not leather (e.g. canvas shoes), and not size 10 (e.g. size 9 shoes). So, if something is a shoe, it is *necessarily* footwear, but it may also have other properties that are incidental, rather than necessary (entailed) properties of *shoe*-ness.

Puzzle 2–2

Which of the following (unfortunately morbid) statements express entailment relations? Treat X and Y as placeholders for any noun phrase – that is, consider whether these statements are true, no matter which noun phrases X or Y might be replaced with.

(a) If X kills Y, then Y dies.
(b) If X assassinates Y, then Y dies.
(c) If X shoots Y, then Y dies.
(d) If X shoots Y, then Y is hit by a bullet.
(e) If X drowns, then X dies.
(f) If X drowns, then X is submerged in water.

2.2.2 Dimensions of meaning

In addition to pragmatic meaning, which is context-dependent, words come with lexical types of meaning – that is, meaning that is specific to the word and must be recorded as part of its lexical entry. The most important of these is denotative meaning, and so our task here is to differentiate that from other types.

Denotative (sometimes also called **conceptual** or **cognitive**) **meaning** involves the relation between a word and the things (or properties or actions or concepts) that it refers to. A word's denotative meaning is its "literal" meaning, the kind of meaning that is most directly represented in dictionary definitions

of a word. In knowing the denotative meaning of a word, you know what the word can and cannot refer to, and you know what other words it is semantically related to or not, and hence what entailments it forces in particular contexts. For instance, because I know the meaning of the word *pet* I know that odors cannot be called *pets* but certain animals can, and I know that *pet* and *dog* can in certain circumstances be the same thing. That is to say that *pet* and *dog* have different denotative meanings which happen to overlap to some degree, so that they sometimes, but not always, can be used to refer to (or **denote**) the same thing.

Besides denotative meaning, words can also have **connotative meaning**, or **connotation**. Use this term with caution, as it has a technical meaning in semantics that only partly coincides with its use in everyday speech. Connotations are semantic associations that a word has, which are not strictly part of the denotative meaning of the word. For instance, *feline* and *cat* and *kitty* can all denote the same things, yet they are quite different in their connotations, as can be seen in (7):

(7) a. A feline jumped out of the tree.
b. A cat jumped out of the tree.
c. A kitty jumped out of the tree.

Feline sounds more scientific and less domestic, so you might assume that the feline in (7a) is some kind of wildcat that might be found in a zoo. On the other hand, you might picture the kitty in (7c) as something small and cute. But, denotatively speaking, the sentences in (7) could all be true if any cat jumped out of the tree, no matter its size, appearance, or disposition. The assumptions one makes based on the choice of one of those words or the other are just assumptions, just connotations. Connotations are often included in dictionary definitions, but we need to be careful here not to confuse connotations, which are loose associations, with denotative meaning, which indicates what the word can and cannot refer to. If someone tells you about a feline they saw, they are not lying if the animal they're talking about is a common housecat, even if their choice of the word *feline* led you to believe that it was not.

The last dimension of meaning we'll consider is **social meaning**, which is what an expression can tell you about the person who is saying it and the social situation they are in. If someone says *howdy* to you rather than *hello*, you might figure out a number of things about that person: perhaps they are American, perhaps they are from a rural area, perhaps they feel friendly toward you and feel that the situation is informal. Again, these are just assumptions that you are making – if an English person calls a lift *an elevator*, you can hardly accuse him of lying about his nationality just because he used the American word. A particular subtype of social meaning is **affect**, which indicates the speaker's feelings or attitude toward the thing that they are talking about. Compare the cases in (8):

(8) a. That artist was a drunk.
b. That artist was an alcoholic.

If someone said (8a) you would get the feeling that they do not approve of the artist's drinking habits, and perhaps do not approve of the artist at all, but (8b)

Thus, according to Referential Theory, *Tooth Fairy*, *goblin*, and *happy cucumber* all mean the same thing, since they have the same extensions. But we know that when English users say *Tooth Fairy*, they use that phrase instead of *happy cucumber* precisely because those two expressions *do* mean different things. So, the first blow to Referential Theory is its wholly unsatisfactory treatment of expressions for non-existent entities.

The other major problem that Referential Theory faces is the fact that language users do not always intend that expressions with the same extension should be understood to be synonyms. A classical example is *Phosphorus* and *Hesperus*, the Latin names for the Morning Star and the Evening Star. Since these two words both refer to the planet Venus, Referential Theory holds that the two words mean the same thing. But the Romans who used these words believed that Hesperus and Phosphorus were two different stars, so from their point of view, they did not mean the same thing. Because Referential Theory is just about the relationship between language and the world, there is no room in it for points of view, and it can only say that *Hesperus* and *Phosphorus* are synonyms.

2.3.2 Sense vs. reference

The lesson we learn from Referential Theory is that, as the philosopher Gottlob Frege pointed out, meaning is not equivalent to referents or extensions. Instead, there must be a more abstract notion of meaning, called *sense* (a translation of the German *Sinn*). A **sense** (also called **intension** – note that this is different from *intention*) is some abstract representation of what the referents of a word have in common, in other words the qualities that something needs to have in order for us to apply a certain label to it. So, the sense of *dog* tells us how to tell which things to call *dog* (i.e. four-legged mammals that bark) and which things we should not call *dog* (everything else). The **Law of Denotation** states that the "bigger" a word's sense (i.e. the more conditions that it places on what counts as a referent for that word), the smaller its extension will be. Compare *dog* and *poodle*, for instance. There is a certain set of qualities that a thing must have in order for it to count as a *dog*. In order to count as a poodle, a thing has to have all the dog qualities, plus some more qualities (curly hair, for instance). So, since the sense of *poodle* has more restrictions on what it can denote than *dog*'s sense has, there are bound to be fewer things called *poodle* in the world than things called *dog*.

Separating sense from reference allows us to account for the fact that *goblin* and *happy cucumber* mean different things. Although neither refers to anything, we know that their senses would point out different things in the world if they did exist. Senses also allow us to identify different meanings of expressions that just happen to refer to the same thing, like *Hesperus* and *Phosphorus*. Even though both words end up referring to the same thing, they come to that reference in different ways – one by pointing out a star that shines in the morning, and the other by pointing out one that shines in the evening.

Puzzle 2–3

If sense and reference are different sorts of things, then it is possible that there are linguistic expressions that have senses but no referents or referents but no senses. See if you can complete the table below by thinking of examples that fulfill the criteria stated for each row and column. So, for example, in the bottom right-hand corner, you need to fill in an expression that has neither a sense nor any referents (i.e. an empty extension). You can find examples for boxes 1 and 3 in this section. The other two are quite tricky, since they concern expressions that have no senses. Give it a try and check the answers if you get stuck.

	has a sense	*has no sense*
has at least one referent	1.	2.
has no referent	3.	4.

Usually when people talk about *meaning* (as in *The meaning of that word can be found in the dictionary*), they refer to the word's sense rather than its extension, and from now on we can take the phrase *lexical meaning* to refer to the senses of lexemes. But this raises the question of how a sense would be represented in a mental lexicon. The next two chapters examine theories of meaning that constitute serious attempts to answer that question. But first let's look at a common folk theory of how senses are represented in the mind in order to demonstrate why a more sophisticated approach is needed.

2.4 Are senses "images in the mind"?

While *goblin* and *unicorn* may be identical in terms of their empty extensions, you have no trouble knowing that the two name entirely different things. If you ever met a unicorn, you would know very well that *goblin* or *Tooth Fairy* or *happy cucumber* would not be accurate descriptions of it. Part of the way that you would recognize a unicorn if you met one is that you probably have a picture in your mind of what a unicorn looks like. Thus it is tempting to think of word senses as pictures in the mind. This approach is called the **Image Theory** of meaning. However, there are many reasons that this theory cannot be right. Pause a moment to think of some before reading on.

One of the reasons that senses cannot be "pictures in the mind" is that pictures are necessarily more specific than meanings should be. If I imagine a unicorn, it's a white one, its horn is long and straight and it's the size of a pony. Now, if I saw a purple animal that looked like a stallion with a swirly horn growing out of the center of its forehead, I would say *Look! It's a unicorn! They're real!* In that

case, the thing that I am calling a unicorn does not actually look much like the picture in my head. If the picture in my head can differ from the thing that the word refers to, then why wouldn't an albino rhinoceros count as a unicorn in my mind? After all, an albino rhino is similar to the unicorn picture in my head – it is a white animal with a horn on its head. The problem is that there's nothing in the picture that tells me which are the "important" parts of a unicorn – that having a horn and being horse-like are necessary but that being white is less so. The sense of a word must indicate the **essence** of what it is to count as a unicorn or a rhinoceros, and a picture captures much more than that essence without sorting out what is essential and what is not.

Another reason that senses cannot be pictures is that there are plenty of words for unpicturable things, which are nevertheless meaningful words that can mean different things. If meanings consist of pictures, then what would be the meaning of *air* or *time* or *semantics*? You might envision *time* as a clock, but in that case how would you know the difference between the meaning of *time* and the meaning of *clock*?

In the end, Image Theory does little to further our understanding of how we go about the business of meaning when we use words, but examining this theory has pointed out that theories of word meaning need instead to focus on the essential properties that allow the word to refer to particular things and not others.

2.5 Meaning and concepts

A mental lexicon, as discussed in chapter 1, is an individual's collection of knowledge concerning words, while, as we saw earlier in this chapter, our minds also store large collections of world knowledge. Lexical semantics can be seen as spanning these two realms. For example, when you read the word *beanbag*, you subconsciously search your lexicon for a word that's spelled that way, then link that form to the conventional meaning of *beanbag* (as you understand it), and to your **concept** of a beanbag – that is, your understanding of what a beanbag is and the knowledge you have about beanbags. **Concepts** are part of our world knowledge, and we use words to communicate about those concepts. My concept of *beanbag* includes information about what beanbags are made of, what they are used for, what sizes they typically come in and so forth.

Not all concepts are lexicalized – that is, not all concepts have a name. For example, I have a concept of the dip in a saucer in which a teacup can fit, but I don't know a name for it. Concepts can also be invented ad hoc, that is, we assemble new concepts depending on our needs – for instance, you may at some point in your life need a concept to represent the category of THINGS TO PACK FOR A TRAIN JOURNEY TO SIBERIA – and in that case, you will form that concept – but you are unlikely to lexicalize such a temporarily relevant concept (see Barsalou 2009). These points show that there is a mismatch between words and