

Meaning

A SLIM GUIDE TO SEMANTICS

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OXFORD
UNIVERSITY PRESS

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Great Clarendon Street, Oxford OX2 6DP

Oxford University Press is a department of the University of Oxford.
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New Delhi Shanghai Taipei Toronto

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Published in the United States
by Oxford University Press Inc., New York

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First published 2011

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British Library Cataloguing in Publication Data
Data available

Library of Congress Cataloging in Publication Data
Data available

Typeset by SPI Publisher Services, Pondicherry, India
Printed in Great Britain
on acid-free paper by
Clays Ltd, St Ives plc

ISBN 978-0-19-958583-0 (Hbk)
978-0-19-969662-8 (Pbk)

1 3 5 7 9 10 8 6 4 2

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Contents

<i>Preface</i>	viii
1 Definitions	1
2 What are word meanings?	14
3 Semantic properties of words	33
4 What are sentence meanings?	43
5 Semantic properties of sentences	65
6 Meaning and grammar	99
7 Meaning and context	111
8 Meaning and thought	140
9 Conclusion	156
Sources and further reading	158
<i>Index</i>	171

Preface

The ability to communicate linguistically with each other in the extraordinarily rich way that we do is a distinguishing feature of the human species. To communicate linguistically is to convey meaning. This book offers an introduction to semantics, the discipline that analyses meaning. Semantics asks questions like

'What is meaning?'

'How do meanings of words combine with each other to give us meanings of sentences?'

and

'Do the meanings of the words in our languages influence what thoughts we can think?' All of these questions will be addressed in this book.

To be precise, this book is about natural language semantics, which is the analysis of the meanings of words and sentences in natural languages like English and Japanese. It will have nothing to say about the semantics of computer programming languages and other artificial languages, important though that topic is. And it will regrettably have nothing to say about the meaning of life, important though that topic arguably is too. Natural language semantics is a peculiar discipline in that it is carried out under the collective aegis of three larger subjects: linguistics, psychology, and philosophy. This book looks at theories from all three. Semantics is also notable for the amount of controversy involved, on everything from small details to the most basic foundations of the field. Unlike some other introductory texts, this book will not shy away from exploring disagreements and difficulties.

I am very grateful to John Davey, of OUP, for his encouragement and for all kinds of advice; to Lera Boroditsky for confirming some details of her experiments; and to Joanne Dixon, Lee Jackson, and S ofra Pierse for reading various drafts of the manuscript and telling me what was incomprehensible and what was not.

1

Definitions

Words are traditionally supposed to have meanings. Indeed it is widely supposed to be possible to *define* words' meanings. Whole books, called dictionaries, are devoted to listing the definitions of words; and philosophers from Socrates (469–399 BC) and Plato (429–347 BC) onwards have devoted obsessive attention to pinning down the meaning of philosophically interesting words like *knowledge*, *truth*, *justice*, and, indeed, *meaning*. It is important for anyone embarking upon the study of semantics to realize, however, that defining the meaning of a word is an enterprise of almost inconceivable complexity. Despite 2,400 years or so of trying, it is unclear that anyone has ever come up with an adequate definition of any word whatsoever, even the simplest. Certainly the definitions in dictionaries are the merest hints, and are sometimes flat out wrong.

Before we look at some examples of attempted definitions, it will be useful to formulate a standard by which we might appropriately judge them. Suppose I define *chair* as 'item of furniture'. It is clear, I think, that my definition is faulty. Why? Because there are plenty of things that are items of furniture that are not chairs—tables, desks, footstools, and so on. My definition is too lax, in the sense that it includes too many things. Suppose, on the other hand, that I define *chair* as 'throne'. My definition is once again flawed. All thrones are plausibly chairs, but there are lots of chairs that are not thrones. My definition is now too strict, in the sense that it excludes too many things. A good definition of the word *chair*, it seems, must be neither too strict nor too lax; in other words, it must pick out all and only the things that are chairs. And similarly for definitions of other words.

How well do dictionary definitions of *chair* measure up on this score? Let us look at a few and find out. The *Collins Pocket English Dictionary*, one of the more respected and well known smaller dictionaries of English, in its 2008 edition, defines *chair* as 'a seat with a back and four legs, for one person to sit on'. Does this pick out all and only the things that are chairs? Why, no, it does not. If that is not immediately obvious to you, think about the chairs in which the office workers of today can be found sitting at their desks. Some people do of course use a seat with a back and four legs for this purpose. But many are to be found swivelling around in a seat that rests on one central column that splays out near ground level into five or six separate castor-bearing feet. However you do the count, you cannot plausibly impute four legs to these devices; and yet they are indubitably chairs. So this definition is too strict, in the sense that it unjustly denies chairhood to many things that merit it.

Interestingly, the definition also seems to be too lax. Think back to the Diogenes Club of the Sherlock Holmes stories, a club in which no member is allowed to take the slightest bit of notice of any other member. Imagine that it has a garden adorned with ordinary garden benches. Two or three people could easily fit on each bench. But the club rules, we can well imagine, forbid any person to sit on a bench that is already occupied by another person. These garden benches, then, are seats with a back and four legs, for one person to sit on. But they are surely not chairs. (If it is relevant, we can imagine that the designers and manufacturers of the benches knew the use to which they would be put, so that no-one ever intended that these benches would be occupied by more than one person at any time.) So the definition of *chair* in the *Collins Pocket English Dictionary* is simultaneously too strict and too lax.

Perhaps you are thinking that it is unfair to pick on a 'pocket dictionary'. Such dictionaries, if they are to have any chance of actually fitting into people's pockets, will not have the space to include all the details about leg-count and occupancy that a larger dictionary might. So let us go to the opposite extreme. The *Oxford English Dictionary*, in its second edition of 1989, comprises twenty volumes and

21,728 pages, and takes up several feet of shelf-space. Let us see what it has to say on the subject of chairs:

A seat for one person (always implying more or less of comfort and ease); now the common name for the movable four-legged seat with a rest for the back, which constitutes, in many forms of rudeness or elegance, an ordinary article of household furniture, and is also used in gardens or wherever it is usual to sit.

The format of this entry is slightly complex, in that it seems to offer two alternative definitions: the phrases that come respectively before and after the semi-colon. The 'now' is perhaps to be taken as implying some historical development of the meaning of the word. So let us concentrate on the second, more up-to-date, definition, 'the movable four-legged seat with a rest for the back, which constitutes, in many forms of rudeness or elegance, an ordinary article of household furniture, and is also used in gardens or wherever it is usual to sit'. Does this succeed in picking out all and only the chairs? No. For all its elegance of phrasing and luxuriance of detail, it makes the same mistake about four-leggedness that the *Collins Pocket English Dictionary* made.

What if we emended these definitions to allow for different numbers of legs? It is not immediately clear how we should do so. When you think about it, it becomes obvious that chairs could come with all kinds of different numbers of legs. An avant-garde designer could easily promote a three-legged chair, a five-legged chair or a 100-legged chair. (For the latter case, imagine very thin legs, perhaps arranged in a ten-by-ten grid.) And think back to the swivelling office chair that I just described. Is it accurate to describe this kind of chair as having legs at all? Not for my money. And if you need any further convincing, imagine a solid cube of wood that reaches the customary height of a chair seat when placed on the ground, and imagine that it has a back like a chair. Such an object could, in fact, be a chair; but it would definitely not have legs.

So maybe we should charitably pass over the claims about legs. What about the other components of the *OED* definition? To start at the start, we have already seen difficulties with the claim that a chair

is a seat for one person: it introduces an inappropriate degree of laxity into the definition since it allows the garden benches at the Diogenes Club to be chairs. We have not yet observed that this condition is also too strict. I am sure that you have in fact seen perfectly ordinary chairs with two people on them, one person sitting on the lap of the other. Does this not raise a difficulty for the idea that chairs are seats for one person? Well, we could perhaps defend the dictionary definitions on this point by offering some kind of explication of the word *for*. Perhaps *for* here means something like 'designed for'. In other words, we could claim that, even if some people do utilize chairs in the peculiarly unnecessary manner just described, what the dictionary authors are driving at here is something like the intent of the designer of the chairs: chairs would be designed for one person, even if some irresponsible types do not respect this. But imagine a society in which, whether due to decadence or thrift, all chairs are designed to support two people (perhaps they are slightly reinforced) and are in fact generally used like this. Would these items of furniture still be chairs? Of course. The very fact that I can write without contradiction about chairs that are designed to support two people shows this. There is no internal contradiction in the idea of a chair that is designed to support two people. Compare the idea of a unicycle with two wheels, which does seem genuinely self-contradictory. This is evidence that the idea of being associated with *one* of something or other does form part of the meaning of the word *unicycle*, whereas it does not form part of the meaning of the word *chair*.

The technique that I just used to argue against chairs being seats for one, frivolous though it may seem, actually bears closer examination, for there is a moral hidden here. We must not confuse the meaning of a word with details about how the things that that word designates are in fact produced or used. We can tell this because we can use our common, everyday words to describe components of the most outlandish counterfactual situations. Semanticists distinguish between the *extension* and the *intension* of a term like *chair*: roughly speaking, the extension of *chair* is the set of all actual chairs, while the intension is the set of possible chairs, allowing for all the possibilities of bizarre science-fiction scenarios. The meaning of *chair*, whatever

it is, allows us to talk not only about actual chairs, but also about merely possible chairs.

The *OED* definition says that chairs are movable, which strikes me as a good generalization, but certainly not exceptionless, and almost certainly not part of the meaning of the word *chair*. Think of a daring architect who proposes a kitchen or a dining room in which the chairs are sculpted from the stone that forms the floor. There is nothing self-contradictory about the notion. If we abstract away from the *OED*'s talk of comfort, ease, rudeness, elegance and gardens, which forms part of the baroque splendour of the entry but does not increase our understanding of chairs, there are two ideas remaining: that of a seat, and that of a rest for the back. What do the *OED* authors mean by *seat*? Fortunately, we can look up the word in the *OED* and see. The most relevant sense in the article on *seat* seems to be 'Something adapted or used for sitting upon'. Now it might seem uncontroversial that chairs are things adapted or used for sitting upon. But even this is dubious, at least if the definition is taken to claim that all chairs have this property. Imagine a grand stately home open to the public. Much of the original furniture is still there, but a few chairs are missing. The owners decide to commission the construction of some chairs, replicas of the old ones, to fill in a couple of gaps around a great dining table. They do not intend that people should sit on them, however; in fact the whole ensemble is to be shut off behind a velvet rope and no-one is to be allowed to touch the chairs in question. In case it matters, we can further suppose that the designers and manufacturers know this. These chairs, then, are not adapted or used for sitting upon. And yet they are indubitably chairs.

This leaves the idea of a 'rest for the back'. If this is taken to imply that actual human backs have to touch chairs, it seems to be falsified by the scenario about the replica chairs in the manor house; and similarly if it is understood in a slightly weaker form, so as to imply only that the manufacturers or designers must intend this. It is not obvious that this phrase can be taken in any other way.

Overall, we have found that chairs do not have to have any of the properties ascribed to them by the definition of *chair* in the *Oxford*

English Dictionary. If we judge the definition as an attempt to pick out all and only the possible chairs, it fails. Other dictionaries perform no better.

Perhaps even the *OED* does not have enough space to go into all the necessary details that a good definition would require. Or perhaps its editors have not had enough time to find out what *chair* means: work on the dictionary only began in 1879, after all, which is quite recent in terms of the history of scholarship. What about philosophy? Philosophers, as I mentioned earlier, have devoted about 2,400 years to formulating the definitions of philosophically interesting words, and they can, and frequently do, devote whole books to just one such word. Have philosophers succeeded in defining a word after all this time? Not obviously. There may possibly be an accurate definition of a word lurking in some philosophical manuscript somewhere, but it is difficult to know what it might be, because there is no consensus among philosophers on any such case. On all the examples I mentioned earlier (*knowledge, truth, justice, meaning*), and many more, there is still controversy.

To get the flavour of the enterprise, let us consider the definition of *knowledge*. (Unfortunately, the word *chair* has come in for only limited philosophical analysis.) And to avoid getting tangled up in ambiguity (of which more later), let us concentrate on what is called *propositional knowledge*: knowledge that something is the case (for example, that snow is white), as opposed to knowing (or being acquainted with) a place or a person. For quite some time, it was thought that *knowledge* could be defined as 'justified true belief'. The first analysis of this kind, in fact, goes back to Plato's *Meno* (fourth century BC). Why should one think this? Well, it seems intuitively plausible that for you to know that snow is white you must at least believe it. Knowing is a kind of believing, perhaps with other conditions thrown in. Furthermore, if you know some proposition then that proposition has to be true. You cannot know that trepanning cures people of demonic possession, because it is not true that trepanning cures people of demonic possession. (Those in thrall to the intellectual charlatany known as 'postmodernism' might seek to convince you that nothing is true. In most cases, however, the

question 'So is it *true* that nothing is true?' is enough to discombobulate them.) Why not stop here and say that knowledge is true belief? The reason is that it is possible to acquire true beliefs by accident, as it were, but we feel queasy about designating such beliefs as knowledge: a madman amidst his ravings might sincerely shout out some substantive and interesting true propositions that would be no better grounded than his belief that he is Napoleon. The requirement that the belief in question be justified somehow is meant to rule out this kind of thing from qualifying as knowledge.

So matters might have rested (I am simplifying the history somewhat) had it not been for the sublimely concise Edmund Gettier. Gettier is one of the most eminent living philosophers; but, rather splendidly, his entire published *oeuvre* consists of one three-page paper, an article from 1963 called 'Is justified true belief knowledge?' The answer to the question is no. Suppose, says Gettier, that Smith and Jones have applied for the same job. Before the result of their applications is announced, two things happen: Smith counts the coins in Jones's pocket and finds that they number ten; and the president of the company assures Smith that Jones will get the job. (We are not supposed to wonder why these things happen. This is a philosophical example, not a psychological novel.) Smith thus justifiably believes that Jones is the man who will get the job and that Jones has ten coins in his pocket. Being an impeccable logician he deduces that the man who will get the job has ten coins in his pocket. Now he is surely justified in believing this latter proposition: it is a watertight deduction from two things that he is already fully justified in believing. As it happens, however, Smith, not Jones, gets the job. And unbeknownst to himself, Smith too had ten coins in his pocket at the time that he counted Jones's coins and formed his beliefs. So it turns out that his belief that the man who would get the job had ten coins in his pocket was true. And it was also justified. But it is discomfiting in the extreme to say that Smith knew that the man who would get the job had ten coins in his pocket. So not all justified true belief is knowledge. A large part of the history of epistemology since 1963 has consisted of efforts to solve the 'Gettier problem', sometimes involving attempts to add some elusive fourth

property to the 'justified true belief' definition of *knowledge* and sometimes veering off in other directions; but there is no consensus in the field.

Perhaps you are now expecting me to come up with dazzling definitions of *chair* and *knowledge* that remedy the above deficiencies. I am afraid I must disappoint. The aim of this exercise has been to impress upon you the extraordinary difficulty of giving adequate definitions of words, even apparently humble ones. To give you a further taste of the difficulties that arise in this kind of exercise, let us examine some surprising facts about word meaning that have been pointed out by Noam Chomsky, the founder of generative linguistics and one of the leading figures in the 'cognitive revolution' of the 1950s and 1960s, which saw the foundation of modern cognitive psychology and artificial intelligence. In the discussion of *chair*, you may have remarked upon the important role that human intentions play in defining what seems at first to be a word for a straightforward physical object. Chomsky's observation is that this phenomenon is much more widespread than you might have thought, even in the case of words that do not denote human artefacts. If tea leaves have been deposited in your local reservoir by the proper authorities as a new kind of water purifier, what comes out of your tap will still be called *water*, even if (on one way of looking at it) it is an extremely mild tea; but if someone likes their tea very mild and dips a tea bag for just a split second into a cup of pure H₂O, the resulting liquid is tea and not water, even if it is chemically identical to the stuff that comes out of the tap. And take the word *thing*, which expresses what seems in a way to be the most basic concept we have. Chomsky points out that some sticks lying on the ground constitute a thing if left there by a human being as a signal; but they are not a thing if left there randomly by a forest fire. Such subtleties abound.

Are any words immune from the kind of complications we have seen? It is sometimes thought that we might be able to give precise definitions for words from technical domains like science or mathematics. But even here things are more complicated than we might like. Take the word *metal*, for example. The following is an excerpt from a lecture on metals by the distinguished metallurgist Robert

Pond. He begins by asking the audience to come up with a definition of *metal*. Their efforts are not successful.

Well, I'll tell you something. You really don't know what a metal is. And there's a big group of people that don't know what a metal is. Do you know what we call them? Metallurgists!... Here's why metallurgists don't know what metal is. We know that a metal is an element that has metallic properties. So we start to enumerate all these properties: electrical conductivity, thermal conductivity, ductility, malleability, strength, high density. Then you say, how many of these properties does an element have to have to classify as a metal? And do you know what? We can't get metallurgists to agree. Some say three properties; some say five properties, six properties. We really don't know. So we just proceed along presuming that we are all talking about the same thing.

Even metallurgists, then, cannot agree on a definition of the word *metal*.

Perhaps *metal* is somehow too broad a term. How about *gold*? Gold is an element of the periodic table and can be pinned down, as it were, with some exactness: it is the element with atomic number 79. What if we define *gold* as 'the element with atomic number 79'? Well, one problem with that suggestion is that most people who know the word *gold* do not know that gold's atomic number is 79. The current suggestion would imply that most competent English speakers do not know the meaning of the word *gold*, which would be a rather paradoxical state of affairs. What is it, we might ask, that allows such people to use the word appropriately? If they do not know its meaning, how is it that they use it quite successfully to talk about gold? A further problem with this suggestion can be brought out with another fantastical scenario. Imagine that an evil demon has been systematically deceiving all the scientists who have ever studied gold. The demon has been making them think that gold's atomic number is 79, but actually it is something else entirely. In fact it turns out, in this scenario, that there is no element with atomic number 79. Now suppose that this remarkable state of affairs is discovered. If the word *gold* just meant nothing other than 'the element with atomic number 79', and if there were no element with atomic number 79, it would seem that scientists would be quite justified in announcing, 'There

is no such thing as gold.' (Compare "There is no such thing as the element with atomic number 79", which would be quite true under the circumstances.) But in fact, of course, they would not be justified in announcing that. What they would actually say in such a scenario would be something like 'Gold does not have atomic number 79 (but it does exist).'

We could abandon the attempt to define *gold* by means of atomic numbers and concentrate instead on visible characteristics of gold that lay people can appreciate, such as its glittery yellow colour, its ductility, and so on. But this now looks horribly similar to lexicographical attempts to define *chair* by means of number of legs, use for sitting, and so on; and we would not be surprised to find similar difficulties arising. In this case, the existence of fool's gold (iron pyrites) would make it particularly tricky to come up with a definition of this kind that would not include too much. What we would need, of course, would be some means of telling apart gold and fool's gold. How do we do that? Why, we appeal to facts about their chemical make-up such as atomic numbers. But then we are back where we started.

One could object that *metal* and *gold* are words of ordinary language that have been co-opted by science, and that the trouble we have defining them reflects this peculiar status. What about terms that were coined in the course of explicitly theoretical speculation? I am afraid that the prospects of successfully defining words like this are not much better than the prospects of defining *gold*, and for very similar reasons. Take *atom*, for example. Suppose we attempt to give some definition that sums up current thinking about atoms, such as 'unit of matter that consists of a nucleus containing one or more protons (and optionally one or more neutrons) surrounded by a cloud of electrons'. Suppose further that we can dismiss worries about people being competent to use the word but not knowing these details; the word *atom* is sufficiently recondite, we can assume, that anyone who is competent to use it knows at least this much about atoms. It is still possible that some scientific discovery should radically change our conception of atoms, meaning that this definition no longer reflected the best current understanding of them; and yet we would still almost

certainly keep the word and say things like 'Atoms are not units of matter that consist of a nucleus containing one or more protons (and optionally one or more neutrons) surrounded by a cloud of electrons after all.' This is evidence that the meaning of the word *atom* is not the definition just given, or anything along similar lines; for, if it were, it would make more sense to say, 'Since atoms, by definition, are just supposed to be units of matter of the kind we have described, and since we have just discovered that there are no such units of matter, we can deduce that atoms do not exist.'

In the case of the word *atom*, this kind of wholesale revision is not just a hypothetical scenario. The English word derives from the Ancient Greek word *atomos*, which meant 'uncuttable' or 'indivisible'. Atomists, from Leucippus and Democritus in the fifth century BC down to many scientists in the nineteenth century AD, believed that there were ultimate, indivisible units of matter out of which everything else was composed. By the latter half of the nineteenth century, some particular units of matter, called *atoms*, were tentatively identified as being these ultimate, indivisible units of matter. Then came the demonstration in 1897, by the English physicist J.J. Thomson (1856–1940), that these things in fact contained smaller particles, called electrons. What happened? Scientists did not in general conclude, 'These things are not atoms after all, since they are not indivisible.' They said, in effect, 'Atoms are not indivisible after all.' So the word *atom* did not mean 'ultimate, indivisible unit of matter'.

I know of only one area where it seems likely that we have good definitions of words: mathematics. I can see nothing wrong, for example, with the statement that *prime* means 'integer greater than one that has no factors other than itself and one'. It is a matter of some intellectual interest why mathematical terms should be immune from the general chaos that surrounds definitions; but I will not attempt to address this question here.

It is appropriate, at this point, to step back and reflect on what these examples show us. All I have been trying to demonstrate is that giving definitions of words is a task of mind-boggling complexity; by reporting on the state of the art in fields such as epistemology and metallurgy, I have been trying to suggest, but not to demonstrate

conclusively, that no-one has ever given an adequate definition of a word, as far as we know, with the possible exception of mathematical terms; and by discussing a couple of dictionary entries, I hope to have convinced you that dictionary entries do not generally give the meanings of words. Some of these conclusions may be surprising, if you have never studied semantics before. But it is important to realize that they are also rather limited.

To start with, the fact that it is astonishingly difficult to give definitions of words does not show that it is impossible. Even the conclusion, if I could establish it, that no-one has ever given an adequate definition of a word would not show that. Perhaps we just have to try harder and eventually we will hit on some good definitions. Or perhaps definitions of words could in principle be given—perhaps a hyper-intelligent alien race could give some, for example—but human beings are just not smart enough to do this. This last possibility, although it might, once more, strike some readers as surprising, is really not very radical. Imagine trying to explain the atomism of Democritus, or the cathode ray experiments of J.J. Thomson, to a cow. However much you explain atomism, the cow is just not going to get it. Various thinkers have pointed out that some topics could stand in the relation to us that atomism and cathode ray experiments stand in to the cow: we are just too deeply stupid to grasp them. Maybe accurate definitions of words constitute one such topic.

So much for the question of whether we can give definitions of words. But we should also address the question of what definitions of words actually are (or would be, if we could give any). In particular, if we had a completely successful definition of a word, would it be the meaning of that word? Not in a sense that would ultimately satisfy us. The problem is that when we give a scientific or philosophical account of something, we ideally want to explain the thing in question in terms of other kinds of things, things that we take to be somehow more basic. A chemist explains water as a compound of hydrogen and oxygen; a physicist explains atoms as structures involving protons, neutrons, and electrons; a philosopher explains knowledge as true, justified belief of a certain kind. (We wave our hands a little during the last few words of that sentence.) But a

definition is just a string of words. It is unsatisfying, therefore, to say that the meaning of a word is a definition, because that would be to say that the meaning of a word is just more words. It would appear that we were not progressing to any explanatorily deeper level. This is not to say, however, that effort put into constructing definitions is just wasted. As we have seen, efforts of this kind can turn up intricate and sometimes surprising facts about meaning; and any theory of meaning that purported to tell us what meanings were would also ultimately have to account for these facts.

So what things could the meanings of words be? I turn to this topic in the next chapter.