

# What is Semantics?

## In this chapter . . .

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In this chapter, we introduce the subject of semantics, stressing its essential role in linguistics and other cognitive disciplines. We will look at some common definitions, and will come up with a list of questions about meaning that we would be interested in answering. We also review briefly the place of semantic studies in linguistic theorizing in the last century; in order to get a feel of the difficulties involved in semantic analysis, we will examine the meaning of a single word. The second part of the chapter will be devoted to reviewing the ways in which meaning can be expressed, both non-linguistically (introducing the discipline of semiotics) and linguistically, examining the different types of meaning expressed by the different linguistic levels (phonology, morphology, lexicon and syntax). The chapter ends with some notes on the general organization of the book.

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## 1.1 Some Preliminaries

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Meaning controls memory and perception. Meaning is the goal of communication. Meaning underlies social activities and culture. To a great degree, what distinguishes human cultures are the meanings they give to natural phenomena, artifacts, and human relations (Glenberg and Robertson, 2000).

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The importance of semantics for the study of language cannot be overstated. Understanding how we construct meanings from the words and expressions we hear can be said to be the core of linguistic studies, since it amounts to understanding how language performs its main task, which is to convey meaning. Semantics is thus essential for all aspects of language study: how language is acquired (be it a first language or a second one) and how it is structured; how language changes over time and how it varies in different social contexts; how languages should be taught and how we (or machines) translate it; how language-related conditions such as aphasia work, etc. You could say that semantics lies at the very heart of the study of language. The practical applications of knowing in an accurate and detailed way how people associate their thoughts to linguistic objects, and how hearers use those objects to recover the intended meaning in a communicative exchange, are obviously enormous. Semantic search in the web has been called ‘the holy grail of computer-assisted research’ (McCloskey, 2013); natural-language computer query systems such as Apple’s Siri or IBM’s Watson would be delighted to have a complete story of how meaning really works.

But semantics goes even further than that: it is also relevant for learning about the way in which we structure our thoughts. Indeed, many authors think that there are deep connections between our language and our conceptual structure and that semantics is a window that allows us to peek into the functioning of a substantial part of our cognitive system. Language has been shown to be one of the driving forces in our evolution, influencing our hearing range and the specific shape of our larynx and our vocal organs. In all probability, our semantic system and our brain structure also co-evolved, transforming us into the species we are today. The capacity to produce and understand language seems to be uniquely human, distinguishing our species from other animals in our world. It is thus easy to understand why the problem of meaning has stirred the interest of scholars of many different traditions, including philosophers, linguists, anthropologists, sociologists, psychologists and neuroscientists, among other scholars.

The present book will provide an overview of the main areas of interest of semantics, specifying the main mechanisms involved in meaning production and comprehension, and the methodologies used to learn about these mechanisms, pointing along the way to the connections with a variety of neighbouring disciplines, such as linguistics, psychology, philosophy and neuroscience.

## 1.2 What is Semantics? Some Definitions

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Many introductions to semantics begin by asking the following question: *what is semantics?* What does semantics actually study? This seems like

Table 1.1 *Some Definitions of Semantics*

Semantics is the study of meaning	Lyons (1977)
Semantics is the study of meaning in language	Hurford and Heasley (1983)
Semantics is the study of meaning communicated through language	Saeed (1997)
Semantics is the part of linguistics that is concerned with meaning	Löbner (2002)
Linguistic semantics is the study of literal, decontextualized, grammatical meaning	Frawley (1992)
Linguistic semantics is the study of how languages organize and express meanings	Kreidler (1998)

a sensible way to start a course on semantics, so we can begin by looking at some of the answers that different authors provide.

Table 1.1 provides a selection of definitions. As can be immediately noticed, there is no complete agreement. For some authors, semantics concerns the study of meaning as communicated through language, while for some others, semantics studies *all* aspects of meaning and they have to add the label ‘linguistic’ to arrive at a more precise definition. However, probably most authors would agree with Kreidler’s definition (to choose just one of them): *linguistic semantics is the study of how languages organize and express meanings*.

This leaves us with a second question, though: what do we understand by ‘meaning’? What are those ‘meanings’ that are organized and expressed by languages? In very general terms, speaking consists of communicating information: somebody (the speaker) has something in his/her mind (an idea, a feeling, an intention, or whatever), and decides to communicate it linguistically. Vocal noises are then emitted that are heard by a second person (the hearer), who seems to ‘translate’ these noises back into ideas, with the result being that this hearer somehow knows what the first person had in mind. That ‘something’ that was at first in the speaker’s mind and now is also in the hearer’s mind is what we call meaning. What can it be? The problem is that it can be virtually anything: objects (concrete, abstract or imaginary), events and states (past, present, future or hypothetical) or all sorts of properties of objects, feelings, emotions, intentions, locations, etc. We can talk about anything we can think of (or perhaps almost). And even if we were to arrive at a rough idea of what meaning is, we would nevertheless have another list of questions waiting in line. These are some of them, in no particular order:

- How can the meaning of a given word or expression be defined or measured?
- How can the meaning of a word or expression be represented?

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- What is the relationship between language and thought? Do we think *in* language or a similar format? What is the relationship between word meanings and conceptual structure?
- Can language express all meanings or are there meanings that cannot be expressed linguistically? If you cannot express something in your language, can you think about it?
- Are there different types of meaning?
- Should semantics study *all* aspects of the meaning of a word, or only those that are important or necessary for linguistic processing? (i.e., should we distinguish semantics and pragmatics, and if so, where do we draw the line?)
- How do children learn the meaning of words? Do they first develop the necessary cognitive structures and then learn the corresponding linguistic labels or do some cognitive relations depend on language? That is, does cognitive development drive language, is it the other way round, or do they evolve in tandem?
- How exact is the ‘copy’ of the meaning that goes ‘from’ the speaker ‘into’ the hearer? That is, how faithful or unambiguous is linguistic communication?
- What are the laws governing the changes of meaning that words undergo over time?
- How are the meanings of words combined in phrases and sentences?
- Do different languages structure and express meaning in significantly different ways?
- How are the meanings of the different words related to each other?

And perhaps the most crucial question for linguists:

- Which parts of the linguistic code correspond to which parts of meaning?

These are some of the questions that semantics has to try to answer; throughout the history of semantics, different theories have chosen to focus on some of them and have ignored the rest, and have also provided radically different answers to some of these questions.

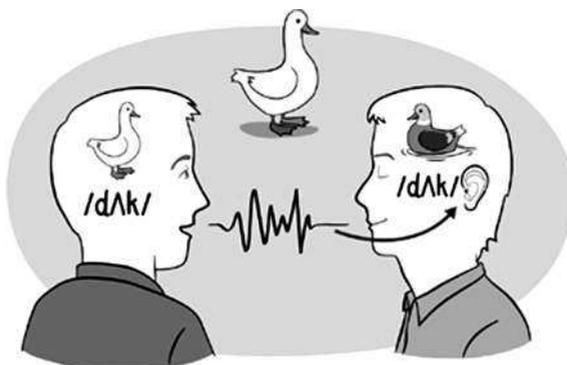


Figure 1.1 Meaning Communication

### 1.3 A Very Short History of Semantics

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The history of semantics is not straightforward. In a way, semantic studies can be traced back to the first studies of language. From the very first moments in which man started to explore the phenomenon of linguistic communication, semantics had a central place in that endeavour. Aristotle's first reflections on language or Panini's grammar (both around the fourth century BC) included questions about meaning in language. Such questions have continued to be present in most linguistic discussions up until this century.

The attempt to find the correspondence between parts of the linguistic code and parts of meaning can be considered the goal of any linguistic theory in general. Still, there have been many disagreements on how to approach this question, and there are even disagreements on the overall importance of the study of meaning in a linguistic theory. In the century or so of existence of linguistics as an autonomous discipline (since Saussure), semantics has been awarded different degrees of importance or centrality in linguistic analyses. For example, semantics was banned from linguistics by American structuralism (e.g., Bloomfield); it was not something 'observable', and therefore it could not form part of any scientific study of language. The prohibition of using mental constructs in theorizing was lifted by the next linguistic theory, probably the most popular of the twentieth century: Chomskyan generativism.

However, generativists also decided that semantics was not a central part of linguistic analysis; in their view, the central concern of language is syntax: linguistic knowledge is basically knowledge about how words are combined and grouped. This is the information that is 'pre-wired' in children's brains, in the form of Universal Grammar. The connection between words and phrases and their meanings is something that is achieved in a second phase by 'general purpose devices', that is, psychological mechanisms that are not specifically linguistic in nature, and thus fall outside the scope of linguistic study. According to generativists, you can study language, and you can explain a significant part of its behaviour, if not all, just by looking at syntax, at the rules for the different combinations of words. You don't have to worry about the meanings of words and expressions in order to capture the true essence of linguistic behaviour.

As a summary, then, during most of the twentieth century, the study of semantics as an integral and essential part of language was shunned from linguistic studies (especially in American circles), first by Bloomfieldian structuralism and then by Chomskyan generativism. By the end of the century, however, some scholars started to rebel against this state of affairs in the belief that this theoretical stance was incorrect and artificial. The linguist Ronald Langacker, for example, speaks

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about the ‘centrality of meaning to virtually all linguistic concerns’. In his view:

Meaning is what language is all about; the analyst who ignores it to concentrate solely on matters of form severely impoverishes the natural and necessary subject matter of the discipline and ultimately distorts the character of the phenomena described (Langacker, 1987: 12).

A similar view is expressed by the artificial intelligence scholar Robert Wilensky, who also warns about the difficulties of incorporating semantics into our theories:

The notion of meaning is central to theories of language. However, there appears to be considerable disagreement regarding what a theory of meaning should do, and how it pertains to other linguistic issues (Wilensky, 1989: 249).

## 1.4 Some Problems for Semantic Studies

While the study of other linguistic levels can undoubtedly prove difficult, the study of meaning presents difficulties that can seem insurmountable. Phonetics, for example, studies phenomena that are quite concrete and tangible: the linguistic sounds produced by humans. These sounds can be recorded with several methods (sometimes, very sophisticated ones); the organs involved in their production can be examined; the acoustic composition of the sound wave can be analysed, as can the combinations of sounds allowed in each language or the way context affects their production or interpretation. In the same way, morphology and syntax also have an object of study which is concrete: morphology studies the different parts of words and their order of combination, and syntax studies the order in which words are placed when formulating a message and the different structures that can be formed when different words are grouped together (i.e., phrases). In both cases, the object of study can be observed directly: recording conversations, looking at texts that have been produced in different ways (written or oral form), etc.

But the object of study of semantics is much more slippery, more elusive: the goal is to analyse the ‘meaning’ that linguistic elements express. This is a much harder problem, since meaning cannot be observed directly, no matter how sophisticated our brain imaging systems become. The problem of the nature of meaning is a question that has been with us since the beginning of time, and it is not clear whether we have arrived at a completely satisfactory

answer (though as we hope to show in this book, significant headway has been made).

In spite of the difficulties, we cannot choose to ignore semantics; over the years, only two plausible functions of language have been considered: a communicative function and a representational function. In both of them, semantics has to be placed at the very heart of the process. If language evolved as a means of communication and this is its real and original function and *raison d'être*, then we find meaning at the beginning and at the end of the communication process, and it must be considered, therefore, to be a central part of the nature of language itself. On the other hand, some scholars have proposed that the primary function of language is not communication but mental representation (i.e., language is a way of representing the world in our minds). This would confer on humans the advantages of performing certain manipulations of those representations, allowing us to conceive hypothetical scenarios and quite complex reasoning patterns, which would be impossible without language. If this view of language is the correct one, we again find meaning in a central place: if the function of language is to represent reality in our minds, that representation is what we would call meaning.

To get a grasp of the difficulties involved, let us try to think for a moment about the meaning of one specific word: *coffee*. Can we provide a precise answer to the question ‘What is the meaning of coffee?’ Is it the mental information that we have about the concept and that is evoked by the sounds [koffl]? How much do we know about *coffee*? Below you can find a list of facts that we know about coffee.

### *Some facts we know about coffee*

We know that coffee is a drink, made of some plant beans (that have to be roasted); that it is black, has a particular smell and a strong taste; that normally we put sugar in it; that it has a particular effect (stimulating); that it is usually drunk hot; that we can consume it in other forms (ice-cream, cakes). We know how to prepare coffee in different ways, the devices we use to prepare coffee (the Italian-type household coffee-pot, the professional cafeteria espresso machine, the filter version, etc.), the recipients where you put the coffee when it's made (a cup, a jug, etc.), when you have coffee or how many times a day (at breakfast and after lunch are the most typical, and then, mid-morning coffee, probably, sometimes after dinner, but only when you go out), the varieties of forms in drinks (latte, espresso, macchiato, mocha, cappuccino and then all the variants in Starbucks). You know how expensive it is (depending on whether you buy it in a shop, in a coffeehouse, in a hotel, in an airport, etc.), where they sell it, which companies sell it (Nescafé, Illy,

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Lavazza – you might even have heard about Juan Valdés, the Colombian coffee symbol), the varieties in shops and supermarkets (regular or decaffeinated, in whole beans, so you can grind it yourself, or already ground, in powder, ready to be brewed in a specific device, or instant or soluble coffee). More recently, you can also buy coffee with added flavours, such as cinnamon or hazelnut. You know it's produced in countries like Brazil or Colombia, the type of shops where they sell coffee so you can prepare it yourself (supermarkets) or buy the beverage ready to be drunk (cafés). You know the difference between a cafeteria (where they serve food, like in a University cafeteria) and a coffeehouse or coffee shop (where they serve primarily coffee or hot beverages). You know the social occasions in which coffee is the typical drink (think of the expression 'go for a coffee', which implies that you will talk, possibly about informal or personal matters; if somebody you've recently met asks you 'would you like to get coffee sometime?', that person wants to know you better). You know that students drink coffee during exam preparation to stay awake, that too much coffee is bad for your health, that smokers feel compelled to smoke when they drink coffee, that you must store it in a cool and dry place, that in planes the option is normally either tea or coffee. You probably know that when you have coffee on a plane, you're supposed to put your cup on the flight attendant's tray, that the substance which coffee has that makes you nervous is called caffeine, that other related beverages with caffeine are colas, that there are national varieties of coffees such as Turkish-Greek, Italian-Espresso or English-American, that stains from coffee are difficult to clean, that there is a 'coffee' hour, or a 'coffee break' during which you stop your work and have a coffee (or even something else: you can have 'tea' during a coffee-break), etc.

This list could probably go on almost indefinitely. We could have more 'personal' information, things that belong to the private sphere (in my case, coffee has a special connection with my childhood memories, because of the coffee pudding that my mother used to make for me), or perhaps the associations it could have for someone with the songs 'Night Café' by the British group Orchestral Manoeuvres in the Dark or 'One More Cup of Coffee' by Bob Dylan. To this we could even add highly contextual information, like the fact that coffee, being a liquid, can be used to put out a fire (at least, a very small one), and a very long etcetera.

Now we can get a feel of the real problems of doing semantic analysis. Which part of this knowledge is to be accounted for by a theory of linguistic semantics? Is all the information we have about a word and its concept relevant for language use or only a subset of it? Can we draw a line between the dictionary and the encyclopaedia? And how can we decide which part is

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going to be relevant across all contexts of use? The questions are numerous, and many of them will prove exceedingly difficult. But all journeys, no matter how long, always start with the first step.



Figure 1.2 Is this Part of What you Know about Coffee?

## 1.5 How can Meaning be Communicated?

In our definition, we have been careful to add that ‘semantics is the study of meaning *in language*’. And the reason for this is that language is not the only way in which we can communicate meaning. We can do it, for example, just by showing people our hands, as can be seen in Figure 1.3:



Figure 1.3 Hand Shapes with Different Meanings

Almost everybody in our Western culture knows the meaning of these ‘signs’ (approximately, disapproval, victory (or peace), approval, attention request and greeting). There are lots of non-linguistic symbols that are used to communicate meaning: almost all traffic signs, for example. If you want to communicate that something is dangerous, you can attach this drawing to it (Figure 1.4):



Figure 1.4 Sign for Danger

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The study of meaning in general is carried out by **semiotics**. Semiotics studies how ‘signs’ mean, that is, how we can make one thing stand for another (a ‘signifier’ stands for a ‘signified’). For example, in Western culture, black clothes are used to indicate mourning, and on our beaches a red flag means that it’s dangerous to swim. It is clear that many of these signs are culturally based: for example, in some Eastern cultures, the colour to indicate mourning is white. However, not all of them are cultural; normally, semioticians find it useful to make a three-way distinction, first established by C. S. Peirce:

- **Icon:** a relation of similarity between the sign and what it represents; for example, a portrait of a person.
- **Index:** a cause–effect relationship; contiguity in space or time; for example, smoke and fire or yawning and boredom.
- **Symbol:** an arbitrary, conventional relationship between sign and meaning; for example, red flag and danger.

Clearly, linguistic meaning will be (mainly) circumscribed to the third type, since the connection between a collection of sounds and a particular meaning is arbitrary and subject to different cultural conventions by different languages. This does not mean that *all* aspects of language are symbolic: it is easy to find iconic aspects in language, from phonology (as we shall see in the next section) to syntax (e.g., word order aspects); the amount of literature devoted to examining cases of iconicity in language is indeed substantial. Be that as it may, semantics must probably be seen as a part of semiotics, and this is how most scholars regard language.

As a final thought, we should warn that it is not always easy to distinguish these three types of signs. Often, we find cases in which a sign is at the same time, icon, index and symbol, since these are often built upon one another: symbols on indices and indices on icons.

## 1.6 How is Meaning Communicated through Language?

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‘Everything in language conspires to convey meaning’ (Wierzbicka, 1988: 1).

It is clear then that one of the main questions that semantics must ask is how meaning is communicated linguistically. What resources does language have to convey or express meaning? We can try to review the different linguistic levels one by one and see what types of meaning can be expressed.