Semantic theories

Given that no two languages have the same semantics—no two languages are comprised of just the same words, with just the same meanings—it may seem hard to say how we can say anything about different views about semantics in general, as opposed to views about the semantics of this or that language. This problem has a relatively straightforward solution. While it is of course correct that the semantics for English is one thing and the semantics for French something else, most assume that the various natural languages should all have semantic theories of (in a sense to be explained) the same form.

According to Lyon's Linguistic Semantics, there are several distinguishable, and more or less well-known philosophical, theories of meaning: theories which seek to provide an answer to the question *What is meaning?* Among them, one might mention the following:
(i) the **referential** (or **denotational)** theory ("the meaning of an expression is what it refers to (or denotes), or stands for"; e.g., 'Fido' means Fido, 'dog' means either the general class of dogs or the essential property which they all share);
(ii) the **ideational,** or **mentalistic,** theory ("the meaning of an expression is the idea, or concept, associated with it in the mind of anyone who knows and understands the expression");
(iii) the **behaviourist** theory ("the meaning of an expression is either the stimulus that evokes it or the response that it evokes, or a combination of both, on particular occasions of utterance");
(iv) the **meaning-is-use** theory ("the meaning of an expression is determined by, if not identical with, its use in the language");
(v) the **verificationist** theory ("the meaning of an expression, if it has one, is determined by the verifiability of the sentences, or propositions, containing it");
(vi) the **truth-conditional** theory ("the meaning of an expression is its contribution to the truth-conditions of the sentences containing it").

In more details, these theories may be discussed as follows:

Ideational semantics
The 17th-century British empiricist John Locke held that linguistic meaning is mental: words are used to encode and convey thoughts, or ideas. Successful communication requires that the hearer correctly decode the speaker's words into their associated ideas. So construed, the meaning of an expression, according to Locke, is the idea associated with it in the mind of anyone who knows and understands that expression.
But the ideational account of meaning, as Locke's view is sometimes called, is vulnerable to several objections. Suppose, for example, that a person's idea of grass is associated in his mind with the idea of warm weather. It would follow that part of the meaning of *grass,* for this person, is warm weather. If so, then the

meaning of *grass* or any other word may be different for each person. And in that case, how does anyone fully understand anyone else? Similarly, suppose that a person mistakenly associates the word *beech* with the idea of an elm tree. Would it follow that, for this person, *beech* means elm? If so, how is it possible to say that anyone misunderstands the meaning of a word or uses a word incorrectly?

As such examples show, the ideational account ignores the "public" nature of meaning. Whatever meanings are, they must be things that different speakers can learn from and share with one another.

Behaviourist semantics

In an effort to render linguistic meaning public and the study of linguistic meaning more "scientific," the American psychologist B.F. Skinner (1904–90) proposed that the correct semantics for a natural language is behaviouristic: the meaning of an expression, as uttered on a particular occasion, is either (1) the behavioral stimulus that produces the utterance, (2) the behavioral response that the utterance produces, or (3) a combination of both. Thus, the meaning of *fire!* as uttered on a particular occasion might include running or calling for help. But even on a single occasion it is possible that not everyone who hears *fire!* will respond by running or calling for help. Suppose, for example, that the hearers of the utterance include a firefighter, a pyromaniac, and a person who happens to know that the speaker is a pathological liar. The behaviourist account seems committed to the implausible view that the meaning of *fire!* for those people is different from the meaning of *fire!*for others who run or call for help.

Referential semantics

This theory is one of the propositional semantic theories. A theory of reference is one which, like a propositional semantic theory, pairs the expressions of a language with certain values. However, unlike a semantic theory, a theory of reference does not pair expressions with their meanings; rather, it pairs expressions with the contribution those expressions make to the determination of the truth-values of sentences in which they occur. This construal of the theory of reference is traceable to Gottlob Frege's attempt to formulate a logic sufficient for the formalization of mathematical inferences (1879 and 1892.) The construction of a theory of reference of this kind is best illustrated by beginning with the example of proper names. Consider the following sentences:

- (1)Barack Obama is the 44th president of the United States.
- (2)John McCain is the 44th president of the United States.

(1) is true, and (2) is false. Obviously, this difference in truth-value is traceable to some difference between the expressions 'Barack Obama' and 'John McCain.' What about these expressions explains the difference in truth-value between these

sentences? It is very plausible that it is the fact that ‘Barack Obama’ stands for the man who is in fact the 44th president of the United States, whereas ‘John McCain’ stands for a man who is not. This indicates that the reference of a proper name—its contribution to the determination of truth conditions of sentences in which it occurs—is the object for which that name stands.

Reference is an apparent relation between a word and the world. Russell, following the 19th-century British philosopher John Stuart Mill, pursued the intuition that linguistic expressions are signs of something other than themselves. He suggested that the meaning of an expression is whatever that expression applies to, thus removing meaning from the minds of its users and placing it squarely in the world. According to a referential semantics, all that one learns when one learns the meaning of *tomato* is that it applies to tomatoes and to nothing else. One advantage of a referential semantics is that it respects compositionality: the meaning of *red tomato* is a function of the meanings of *red* and *tomato,* because *red tomato* will apply to anything that is both red and a tomato.

But what about expressions that apparently refer to nothing at all, such as *unicorn*? A referential semantics would appear to be committed to the view that expressions such as *unicorn, Santa Claus,* and *Sherlock Holmes* are meaningless. Another problem, first pointed out by Frege, is that two expressions may have the same referent without having the same meaning. *The morning star* and *the evening star,* for example, refer to the same object, the planet Venus, but they are not synonymous. As Frege noted, it is possible to believe that the morning star and the evening star are not identical without being irrational (indeed, the identity of the morning star and the evening star was a scientific discovery).

Such examples have led some philosophers, including Mill himself and Saul Kripke, to conclude that proper names lack meaning. But the problem also affects common nouns, including definite descriptions. The descriptions *the first president of the United States* and *the husband of Martha Washington* apply to the same individual but are not synonymous. It is possible to understand both without recognizing that they refer to the same person. It follows that meaning cannot be the same as reference.

Possible-world semantics

So we know that expressions are associated with characters, which are functions from contexts to contents; and we know that contents are things which, for each circumstance of evaluation, determine a reference. We can now raise a central question of (propositional) semantic theories: what sorts of things are contents? The foregoing suggests a pleasingly minimalist answer to this question: perhaps, since contents are things which together with circumstances of evaluation determine a reference, contents just *are* functions from circumstances of evaluation to a reference.

This view sounds abstract but is, in a way, quite intuitive. The idea is that the meaning of an expression is not what the expression stands for in the relevant circumstance, but rather a rule which tells you what the expression would stand for were the world a certain way. So, on this view, the content of an expression like 'the tallest man in the world' is not simply the man who happens to be tallest, but rather a function from ways the world might be to men—namely, that function which, for any way the world might be, returns as a referent the tallest man in that world (if there is one, and nothing otherwise). This fits nicely with the intuitive idea that to understand such an expression one needn't know what the expression actually refers to—after all, one can understand 'the tallest man' without knowing who the tallest man is—but must know how to tell what the expression would refer to, given certain information about the world (namely, the heights of all the men in it).

Yet there are important problems with possible-world semantics. Chief among them is the notion of a possible world itself, which is not well understood. In addition, it turns out that possible-world semantics does not entirely dispose of objections based on co-referential but non-synonymous expressions and non-referential, but meaningful expressions. The expressions *triangular* and *trilateral,* for example, are not synonymous, but there is no possible world in which they do not apply to exactly the same things. And the expression *round square* appears to be meaningful, but there is no possible world in which it applies to anything at all. Such examples are easy to multiply.

Fregean semantics

According to Frege, the meaning of an expression consists of two elements: a referent and what he called a "sense." Both the referent and the sense of an expression contribute systematically to the truth or falsehood (the "truth value") of the sentences in which the expression occurs.

As noted above, Frege pointed out that the substitution of co-referring expressions in a sentence does not always preserve truth value: if Smith does not know that George Washington was the first president of the United States, then *Smith believes that George Washington chopped down a cherry tree* can be true while *Smith believes that the first president of the United States chopped down a cherry tree* is false. Frege's explanation of the phenomenon was that, in such sentences, truth value is determined not only by reference but also by sense. The sense of an expression, roughly speaking, is not the thing the expression refers to but the way in which it refers to that thing. The sense of an expression determines what the expression refers to. Although each sense determines a single referent, a single referent may be determined by more than one sense. Thus, *George Washington* and *the first president of the United States* have the same referent but different senses. The two belief sentences can differ in truth value because, although both are about the same individual, the expressions referring to that individual pick him out in different ways.

Verificationist semantics

Frege did not address the problem of how linguistic expressions come to have the meanings they do. A natural, albeit vague, answer is that expressions mean what they do because of what speakers do with them. An example of that approach is provided by the school of logical positivism, which was developed by members of the Vienna Circle discussion group in the 1920s and '30s. According to the logical positivists, the meaning of a sentence is given by an account of the experiences on the basis of which the sentence could be verified. Sentences that are unverifiable through any possible experience (including many ethical, religious, and metaphysical sentences) are literally meaningless.

The basic idea underlying verificationism is that meaning results from links between language and experience: some sentences have meaning because they are definable in terms of other sentences, but ultimately there must be certain basic sentences, what the logical positivists called "observation sentences," whose meaning derives from their direct connection with experience and specifically from the fact that they are reports of experience. The meaning of an expression smaller than a sentence is similarly dependent on experience. Roughly speaking, the meaning of an expression is given by an account of the experiences on the basis of which one could verify that the expression applies to one thing or another. Although the circumstances in which *triangular* and *trilateral* apply are the same, speakers go about verifying those applications in different ways.

The case against verificationism was most ardently pressed in the 1950s by the American philosopher Willard Van Orman Quine. He argued that experience cannot be used to verify individual observation sentences, because any experience can be taken to verify a given observation sentence provided that sufficient adjustments are made in the truth values of the other sentences that make up the scientific theory in which the sentence is embedded. In the case of word meaning, Quine asked: What experience, or empirical evidence, could determine what a word means? He contended that the only acceptable evidence is behavioral, given the necessity that meanings be public.

But behavioral evidence cannot determine whether a person's words mean one thing or another; alternative interpretations, each compatible with all the behavioral evidence, will always be available. (For example, what possible behavioral evidence could determine that by *gavagai* a speaker means "rabbit" rather than "undetached rabbit part" or "time-slice of a rabbit"?) From the underdetermination of meaning by empirical evidence, Quine inferred that there is no "fact of the matter" regarding what a word means.

Truth-conditional semantics

Confronted with the skepticism of Quine, his student Donald Davidson made a significant effort in the 1960s and '70s to resuscitate meaning. Davidson attempted to account for meaning not in terms of behaviour but on the basis

of truth, which by then had become more logically tractable than meaning because of work in the 1930s by the Polish logician Alfred Tarski. Tarski defined truth for formal (logical or mathematical) languages in terms of a relation of "satisfaction" between the constituents of a sentence and sequences of objects. Truth is thereby determined systematically by the satisfaction of sentential constituents. Tarski showed how to derive, from axioms and rules, certain statements that specify the conditions under which any sentence of a given formal language is true.

Davidson's innovation was to employ a Tarskian theory of truth as a theory of meaning. Adopting Tarksi's distinction between an "object language" (an ordinary language used to talk about things in the world) and a "metalanguage" (an artificial language used to analyze or describe an object language), Davidson proposed that a semantic theory of a natural language is adequate just in case, for each sentence in the object language, the theory entails a statement of the form *'S' is true just in case p,* where *S* is a sentence in the object language and *p* is a translation of that sentence in the metalanguage. For the sentence *snow is white,* for example, the theory should entail a statement of the form *'snow is white' is true just in case snow is white.* Tarski had already shown how to derive such statements. Davidson's appropriation of Tarski's theory of truth thus rendered substantive the rough but venerable idea that to give the meaning of a sentence is to give its truth conditions.

But how can such a truth-conditional semantics explain the phenomena for which Frege invoked the notion of sense? The sentences *George Washington chopped down a cherry tree* and *the first president of the United States chopped down a cherry tree* share truth conditions: both are true just in case the individual who happens to be picked out by *George Washington* and *the first president of the United States* chopped down a cherry tree.

Conceptual-role semantics

In order to avoid having to distinguish between meaning and character, some philosophers, including Gilbert Harman and Ned Block, have recommended supplementing a theory of truth with what is called a conceptual-role semantics (also known as cognitive-role, computational-role, or inferential-role semantics). According to that approach, the meaning of an expression for a speaker is the same as its conceptual role in the speaker's mental life. Roughly speaking, the conceptual role of an expression is the sum of its contributions to inferences that involve sentences containing that expression. Because the conceptual role played by *I* is the same for both A and B, the meanings of the two utterances of *I am 30 years old* are the same, even though the referent of *I* in each case is distinct. In contrast, the meanings of *George Washington chopped down a cherry tree* and *the first president of the United States chopped down a cherry tree* are different, even though they have the same truth conditions, because the

conceptual role of *George Washington* is different from that of *the first president of the United States* for any speaker. Because the meanings of the two sentences are different, the corresponding beliefs are different, and this explains how it is possible for a person to affirm one and deny the other without being irrational.

Although the notion of conceptual role is not new, what exactly a conceptual role is and what form a theory of conceptual roles should take remain far from clear. In addition, some implications of conceptual-role semantics are strongly counterintuitive. For example, in order to explain how the meaning of *tomato* can be the same for two speakers, conceptual-role semantics must claim that the word plays the same conceptual role in the two speakers' mental lives. But this is extremely unlikely (unless the speakers happen to be psychological identical twins). As long as there is the slightest difference between them with respect to the inferences they are prepared to draw using sentences containing *tomato,* the conceptual roles of that word will differ.

Gricean semantics

The British philosopher Paul Grice (1913–88) and his followers hoped to explain meaning solely in terms of beliefs and other mental states. Grice's suggestion was that the meaning of a sentence can be understood in terms of a speaker's intention to induce a belief in the hearer by means of the hearer's recognition of that intention.
Grice's analysis is based on the notion of "speaker meaning," which he defines as follows: a speaker S means something by an utterance U just in case S intends U to produce a certain effect in a hearer H by means of H's recognition of that intention. The speaker meaning of U in such a case is the effect that S intends to produce in H by means of H's recognition of that intention. Suppose, for example, that S utters *the sky is falling* to H, and, as a result, H forms the belief that the sky is falling. In such a case, according to Grice, S had several specific intentions: first, he intended to utter *the sky is falling*; second, he intended that H should recognize that he (S) uttered *the sky is falling*; third, he intended that H should recognize his (S's) intention to utter *the sky is falling*; and fourth, he intended that H should recognize that he (S) intended H to form the belief that the sky is falling. In those circumstances, according to Grice, *the sky is falling* has the speaker meaning that the sky is falling. The place of conventional meaning in Grice's conception of language appears to be that it constitutes a feature of words that speakers can exploit in realizing the intentions referred to in his analysis of speaker meaning.

References:

Lyons, John. (1995). *Linguistic Semantics.* Cambridge: Cambridge University Press.

https://www.britannica.com/science/semantics

https://plato.stanford.edu/entries/meaning/#TwoKinTheMea