

# Semantics

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## I) INTRODUCTION

Semantics (Greek *semantikos*, 'significant'), the study of the meaning of linguistic signs—that is, words, expressions, and sentences. Scholars of semantics try to answer such questions as 'What is the meaning of (the word) X?' They do this by studying what signs are, as well as how signs possess significance—that is, how they are intended by speakers, how they designate (make reference to things and ideas), and how they are interpreted by hearers. The goal of semantics is to match the meanings of signs—that they stand for—with the process of assigning those meanings.

Semantics is studied from philosophical (pure) and linguistic (descriptive and theoretical) approaches, plus an approach known as general semantics. Philosophers look at the behavior that goes with the process of meaning. Linguists study the elements or features of meaning as they are related in a linguistic system. General semanticists concentrate on meaning as influencing what people think and do.

These semantic approaches also have broader application. Anthropologists, through descriptive semantics, study what people categorize as culturally important. Psychologists draw on theoretical semantic studies that attempt to describe the mental process of understanding and to identify how people acquire meaning (as well as sound and structure) in language. Animal behaviorists research how and what other species communicate. Exponents of general semantics examine the different values (or connotations) of signs that supposedly mean the same thing (such as 'the victor at Jena' and 'the loser at Waterloo,' both referring to Napoleon). Also in a general-semantics vein, literary critics have been influenced by studies differentiating literary language from ordinary language and describing how literary metaphors evoke feelings and attitudes. II) PHILOSOPHICAL APPROACHES

In the late 19th century Michel Jules Alfred Breal, a French philologist, proposed a 'science of significations' that would investigate how sense is attached to expressions and other signs. In 1910 the British philosophers Alfred North Whitehead and Bertrand Russell published *Principia Mathematica*, which strongly influenced the Vienna Circle, a group of philosophers who developed the rigorous philosophical approach known as logical positivism (see Analytic and Linguistic Philosophy).

### A) Symbolic Logic

One of the leading figures of the Vienna Circle, the German philosopher Rudolf Carnap, made a major contribution to philosophical semantics by developing symbolic logic, a system for analyzing signs and what they designate. In logical positivism, meaning is a relationship between words and things, and its study is empirically based: Because language, ideally, is a direct reflection of reality, signs match things and facts. In symbolic logic, however, mathematical notation is used to state what signs designate and to do so more clearly and precisely than is possible in ordinary language. Symbolic logic is thus itself a language, specifically, a metalanguage (formal technical language) used to talk about an object language (the language that is the object of a given semantic study).

An object language has a speaker (for example, a French woman) using expressions (such as *la plume rouge*) to designate a meaning (in this case, to indicate a definite pen—plume—of the color red—rouge). The full description of an object language in symbols is called the semiotic of that language. A language's semiotic has the following aspects: (1) a semantic aspect, in which signs (words, expressions, sentences) are given specific designations; (2) a pragmatic aspect, in which the contextual relations between speakers and signs are indicated; and (3) a syntactic aspect, in which formal relations among the elements within signs (for example, among the sounds in a sentence) are indicated.

An interpreted language in symbolic logic is an object language together with rules of meaning that link signs and designations. Each interpreted sign has a truth condition—a condition that must be met in order for the sign to be true. A sign's meaning is what the sign designates when its truth condition is satisfied. For example, the expression or sign 'the moon is a sphere' is understood by someone who knows English; however, although it is understood, it may or may not be true. The expression is true if the thing it is extended to—the moon—is in fact spherical. To determine the sign's truth value, one must look at the moon for oneself.

### B) Speech-Act Semantics

The symbolic logic of logical positivist philosophy thus represents an attempt to get at meaning by way of the empirical verifiability of signs—by whether the truth of the sign can be confirmed by observing something in the real world. This attempt at understanding meaning has been only moderately successful. The Austrian-British philosopher Ludwig Wittgenstein rejected it in favor of his 'ordinary language' philosophy, in which he asserted that thought is based on everyday language. Not all signs designate things in the world, he pointed out, nor can all signs be associated with truth values. In his approach to philosophical semantics, the rules of meaning are disclosed in how speech is used.

From ordinary-language philosophy has evolved the current theory of speech-act semantics. The British philosopher J. L. Austin claimed that, by speaking, a person performs an act, or does something (such as state, predict, or warn), and that meaning is found in what an expression does, in the act it performs. The American philosopher John R. Searle extended Austin's ideas, emphasizing the need to relate the functions of signs or expressions to their social context. Searle asserted that speech encompasses at least three kinds of acts: (1) locutionary acts, in which things are said with a certain sense or reference (as in "the moon is a sphere"); (2) illocutionary acts, in which such acts as promising or commanding are performed by means of speaking; and (3) perlocutionary acts, in which the speaker, by speaking, does something to someone else (for example, angers, consoles, or persuades someone). The speaker's intentions are conveyed by the illocutionary force that is given to the signs—that is, by the actions implicit in what is said. To be successfully meant, however, the signs must also be appropriate, sincere, consistent with the speaker's general beliefs and conduct, and recognizable as meaningful by the hearer.

What has developed in philosophical semantics, then, is a distinction between truth-based semantics and speech-act semantics. Some critics of speech-act theory believe that it deals primarily with meaning in communication (as opposed to meaning in language) and thus is part of the pragmatic aspect of a language's semiotic—that it relates to signs and to the knowledge of the world shared by speakers and hearers, rather than relating to signs and their designations (semantic aspect) or to formal relations among signs (syntactic aspect). These scholars hold that semantics should be restricted to assigning interpretations to signs alone—independent of a speaker and hearer.

### III LINGUISTIC APPROACHES

Linguistic semantics is both descriptive and theoretical.

#### A) Descriptive Semantics

Researchers in descriptive semantics examine what signs mean in particular languages. They aim, for instance, to identify what constitutes nouns or noun phrases and verbs or verb phrases. For some languages, such as English, this is done with subject-predicate analysis. For languages without clear-cut distinctions between nouns, verbs, and prepositions, it is possible to say what the signs mean by analyzing the structure of what are called propositions. In such an analysis, a sign is seen as an operator that combines with one or more arguments (also signs)—often nominal arguments (noun phrases)—or relates nominal arguments to other elements in the expression (such as prepositional phrases or adverbial phrases). For example, in the expression "Bill gives Mary the book," "gives" is an operator that relates the arguments "Bill," "Mary," and "the book."

Whether using subject-predicate analysis or propositional analysis, descriptive semanticists establish expression classes (classes of items that can substitute for one another within a sign) and classes of items within the conventional parts of speech (such as nouns and verbs). The resulting classes are thus defined in terms of syntax, and they also have semantic roles; that is, the items in these classes perform specific grammatical functions, and in so doing they establish meaning by predicating, referring, making distinctions among entities, relations, or actions. For example, "kiss" belongs to an expression class such as "hit" and "see," as well as to the conventional part of speech "verb," in which it is part of a subclass of operators requiring two arguments (an actor and a receiver). In "Mary kissed John," the syntactic role of "kiss" is to relate two nominal arguments ("Mary" and "John"), whereas its semantic role is to identify a type of action. Unfortunately for descriptive semantics, however, it is not always possible to find a one-to-one correlation of syntactic classes with semantic roles. For instance, "John" has the same semantic role—to identify a person—in the following two sentences: "John is easy to please" and "John is eager to please." The syntactic role of "John" in the two sentences, however, is different: In the first, "John" is the receiver of an action; in the second, "John" is the actor.

Linguistic semantics is also used by anthropologists called ethnoscientists to conduct formal semantic analysis (componential analysis) to determine how expressed signs—usually single words as vocabulary items called lexemes—in a language are related to the perceptions and thoughts of the people who speak the language. Componential analysis tests the idea that linguistic categories influence or determine how people view the world; this idea is called the Whorf hypothesis after the American anthropological linguist Benjamin Lee Whorf, who proposed it. In componential analysis, lexemes that have a common range of meaning constitute a semantic domain. Such a domain is characterized by the distinctive semantic features (components) that differentiate individual lexemes in the domain from one another, and also by features shared by all the lexemes in the domain. Such componential analysis points out, for example, that in the domain "seat" in English, the lexemes "chair," "sofa," "loveseat," and "bench" can be distinguished from one another according to how many people are accommodated and whether a back support is included. At the same time all these lexemes share the common component, or feature, of meaning "something on which to sit."

Linguists pursuing such componential analysis hope to identify a universal set of such semantic features, from which are drawn the different sets of features that characterize different languages. This idea of universal semantic features has

been applied to the analysis of systems of myth and kinship in various cultures by the French anthropologist Claude Lévi-Strauss. He showed that people organize their societies and interpret their place in these societies in ways that, despite apparent differences, have remarkable underlying similarities.

## B) Theoretical Semantics

Linguists concerned with theoretical semantics are looking for a general theory of meaning in language. To such linguists, known as transformational-generative grammarians, meaning is part of the linguistic knowledge or competence that all humans possess. A generative grammar as a model of linguistic competence has a phonological (sound-system), a syntactic, and a semantic component. The semantic component, as part of a generative theory of meaning, is envisioned as a system of rules that govern how interpretable signs are interpreted and determine that other signs (such as "Colorless green ideas sleep furiously"), although grammatical expressions, are meaningless—semantically blocked. The rules must also account for how a sentence such as "They passed the port at midnight" can have at least two interpretations.

Generative semantics grew out of proposals to explain a speaker's ability to produce and understand new expressions where grammar or syntax fails. Its goal is to explain why and how, for example, a person understands at first hearing that the sentence "Colorless green ideas sleep furiously" has no meaning, even though it follows the rules of English grammar; or how, in hearing a sentence with two possible interpretations (such as "They passed the port at midnight"), one decides which meaning applies.

In generative semantics, the idea developed that all information needed to semantically interpret a sign (usually a sentence) is contained in the sentence's underlying grammatical or syntactic deep structure. The deep structure of a sentence involves lexemes (understood as words or vocabulary items composed of bundles of semantic features selected from the proposed universal set of semantic features). On the sentence's surface (that is, when it is spoken) these lexemes will appear as nouns, verbs, adjectives, and other parts of speech—that is, as vocabulary items. When the sentence is formulated by the speaker, semantic roles (such as subject, object, predicate) are assigned to the lexemes; the listener hears the spoken sentence and interprets the semantic features that are meant.

Whether deep structure and semantic interpretation are distinct from one another is a matter of controversy. Most generative linguists agree, however, that a grammar should generate the set of semantically well-formed expressions that are possible in a given language, and that the grammar should associate a semantic interpretation with each expression.

Another subject of debate is whether semantic interpretation should be understood as syntactically based (that is, coming from a sentence's deep structure); or whether it should be seen as semantically based. According to Noam Chomsky, an American scholar who is particularly influential in this field, it is possible—in a syntactically based theory—for surface structure and deep structure jointly to determine the semantic interpretation of an expression.

## IV) GENERAL SEMANTICS

The focus of general semantics is how people evaluate words and how that evaluation influences their behavior. Begun by the Polish American linguist Alfred Korzybski and long associated with the American semanticist and politician S. I. Hayakawa, general semantics has been used in efforts to make people aware of dangers inherent in treating words as more than symbols. It has been extremely popular with writers who use language to influence people's ideas. In their work, these writers use general-semantics guidelines for avoiding loose generalizations, rigid attitudes, inappropriate finality, and imprecision. Some philosophers and linguists, however, have criticized general semantics as lacking scientific rigor, and the approach has declined in popularity.