

# A Short Introduction to Semantics

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**Abstract**—Semantics is the study of meaning in language. Although it can be conceived as concerned with meaning in general, it is often confined to those aspects which are relatively stable and context-free, in contrast to pragmatics, which is concerned with meaning variation with context. Semantics is sometimes described as concerned with the relation of linguistic forms to states of the world; more sensibly, it may be seen as concerned with the relation of linguistic forms to non-linguistic concepts and mental representations, as well as with relationship, of meaning between linguistic forms, such as synonymy, antonymy and hyponymy. Semantic theories have influenced approaches to describing word meaning, and are thus particularly relevant to Lexicography and vocabulary teaching.

**Index Terms**—semantic theories, compositional semantics, lexical semantics, semantic features, semantic roles, lexical relations

## I. INTRODUCTION

Semantics is the study of meaning. Seen by Breal, in the late 19th century, as an emerging science (French, 'semantique') opposed to phonetics ('phonetique') as a science of sounds: similarly for Bloomfield in 1930, it was a field covering, as one account of meaningful forms, and the lexicon. Also seen more narrowly, in a traditional lasting into the 1960s, as the study of meaning in the lexicon alone, including changes in word meaning. Later, in accounts in which the study of distribution was divorced from that of meanings, opposed either to grammar in general; or, within grammar and especially within a generative grammar from the 1960s onwards, to syntax specifically. Of the uses current at the beginning of the 21st century, many restrict semantics to the study of meaning is abstraction from the contexts in which words and sentences are uttered: in opposition, therefore, to pragmatics. Others include pragmatics as one of its branches. In others its scope is in practice very narrow: thus one handbook of 'contemporary semantic theory', in the mid-1990s deals almost solely with problems in formal semantics, even the meanings of lexical units being neglected.

## II. DEFINITION

Semantics is the study of meaning in language. We know that language is used to express meanings which can be understood by others. But meanings exist in our minds and we can express what is in our minds through the spoken and written forms of language (as well as through gestures, action etc.). The sound patterns of language are studied at the level of phonology and the organization of words and sentences is studied at the level of morphology and syntax. These are in turn organized in such a way that we can convey meaningful messages or receive and understand messages. 'How is language organized in order to be meaningful?' This is the question we ask and attempt to answer at the level of semantics. Semantics is that level of linguistic analysis where meaning is analyzed. It is the most abstract level of linguistic analysis, since we cannot see or observe meaning as we can observe and record sounds. Meaning is related very closely to the human capacity to think logically and to understand. So when we try to analyze meaning, we are trying to analyze our own capacity to think and understand our own ability to create meaning. Semantics concerns itself with 'giving a systematic account of the nature of meaning' (Leech, 1981).

## III. WHAT IS MEANING?

Philosophers have puzzled over this question for over 2000 years. Their thinking begins from the question of the relationship between words and the objects which words represent. For example, we may ask: What is the meaning of the word 'cow'? One answer would be that it refers to an animal who has certain properties, that distinguish it from other animals, who are called by other names. Where do these names come from and why does the word 'cow' mean only that particular animal and none other? Some thinkers say that there is no essential connection between the word 'cow' and the animal indicated by the word, but we have established this connection by convention and thus it continues to be so. Others would say that there are some essential attributes of that animal which we perceive in our minds and our concept of that animal is created for which we create a corresponding word. According to this idea, there is an essential correspondence between the sounds of words and their meanings, e.g., the word 'buzz' reproduces 'the sound made by a bee'. It is easy to understand this, but not so easy to understand how 'cow' can mean 'a four-legged bovine' – there is nothing in the sound of the word 'cow' to indicate that, (Children often invent words that illustrate the

correspondence between sound and meaning: they may call a cow ‘moo-moo’ because they hear it making that kind of sound.)

The above idea that words in a language correspond to or stand for the actual objects in the world is found in Plato’s dialogue *Cratylus*. However, it applies only to some words and not to others, for example, words that do not refer to objects, e.g. ‘love’, ‘hate’. This fact gives rise to the view held by later thinkers, that the meaning of a word is not the object it refers to, but the concept of the object that exists in the mind. Moreover, as de Saussure pointed out, the relation between the word (signifier) and the concept (signified) is an arbitrary one, i.e. the word does not resemble the concept. Also, when we try to define the meaning of a word we do so by using other words. So, if we try to explain the meaning of ‘table’ we need to use other words such as ‘four’, ‘legs’, and ‘wood’ and these words in turn can be explained only by means of other words.

In their book, *The Meaning of Meaning* (1923), C.K. Ogden and I.A. Richards made an attempt to define meaning. When we use the word ‘mean’, we use it in different ways. ‘I mean to do this’ is a way of expressing our intention. ‘The red signal means stop’ is a way of indicating what the red signal signifies. Since all language consists of signs, we can say that every word is a sign indicating something—usually a sign indicates other signs. Ogden and Richards give the following list of some definitions of ‘meaning’. Meaning can be any of the following:

1. An intrinsic property of some thing
2. Other words related to that word in a dictionary
3. The connotations of a word (that is discussed below)
4. The thing to which the speaker of that word refers
5. The thing to which the speaker of that word should refer
6. The thing to which the speaker of that word believes himself to be referring
7. The thing to which the hearer of that word believes is being referred to.

These definitions refer to many different ways in which meaning is understood. One reason for the range of definitions of meaning is that words (or signs) in a language are of different types. Some signs indicate meaning in a direct manner, e.g. an arrow (→) indicates direction. Some signs are representative of the thing indicated, e.g. onomatopoeic words such as ‘buzz’, ‘tinkle’, ‘ring’; even ‘cough’, ‘slam’, ‘rustle’ have onomatopoeic qualities. Some signs do not have any resemblance to the thing they refer to, but as they stand for that thing, they are symbolic.

#### IV. WORDS AND MEANINGS

‘When I use a word’, Humpty Dumpty said, in rather a scornful tone, ‘it means just what I choose it to mean neither more nor less.’

‘The question is’ said Alice, ‘whether you can make words mean so many different things.’

(Lewis Carroll. *Alice through the Looking Glass*. Macmillan 1871)

We distinguish between a word and its meaning. We will start with an ordinary word pen. What does the word pen mean? Pen is a concept in your mind and you know a variety of facts about it – the fact that it is spelt ‘pen’, that it is a noun, and so on. Let us make this word bold and call it pen. The name of your concept for pen is just pen.

One other fact that you know about pen is that it means: ‘an apparatus for writing, .... This is also part of your knowledge. Therefore it must be another concept. Now we have two concepts and it is essential to keep these concepts distinct, so we shall call this second concept ‘pen’; i.e. by single quotes.

In fact, when we use the word as a name for its meaning we are actually using it in the normal way. That is what words are: names for their meanings. So we could say pen mean ‘pen’.

#### V. SENSE AND REFERENT

In the above discussion we assumed that the word pen always has the same meaning, namely ‘pen’. To use a technical term, we could say pen has ‘pen’ as its sense.

Now look at the following sentence:

1) Jack put his pen next to Betty’s pen.

What is the meaning of the word pen in this sentence? On the one hand we could agree that it has the same meaning each time it is used, but on the other hand we would also agree that it is used to mean two different things, Jack’s pen and Betty’s pen. Thus we are using the word meaning in two different ways. When we agreed that both examples of pen have the same meaning we meant that they have the same sense. But when we think of pen as meaning specifically Jack’s pen we have a different kind of meaning in mind – something like “the particular pen the speaker has in mind when saying that word.”

There is a technical term which we could easily use for ‘having something particular in mind when saying a word’, which is the verb refer. This allows us to say that the speaker of (1) was referring to Jack’s pen when saying his pen, but to Betty’s when saying Betty’s pen. The thing referred to is called the word’s referent, so the two pens in (1) have the same sense but different referents. In short, we can recognize two parts to the meaning of a word like pen: its sense which lives permanently in the dictionary, and its referent, which varies from occasion to occasion.

## VI. REFERENCE

The study of reference, like the study of sense, can be divided into two areas: speaker-reference and linguistic-reference. Speaker-reference is what the speaker is referring to by using some linguistic expression. For example, if someone utters the sentence *Here comes Queen Elizabeth* facetiously, to refer to a snobbish acquaintance, then the speaker-reference of the expression *Queen Elizabeth* is the acquaintance. Speaker-reference, because it varies according to the speaker and context, is outside the domain of semantics; instead it is part of pragmatics. Linguistic-reference, on the other hand, is the systematic denotation of some linguistic expression as part of a language. For example, the linguistic expression *Queen Elizabeth* in the sentence *Here comes Queen Elizabeth* refers in fact to the public figure *Queen Elizabeth*. Linguistic-reference, in contrast to speaker-reference, is within the domain of semantics, since it deals with reference that is a systematic function of the language itself, rather than of the speaker and context.

Let's now consider some concepts that seem useful in thinking and talking about reference (referent, extension, prototype, and stereotype); then we will take a look at some different types of linguistic reference (coreference, anaphora, and deixis).

**Referent.** The entity identified by the use of a referring expression such as a noun or noun phrase is the referent of that expression. If, for example, you point to a particular robin and say *That bird looks sick*, then the referent for the referring expression *That bird* is the particular robin you are pointing at.

**Extension.** Extension refers to the set of all potential referents for a referring expression. For example, the extension of *bird* is the set of all entities (past, present, and future) that could systematically be referred to by the expression *bird*. In other words, the extension of *bird* is the set of all birds.

**Prototype.** A typical member of the extension of a referring expression is a prototype of that expression. For example, a robin or a bluebird might be a prototype of *bird*; a pelican or an ostrich, since each is somewhat atypical, would not be.

**Stereotype.** A list of characteristics describing a prototype is said to be a stereotype. For example, the stereotype of *bird* might be something like the following: has two legs and two wings, has feathers, is about six to eight inches from head to tail, makes a chirping noise, lays eggs, builds nests, and so on.

**Coreference.** Two linguistic expressions that refer to the same real-world entity are said to be coreferential. Consider, for example, the sentence *Jay Leno is the host of the Tonight Show*. The expression *Jay Leno* and *The host of the Tonight Show* are coreferential because they both refer to the same entity, namely the person *Jay Leno*. Not, however, the coreferential expressions do not "mean" the same thing; that is, they are not synonymous. For example, before *Jay Leno* hosted the *Tonight show*, *Johnny Carson* held that position; thus, there was a period of time when *Johnny Carson* was coreferential with *host of the tonight show*. However, we cannot describe *Johnny Carson* and *Jay Leno* as "meaning" the same thing. The fact that they are not synonymous is illustrated by the unacceptability of the sentence \**Jay Leno used to be Johnny Carson*.

**Anaphora.** A linguistic expression that refers to another linguistic expression is said to be anaphoric or an anaphor. Consider the sentence *Mary wants to play whoever thinks himself capable of beating her*. In this sentence the linguistic expression *himself* necessarily refers to *whoever*; thus *himself* is being used anaphorically in this case. Note, moreover, that it would be inaccurate to claim that *whoever* and *himself* are coreferential (i.e., that they have the same extralinguistic referent). This is because there may in fact not be anyone who thinks himself capable of beating *Mary*; that is, there may not be any extralinguistic referent for *Whoever* and *himself*.

It is common, however, for coreference and anaphora to coincide. Consider, for example, the sentence *The media reported that Congress voted themselves a raise*. The expressions *Congress* and *themselves* are coreferential since they refer to the same real-world entity, namely the legislative branch of the federal government. At the same time, *themselves* is an anaphor since it necessarily refers to the expression *Congress*. Note that there is no reading of this sentence such that *themselves* can be construed as referring to the expression *the media*. In sum, coreference deals with the relation of a linguistic expression to some entity in the real world, past, present, or future; anaphora deals with the relation between two linguistic expressions.

**Deixis** (pronounced DIKE-sis). A deictic expression has one meaning but can refer to different entities depending on the speaker and his or her spatial and temporal orientation. Obvious examples are expressions such as *you* and *I*, *here* and *there*, and *right* and *left*. Assume, for instance, that *Jack* and *Jill* are speaking to each other face to face. When *Jack* is speaking, *I* refers to *Jack*, and *you* refers to *Jill*. When *Jill* is speaking, the referents for these expressions reverse. Likewise, when *Jack* is speaking, *here* refers to a position near *Jack*, and *there* refers to a position near *Jill*. When *Jill* speaks, the referents for these expressions reverse. Similarly, *right* and *left* can refer to the same location, depending upon whether *Jack* or *Jill* is speaking; his left is her right, and vice versa. Likewise, expressions such as *Jack* or *Jill* is speaking; his left is her right, and vice versa. Likewise, expressions such as *yesterday*, *today*, and *tomorrow* are deictic. *Jack* may say to *Jill*, *Yesterday I told you I would pay you tomorrow, which is today*.

Note, moreover, that deixis can intersect with anaphora. Consider, for example, the sentence *Members of Congress believe they deserve a raise*. The expression *they* can refer either to the expression *members of Congress* or to some other plural entity in the context of the utterance. When, as in the first case, a pronoun refers to another linguistic expression, it is used anaphorically; when, as in the second case, it refers to some entity in the extralinguistic context, it is used deictically.

## VII. SPEAKER'S MEANING AND SEMANTIC MEANING

Everyone knows that language can be used to express meaning, but it is not easy to define meaning. One problem is that there are several dimensions of meaning. Imagine that I ask you, "Can you give me an apple?" while looking at a bowl of apples on the table beside you. What I literally asked is whether you have the ability to give me an apple; this is the semantic meaning of what I said. Sometimes people will make an annoying joke by responding only to the semantic meaning of such a question; they'll just answer, "Yes, I can." But what I almost certainly want is for you to give me one of the apples next to you, and I expect you to know that this is what I want. This speaker's meaning is what I intend to communicate, and it goes beyond the literal, semantic meaning of what I said.

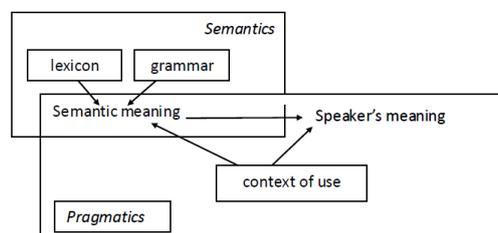
Linguists study both semantic meaning and speaker's meaning. Let's look at semantic meaning first. To understand semantic meaning, we have to bring together three main components: the context in which a sentence is used, the meanings of the words in the sentence, and its morphological and syntactic structure. For example, suppose you say to me:

1) My dog chased a cat under the house.

Because (1) contains the pronoun *my*, part of its meaning depends on the fact that you uttered it, *my* refers to you. So to some extent the semantic meaning of a sentence depends on the context of use – the situation in which the sentence was uttered, by a particular speaker, to a particular addressee, at a particular time, and so forth. The semantic meaning of (1) also depends on the meanings of the individual words *dog*, *chased*, *a*, *cat*, etc.; therefore, semantic meaning depends on the lexicon of English. In addition, the morphological and syntactic structure of sentence (1) is crucial to its meaning. If the words were rearranged to *A cat Under the house chased my dog*, it would mean something different. So semantic meaning depends on the grammatical structure of the sentence.

Now let's think about the speaker's meaning of (1). Suppose that you know I've lost my cat and you say (1) to me. In that case, it would be likely that your speaker's meaning is to inform me that my cat may be hiding under the house, and to suggest that I go there to look for it. To understand where this meaning comes from, we need to bring together two components. First, the semantic meaning is certainly part of the picture; there is some kind of connection between your saying that your dog chased a cat under the house and your suggesting that I look for my lost cat under the house. But in order for me to understand your speaker's meaning, I have to assume that we both know my cat is missing, that you know I want to find it, and that you want to see that my cat is safely back home. These are additional aspects of the context of use which help to determine your speaker's meaning.

We can visualize the two kinds of meaning as follows:



## VIII. THE TWO MAIN BRANCHES OF SEMANTICS

Grammar (morphology and syntax) generate novel words, phrases, and sentences – in fact an infinite number of them. This gives us an infinite number of words, phrases, and sentences that can have meaning. In order to explain how an infinite number of pieces of language can be meaningful, and how we, as language users, can figure out the meanings of new ones every day, semanticists apply the Principle of Compositionality.

**The Principle of Compositionality:** The semantic meaning of any unit of language is determined by the semantic meanings of its parts along with the way they are put together.

According to the Principle of Compositionality, the meaning of a sentence like *Mary liked you* is determined by (a) the meanings of the individual morphemes that make it up (*Mary*, *like*, *you*, "past") and (b) the morphological and syntactic structures of the sentence. The Principle of Compositionality doesn't just apply to sentences. It also implies that the meaning of the verb phrase *liked you* is determined by the meanings of its parts and the grammatical structure of the verb phrase, and that the meaning of the word *liked* is determined by the meanings of the two morphemes that make it up (*like* and *(e)d*). The subfield of semantics known as compositional semantics (or formal semantics) is especially concerned with how the Principle of Compositionality applies, and consequently formal semanticists study the variety of grammatical patterns which occur in individual languages and across the languages of the world. Formal semantics developed in linguistics during the early 1970s under the influence of philosophers, especially Richard Montague (Montague 1974).

Linguists who are interested in the meanings of words, and the relations among words' meanings, study lexical semantics. Thematic roles provide one very popular framework for investigating lexical semantics, in particular the lexical semantics of verbs, but not the only one. Lexical semantics is very interesting to syntacticians, because the

meaning of a word often influences how it fits into syntax; for example, the fact that ripen can have two different patterns of thematic role explains why it can be used grammatically either with or without an object.

IX. DIFFERENT ASPECTS OF MEANING OF A WORD

- (i) Denotative meaning. The logical meaning, which indicates the essential qualities of a concept which distinguish it from other concepts.
- (ii) Connotative meaning. The additional or associated meaning, which is attached to the denotative, conceptual meaning. It consists of associations made with a concept whenever that concept is referred to.
- (iii) Social meaning. It is the meaning that a word possesses by virtue of its use in particular social situations and circumstances.
- (iv) Thematic meaning. It lies in the manner in which a message is organized for emphasis.

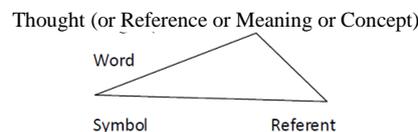
X. THEORIES OF MEANING

Here, we will briefly discuss the theories concerned with semantics.

1. The Theory of Naming; This theory, explained in Plato’s dialogue Cratylus maintains that language is a communication system which works with two elements; the signifier, and the signified. Plato says that the signifier is a word in the language and the signified is the object in the world that it ‘stands for’ or ‘refers to’. Thus, according to this theory words and things are directly related. Traditional grammar was based on the assumption that the word was the basic unit of syntax and semantics. The word was a ‘sign’ composed of two parts, or components: the form (signifier) and its meaning (signified).

There are some difficulties with this view, however. Firstly, it seems to apply to some nouns only. You may locate the signified (object) which the signifier (word) ‘chair’ refers to. However, there are some nouns which do not refer to objects in this world: examples are Unicorn and Raxsh (Rostam’s special horse in the Iranian epic written by Ferdousi). Secondly, there are other nouns that do not refer to physical objects at all. Thus, what are the objects which love and hatred refer to? Thirdly, with a noun we can draw a picture of the object that is denoted (referred to). But this is impossible with verbs. How should we show run, hesitate, and annoy? The same problem remains regarding adjectives and adverbs, as well.

2. The Conceptual Theory of Meaning: In the theory of meaning, just explained, words and things are directly related. But in the conceptual theory of meaning words and things are related through the mediation of concepts of the mind. Ogden and Richards (1923) saw this relationship as a triangle:



the symbol = the linguistic element; the word, phrase, sentence  
 the referent = the object in the world  
 thought or reference = concept

Thus, according to this theory there is no direct link between the symbol and referent – the link is through reference or thought (our concepts). The problem with this view is that we do not precisely know the nature of the link or bond between symbol and concept.

The conceptual theory of meaning or mentalistic theory is maintained by Chomsky. He believes that intuition and introspection must play a crucial part in our investigation of language.

3. The Behavioristic Theory of Meaning: The term context of situation is used by two scholars, first by an anthropologist called Malinowski, and later by a British linguist called Firth. Both of these scholars stated meaning in terms of the context in which language is used. These two maintained that the description of a language is not complete without some reference to the context of situation in which the language operated. A more extreme view sees the meaning of the linguistic elements AS the situation in which the word is used. Bloomfield, the structuralist, maintained this behavioristic view. He explained his view through his famous account of Jack and Jill.

As we know, Bloomfield is a follower of Skinner’s school of psychology called behaviorism. However, Skinner’s model has been severely criticized by Chomsky, a proponent of the conceptual theory of meaning.

XI. SEMANTIC FEATURES

One obvious way in which the study of basic conceptual meaning might be helpful in the study of language would be as a means of accounting for the ‘oddness’ we experience when we read sentences such as the following:

- The hamburger ate the boy.
- The table listens to the radio.
- The horse is reading the newspaper.

We should first note that the oddness of these sentences does not derive from their syntactic structure. According to the basic syntactic rules for forming English sentences, we have well-formed structures.

NP	V	NP
The hamburger	ate	the boy

This sentence is syntactically good, but semantically odd. Since the sentence *The boy ate the hamburger* is perfectly acceptable, we may be able to identify the source of the problem. The components of the conceptual meaning of the noun *hamburger* must be significantly different from those of the noun *boy*, thereby preventing one, and not the other, from being used as the subject of the verb *ate*. The kind of noun that can be the subject of the verb *ate* must denote an entity that is capable of 'eating'. The noun *hamburger* does not have this property and the noun *boy* does.

We can make this observation more generally applicable by trying to determine the crucial element or feature of meaning that any noun must have in order to be used as the subject of the verb *ate*. Such an element may be as general as 'animate being'. We can then use this idea to describe part of the meaning of words as having either plus (+) or minus (-) that particular feature. So, the feature that the noun *boy* has is '+animate' (= denotes an animate being) and the feature that the noun *hamburger* has is '-animate' (= does not denote an animate being).

The simple example is an illustration of a procedure for analyzing meaning in terms of semantic features. Features such as '+animate, -animate'; '+human, -human', '+female, -female', for example, can be treated as the basic elements involved in differentiating the meaning of each word in a language from every other word. If we had to provide the crucial distinguishing features of the meanings of a set of English words such as *table, horse, boy, man, girl, woman*, we could begin with the following diagram.

	<i>table</i>	<i>Horse</i>	<i>boy</i>	<i>Man</i>	<i>girl</i>	<i>woman</i>
Animate	-	+	+	+	+	+
human	-	-	+	+	+	+
Female	-	-	-	-	+	+
Adult	-	+	-	+	-	+

From a feature analysis like this, we can say that at least part of the meaning of the word *girl* in English involves the elements [+human, +female, - adult]. We can also characterize the feature that is crucially required in a noun in order for it to appear as the subject of a particular verb, supplementing the syntactic analysis with semantic features.

The \_\_\_\_\_ is reading the newspaper.

N [+human]

This approach would give us the ability to predict which nouns make this sentence semantically odd. Some examples would be *table, horse* and *hamburger*, because none of them have the required feature [+human].

The approach just outlined is a start on analyzing the conceptual components of word meaning, but it is not without problem. For many words in a language it may not be as easy to come up with neat components of meaning. If we try to think of the components or features we would use to differentiate the nouns *advice, threat* and *warning*, for example, we may not be very successful. Part of the problem seems to be that the approach involves a view of words in a language as some sort of 'containers' to carry meaning components. There is clearly more to the meaning of words than these basic types of features.

## XII. SEMANTIC ROLES

Agent: The entity that performs the action.

Theme: The entity that is involved in or affected by the action.

Instrument: if an agent uses another entity in performing an action, that other entity takes the role of instrument. For example, consider the following:

*The boy* kicked *the ball*. *The man* opened *the door* with *a key*.

Agent            theme    agent            theme    instrument

The theme can also be an entity that is simply being described.

*The ball* was red.

theme

Although agents are typically human, they can also be non-human forces, machines, or creatures.

*The wind* blew the ball away.

agent

*The car* ran over the ball.

agent

*The dog* caught the ball.

agent

The theme can also be human.

The boy kicked *himself*.

theme

Benefactive: The noun or noun phrase that refers to the person or animal who benefits, or is meant to benefit, from

the action of the verb. For example in the sentence John baked a cake for Louise, Louise is in the benefactive case.

Experiencer: When an NP designates an entity as the person who has a feeling, apperception or a state, it fills the role of experience. If we see, know or enjoy something, we don't perform an action, but we are experiencers.

Did you hear that noise?

Experiencer

Location: It explains where an entity is.

Source: From where an entity moves.

Goal: Where an entity moves to.

She borrowed a magazine from George.

source

She handed the magazine back to George.

goal

### XIII. LEXICAL RELATIONS

Not only words can be treated as 'containers' or as fulfilling 'roles', they can also have 'relationships'. The types of lexical relations are as follows:

Synonymy: Two or more forms with very closely related meanings, which are often, but not always, intersubstitutable in sentences. For example, Broad = Wide. It should be noted that the idea of 'sameness of meaning' in synonymy is not necessarily 'total sameness'.

Antonymy: Two forms with opposite meanings are called antonyms. Antonyms are usually of two main kinds:

1) Gradable: They can be used in comparative constructions. The negative of one member does not necessarily imply the other; e.g. not old doesn't mean young.

2) Non-Gradable (complementary pairs): They are not normally used in comparative constructions and the negative of one member does imply the other; e.g. not dead means alive. But it is important to avoid describing most antonym pairs as one word meaning the negative of another. Consider the opposites tie-untie. The word untie doesn't mean not tie. It means 'do the reverse of tie'. Such pairs are called reversives. Pack-unpack; raise-lower; dress-undress; and lengthen-shorten.

Hyponymy: When the meaning of one form is included in the meaning of another, the relationship is called hyponymy. In this category, we are looking at the meaning of words in some type of hierarchical relationship e.g. animal-horse, animal-dog. We can say that two or more terms which share the same superordinate (higher up) term are called co-hyponyms. So, dog and horse are co-hyponyms, and animal is superordinate. The Hyponymy captures the idea of 'is a kind of' e.g. Asp is a kind of snake.

Terms for actions can also be hyponyms; e.g. cut, punch, shoot, and stab can all be found as co-hyponyms of the superordinate term injure.

Prototype: It explains the meaning of certain words like bird not in terms of component feature (e.g. 'has wings') but in terms of resemblance to the clearest exemplar; e.g. native speakers of English might wonder if ostrich or penguin should be hyponyms of bird, but have no trouble deciding about sparrow or pigeon. The last two are prototypes.

Homophony: When two or more differently written forms have the same pronunciation but different meaning; e.g. sea-see.

Homography: When two or more forms are the same only in writing but different in pronunciation and meaning they are described as homographs such as lead ([lid]) and lead ([led]).

Homonymy: It is when one form (written or spoken) has two or more unrelated meanings, but have the same pronunciation and spelling; e.g. bank (of a river) and bank (financial institution). They have quite different meanings but accidentally have the same form.

Polysemy: It can be defined as one form (written or spoken) having multiple meanings which are all related by extension. e.g. head refers to top of your body, top of a glass of beer, top of a company. If two words are treated as homonyms, they will typically have two separate entities.

Metonymy: This relationship is essentially based on a close connection in everyday experience. It may be container-content relation (can-juice); a whole-part relation (car-wheels); or a representative-symbol relation (king-crown). Sometimes making sense of many expressions depends on context, background knowledge and inference.

Collocation: Those words which tend to occur with other words; e.g. hammer collocates with nail; wife with husband and knife with fork.

### XIV. TRUTH.

The study of truth or truth conditions in semantics falls into two basic categories: the study of different types of truth embodied in individual sentences (analytic, contradictory, and synthetic) and the study of different types of truth relations that hold between sentences (entailment and presupposition).

Analytic Sentences. An analytic sentence is one that is necessarily true simply by virtue of the words in it. For example, the sentence A bachelor is an unmarried man is true not because the world is the way it is, but because English

language is the way it is. Part of our knowledge of ordinary English is that bachelor “means” an unmarried man, thus to say that one is the other must necessarily be true. We do not need to check on the outside world to verify the truth of this sentence. We might say that analytic sentences are “true by definition.” Analytic sentences are sometimes referred to as linguistic truths, because they are true by virtue of the language itself.

**Contradictory Sentences.** Contradictory sentences are just the opposite of analytic sentences. While analytic sentences are necessarily true as a result of the words in them, contradictory sentences are necessarily false for the same reason. The following sentences are all contradictory: A bachelor is a married man, A blue gas is colorless, A square has five equal sides. In each case, we know the sentence is false because we know the meaning of the words in it: part of the meaning of bachelor is ‘unmarried’; part of the meaning of blue is ‘has color’; part of the meaning of square is ‘four-sided.’ It is not necessary to refer to the outside world in order to judge each of these sentences false. Consequently, contradictory sentences are sometimes referred to as linguistic falsities, because they are false by virtue of the language itself.

**Synthetic Sentences.** Synthetic sentences may be true or false depending upon how the world is. In contrast to analytic and contradictory sentences, synthetic sentences are not true or false because of the words that comprise them, but rather because they do or do not accurately describe some state of affairs in the world. For example, the sentence My next door neighbor, Bud Brown, is married is a synthetic sentence. Note that you cannot judge its truth or falsity by inspecting the words in the sentence. Rather, you must verify the truth or falsity of this sentence empirically, for example by checking the marriage records at the courthouse. Other examples of synthetic sentences include Nitrous oxide is blue, Nitrous oxide is not blue, Bud Brown’s house has five sides, and Bud Brown’s house does not have five sides. In each case, the truth or falsity of the sentence can be verified only by consulting the state of affairs that holds in the world. Thus, synthetic sentences are sometimes referred to as empirical truths or falsities, because they are false by virtue of the state of the extralinguistic world.

#### XV. ENTAILMENT.

An entailment is a proposition (expressed in a sentence) that follows necessarily from another sentence. For example, Martina aced chemistry entails Martina passed chemistry, because one cannot ace chemistry without passing chemistry. The test for entailment is as follows; sentence (a) entails sentence (b) if the truth of sentence (a) ensures the truth of sentence (b) and if the falsity of sentence (b) ensures the falsity of sentence (a). Our example sentences pass both tests. First, the truth of sentence (a) ensures the truth of sentence (b). Note that if Martina aced chemistry, she necessarily passed chemistry. Second, the falsity of sentence (b) ensures the falsity of sentence (a). If Martina didn’t pass chemistry, she necessarily didn’t ace chemistry.

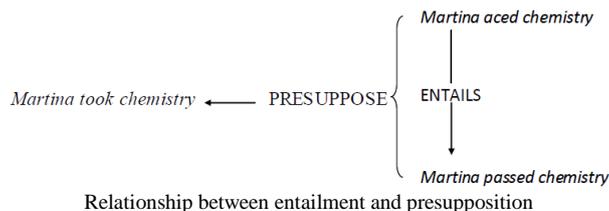
Note, however, that the relation of entailment is unidirectional. For instance, consider our example sentences again, but in the opposite order: (b) Martina passed chemistry and (a) Martina aced chemistry. In this case, sentence (b) does not entail (a) (if Martina passed chemistry, she did not necessarily ace chemistry – she may have made a C); and the falsity of (a) does not ensure the falsity of (b) (if Martina did not ace chemistry, it is not necessarily the case that she did not pass chemistry – she may, once again, have made a C). In short, then, it should be clear that the relation of entailment is unidirectional.

This is not to say, however, that there cannot be a pair of sentences such that each entails the other. Rather, when such a relation holds, it is called paraphrase. For example, the sentences Martina passed chemistry and What Martina passed was chemistry are paraphrases of each other. Note, incidentally, that entailment describes the same relationship between sentences that hyponymy describes between words. Likewise, paraphrase describes the same relationship between sentences that synonymy describes between words. These relations are illustrated in the following figure.

Inclusion analogues between sentences and words		
	SENTENCES	WORDS
unidirectional	entailment (Martina aced chemistry →Martina passed chemistry)	hyponymy (hate→dislike)
bidirectional	paraphrase (Martina passed chemistry ↔ What Martina passed was chemistry)	synonymy (hate ↔despise)

Thus, if sentence (a) Martina aced chemistry presupposes sentence (b) Martina took chemistry, the denial of sentence (a) Martina did not ace chemistry also presupposes sentence (b) Martina took chemistry. If Martina did not take chemistry, then Martina did not ace chemistry cannot be judged true or false.

The relationship between entailment and presupposition is illustrated in this figure. This figure should be read as follows: Martina aced chemistry entails Martina passed chemistry. Both of those sentences, in turn, presuppose Martina took chemistry.



XVI. PRESUPPOSITION.

A presupposition is a proposition (expressed in a sentence) that must be assumed to be true in order to judge the truth or falsity of another sentence. For example, Martina aced chemistry presupposes Martina took chemistry, because acing chemistry assumes the person in question actually took chemistry. The simplest test for presupposition depends upon the fact that a sentence and its denial (i.e., the negative version of the sentence) have the same set of presuppositions. This test is known as constancy under negation.

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