

## Introduction

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The Philosophy of Language

Philosophers and reflective persons in general have been interested in language for a long time and for various reasons. First, since language seems to be characteristic of human beings, to know about language is to know something about being human. Although some anthropologists claim that some of the nonhuman primates can acquire language, most philosophers and linguists disagree. While conceding that these chimpanzees and gorillas have learned to communicate using a symbol system, they deny that what the primates are using counts as a human language. That is, none of the systems the primates use allows for the construction of an infinitely large number of expressions. And it is this feature that philosophers and linguists take to be characteristic of human language.

Second, since certain philosophical problems seem to arise from false beliefs about the structure of language, understanding it may help solve those problems or avoid them altogether. For example, since the sentence "Nothing came down the road" is, at least superficially, grammatically like "John came down the road" and John is something that exists, one might think that nothing is something that exists. But this absurd view would be caused by a misunderstanding of the structure of language.

In *Through the Looking Glass*, Lewis Carroll exploited the difference between the word "nothing" and ordinary proper names, when Alice told the king, "I see nobody on the road," and the king replied, "I only wish I had such eyes to be able to see Nobody! And at that distance too!" What Alice meant is, "It is not the case that I see somebody on the road," while the king understood her to mean, "I see something, namely, Nobody, on the road."

It would also be a mistake, caused by a misunderstanding of how language works, to think that since "Justice is a virtue" is grammatically like "Mary is a lawyer," justice is a concrete, actual thing.

Third, many philosophers have held that language is a reflection of reality, so, if one could understand the structure of language, one could understand the structure of reality. It is not odd to think that the structure of language is the same or similar to the

Phaedrus

structure of reality. For language is the expression of thought, and, if human thoughts can count as knowledge about the world, thought would seem to be a reflection of reality. This view of language, thought, and reality is very old, at least as old as Plato, who has Socrates explain that this very belief is the strategy behind his own philosophizing. In Socrates' account of his turn away from the physical philosophy of Anaxagoras to his own method, he says that he feared that if he tried to figure out the structure of reality by studying reality directly, he might be intellectually blinded. Thus he resolved to use language as a kind of mirror of reality: "I decided to take refuge in language, and study the truth of things by means of it" (*Phaedo* 99E). The same idea of language as a reflection of reality continued through the middle ages, and through modern philosophy into the twentieth century. One of the most forceful statements of this view of language is Ludwig Wittgenstein's *Tractatus Logico-Philosophicus*, published in 1921. His ideas were dubbed the picture theory of language, and it has been the dominant view during the twentieth century. There is a Kantian variation on this view according to which language is not a reflection of reality, which is inaccessible to human intelligence, but a reflection of our thought about reality. Much of the philosophizing of those who do not accept any version of the picture theory of language consists of little more than criticism.

Fourth, language is, of course, interesting in itself and might be studied profitably for its own sake.

## II

Philosophers distinguish three areas of the study of language: syntax, semantics, and pragmatics.

Syntax is the study of the rules that describe what a well-formed or grammatical sentence is in purely formal terms. That is, it describes what a sentence is in terms of rules that specify what sequences of words are permissible. These rules are called concatenation rules, from the metaphor of words being linked together as if in a chain. A syntactic description of language is not allowed to use the concept of meaning or any related concept in order to explain what a grammatical sentence is.

Semantics is the study of the meaning of words and sentences. A semantic theory tries to explain what meaning is, and any theory of meaning will have to describe what is and what is not a meaningful expression as well as the systematic relations between words and what they mean. The principal semantic notions are truth and reference, although pragmatics, too, has much to say about reference.

Pragmatics is the study of what speakers do with language. Speakers do not simply talk. In or by speaking, they promise, marry, swear, forgive, apologize, insult, and enrage, among many other things. Further, what is communicated is not wholly conveyed by what is said; much is implied. The treatment of these and related topics belongs to pragmatics. (Some philosophers have a different and more restrictive notion of pragmatics; they define it as the study of indexical expressions, such as "I," "here" and "now," the reference of which depends upon the context of the utterance.)

In addition to syntax, semantics, and pragmatics, linguists study a fourth aspect of language, phonetics, that is, the science of the sounds of human languages. Each human language uses only a small number of the sounds that people can easily vocalize, and the presence of some sounds in a language excludes, as a matter of fact, the use of certain other sounds that exist in other languages. Phonetics is fascinating, but philosophers have done virtually no work in this area.

The one exception is some work done on contrastive stress. To understand this, we first need to appreciate that there is a normal rhythm to English sentences. For example, indicative sentences have a "falling" intonation at the end of a sentence, while interrogative sentences have a rising one. Listen to the difference between, "Mary left the room," versus, "Did Mary leave the room?" A grammatical indicative sentence can actually be used to ask a question by substituting a rising intonation at the end instead of the normal falling one. (In recent years, I have noticed that some speakers are obliterating the distinction between indicative and interrogative intonation by using rising intonation as the normal one for indicative sentences.)

Contrastive stress is one way of altering the normal pattern of stress in a sentence to communicate something special. For example, if one uses the sentence, "John stole the cookies," to make a simple statement, the stress is distributed fairly uniformly on each word. But now suppose that someone falsely accuses Mary of being the thief. Someone might object to this accusation by putting extra or contrastive stress on "John" in order to convey that it is not Mary, but John who is the thief: *John* stole the cookies. Alternatively, suppose that some cookies are stolen and then eaten. If it is mistakenly thought that John is the one who ate the cookies, one might say, "John *stole* the cookies," indicating that he only stole them and did not eat them. Finally, suppose that John is accused of stealing both cookies and some money but that he stole only the cookies. One might say, "John stole the *cookies*." According to one theory, the three differently stressed sentences have different truth-conditions: "John stole the cookies," for example, is true only if someone other than John is thought to have stolen them. The theory is controversial.

Distinguish b/w words  
& meanings.  
Easy. Poetry.

ENTHY

## III

Several distinctions are presupposed by many of the articles in this anthology and need to be understood. First there is the use-mention distinction. For the most part, words are *used* in such a way that the word itself is not the primary object of interest. Roughly, words are signs that point beyond themselves to other things. However, it is possible for words to be used to *mention* or talk about themselves, to make the very word itself the object of interest. Consider the sentences

- (1) Cicero was a Roman senator.
- (2) Cicero is a word with six letters.
- (3) "Cicero" was a Roman senator.
- (4) "Cicero" is a word with six letters.

Sentences (1) and (4) are or can be used to make true statements. Sentence (1) is about the historical person Cicero; the subject expression was *used* to talk about Cicero. Sentence (4) is not about the historical person Cicero; it is about a word, about the proper name of Cicero, and it is that name that was *mentioned* in (4).

Sentences (2) and (3) are false. (2) is false because it claims that the person Cicero was a word, which is absurd; (3) is false because it claims that a word is a person.

This might seem simple and straightforward enough. But now consider this. In sentence (1), the word "Cicero" is used to talk about Cicero. In sentence (4), "'Cicero'" is used to talk about the word "Cicero." Notice that in the preceding sentence, the subject expression contains two sets of quotation marks. The inner (single) quotation marks are used to mention a word; the outer (double) quotation marks are used to mention the mention of a word. These quotation marks can be stacked indefinitely, if necessary, to mention other mentioned expressions.

Instead of double quotation marks, philosophers sometimes use single quotation marks to indicate that a word or phrase is being mentioned. Thus, instead of the sentence

"Cicero" is a word with six letters.

a philosopher might write

'Cicero' is a word with six letters.

This convention has the advantage of distinguishing between when the author is mentioning a word or phrase and when the author is directly quoting the words of someone else.

There are three ways to avoid the quotation mark device of mentioning a word or expression. One is to *display* the mentioned word or expression on a separate line. For example, the word

Cicero

has six letters. In the previous sentence, "Cicero" is mentioned by displaying it on a separate line. (Sometimes it is convenient to display a word or expression immediately following a colon.) The device of displaying an expression has already been used. Sentences (1) through (4) above were displayed. If I had not wanted to display them, I might have mentioned them in this way: Consider the sentences, (1) "Cicero was a Roman senator," (2) "Cicero is a word with six letters," (3) "'Cicero' was a Roman senator," (4) "'Cicero' is a word with six letters." Obviously, displaying expressions is often neater.

The second way to mention a word is to name it. Just as one might name an infant or pet, one can name words or expressions (or anything else). Suppose we want to talk about the word "Cicero" extensively. We might name that word "Harry." If we do, then the sentence "Harry is a word with six letters" is true. Question: Is the sentence "'Harry' has six letters" true or false?

Linguists have a third way of mentioning an expression. They italicize it. Thus, instead of (4), a linguist might write

(4) *Cicero* is a word with six letters.

#### \* IV

The use-mention distinction can be generalized in a certain way to distinguish between using a language and mentioning a language. This is the distinction between metalanguage and object language. Most areas of science and philosophy use language to talk about nonlinguistic phenomena. Linguistics and philosophy of language are unusual in that language is used to talk about language. We can distinguish then between the language used to express the science or philosophy and the language that is being studied. Since the language being studied is the *object* of study, it is called the object language. Since the language used to express the study is in a sense "outside" or "higher" than the language being studied, it is called the metalanguage. The metalanguage of a linguistic researcher will typically be his native language. English-speaking linguists typically use English as their metalanguage to talk about language. If Latin is the object of study, then Latin is the object language. When the metalanguage and the object language are different, there is relatively little risk of confusion. It is not difficult to understand what is meant by "'Fiat lux' is a Latin sentence, consisting of a verb followed by a noun" and why it is being uttered. Yet, a linguist might take his native

language as his object of study. An English-speaking linguistic researcher might take English as his object of study, in which case English is both the metalanguage and the object language. The identity of the metalanguage and object language raises philosophical problems, some of which are discussed by Alonzo Church, Alfred Tarski, and Donald Davidson in their articles in Section I. There is also a kind of practical problem. When the metalanguage and the object language are the same and the discussion involves the meaning of the object language, the results can sound trivial. Philosophers have expended a lot of effort over the sentence

"Snow is white" means snow is white.

and

"Snow is white" is true just in case snow is white.

For Davidson, the truth of this latter, seemingly trivial sentence is crucial to his program for semantics. Other philosophers have called the sentence degenerate. Whatever the truth of the matter, one must keep in mind that the quoted sentence (the one mentioned) is the object of study, while the unquoted clause (the one being used) is part of the metalanguage being used to discuss the object language.

#### V

In the discussion of the use-mention distinction, the word "sentence" was used loosely and, one might argue, uncritically. For philosophers of language have found it necessary to distinguish between sentences, meanings, statements, and proposition, among other things; and sentences, contrary to my earlier usage, are often held not to be the kinds of things that can be either true or false.

To get a sense of the distinctions involved here, consider these expressions:

- (5) I am a bachelor.
- (6) John is a bachelor.
- (7) John is an unmarried adult male.

(5) through (7) are different sentences in English. None of them has all the same words in the same order as any other. Yet, although (6) and (7) are different sentences, they have the same meaning. Sentences of different languages can have the same meaning. The English sentence "It is raining," the Italian sentence "*Piove*," and the German sentence "*Es regnet*" mean the same thing. Sentence (5) does not have the same meaning as (6) or (7). But suppose sentence (5) is uttered by John. Then (5) seems to be the same as (6) and (7) in some respect. They each express the same proposition: each refers to the same object and predicates the same thing of it. In order to determine whether (5) expresses the same proposition as (6) and (7), it is necessary to know something about the context. In this case, I have stipulated that John asserted the sentence. I have presupposed that the time and place of the utterance of the other sentences as well as the identities of the speakers were appropriate to make them express the same proposition. Many philosophers think this dependence upon context is philosophically significant. Without knowing who uttered (5), it is impossible to know what proposition was expressed. More importantly, without knowing whether the sentence was asserted, or merely used as an example of a sentence of English without anyone committing himself to its truth, (5) is not used to express a proposition at all. On this view, (5) is a sentence and neither true nor false; and, in general, sentences do not have truth-values. Propositions do. Other philosophers do not think the sentence/meaning/proposition

distinction is so important. They think that a proposition can be defined by relativizing a sentence to a context: a proposition is simply an ordered triple consisting of a sentence, a person, and a time of utterance.

Propositions also need to be distinguished from statements. The same proposition can be expressed with different forces. For example, consider these sentences:

- I state that John will be at the party.
- I promise that John will be at the party.
- I question whether John will be at the party.
- I order you, John, to be at the party.

All of them can be used to express the same proposition. But only the first has the potential force to make a statement directly. The other sentences, respectively, have the potential force to promise that the proposition will be made true, to question whether it is true and to order that it will be made true. Roughly, the difference between a proposition and a statement is that a proposition has a truth value without any special force attached to it, while a statement is a proposition the truth of which the speaker has committed himself to on the basis of sufficient evidence. This distinction between propositions and statements is explained by John Searle in "The Structure of Illocutionary Acts."

Related to these distinctions is a type-token distinction. Count the number of sentences displayed immediately below.

It is raining.  
It is raining.  
It is raining.

One might count one or three. There is one sentence-type and three tokens or instances of that one sentence-type. If it seems dubious that there is only one sentence occurring three times, consider that if a teacher says, "Write the sentence 'I will not speak in class' one hundred times" she is using the word "sentence" in the sense of sentence-type. For it is the same sentence that is to be written repeatedly. She wants one sentence written: I will not speak in class. But she wants one hundred tokens of it.

## VI

There is another device that philosophers of language use that needs to be mentioned, namely, a pair of matched right angles (' '). The device goes by various names: 'corner quotes', 'square quotes', 'quasi-quotes', and sometimes 'Quine corners', after their inventor W. V. Quine. Corner quotes function similarly to quotation marks that are used to mention phrases. The difference is that, whereas quotation marks mention all the symbols inside of them, corner quotes mention symbols selectively; they mention all the words inside of them, but not other symbols (metavariables).

For example, suppose someone wants to talk about every sentence that begins with the word 'The' and ends with the word 'tree', such as

- The woodsman cut down a tree.
- The dog chased the cat up a tree.
- The most beautiful plant is a tree.

Some symbol needs to be used to represent the words between 'The' and 'tree'. Suppose it is the Greek symbol ' $\Phi$ ' (phi). It would be natural, but incorrect, to represent the three sentences above by writing, 'The  $\Phi$  tree'. What the symbols within quotation marks represent is the sequence, 'The', followed by ' $\Phi$ ', followed by 'tree'. That is,

the Greek letter  $\Phi$  is being mentioned. But that was not what was intended. What was intended was the word 'The', followed by some sequence of words, followed by the word 'tree'. In other words, some device is needed that will mention certain words or symbols of the object language but skip over mentioning symbols that are used in the metalanguage to designated words and symbols in the object language. Corner quotes do exactly that. That is, the symbols

'The  $\Phi$  tree'

(where ' $\Phi$ ' is any sequence of words within a grammatical English sentence) can be used to represent the three quoted sentences.

The use of corner quotes will be extremely important in our discussion of syntax.

## VII

A formal treatment of a subject is one that is clear, precise, and explicit. Let's apply this idea to that of a grammar for language. A formal grammar consists of two parts: a syntax and a semantics. The syntax itself also consists of two parts: a vocabulary and formation rules. The vocabulary specifies which marks or sounds can appear in sentences. Roughly, the vocabulary consists of words and punctuation marks or whatever would be equivalent to them in the language being treated. The phrase, 'marks or sounds' was used rather than 'symbols' because 'symbol' suggests something that has a meaning, and syntax is not permitted to use any semantic concept. The formation rules either generate sentences out of the items in the vocabulary or they describe them. The semantics consists of two parts: a part that specifies the meanings of the simplest elements of the language, and a part that specifies the meanings of the complex elements of the language. The simplest elements of the language may either be words or sentences, depending on the specific language being studied and the philosophical views of the author of the grammar.

Most research in syntax is currently done by linguists. Nonetheless, something needs to be said about syntax because it is presupposed by most of the articles in this book, because it is important not to confuse syntactic with semantic issues, and because it is interesting in its own right. To think about language syntactically is to think about it as consisting of sequences of sounds or physical shapes without regard to its having any meaning, as if the sentences had no significance, no truth-value, no reference beyond themselves, and no symbolic value at all. This is difficult to do because when people use language, they focus almost exclusively on what the language means. Let me illustrate these points by constructing a syntax for a language that looks very much like a part or fragment of English. We shall call the language 'Language', and it resembles certain systems used in logic. The number of sentences or well-formed formulas of this language is infinite even though they are relatively simple in syntactic structure. Because the number is infinite, I could not hope to include all of them. For now I shall list only a few.

- Adam walks
- Beth walks
- Adam talks
- Beth talks
- it is not the case that Adam walks
- (it is not the case that Adam walks and Beth talks)
- it is not the case that (Adam walks and Beth talks)

Use  $\Phi$  as an example

Sequences of words that are not sentences include these:

walks Beth  
Beth walked  
it is not the case that Beth walks and Adam talks

Even from the brief list of sentences that was given, it should be plausible that the complex sentences ("molecular sentences") are formed from the simple sentences ("atomic sentences"). This important fact about language allows us to explain how an infinite number of sentences can be generated from a finite base. (By a "finite base", here, I mean a finite number of vocabulary items [words] and syntactic, generation rules.) Here is a syntax for Languish.

## A SYNTAX FOR LANGUISH

### Vocabulary

*Proper names:* Adam, Beth, Carol, David

*Predicates:* walks, talks, flies, sits, reads

*Sentential connectives:* it is not the case that, and, or, if, . . . then, if and only if

### Formation Rules

1. Where  $\alpha$  is any proper name and  $\Phi$  is any predicate, enter  $\alpha\Phi$  as a sentence.
2. Where  $\Phi$  is any sentence, enter 'it is not the case that  $\Phi$ ' as a sentence.
3. Where  $\Phi$  is a sentence and  $\Psi$  is a sentence, enter ' $(\Phi$  and  $\Psi)$ ' as a sentence.
4. Where  $\Phi$  is a sentence and  $\Psi$  is a sentence, enter ' $(\Phi$  or  $\Psi)$ ' as a sentence.
5. Where  $\Phi$  is a sentence and  $\Psi$  is a sentence, enter ' $($ if  $\Phi$ , then  $\Psi)$ ' as a sentence.
6. Where  $\Phi$  is a sentence and  $\Psi$  is a sentence, enter ' $(\Phi$  if and only if  $\Psi)$ ' as a sentence.

Notice that this syntax consists of two parts: a vocabulary (sometimes called 'an alphabet') and formation rules. The vocabulary is divided into categories. These categories are analogous to the parts of speech that you were taught in grammar school. The category of proper names is analogous to the grammatical category of proper nouns. The category of predicates is analogous to the grammatical category of verbs. The category of sentential connectives is analogous to the grammatical category of particles. In school grammars, there are eight parts of speech. In our syntax, there are only three parts of speech. This is not accidental, or wholly due to the simplicity of Languish. In general, philosophers try to explain things using as few categories as possible.

The syntax for Languish generates sentences. A sentence (by stipulative definition) is any line in a generation. 'Generation' is a technical term, which I shall explain in large part by giving examples of it. Here is a generation of the sentence 'Adam walks':

1. Adam walks Rule 1

In this example,  $\alpha$  = 'Adam' and  $\Phi$  = 'walks'. Here is a generation of the sentence 'Beth talks':

1. Beth talks Rule 1

In this example,  $\alpha$  = 'Beth' and  $\Phi$  = 'talks'. Here is a generation of the sentence 'it is not the case that (Beth walks and Adam talks)':

- |  |                            |
|--|----------------------------|
| 1. Beth walks  | Rule 1                     |
| 2. Adam talks  | Rule 1                     |
| 3. (Beth walks and Adam talks)                         | Rule 3, from lines 1 and 2 |
| 4. it is not the case that (Beth walks and Adam talks) | Rule 2, from line 3        |

In line 3 of the generation,  $\Phi$  = 'Beth walks', but in line 4 of the generation,  $\Phi$  = 'Beth walks and Adam talks'.

Notice the following characteristics of this syntax and the generations of sentences: (i) A rule can be used an indefinite number of times. (ii) The complex sentences are formed from the simpler sentences. (iii) The metavariables,  $\alpha$ ,  $\Phi$ , and  $\Psi$ , can be used for any individual symbol from the category they indicate; thus,  $\alpha$  can be 'Adam' in one sentence and 'Beth' in the next. (iv) The parentheses substitute for punctuation marks, such as commas, semicolons, and periods, and for such words as 'either' and 'both'. (v) The placement of the parentheses is very important. The formation rules must be followed precisely. Words and other marks must be put in when and only when they are dictated. (vi) The formation rules can be thought of as being of two kinds. Some rules get the process started by directly generating some sentences, for example, Rule 1. These may be called 'syntactic base rules'. Some rules form new and more complex sentences from simpler sentences that have already been generated, namely, Rules 2-6. These may be called 'syntactic projection rules'.

Here is a final example of a generation:

- |   |                             |
|---|-----------------------------|
| 1. Carol reads  | Rule 1                      |
| 2. Adam talks   | Rule 1                      |
| 3. Beth walks   | Rule 1                      |
| 4. it is not the case that Adam talks   | Rule 2, from line 2         |
| 5. (it is not the case that Adam talks and Beth walks)                              | Rule 3, from lines 4 and 3  |
| 6. (Carol reads if and only if (it is not the case that Adam talks and Beth walks)) | Rules 6, from lines 1 and 5 |

Because the words 'Adam', 'Beth', 'walks', 'talks', 'and', 'or', and so on are familiar to us, as are the categories of proper names and predicates, it is tempting to think of them as having a semantic value. 'Adam' seems to be the name of Adam or as referring to Adam. The word 'walks' seems to mean something like walking or the concept of walking. However, since we are considering Languish purely syntactically, we must resist the temptation to view words in this way. Considered syntactically, these items of Languish do not have any meaning or representational value at all.

The formation rules of Languish are acceptable syntactic rules in large part because they merely give instructions about what vocabulary items are to be placed next to which other vocabulary items in order to form a sentence. The fact that a syntax does not treat sentences, word-sequences, or formulas as having a meaning can be brought out better if we look at some syntaxes for some very simple systems that genuinely do not have any meaning. For simplicity's sake, we shall refer to the following sets of symbols as languages. (The following treatment is inspired by Noam Chomsky's *Syntactic Structures* [1957].) Consider the language that consists of all and only sequences of 'a's followed by the identical number of 'b's, and sequences of 'b's followed by the identical number of 'a's. In other words, these are some sentences of the language:

ab, ba, aabb, bbaa, aaabbb, bbbaaa.

These are not sentences of the language:

a, b, aab, bba, aabaa, bbab.

Here is a syntax for this language:

**Vocabulary:** a, b

**Formation Rules**

1. Enter 'ab' as a sentence.
2. Enter 'ba' as a sentence.
3. If 'aΦb' is a sentence, enter 'aaΦbb' as a sentence.
4. If 'bΦa' is a sentence, enter 'bbΦaa' as a sentence.

Since all the vocabulary items are of one type, there is no need to distinguish different categories of vocabulary items. Rules 1 and 2 are base rules; Rules 3 and 4 are projection rules.

Here is a generation of 'aabb':

- |         |                     |
|---------|---------------------|
| 1. ab   |                     |
| 2. aabb | Rule 1              |
|         | Rule 3, from line 1 |

In this language, some rules are needed to generate the simplest sentences out of which the more complicated sentences will be generated. Rules 1 and 2 serve this purpose and one of them will always be the first rule applied in a generation. Here is a generation of the sentence 'bbbbaaaa':

- |             |                     |
|-------------|---------------------|
| 1. ba       |                     |
| 2. bbaa     | Rule 2              |
| 3. bbbaaa   | Rule 4, from line 1 |
| 4. bbbbaaaa | Rule 4, from line 2 |
|             | Rule 4, from line 3 |

Exercise: generate 'aaabbb'.

Let's now consider another language that consists of sequences of 'a's and 'b's, followed by the mirror image of 'a's and 'b's. That is, the following are sentences:

aa, bb, abba, baab, aabbaa, ababbaba, aaaa, bbbb

The following are not sentences:

a, b, ab, ba, aba, bab, aab, bba, abab, aaabaaa

Here is a syntax for this language:

**Vocabulary:** a, b

**Formation Rules**

1. Enter 'aa' as a sentence.
2. Enter 'bb' as a sentence.
3. If  $\Phi$  is a sentence, enter 'aΦa' as a sentence.
4. If  $\Phi$  is a sentence, enter 'bΦb' as a sentence.

Exercise: Generate 'bbbbbbbb' and 'abbaaaaabba'.

Now consider a language that consists of some number of 'a's and/or 'b's followed by the identical string of 'a's and/or 'b's. The following are sentences:

aa, bb, abab, baba, aaaa, bbbb, abaaba

The following are not sentences:

a, b, aaa, aba, bbabb, aabb, bbaa

Here is a syntax for this language:

**Vocabulary:** a, b

**Formation Rules**

1. Enter 'aa' as a sentence.
2. Enter 'bb' as a sentence.
3. If 'ΦΦ' is a sentence, enter 'aΦaΦ' as a sentence.
4. If 'ΦΦ' is a sentence, enter 'bΦbΦ' as a sentence.

Exercise: Generate 'bbbbbb' and 'abaaba'.

Exercise: Write a grammar for a language in which the sentences are all and only strings of alternating 'a's and 'b's. Thus, the following are sentences:

ab, abab, ababab, ba, baba, bababa

The following strings are not sentences:

a, b, aa, bb, aba, bab, aabb, bbaa

In order to provide some additional help in understanding what a syntactic description of a language is, let me introduce several more syntactically very simple languages. Numerals used to designate the natural numbers can be considered a language or quasi language. Implicit in the last sentence is the important distinction between the numerals themselves and the numbers that they represent. In giving a syntactic description, it is important that we focus only on how the numerals themselves are concatenated, and ignore all references to the numbers that they represent. The sentences of the language we are discussing are the following:

1, 2, 3, . . . , 9, 10, 11, 12, . . . , 100, 101, 102, . . .

Strings of numerals that are not sentences of the language include the following:

0, 01, 1.1, 1/4, 2 + 2 = 4

That is, neither the numeral zero nor natural numerals preceded by zero, decimals, fractions, nor equations are sentences. Here is a syntax for this language:

**Vocabulary:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 0

**Formation Rules**

1. Enter '1' as a sentence.
2. Enter '2' as a sentence.
3. Enter '3' as a sentence.
4. Enter '4' as a sentence.
5. Enter '5' as a sentence.
6. Enter '6' as a sentence.
7. Enter '7' as a sentence.
8. Enter '8' as a sentence.
9. Enter '9' as a sentence.
10. Where  $\Phi$  is a sentence and  $\Psi$  is a vocabulary item, enter  $\Phi\Psi$  as a sentence.

Exercises:

1. Why are there no quotation marks and no Quine corners around 'ΦΨ' in Rule 10?
2. Generate '5', '30', '209', and '2009'.

Both the even numerals and the odd numerals separately can be considered languages in themselves. Thus, one might devise a language in which the following strings of marks are sentences:

1, 3, 5, 7, 9, 11, 13, 15, . . . , 101, 103, . . .

and the following strings of marks are not sentences:

0, 2, 10, 12, 102.

Exercise: Write a syntax for the language just described.

Similarly, one might devise a language in which the following strings of marks are sentences:

2, 4, 6, 8, 10, 12, . . . , 100, 102, . . . , 990, . . .

and the following strings are not sentences:

0, 1, 3, 5, 7, . . .

Exercise: Write a syntax for this language.

## VIII

Semantics is the study of the meaning of words and sentences. The chief ideas used in semantics are reference and truth. It is plausible that the function of language is to connect words with the world. The connection or relation between words and the world is often said to involve reference. Also, if the words of a sentence connect with the world in the right sort of way, then it is plausible that the sentence is true. Every semantics consists of two parts: rules that specify the meanings of the basic elements of the language (either words or the simplest sentences); and rules that specify how the meanings of the complex sentences are determined. In the twentieth century, the most popular formal semantic theory has been what is called 'a referential semantics'. The basic idea behind such a semantic theory is that the meaning of a word or sentence is the object that it refers to or denotes. Such a semantics can be illustrated in connection with the language consisting of all and only the numerals for natural numbers.

### Semantic Base Rules

1. '1' refers to the number one.
2. '2' refers to the number two.
- ...
9. '9' refers to the number nine.
10. '0' refers to the number zero.

### Semantic Projection Rule

11. Where  $\Phi\Psi$  is a sentence,  $\Phi$  is a string of vocabulary items, and  $\Psi$  is a vocabulary item,  $\Phi\Psi$  refers to ten times the number referred to by  $\Phi$ , plus the number referred to by  $\Psi$ .

Let's look at two examples to see how these rules, especially Rule 11, work.

Sentence	Semantics	Semantic Rule
1. 5	5	Rule 5
2. 58	$10 \times 5 + 8$	Rule 11

The first occurrence of '5' in line 1 is a sentence generated by a syntactic rule. The second occurrence of '5' expresses the meaning of the first occurrence. This may seem odd, because as users of the Arabic numeral system, we already know that '5' means 5. Let's now consider line 2:  $\Phi = '5'$  and  $\Psi = '8'$ . Notice the single quotation marks around the numerals. Making the proper substitutions for  $\Phi$  and  $\Psi$  in Rule 11, we see that '58' refers to  $10 \times 5 + 8$ . That is, it refers to 58. Here's the second example:

Sentence	Semantics	Semantic Rule
1. 3	3	Rule 3
2. 39	$10 \times 3 + 9$	Rule 11, line 1
3. 396	$10 \times (10 \times 3 + 9) + 6$	Rule 11, line 2
4. 3,967	$10 \times (10 \times (10 \times 3 + 9) + 6) + 7$	Rule 11, line 3

Lines 1 and 2 should be obvious. Now apply Rule 11 to line 3. Since  $\Phi = '39'$ ,  $\Phi$  refers to ten times 39; that is,  $10 \times ((10 \times 3) + 9)$ . That is, '39' refers to 390, because it precedes another numeral, namely,  $\Psi$ . Finally,  $\Psi = '6'$  and it refers to 6. Thus, the sentence '396' refers to 396.

Apply Rule 11 again to line 4.  $\Phi = '396'$ ;  $\Phi$  refers to ten times 396; that is,  $10 \times (10 \times (10 \times 3 + 9) + 6)$ . That is,  $\Phi$  refers to 3,960. Finally,  $\Psi = '7'$ , and it refers to 7. Thus, the sentence '3,967' refers to 3,967.

It is much more complicated to understand the description of the calculations underlying the reference of the numerals than it is to understand the calculations themselves.

Once we understand the compositionality of the method, it is acceptable to simplify the calculations at each stage of the derivation:

Sentence	Semantics	Semantic Rule
1. 3	3	Rule 3
2. 39	$30 + 9$	Rule 11, line 1
3. 396	$390 + 6$	Rule 11, line 2
4. 3,967	$3,960 + 7$	Rule 11, line 3

Let's now consider a referential semantics for Languish.

## A SEMANTICS FOR LANGUISH

### Semantic Base Rules

#### Proper Names:

- 'Adam' refers to Adam
- 'Beth' refers to Beth
- 'Carol' refers to Carol
- 'David' refers to David

#### Predicates:

- 'walks' refers to the concept of walking
- 'talks' refers to the concept of talking
- 'flies' refers to the concept of flying

*Imposter?*

'sits' refers to the concept of sitting  
'reads' refers to the concept of reading

### Semantic Projection Rules

1. Where  $\alpha$  is any proper name and  $\Phi$  is any predicate, the sentence  $\alpha\Phi$  is true if and only if  $\alpha$  falls under the concept  $\Phi$ .

Where  $\Phi$  and  $\Psi$  are sentences:

2. The sentence 'it is not the case that  $\Phi$ ' is true if and only if  $\Phi$  is false; and otherwise it is false.
3. The sentence ' $(\Phi$  and  $\Psi)$ ' is true if and only if  $\Phi$  is true and  $\Psi$  is true; and otherwise it is false.
4. The sentence ' $(\Phi$  or  $\Psi)$ ' is true if and only if  $\Phi$  is true or  $\Psi$  is true; and otherwise it is false.
5. The sentence ' $($ if  $\Phi$ , then  $\Psi)$ ' is true if and only if  $\Phi$  is false or  $\Psi$  is true; and otherwise it is false.
6. The sentence ' $(\Phi$  if and only if  $\Psi)$ ' is true if and only if  $\Phi$  and  $\Psi$  are both true or  $\Phi$  and  $\Psi$  are both false; and otherwise it is false.

Instead of defining the predicates in terms of concepts, some philosophers prefer to speak of properties. Thus, one may say that the word 'walks' refers to the property of walking; and Semantic Formation Rule 1 would read:

- 1'. Where  $\alpha$  is any proper name and  $\Phi$  is any predicate, the sentence  $\alpha\Phi$  is true if and only if  $\alpha$  has the property  $\Phi$ .

Another possibility is to say that the meaning of a predicate is a set of objects. Given that Adam and Beth walk and that Carol and David do not, the meaning of 'walks' is the set consisting of Adam and Beth:

{Adam, Beth}

On this view of the meaning of predicates, Semantic Formation Rule 1 would be formulated as follows

- 1". Where  $\alpha$  is any proper name and  $\Phi$  is any predicate, the sentence  $\alpha\Phi$  is true if and only if  $\alpha$  is a member of the set referred to by  $\Phi$ .

The semantics sketched so far specifies a meaning for proper names and predicates, and it gives some direction about how to determine the truth-value for the simplest sentences. The simplest sentences are sometimes called 'atomic sentences', and they are defined as those sentences of which no proper part is a sentence. The meanings of the proper names and predicates, together with Semantic Rule 1 are not sufficient to yield the meaning (truth-value) of the atomic sentences. What is also needed is some information about the world.

The truth of the basic or atomic sentences, such as 'Adam walks' and 'Beth reads' is partially determined by the meanings of 'Adam', 'Beth', 'walks', and 'reads'; partially determined by Semantic Rule 1; and partially determined by the way the world is. If it is a fact that Adam walks, then 'Adam walks' is true, and if it is a fact that Adam does not walk, then 'Adam walks' is false.

Also notice that Semantic Rules 2-6 assume that one knows the meaning of the words 'and' and 'or' since those phrases occur in the definiens of the semantic rules. The purpose of the semantic formation rules is primarily to explain how the truth-values of complex sentences are determined by properties of their parts and not to give

the intuitive sense of negation, conjunction, disjunction, implication ('if . . . , then'), and equivalence ('if and only if'). Some philosophers think that this is a defect of this sort of semantics.

The intuition behind such a semantics is that to know the meaning of a sentence is to know the conditions under which that sentence is true and the conditions under which it is false. This is quite plausible for declarative sentences. It is less obvious for interrogative, imperative, and exclamatory sentences, but they are not part of our simple language. If they were to be made part of an enriched language, related to *Language*, it may be possible to relate their meaning to truth in some manner. For example, an interrogative sentence asks whether the truth-conditions for a certain related sentence are fulfilled. An imperative sentence tries to get the truth-conditions for a certain related sentence fulfilled. Philosophers have argued about whether the Semantic Rules 2-6 accurately capture the meanings of the English words and phrases they purport to define. Most philosophers thought that they did not, until H. P. Grice, in "Logic and Conversation," explained how it is possible to hold that the Semantic Rules 2-6 are accurate but that speakers often use those phrases in conversation to convey additional things that are not part of the meaning of the phrases themselves. Thus Grice distinguishes between what the speaker says in virtue of the meanings of the words he uses and what the speaker implies in virtue of certain contextual features that interact with the meanings of the words.

Let's now apply the semantic formation rules to some of the sentences generated earlier. It is stipulated that the world is such that Adam and Beth walk and that Carol and David do not; and that Adam and Beth talk. Consequently, when Rule 1 is cited, it indirectly depends upon how the world is.

Sentence	Semantics
1. Adam walks	True by Rule 1

Here's another example:

Sentence	Semantics
1. Beth walks	True by Rule 1
2. Adam talks	True by Rule 1
3. (Beth walks and Adam talks)	True by Rule 3, from lines 1 and 2
4. it is not the case that (Beth walks and Adam talks)	False by Rule 2, from line 3

**Exercise:** Determine the truth value of the sentence '(it is not the case that Beth talks and (Adam walks if and only if Carol walks))'.

The syntactic generation of each sentence can be combined with the semantic computation of the sentences' meaning in the following way:

Sentence	Syntax	Semantics
1. Beth walks	Rule 1	True by Rule 1
2. Adam talks	Rule 1	True by Rule 1
3. (Beth walks and Adam talks)	Rule 3, from lines 1 and 2	True by Rule 3, from lines 1 and 2
4. it is not the case that (Beth walks and Adam talks)	Rule 2, from line 3	False by Rule 2, from line 3

Although an infinite number of sentences can be generated by the grammar of *Language*, *Language* is quite impoverished in its expressive ability, compared with that of natural languages. Even if thousands of proper names and predicates were added to it, it would lack almost all of the expressive resources of a genuine natural language. My



purpose in presenting it is the limited one of illustrating what a rudimentary formal syntax and semantics might look like.

The last language I will present is a version of the predicate calculus, call it 'Predical'. In addition to subject-predicate sentences, it can express relational sentences, and quantified ones (in English such sentences 'Some dog is happy' and 'All dogs are happy'). We introduce some syntactic rules that take a sentence and rather than simply forming a more complex sentence, the rules change parts of that sentence to form a new sentence. Also, we introduce semantic rules that give the sentences meaning in virtue of 'models'. In fact, I will present, as customary, only an outline of a syntax and semantics for such a language. It is not an actual language for at least the following reasons: With regard to its syntax, it contains an infinite number of vocabulary items, contrary to our earlier position that the vocabulary and rules of actual languages are finite. With regard to semantics, it does not specify the meanings of any of the proper names (individual constants), any of the sentence letters, or any of the predicates. Only the meanings of the sentential connectives (words and phrases like 'it is not the case that', 'and', 'if . . . , then \_\_\_\_\_' and two quantifiers ('there exists an object  $\alpha$  such that' and 'for any object  $\alpha$ ') are specified. As regards semantics, it would be easy enough to give a partial model. For example, we could have 'a' refer to Adam and 'b' refer to Beth, and 'A<sup>1</sup>' could mean being the first human. But this would still leave an infinite number of individual constants, predicates, and sentence letters without a meaning.

## A SYNTAX FOR PREDICAL

A sentence is any string of vocabulary items that is generated by the Formation Rules. Nothing else is a sentence.

In the Vocabulary below, a superscript indicates how many names the predicate requires in order to be a sentence. See Formation Rule 2.

### Vocabulary

Sentence letters:  $A^0, B^0, C^0, \dots, A_1^0, B_1^0, C_1^0, \dots$

Predicate letters:  $A^1, B^1, C^1, \dots, A_1^1, B_1^1, C_1^1, \dots$

$A^2, B^2, C^2, \dots, A_1^2, B_1^2, C_1^2, \dots$

Proper names:  $a, b, c, \dots, s, a_1, b_1, c_1, \dots, s_1, \dots$

Individual variables:  $x, y, z, t, u, v, w, x_1, y_1, z_1, t_1, u_1, v_1, w_1, \dots$

Sentential connectives (logical constants)  $\sim, \&, v, \rightarrow, \leftrightarrow$

Punctuation:  $(, )$

### Formation Rules

1. Enter any sentence letter as a sentence.
2. If  $\Phi^n$  is an n-place predicate and  $\alpha_1, \dots, \alpha_n$  a series of proper names, enter  $\Phi^n \alpha_1, \dots, \alpha_n$  as a sentence.
3. If  $\Phi$  is a sentence, enter  $\neg \Phi$  as a sentence.
4. If  $\Phi$  and  $\Psi$  are sentences, enter  $\Phi \& \Psi$  as a sentence.
5. If  $\Phi$  and  $\Psi$  are sentences, enter  $\Phi v \Psi$  as a sentence.
6. If  $\Phi$  and  $\Psi$  are sentences, enter  $\Phi \rightarrow \Psi$  as a sentence.

7. If  $\Phi$  and  $\Psi$  are sentences, enter  $\Phi \leftrightarrow \Psi$  as a sentence.
8. If  $\dots \alpha \_$  is a sentence in which  $\alpha$  represents each and every occurrence of some one individual constant, enter  $\exists \beta \dots \beta \_$  as a sentence.
9. If  $\dots \alpha \_$  is a sentence in which  $\alpha$  represents each and every occurrence of some one individual constant, enter  $\forall \beta \dots \beta \_$  as a sentence.

(Concerning Rule 8 and Rule 9, the sentence  $(A^2bb v C^2ba)$ , for example, could (or would) be transformed into  $(\exists x)(A^2xx v C^2bx)$  and  $(x)(A^2xx v C^2bx)$  respectively.)

## A SEMANTICS FOR PREDICAL

### Preliminary Comments

The semantics for Predical is formal logic as an interpretation. Interpretations require four elements:

1. A specification of a nonempty universe of discourse (domain). (These are the things that the language talks about.)
2. An assignment of individual constants to individuals. (Individual constants are in effect proper names; each individual constant names one and only one object.)
3. Assignments of predicates of degree n to sets of ordered n-tuples of objects, which are also called 'extensions'. (For example, the predicate 'L<sup>2</sup>' might be correlated with  $\{ \langle 2, 1 \rangle, \langle 3, 2 \rangle, \langle 4, 3 \rangle, \dots \}$  and in effect mean the same as ' $\alpha$  is one natural number larger than  $\beta$ '.)
4. Assignments of sentence letters to truth-values. (For example, 'A' may be assigned to truth, and 'B' to falsity. This would be expressed more briefly as ' $V(A)=T$ ' (read: the valuation of 'A' is truth) and ' $V(B)=F$ ' (read: the valuation of 'B' is falsity), respectively.)

The final preliminary is some definitions:

A sentence is *atomic* if and only if it contains no logical constants or quantifiers.

A sentence is *molecular* if and only if it is not atomic.

A *model* for a sentence is an interpretation that makes the sentence true.

A *model* for a set of sentences is an interpretation that makes every sentence in the set true.

We are making the following assumptions. Every sentence is either true or false; a universe of discourse (domain) has been given, every sentence letter has been assigned a truth-value, every predicate an extension, and every proper name an individual. Then, we can give the semantics of the sentences of Predical as follows:

1.  $V(\Phi_{\alpha_1 \dots \alpha_n}) = T$  if and only if  $\langle \alpha_1, \dots, \alpha_n \rangle$  is a member of the extension of  $\Phi^n$ .
2.  $V(\neg \Phi) = T$  if and only if  $V(\Phi) = F$ .
3.  $V((\Phi \& \Psi)) = T$  if and only if  $V(\Phi) = T$  and  $V(\Psi) = T$ .
4.  $V((\Phi v \Psi)) = T$  if and only if  $V(\Phi) = T$  or  $V(\Psi) = T$  or both.
5.  $V((\Phi \rightarrow \Psi)) = T$  if and only if  $V(\Phi) = F$  or  $V(\Psi) = T$ .
6.  $V((\Phi \leftrightarrow \Psi)) = T$  if and only if  $V(\Phi) = V(\Psi)$ .
7.  $V((\exists \beta)(\dots \beta \_)) = T$  if and only if  $V((\dots \alpha \_)) = T$ , for some name  $\alpha$  and for some assignment of  $\alpha$  to an object in the universe of discourse, not necessarily the actual assignment of  $\alpha$ . Also, in this and the next rule,  $(\dots \beta \_)$  represents every occurrence of a variable  $\beta$  in the open sentence  $(\dots \beta \_)$ ; similarly for  $\alpha$  mutatis mutandis.
8.  $V((\forall \beta)(\dots \beta \_)) = T$  if and only if  $V((\dots \alpha \_)) = T$ , for every assignment of  $\alpha$  to an object in the universe of discourse.

We could convert the sentences of Predical to sentences of English roughly by introducing (i) 'lexical insertion rules', which would convert the vocabulary to equivalent words and phrases in English, (ii) transformation rules that would invert strings like 'A'a' to 'aA' (or 'is aggressive Adam' to 'Adam is aggressive'), and (iii) one or more rules that would tell us when to stop applying the rules. This is harder than it seems, and it would come nowhere close to giving a complete grammatical description of English.

## IX

### Subject and Predicate

The most fundamental distinction in the philosophy of language is that between subject and predicate. This distinction is closely related to the distinction that goes under the same name in grammar schools; but there are important differences. I will talk about the distinction only as philosophers typically understand it.

Many, if not most philosophers, take sentences like

Socrates sits

and

Napoleon ruled

as instances of the most basic kind of sentence. They can be divided into two parts: a subject expression and a predicate expression. The paradigmatic examples of subjects are proper names, and I am assuming that 'Socrates' and 'Napoleon' are proper names. (Many philosophers would disagree.) Whether noun phrases like 'the philosopher who taught Plato' or 'the greatest French general' are or should be considered genuine subject expressions when they occur as the grammatical subject of a sentence is a hotly debated philosophical topic; Gottlob Frege and P. F. Strawson think they are. Bertrand Russell thinks they are not. The issue is discussed in Section III, "Reference and Descriptions."

The paradigmatic predicate expressions are verbs like 'sits' and 'ruled'. (We will ignore the tense of the verb.) Complex verb phrases like 'sits in a chair' or 'ruled the beautiful country northwest of Italy and across the English Channel from Great Britain' are usually considered to be unproblematic predicate expressions also. Of course, these latter predicates are complex and a complete theory of language would have to explain how their complexity functions. An explanation of the complexity of 'Socrates sits in a chair' is that it consists of three simpler parts: 'Socrates', 'sits in', and 'a chair'. (This is not exactly the way that grammar school grammar would divide it.)

Traditionally, philosophers have not been interested in the distinction between subjects and predicates for its own sake, but because they were interested in the basic structure of reality. And they reasoned that since people generally think about the world correctly and express their thoughts in language, language must reflect the basic structure of reality. If the basic structure of language is subject-predicate, then the basic structure of reality must be something analogous.

If one thinks about the difference between subjects and predicates, one may well come to think that subjects (are used to) pick out individual objects in the world. 'Socrates' and 'Napoleon' (are used to) pick out particulars (objects that have a definite location in space and time). Instead of picking out, philosophers often talk about

subjects referring to, mentioning, identifying, or denoting individuals. All of these locutions get at roughly the same idea.

What is the purpose of picking out a particular? The standard answer is that a person does this in order to go on to *say something* about that object. The job of saying something is performed by the predicate. In the sentence, 'Socrates sits', the predicate 'sits' says something about Socrates. What exactly is *saying something* in this sense? A good answer, I think, is that saying something is categorizing something. And categories are general; they group things of the same kind together. Socrates and Napoleon belong to the same category of being human. Thus, we could say correctly,

(1) Socrates is human

and

(2) Napoleon is human.

Now notice an important difference or asymmetry between the function of subjects and predicates. Subjects (are used to) pick out or refer to individual objects. In contrast, predicates (are used to) express something general, something that can belong to or can be common to many things. Only one thing is Socrates, but many things are human. Only one thing is Napoleon, but many things ruled.

This difference is closely connected to the metaphysical distinction between particulars and universals. In other words, subjects pick out particulars and predicates 'pick out' or express universals. Nominalists maintain that however predicate expressions work, there actually are no entities other than particulars. Thomas Hobbes, a staunch nominalist, said that the only universals are words, and by this he meant, predicates, which themselves are particular objects. Realists believe that in addition to particulars, there are entities that are essentially general and are picked out by predicates. These things are called 'universals' and sometimes 'concepts', 'properties', 'features', or 'characteristics'. All of these words serve roughly the same logical role.

As my examples so far have suggested, particulars are objects that have a location in space and time; universals do not. Of course, all sorts of problem cases arise. Given that Socrates and Napoleon are dead, do they exist in space and time? Do fictional characters like Pegasus and Sherlock Holmes exist? Alternatively, are the words 'Pegasus' and 'Sherlock Holmes' able to be used as genuine subjects or not? These questions, for which philosophers have given myriad answers, are touched on in some of the articles in Section III. I shall not discuss them here at all.

### Relations

Let's now consider a plausible extension of the distinction between subjects and predicates. In traditional grammars, sentences that have transitive verbs are said to have a subject and a direct object. But one could also say that they have two subject expressions, ordered in a certain way. For example, the sentence

Adam loves Beth

could be analyzed as consisting of two subjects, 'Adam' and 'Beth' with the verb 'loves' being understood as a predicate that categorizes pairs of objects, namely, just those pairs of things in which the first object loves the second. (Do not confuse the use of 'object' here with grammatical term 'direct object'.) If 'Adam loves Beth' is true, then it is because the relation of loving categorizes or groups Adam and Beth together as an ordered pair. The order is important because while 'Adam loves Beth' may be true, 'Beth loves Adam' may be false.

Philosophers love to generalize or to see similar patterns in things that may not immediately look similar. For example, some sentences can be seen as having predicates that group three or four objects together:

Adam is between Beth and Carol

Adam is between Beth and Carol and in front of David.

That is, for the first sentence, a philosopher might take ' $\alpha$  is between  $\beta$  and  $\gamma$ ' as the predicate and 'Adam', 'Beth', and 'Carol' as three subjects, ordered in the way indicated by the Greek letters. (These Greek letters also mark the places that need to be filled appropriately in order to create a sentence.) The predicate ' $\alpha$  is between  $\beta$  and  $\gamma$ ' expresses a relation that groups three objects together. If the three objects referred to stand to each other in the relation designated by the predicate, then the sentence is true. As regards the second sentence, the predicate ' $\alpha$  is between  $\beta$  and  $\gamma$  and in front of  $\delta$ ' expresses a relation that orders Adam, Beth, Carol, and David. And so on.

Rather than talking about subjects and predicates for these kinds of sentences, it is standard to talk about terms and relations, although the words 'term' and 'relation' are often used ambiguously. 'Term' sometimes is used to mean the name 'Adam' and sometimes the person Adam. 'Relation' sometimes is used to mean the verb or predicate, for example ' $\alpha$  is between  $\beta$  and  $\gamma$ ' and sometimes the property, concept or universal of *being between one thing and another*. I too will use 'term' and 'relation' ambiguously and trust the reader to figure out the right meaning of the words from the context.

For the sake of generality, we can assimilate the idea of subject-predicate sentences to the idea of terms and relations by saying that subject-predicate sentences express monadic relations, that is, relations that essentially involve only one term or object. Some people object to the idea of monadic relations on the grounds that by definition a relation requires two individuals. While relations typically relate one object to one or more other objects, that is not always the case. Every true identity statement, for example, 'Cicero is identical with Tully' and 'Hesperus is Phosphorus' relates one object to itself. Whenever an identity statement relates one object to some other object, it is false, for example, 'Cicero is identical with Hesperus'. Or suppose a person loves only herself. Then love relates that person to herself, and only one individual is involved.

Moreover, we are willing to depart from the ordinary conception of relation for the sake of getting a more general explanation of certain phenomena. We begin with the ordinary conception and use it as the basis for constructing a theoretically more useful one. The primary advantage of merging subjects and predicates into the category of relations is that it allows one distinction to do the work of two. This is not an arbitrary move. In the sentence 'Socrates sits', the verb 'sits' intuitively seems to be doing the same thing with one word, 'Socrates', that 'loves' seems to do with two words, say, 'Adam' and 'Beth', in the sentence 'Adam loves Beth', and that ' $\alpha$  is between  $\beta$  and  $\gamma$ ' does with three words, say, 'Adam', 'Beth', and 'Carol' in the sentence 'Adam is between Beth and Carol'.

### Properties of Relations

Many relations have interesting properties. Let's restrict our discussion to dyadic relations, that is, those relations that hold, roughly, between two objects. Being a sibling of, being adjacent to, and being the same height as someone are symmetric relations. If Adam is a sibling of Beth, then Beth is a sibling of Adam. If Carol is adjacent to David, then David is adjacent to Carol. If Adam is the same height as Beth, then Beth is the same height as Adam. In general, a relation  $R$  is symmetric, if the following formula is true for every  $x$  and  $y$  in the domain or universe of discourse:

Symmetry: If  $x$  has the relation  $R$  to  $y$ , then  $y$  has that very same relation  $R$  to  $x$ .

Being taller, being older, and being younger are transitive relations. If Adam is taller than Beth and Beth is taller than Carol, then Adam is taller than Carol. If Adam is older than Beth and Beth is older than Carol, then Adam is older than Carol. If Adam is younger than Beth and Beth is younger than Carol, then Adam is younger than Carol. In general, a relation  $R$  is transitive, if for every  $x$ ,  $y$  and  $z$ , in the domain or universe of discourse the following formula is true:

Transitivity: If  $x$  has the relation  $R$  to  $y$  and  $y$  has that same relation  $R$  to  $z$ , then  $x$  has  $R$  to  $z$ .

Weighing the same, and being the same height are reflexive relations. Adam weighs the same as himself and is the same height as himself. The same holds for Beth, Carol, and every other thing. In general, a relation  $R$  is reflexive, if the following formula is true for every  $x$  in the domain or universe of discourse:

Reflexivity:  $x$  has the relation  $R$  to  $x$ .

Here are definitions of some other properties of dyadic relations with exercises that will help you understand the property:

A relation  $R$  is asymmetric just in case for every  $x$  and every  $y$ , if  $x$  has  $R$  to  $y$ , then  $y$  does not have  $R$  to  $x$ .

Exercise: Identify the relations that are asymmetric:  $\alpha$  is taller than  $\beta$ ,  $\alpha$  is as heavy as  $\beta$ ,  $\alpha$  is to the right of  $\beta$ ,  $\alpha$  is numerically greater than  $\beta$ .

A relation  $R$  is intransitive just in case for every  $x$ ,  $y$ , and  $z$ , if  $x$  has  $R$  to  $y$  and  $y$  has  $R$  to  $z$ , then  $x$  does not have  $R$  to  $z$ .

Exercise: Identify the relations that are intransitive:  $\alpha$  is a parent of  $\beta$ ,  $\alpha$  is as heavy as  $\beta$ ,  $\alpha$  is perpendicular to  $\beta$ ,  $\alpha$  is twice as large as  $\beta$ .

A relation  $R$  is irreflexive just in case for every  $x$ ,  $x$  does not have  $R$  to  $x$  (itself).

Exercise: Identify the relation that is not irreflexive:  $\alpha$  is taller than  $\beta$ ,  $\alpha$  is heavier than  $\beta$ ,  $\alpha$  is to the right of  $\beta$ ,  $\alpha$  is as tall as  $\alpha$ .

Finally, let's introduce three additional properties of dyadic relations.

A relation  $R$  is nonsymmetric just in case  $R$  is not symmetric.

A relation  $R$  is nontransitive just in case  $R$  is not transitive.

A relation  $R$  is nonreflexive just in case  $R$  is not reflexive.

All asymmetrical, intransitive, and irreflexive relations are respectively nonsymmetrical, nontransitive, and nonreflexive; but the converse does not hold. That is, some nonsymmetrical relations are asymmetrical (e.g., being a parent of), some nontransitive relations are intransitive (e.g., being a parent of), and some nonreflexive relations are irreflexive (e.g., being taller than).

Exercises:

1. Suppose that David and Eve are not biologically related. Is the following sentence true? And if so, why?

If David is a sibling of Eve, then Eve is a sibling of David.

2. Suppose that David weighs fifty pounds, Eve weighs one hundred pounds, and Frank weighs one hundred and fifty pounds. Is the following sentence true? And if so, why?

If David is heavier than Eve, and Eve is heavier than Frank, then David is heavier than Frank.

3. Categorize the relations expressed by the following relational phrases as symmetric, transitive, reflexive, asymmetric, intransitive, and irreflexive, nonsymmetric, nontransitive, or nonreflexive. Use as many of these properties as appropriate. (Assume the domain or universe of discourse is either living human beings or the natural numbers, as appropriate.)

- a is heavier than b
- a is a cousin of b
- a is greater than b
- a is divisible without remainder by b
- a is identical with b
- a is the square of b

4. (a) Are all nonsymmetric relations asymmetric?  
(b) Are all asymmetric relations nonsymmetric?

Relations that are symmetric, transitive, and reflexive are called equivalence relations. They partition objects into groups that do not overlap. For example, suppose arbitrarily that there are ten people who are four feet tall, eleven people who are five feet tall, and twelve people who are six feet tall. The relation of being the same height conceptually groups every one of those ten, eleven, and twelve people, respectively, into distinct groups. Let's call these groups 'equivalence classes', because they are determined by an equivalence relation.

Exercise: Which of the following phrases express equivalence relations?

- (a)  $\alpha$  is taller than  $\beta$
- (b)  $\alpha$  is younger than  $\beta$
- (c)  $\alpha$  is congruent with  $\beta$
- (d)  $\alpha$  is a spouse of  $\beta$
- (e)  $\alpha$  is the same height as of  $\beta$

### Identity

One of the most wonderful, remarkable, and seemingly mysterious relations is that of identity. On the one hand, it seems to be one of the simplest and the most pervasive of relations. Bishop Butler's famous remark, "Everything is what it is, and not another thing," seems tautologous and too weak. Everything has to be what it is. Things could not be anything other than what they are. On the other hand, the relation was not completely understood until Gottlob Frege wrote about it in the late nineteenth century. Many people today do not realize that what is often referred to as equality as in mathematical equations ' $7 + 5 = 12$ ' are assertions of identity (the number 12 is identical with the number that is the result of adding seven and five). The kind of identity I am referring to is sometimes called numerical or individual identity, in order to distinguish it from the general identity (identity of species) that can hold between two individual objects of the same kind. ('Adam owns a blue 2006 Nissan Maxima LE and Beth has an identical one.')

Numerical identity is an equivalence relation. For every object, if  $x$  is identical with  $y$  and  $y$  with  $z$ , then  $y$  is identical with  $x$  (symmetry),  $x$  is identical with  $z$  (transitivity), and  $x$  is identical with  $x$  (reflexivity).

Exercise: Given what was said in the preceding sentence, is  $y$  identical with  $y$ ? Is  $z$  identical with  $x$ ?

While many relations are equivalence relations, identity has two properties that makes it unique:

The Principle of the Indiscernibility of Identicals: If  $x$  is identical with  $y$ , then  $x$  and  $y$  have all the same properties, that is, any property that  $x$  has  $y$  has also.

The Principle of the Identity of Indiscernibles: If  $x$  and  $y$  have all the same properties, that is, if any property that  $x$  has  $y$  has also, then  $x$  is identical with  $y$ .

By the indiscernibility of identicals, if Cicero is identical with Tully, and if Cicero is a Roman, an orator, and a philosopher, then Tully is a Roman, an orator, and a philosopher. And by the identity of indiscernibility, if Cicero has all of the very same properties as Tully (including, but not restricted to, being a Roman, an orator, and a philosopher), then Cicero is identical with Tully.

There are many problematic cases. The evening star and the morning star are identical. (Each is Venus.) But many people do not know this. And no one knew it until some brilliant astronomer discovered that (other than the sun and moon) the heavenly object that is usually the first to be seen in the night sky and that disappears behind the horizon during the night is identical with the object that appears on the horizon before full daylight and that is usually the last to disappear in the morning. Suppose that John does not know this much astronomy. Since the evening star is identical with the morning star, how could he believe that the evening star is the first celestial body that he sees at night and not believe that the morning star is the first celestial body that he sees at night?

This and related questions are discussed in Section V, "Propositional Attitudes."

X

There are three topics that readers often expect to be treated extensively in a book about the philosophy of language that typically are not: a theory to the effect that language determines how a person perceives the world; a theory that people communicate attitudes or emotions through the way they position their bodies; and the view that males and females communicate in radically different ways.

The first view is sometimes called the Sapir-Whorf hypothesis, after Edward Sapir and Benjamin Whorf, sometimes the thesis of linguistic relativity, and sometimes that of linguistic determinism. There is no entry for it in *The Cambridge Dictionary of Philosophy*, 2d ed. (1999), no entry for it in Blackwell's *Companion to the Philosophy of Language* (1997), and about seventy-five words about it in *The Oxford Companion to Philosophy* (1995). The reason it is absent from standard philosophical handbooks is a combination of two things: either the explanation of it is self-contradictory or it is inconsequential. In its inconsequential form, the hypothesis asserts that the vocabulary for some languages divides the world differently from the way the vocabulary of some other languages does. So there is no exact single word equivalent in Spanish for 'brown' in English; and Eskimos have words for, say, seventeen kinds of snow, whereas English has only one. There is no doubt that each language has many words for which there is no existing word in some other language. It would be strange if this

were not the case, given the diversity of conditions, values, and histories accompanying the use of language. However, this thesis is inconsequential because it is consistent with the following two facts: all the distinctions that are made in one language can be made in another language either by using phrases, 'powdered snow', 'wet snow', 'snow with a crust formed by the partial melting and then refreezing of it', etc., or by enriching the language with new words, often some form of the semantically elusive word. That's how words like 'espresso', 'mauve', 'taupe', and thousands of others got into English.

The contradictory version of the hypothesis is something to the effect that languages determine how people perceive reality. And because of this linguistic relativity or determinism, people of one language group or culture conceptualize the world so differently from people of another language group or culture that the one cannot understand the other. The incoherence of this hypothesis emerges as soon as its proponent provides evidence for it. For that evidence consists of explaining in the proponent's own language the very differences that are supposed to be impossible for him and his audience to understand about the world. Consider this passage by Stuart Chase:

In English we say "Look at that wave." But a wave in nature never occurs as a single phenomenon. A Hopi says "Look at that slosh." The Hopi word, whose nearest equivalent in English is "slosh," gives a closer fit to the physics of wave motion, connoting movement in a mass.

"The light flashed," we say in English. . . . The trend in modern physics, however, with its emphasis on the *field*, is away from subject-predicate propositions. Thus a Hopi Indian is the better physicist when he says *Reh-pi*—"flash"—one word for the whole performance, no subject, no predicate, no time element. (Stuart Chase, in *Language, Thought, and Reality*, ed. John B. Carroll [Cambridge: M.I.T. Press, 1956] p. viii)

Notice that Chase has the supposedly inscrutable Hopi speaking English. How is this possible if Hopi thought is so radically different from English thought? And notice that subject-predicate-thinking physicists discovered fields, the structure of which is not subject-predicate. Again, how is this possible if linguistic determinism is true? Moreover, in addition to understanding his own conceptual scheme and that of people who supposedly have radically different ones, Chase, a subject-predicate-thinking author (his writing is full of subject-predicate sentences) makes authoritative judgments about whether the language of English-speaking nonscientists is nearer to or farther away from that of the scientists. This judgmental stance makes sense only if linguistic categories are not tyrannical, that is, only if the Sapir-Whorf hypothesis is false.

A defender of linguistic determinism may object that Chase only approximated to the meaning that the Hopi and Indian expressed and, more importantly, as a hypothesis, the Sapir-Whorf hypothesis does not need to provide actual evidence. I could reply that Chase is merely following Whorf, who wrote, "We have just seen how the Hopi language maps out a certain terrain of what might be termed primitive physics" (*Language, Thought and Reality*, p. 55). So more than approximation is being claimed. A stronger reply is that it is not the supposed actual evidence that makes the view contradictory. Rather, the problem is that any attempt to explain what the view asserts, as for example by indicating in a general way what the difference is between English-thinking and Hopi-thinking, turns out to be contradictory. Let's say something more about this latter point. If we suppose that it is impossible for, say, an English speaker to translate what a Hopi says, because the Hopi's corresponding conceptual scheme is so radically different, then we do not have enough evidence to judge that the Hopi is even speaking a language. In order to understand something as a language at all, it is necessary to assign beliefs and intentions to the speaker and meanings to the utterances in such a way that

something systematic enough to count as a language emerges. Failing to discover such regularities, one cannot judge that the creatures being studied speak a language. (For more on this, see Donald Davidson, "On the Very Idea of a Conceptual Scheme," in *Inquiries into Truth and Interpretation* [Oxford: Clarendon Press, 1984].)

Let me end the consideration of the Sapir-Whorf hypothesis with a simpler objection. The fact that each language contains words in certain categories, say, categories of things animal, vegetable, or mineral, does not determine that a person must see everything as belonging to one of these types, for every language contains some sign of negation, some sign that says an object does not belong to some given category; and this makes it possible to say that something belongs to none of the existing categories. If English contained words for only three kinds of animals—dogs, cats, and squirrels—and an aardvark came on the scene, a speaker could say, "This animal is not a dog, not a cat, and not a squirrel. I will call it an 'aardvark'." (The story goes on that upon being questioned as to why the speaker called it an 'aardvark', she said, "Because it looks like an aardvark.")

The second topic not covered in the articles in this book concerns 'body language', the view that people 'communicate' what they believe and how they feel by the way they position various parts of their bodies during a conversation. A person who crosses his arms is cautious and reserved; a person whose crossed legs point away from his interlocutor does not want to be in the conversation; and so on. Even if there is solid empirical data to support these claims, they would be linguistically uninteresting because these bodily positions lack the most basic characteristics of languages. A language needs to have a syntax by which a person builds up more complicated structures from simpler ones, with no set limit on their ultimate complexity. Also, people assume the bodily positions in question unconsciously; but an utterance of a language needs to be accompanied by a certain kind of intention to communicate. It is easy to mistake 'body language' for language because it makes sense to say, "Arms crossed against one's chest *means* the person is being cautious." However, as H. P. Grice makes clear in "Meaning" in Section I, "Truth and Meaning," this sense of 'mean', what he calls 'natural meaning', is not the relevant sense of 'meaning'. The relevant kind is communicative meaning, which Grice calls 'nonnatural meaning'.

The third issue not treated in the rest of this book concerns the alleged differences between so-called male and female speech. According to the stereotype, males are direct; females are indirect. No doubt there is something to this. My wife comes from a family consisting exclusively of females, except for brief, necessary male presences; and I come from a family consisting exclusively of males, except for the constant and necessary management of a wife and mother. We were on the brink of divorce during the first year of our marriage because we did not understand each other's linguistic conventions. I would come home in the late afternoon and ask, "What time are we having dinner?" intending to get information so that I could plan whether to start another activity or get ready for dinner. My wife took my question to be an indirect criticism, "You should have dinner ready now!" I could tell that she was angry, because she yelled at me—I appreciated that directness—but I did not know why she was angry, because she wouldn't say. I was direct; I said what I meant. She was indirect; what she said meant something else. I should have known that she was offended by my directness, but I didn't. When I came to understand the directness/indirectness differences between my wife and me, I devised the plan of prefacing my questions with the clarifying sentence, "This is a pure interrogative: When are we having dinner?" She interpreted my innocent, if obtuse, tactic as sarcasm.

On other occasions, my wife would be relaxing in the living room. When she saw

me enter the kitchen to get a snack, she would ask, "Would you like some tea?" Knowing that she knew that I did not drink tea, I found the question odd, but answered directly: "No, thank you." I would complete my task and leave the kitchen. I could smell an emotional smoldering emanating from my wife, but could not figure out the cause. My wife indirectly had been asking me to get her some tea.

Examples could be multiplied. However, the phenomenon just illustrated is more complicated than the examples suggest. Not all males and females use male and female speech methods, respectively. Also, there are ethnic differences in speech. So female members of ethnic group E are typically more direct than male members of ethnic group F. And members of ethnic group G, male and female, typically interrupt each other more than males of group H typically interrupt females of group H. (See Deborah Tannen, *Gender and Discourse* [New York: Oxford University Press, 1996].) The reason that these speech conventions are not a philosophical topic is that they themselves do not clarify or call into question the things that the philosophy of language cares about, namely, the most basic communicative concepts. In philosophy, these include meaning, reference, truth, belief, intentions, and so on. Direct and indirect speech, whether practiced by males or females, people of one culture or another, can be explained by the theory of speech acts, which includes the theory of indirect speech acts. This is not to say that different types of communicative tactics are unimportant or uninteresting, only that they are more properly studied by linguists, sociolinguists, and speech communication theorists.

## XI

W. V. Quine argued in "Two Dogmas of Empiricism" that the concept of synonymy, the concept of  $x$  meaning the same as  $y$ , cannot justifiably be used in a theory of language because no clear empirical sense can be made of it. Donald Davidson replaces the concept of meaning with that of truth. Instead of asking "What does a sentence mean?" Davidson asks, "What are the truth conditions for a sentence?"

The original 1951 version of "Two Dogmas of Empiricism" is reprinted here rather than the more familiar one published in *From a Logical Point of View*. Analytic philosophers recently have become interested in their twentieth-century origins. So something is gained by looking at Quine's original words, such as his acknowledgment of the work of Morton White. Something is lost in that some clarifications or reconsiderations are missing. One of these that should be noted occurs on page 65, column a, paragraph 2. The sentence beginning "Otherwise, there would be" reads as follows in the 1961 version: "Otherwise there would be a state-description which assigned truth to 'John is a bachelor' and to 'John is married,' and consequently 'No bachelors are married' would turn out synthetic rather than analytic under the proposed criterion." Another is an addition made after page 70, column a, paragraph 2, which reads in part, "It may be instructive to compare the notion of a semantical rule with that of a postulate. Relative to a given set of postulates, it is easy to say what a postulate is: it is a member of the set. Relative to a given set of semantical rules, it is easy to say what a semantical rule is. But given simply a notation, mathematical or otherwise, and indeed as thoroughly understood a notation as you please in point of the translations or truth conditions of its statements, who can say which of its true statements rank as postulates? Obviously the question is meaningless. . . ." The most significant omission from the original article in the 1961 version is the four paragraphs on page 74, column b, beginning with "Imagine, for the sake of analogy . . ."

Section I is devoted to articles about the nature of meaning. Alfred Tarski resurrected the philosophical study of meaning in 1935 with the publication of his article, "The Concept of Truth in Formalized Languages," in which he demonstrated that semantics could be treated with the same formal rigor as syntax. The resurrection was necessary because most philosophers had understood Ludwig Wittgenstein's *Tractatus Logico-Philosophicus* (1921) to have shown that only a syntactic description of language is possible. Today almost all research in syntax is done by linguists. Philosophers are interested in syntax only insofar as it relates to semantics or pragmatics. The articles by Tarski and Alonzo Church sketch a syntactic theory because it is relevant to their views about semantics.

In addition to the meaning that words or sentences have, there is also a sense in which speakers mean things. H. P. Grice gave the first explicit, though tentative, analysis of this concept in his article "Meaning," published in 1957. He extended and revised that analysis, in response to numerous criticisms, in his "Utterer's Meaning and Intentions." Grice's view, utterance, word, and sentence meaning are derivative concepts. That is, an analysis of utterance, word, and sentence meaning will contain the concept of utterer's meaning in the analysis. This view goes against the grain of most work in semantics. Thus, Section I develops two important theories of meaning and touches on a number of related semantic issues.

Section II consists of selections about pragmatics or speech acts. It continues the line of thinking expounded in the article by Grice. If a person has successfully conveyed what he meant by an utterance then he has done something with those words: he has performed a speech act. The founder of speech act theory is J. L. Austin, who constructed a theory from the insights that not all cognitively significant talk is supposed to be true or false and that talking is a kind of doing. Many philosophers have extended Austin's work in various fruitful ways.

Section III concerns the single most discussed issue in the philosophy of language: reference. Reference has the importance that it does because philosophers typically think that the principal way in which language attaches to reality is through reference. This is presupposed in most of the selections in this section. The central issue of debate is whether reference is a semantic or pragmatic notion.

Section IV concerns a topic related to reference: Names and demonstratives are paradigmatic kinds of expressions that refer or are used to refer. What are names? What are demonstratives? How do they attach to reality?

In Section V a different problem is discussed. What people say is often the expression of a belief ("It is raining," or "The cat is on the mat"). Notice however that expressions of belief are not in themselves expressions that someone has a belief. To say that the cat is on the mat is *not to say that anyone believes* that the cat is on the mat. Yet, one does of course often express such beliefs. In the sentences "Mary believes that it is raining" and "Mary believes that the cat is on the mat," the speaker is saying that Mary has certain beliefs. Philosophers have wondered what the objects of belief are. This question can be put in a linguistic mode: they have wondered what the object of "it is raining" and "the cat is on the mat" is when they follow the phrase "believes that." There are puzzles that seem to show that a clause occurring after the phrase "believes that" cannot refer to the same thing as it does when it occurs as the main clause of a sentence. And the same puzzles arise for a large family of words called verbs of propositional attitude, including "know," "think," "desire," and "look for."

Section VI concerns two derivative uses of language. The first is metaphor. The selections by Donald Davidson and A. P. Martinich develop theories that can be con-

sidered extensions of the theories of meaning introduced in Section I. The second derivative use of language is the use of names of fictional characters, which, according to Mark Crimmins and Frederick Kroon, involves pretense.

Section VII concerns the nature of understanding what is said. Within most contemporary scholarship, this issue is referred to as interpretation or translation. W. V. Quine has argued that one can come to see that sentences do not have a determinate meaning (the thesis of indeterminacy) if one considers the nature of translation, that is, linguistic understanding. Donald Davidson follows Quine to a large extent and concludes that there is no such thing as language, as philosophers typically have understood it. John Searle thinks that Quine's view is mistaken because he has ignored the legitimacy of the speaker's point of view.

Section VIII deals with one of the most intriguing and elusive issues in the philosophy of language. What is the nature of language? Is it possible for one person to have his own language? Must language be a social phenomenon? Is it a formal system like logic or mathematics? Or a subsystem of the human brain? These issues overlap with the first topic discussed in this book, meaning. So, this is a good topic on which to end a philosophical reflection on language. Or to begin.

## I

## TRUTH AND MEANING

What is meaning? In what terms will meaning be analyzed, and what is the ontological status of these terms? Is it words, sentences, or persons that primarily mean or have meaning? These are the central questions raised and answered in various ways in this section.

The first article, Gottlob Frege's "The Thought," explains his two-tiered theory of meaning. The first tier consists of the senses (*Sinne*) of words, phrases, and sentences. The second tier consists of referents (*Bedeutungen*), the things that the senses pick out. The distinction can be grasped by thinking about the difference between what a linguistic expression talks about and how an expression presents what is talked about to the mind of the user of the language. The way an expression presents an object to a user of a language seems to determine what the expression is about. Suppose that four signs or symbols are written horizontally on a blackboard, say, @, #, \*, &. The phrase 'the third symbol from the left' and the phrase 'the second symbol from the right' talk about or refer to the same thing, the asterisk. They have the same *Bedeutung*, the asterisk. But those two phrases present the asterisk to the speaker's mind in different ways. The phrase 'the third symbol from the left' involves thinking of something as related to things to its left. It's possible that nothing is to its right. The phrase 'The second symbol from the right' involves thinking of something as related to things to its right; again, it's possible that nothing is to its left. So the two phrases have different senses. In short, the phrase 'the third symbol from the left' seems to present the asterisk to thought in a different way than the phrase 'the second symbol from the right' does.

The difference between reference (*Bedeutung*) and sense (*Sinn*), which has just been illustrated with respect to phrases, can be extended to sentences. The sentences 'The third symbol from the left is an asterisk' and the sentence 'The second symbol from the right is an asterisk' both seem to be about the same thing. It is natural to think that those two sentences refer to facts. However, that is not Frege's view. He thinks both sentences refer to the truth. In fact, the truth is the referent of every true sentence. In the same way he thinks that falsehood or the false is the referent of every false sentence. I won't go into his reasons for this, in large part because "The Thought" focuses on the *Sinne* of sentences, the thoughts (*Gedanken*) that sentences present.