

# Semantic values and truth conditions

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1. What do we know when we know the meaning of a sentence? .....	1
2. A framework for assigning truth conditions to sentences .....	1

## 1. WHAT DO WE KNOW WHEN WE KNOW THE MEANING OF A SENTENCE?

Remember our (sketch of an) argument for the existence of a compositional semantics for English: were there no such compositional semantic theory, we would be unable to explain our ability to know the meanings of novel sentences.

But what exactly do we know when we know the meaning of a sentence?

One thing we seem to know is *what it would take for the sentence to be true*. Accordingly, it seems that we should want our compositional semantic theory to assign, to each sentence of the language, its truth conditions.

Note: the distinction between truth *conditions* and truth *value*.

## 2. A FRAMEWORK FOR ASSIGNING TRUTH CONDITIONS TO SENTENCES

The basic idea behind a compositional semantic theory is to assign to each simple expression in the language a meaning — called a *semantic value* — and provide rules for determining the semantic values of complex expressions in terms of the semantic values of the expressions of which they are composed, plus their mode of combination.

The conventional way of talking about the semantic values of expressions is to enclose those expressions in ‘double brackets’, so that we could talk about the semantic value of ‘Pavarotti’ by using the notation

[[Pavarotti]]

and about the semantic value of ‘Pavarotti likes Sophia Loren’ by writing

[[Pavarotti likes Sophia Loren]]

The semantic value of a sentence is its truth value. Hence, given the remarks above, we want our semantic theory to tell us more than the semantic value of each sentence in the language — we want it to tell us the semantic value of each sentence in the language relative to an arbitrary circumstance of evaluation.

So we need some way of signifying not just the semantic value of an expression, but rather the semantic value of an expression in an arbitrary circumstance of evaluation. We do this by using a superscript for circumstances of evaluation, so that the semantic value of our example sentence in circumstance  $v$  would be

$$\llbracket \text{Pavarotti likes Sophia Loren} \rrbracket^v$$

If the semantic values of sentences are truth-values, how do we write, in our notation, ‘the semantic value of “Pavarotti likes Sophia Loren” in  $v$  is true’? Like this:

$$\llbracket \text{Pavarotti likes Sophia Loren} \rrbracket^{v=1}$$

Remember our initial claim that we can know, of novel sentences, what it would take for them to be true. That amounts to the claim, in our current notation, that we can encounter a new sentence  $S$  and know, of  $S$ , which circumstances  $v$  are such that  $\llbracket S \rrbracket^v=1$ .

We suggested that this ability could be best explained by a semantic theory which explained the truth conditions of sentences in terms of the semantic values of the expressions making up the sentence, plus the way in which those expressions are combined. So suppose for example that we have some sentence  $[_S N VP]$ . What we want is a theory which tells us when  $\llbracket [_S N VP] \rrbracket^v=1$ , given only information about  $\llbracket N \rrbracket^v$  and  $\llbracket VP \rrbracket^v$ .

This will involve answering at least three questions:

What sort of thing is  $\llbracket N \rrbracket$ ?

What sort of thing is  $\llbracket VP \rrbracket$ ?

How must  $\llbracket N \rrbracket$  and  $\llbracket VP \rrbracket$  be related so that  $\llbracket [_S N VP] \rrbracket^v=1$ ?

These are the questions we’ll begin to answer next time.