

# **Background**

Ling 802

# Model-theoretic, Denotational, Referential, Truth-conditional Semantics

- Linguistic meaning is an association between a linguistic expression and an object in a MODEL/WORLD.

We will say that the object in the model/world with which a linguistic expression is associated is its DENOTATION or REFERENCE .

We can also say that a linguistic expression DENOTES an object in the model/world.

- An important part of what is involved in knowing the meaning of a sentence is to know what situation it describes. That is, given a situation, if you know the meaning of a sentence, you know whether it describes the situation truthfully or not.

In order to capture this semantic knowledge, the study of linguistic meaning (semantics) must account for TRUTH CONDITIONS of sentences, the conditions that must be met in order for the sentence to be true.

To know the meaning of a sentence is to know the conditions under which it would be true.

# Tarski's T-sentences

- A theory of meaning pairs sentences with their truth conditions.

'Snow is white' is true iff (if and only if) snow is white.

'p' is true iff p.

- We need a theory that will fill in this schema for every sentence in the language, even those we have never heard before.
- There are an infinite number of sentences in a language, so we need an algorithm for determining the truth conditions of all the sentences of a language.

# Principle of Compositionality: Fregean Program

- We are able to compute the meaning of sentences from the meanings of their parts.
- The meaning of a complex linguistic expression is determined by the meaning of its parts and the way those parts are combined.
- Every meaningful part of a sentence contributes to its truth conditions in a systematic way.
- We will develop a theory of meaning composition. We will break sentences down into their meaningful parts, and think about the contribution of each part to the truth-conditions of the whole.

# Semantic Composition as Function Application (Frege)

“In my essay ‘Negation,’ I considered the case of a thought that appears to be composed of one part which is in need of completion or, as one might say, ‘unsaturated’, and whose linguistic correlate is the negative particle, and another part which is a thought. We cannot negate without negating something, and this something is a thought. Because this thought saturates the unsaturated part or, as one might say, completes what is in need of completion, the whole hangs together. And it is a natural conjecture that logical combination of parts into a whole is always a matter of saturating something unsaturated.”

“Statements in general, just like equations or inequalities or expressions in Analysis, can be imagined to be split up into two parts; one complete in itself, and the other in need of supplementation, or ‘unsaturated’. Thus, e.g., we split up the sentence ‘Caesar conquered Gaul’ into ‘Caesar’ and ‘conquered Gaul’. The second part is ‘unsaturated’ it contains an empty place; only when this place is filled up with a proper name, or with an expression that replaces a proper name, does a complete sense appear. Here too I give the name ‘function’ to what this ‘unsaturated’ part stands for. In this case the argument is Caesar.”

## **Semantic Composition as Function Application**

- Frege construed unsaturated meanings as functions. Unsaturated meanings take arguments, and saturation consists in the application of a function to its arguments.
- Technically, functions are sets of a certain kind.
- See ‘Mathematical Preliminaries’, LING 324.