TRUTH-CONDITIONS AND COMPOSTIONALITY

1. Truth-conditions

Convention T: $T(\alpha) \leftrightarrow \phi$,	where ϕ is a sentence of the object language and α is its canonical name in the meta-language.

This requires that the meta-language should be an extension of the object language, which makes the theory parochial. Instead, we might demand only that ϕ be a translation (share meaning with) a language of the object language. Davidson's idea is to turn Tarski's theory upside down – instead of taking meaning as basic and view it as a theory of truth we should take truth as basic and view it as a theory of meaning. Here are some reasons why this idea is problematic:

Absolute truth. Standard semantic theories do not use absolute truth-predicates. They can meet Davidson's requirement only using additional stipulations.

Problematic instances. We do not want to derive *all* instances of Convention T:

(1) 'He is a charlatan' is true if and only if he is a charlatan.
(2) 'Is he a charlatan?' is true if and only if is he a charlatan.
(3) '(3) is not true' is true if and only if (3) is not true.

Forster's problem. A theory might derive the wrong instances of Convention T:

(4) 'Snow is white' is true if an only if grass is green.
(5) 'Snow is white' is true if an only if snow is white and grass is green.
(6) 'Snow is white' is true if an only if snow is white and arithmetic is incomplete.

Meaning outstrips truth-conditions. Arguably, the following pairs are truth-conditionally equivalent but are not synonyms:

(7a) He is rich but honest.
(7b) He is rich and honest.
(8a) The king is bald.
(8b) Someone is a king, everyone that is a king is identical to him, and he is bald.

2. Compositionality

Compositionality: There is a function that maps the complete structure and the meanings of the ultimate constituents of any complex expression onto the meaning of that expression.

The chief reason to believe that natural languages are compositional is that the assumption is entailed by the best available explanation of *productivity* – the fact that competent speakers of a natural language tend to understand complex expressions they have never encountered before. (No need to assume that they could understand infinitely many expressions.)

What usually is called compostionality is actually a stronger principle:

> *Strong Compositionality*: There is a function that maps the immediate structure and the meanings of the immediate constituents of any complex expression onto the meaning of that expression.

Strong compositionality is not supported by the argument from productivity. The idea that speakers could figure out the meanings of complex expressions in a bottom-up fashion has some plausibility, but the idea that they should be able to do so in a completely local manner, at each step disregarding everything but the meaning of the expressions they are combining, is nothing but speculation.

Here are some observations about compostionality:

Strength. The principle is not a priori; its necessity is that of the laws of special sciences. This is so because it is easy to construct and learn non-compositional languages (as long as they are parasitic on languages we already know).

Easy refutations. The principle does not rule out either syncategoremata (expressions that are only indirectly assigned interpretations in the semantics) or idioms (expressions whose meanings are not predictable from their make-up).

Recursion. The principle is independent of the claim that interpretation is recursive. Languages containing quotation can be recursive but are not compositional. Interpretations that appeal to an answer to a formally undecidable question are non-recursive but can be compositional.

Parsing. The principle makes no commitment about the psychological process of parsing. Thus, the standard assumption that processing time and syntactic complexity are directly correlated cannot be supported by appealing to compositionality.

3. Modeling meaning

A semantic theory does not assign meanings to expressions. Rather it assigns entities that model meanings in certain respect. We call these *semantic values*.

> *First Assumption*: semantic values are functions from indices to extensions.
> *Second Assumption*: semantic values are compositional.

The simplest semantic theory conforming to these two assumptions makes indices empty. We can simplify it: instead of assigning constant functions to expressions, we can directly assign extensions to them. This is *extensional semantics*.

(9a) Somewhere, there is an orthodontist who is not an orthodontist.
(9b) Somewhere, there is an orthodontist who is not an insomniac.

(10a) Once, there was an orthodontist who is not an orthodontist.
(10b) Once, there was an orthodontist who is not an insomniac.

(11a) Possibly, there is an orthodontist who is not an orthodontist.
(11b) Possibly, there is an orthodontist who is not an insomniac.

Whether these show that we need place, time, or possible world indices depends on your metaphysics: whether you think merely distant, past, or possible orthodontists are real.
If you think (with the majority), that distant and past orthodontists are real but merely possible ones are not then (9) and (10) are unproblematic but (11) gives you reason to switch to an *intensional semantics*, where semantic values are functions from possible worlds to extensions.

Do we need semantic values that are even more fine-grained? Maybe not: the argument goes wild when we consider psychological reports.

(12a) Bill believes that there is an orthodontist who is not an orthodontist.
(12b) Bill believes that there is an orthodontist who is not an insomniac.

The truth-value of these reports seems to depend on the way Bill happens to thinks of orthodontists. But that is a matter of individual psychology, not of public meaning.

4. The challenge from context-sensitivity

Context-dependence is no threat to compositionality as long as the influence of the context is anchored to the ultimate constituents of context-sensitive complex expressions.

> *Compositionality (with context)*: There is a function that maps the complete structure and the meanings of the ultimate constituents of any complex expression in their respective contexts of utterance onto the meaning of that expression in its context of utterance.

> "As an arbitrary example, consider the words 'The leaf is green', speaking of a given leaf, and its condition at a given time, used so as to mean what they do mean in English. How many distinct things might be said in words with all that true of them? Many. That emerges when we note that one might speak either truth or falsity in such words, if the leaf is the right way. Suppose a Japanese maple leaf, turned brown, was painted green for a decoration. In sorting leaves by colour, one might truly call this one green. In describing leaves to help identify their species, it might, for all the paint, be false to call it that. So words may have all the stipulated features while saying something true, but also while saying something false."

Two kinds of meaning: meaning in context (*content*) and meaning out of context (*character*).

Is the content of 'The leaf is green' different in the two contexts? The contents of the assertions are different. Semantic content might still be a *minimal proposition* or a *propositional radical.*

Is the content of 'green' the same in the two contexts? Granted, the character is the same. But what if 'green' is *indexical* or is associated with another *unpronounced indexical element*?

If neither of these options is appealing, we have to weaken compostionality:

> *Weak compositionality (with context)*: There is a function that maps the complete structure of any complex expression, the meanings of the ultimate constituents of that expression in their respective contexts of utterance, and the context of utterance onto the meaning of that expression.

5. Semantic explanations

A theory of meaning should address at least two questions: *what* do the expressions of a language mean and *why* do they mean what they do. We might call a theory that addresses the first question *semantics*, and a theory that addresses the second *meta-semantics*. (The metaphysical question what meaning is arguably not addressed by either.)

Lewis's view: semantic theories are non-explanatory. They are nothing more than systematic assignments of meanings to expressions of a language.

Stalnaker's view: semantic theories are explanatory. They provide explanations for the meanings of complex expressions in terms of the meanings of their parts.

> *Explanatory compositionality*: Complex expressions have their meanings in virtue of the meanings of their ultimate constituents and in virtue of their complete structure.

This principle is stronger than compositionality – if X holds in virtue of Y and Z then X functionally depends on Y and Z. The converse fails because explanatory primacy is asymmetric but functional dependence need not be.

Explanatory compostionality is in conflict with *holism* – the view that meaning must be explained in a top-down fashion.