<u>PHIL 3710/LING 3332: Philosophy of Language</u>
Week 8: Truth conditional theories of meaning

1. Observation: equipped with a finite amount of knowledge we are able to understand an infinite number of sentences of our language. "Last night I was so depressed from finishing my last Saranac pumpkin ale that not even watching Family Guy for four hours straight could console me." How is that?

2. One explanation: our language is *compositional*: the meaning of a complex expression is determined by its structure and the meanings of its immediate constituents. From a finite stock of simple expressions, and a finite stock of structures, we can generate an infinite number of complex expressions. If we know the meanings of each of the simple expressions, and how each of the structures composes the meanings of its constituents (that is, by knowing a **theory of meaning** for our language), then we are in a position to know the meaning of every one of the infinite number of expressions in our language.

3. Davidson proposed that the meaning of a sentence is its *truth conditions*. So to know the meaning of a sentence (i.e. to understand it) is to know the conditions under which it is true. So a theory of meaning for a language should enable us to work out the truth conditions of every sentence of the language.

4. It should, for every sentence S of our language, yield a theorem that gives the truth conditions of S: "S is true iff …". In particular, it should yield each of the following:

    a. 'Snow is white' is true iff snow is white.
    b. 'Grass is green' is true iff grass is green.
    c. 'Ithaca is gorges' is true iff Ithaca is gorges.

5. The meaning of a sub-sentential expression, then, is whatever it needs to be to get the truth theory to work.

6. To illustrate, we shall develop a Davidson-style truth theory for a fragment of English, *Frag*.

7. <u>Syntax of Frag</u>:

    a. Frag has four primitive syntactic categories: names, intransitive verbs, transitive verbs, and binary connectives.

    b. Frag has two names, 'alan' and 'betty', two intransitive verbs, 'smokes' and 'drinks', two transitive verbs, 'loves' and 'knows', and one binary connective, 'and'.

    c. Frag has two defined syntactic categories: verb phrases and sentences.

        - If I is an intransitive verb then I is a verb phrase. So 'smokes' is a verb phrase.

- If T is a transitive verb and N is a name then ‘T N’ is a verb phrase. So ‘loves alan’ is a verb phrase. (How many verb phrases are there?)
- If N is a name and V is a verb phrase then ‘N V’ is a sentence. So ‘alan smokes’ is a sentence.
- If S_1 and S_2 are sentences then ‘S_1 and S_2’ is a sentence. So ‘alan smokes and betty drinks’ is a sentence. (How many sentences are there?)

8. Semantics of Frag:

a. The denotation of a name is a particular. The denotation of ‘alan’ is alan. The denotation of ‘betty’ is betty.

b. The denotation of an intransitive verb is a property. The denotation of ‘smokes’ is the property of smoking. The denotation of ‘drinks’ is the property of drinking.

[Alternatives: a set of particulars; a function from particulars to truth values.]

c. The denotation of a transitive verb is a 2-place relation. The denotation of ‘loves’ is the relation of loving. The denotation of ‘knows’ is the relation of knowing.

[Alternatives: a set of ordered pairs of particulars; a function from particulars to functions from particulars to truth values.]

d. The denotation of a binary connective is a 2-place function from truth values to truth values. The denotation of ‘and’ is the function f such that $f(x, y)$ = True just in case x = True and y = True.

[Alternatives: a set of ordered pairs of truth values; a function from truth values to functions from truth values to truth values.]

e. The denotation of a verb phrase is a property. If the verb phrase is I, for some I, then the denotation of V is the denotation of I. If the verb phrase is ‘T N’ for some transitive verb T and name N, then the denotation of ‘T N’ is the property of standing in the relation denoted by T to the particular denoted by N. So the denotation of ‘loves alan’ is the property of loving alan.

[Alternatives: the denotation of ‘loves alan’ is the set of all particulars x such that <x, alan> is in the denotation of ‘loves’, or the result of applying the denotation of ‘loves’ to alan.]

f. The denotation of a sentence is a truth value. The denotation of ‘N V’ is True (i.e. ‘N V’ is true) just in case the particular denoted by N has the property denoted by V. The denotation of ‘S_1 and S_2’ is the result of applying the function denoted by ‘and’ to the truth values of S_1 and S_2. So ‘S_1 and S_2’ is true iff S_1 is true and S_2 is true.

[Alternatives: the denotation of ‘N V’ is the condition that the particular denoted by N is in the set denoted by V; the denotation of ‘N V’ is the condition that applying the function denoted by V to the particular denoted by N yields True.]

9. Anyone who knows this theory is in a position to know the meaning (i.e. truth conditions) of every sentence of the language (and there are an infinite number). She can work it out:

    a. ‘alan smokes and betty loves alan’ is true iff ‘alan smokes’ is true and ‘betty loves alan’ is true. (meaning of ‘and’)

    b. ‘alan smokes’ is true iff the particular denoted by ‘alan’ has the property denoted by ‘smokes’. (structure)

    c. The particular denoted by ‘alan’ is alan. The property denoted by ‘smokes’ is the property of smoking. So ‘alan smokes’ is true iff alan has the property of smoking. That is, iff alan smokes. (meaning of ‘alan’ and ‘smokes’)

    d. ‘betty loves alan’ is true iff the particular denoted by ‘betty’ has the property denoted by ‘loves alan’. (structure)

    e. The particular denoted by ‘betty’ is betty. (meaning of ‘betty’)

    f. The property denoted by ‘loves alan’ is the property of standing in the relation denoted by ‘loves’ to the particular denoted by ‘alan’. (structure)

    g. The relation denoted by ‘loves’ is the relation of loving. The particular denoted by ‘alan’ is alan. So the property denoted by ‘loves alan’ is the property of standing in the loving relation to alan. That is, the property of loving alan. (meaning of ‘loves’ and ‘alan’)

    h. So ‘betty loves alan’ is true iff betty has the property of loving alan. That is, iff betty loves alan.

    i. So ‘alan smokes and betty loves alan’ is true iff alan smokes and betty loves alan.

10. Issue: does ‘alan smokes’ have the same truth conditions as ‘alan smokes and alan smokes’?

    a. Sometimes one gets the following response: “It depends on how we individuate truth conditions.” I think that is a bad response.

    b. Here is a better response: “It depends on what is meant by ‘truth conditions’.”

    c. Often this: a set of possible worlds (often called a ‘proposition’). In that case, they have the same truth conditions. If Davidson is right, then they have the same meaning.

d. Note: the theory we have developed will not yield " 'alan smokes' is true iff alan smokes and alan smokes", but it still follows from the theory that 'alan smokes' and 'alan smokes and alan smokes' have the same meaning.

e. To avoid this consequence, we could use 'truth conditions' to refer to something more *fine grained*. Compare: the properties of being triangular and of being trilateral.

11. So maybe we can develop a Davidson-style theory of meaning for simple fragments like Frag. What about other fragments?

12. One problem: indexicals, such as 'I', 'here', 'now', etc. What is the denotation of 'I', 'here', or 'now'?

    One approach: relativise denotations to context of utterance.

13. Note that this problem extends to a great many other words as well:

    a. Peter is a female in disguise.
    b. Zach is ready
    c. Wylie is tall
    d. Kripke is smart
    e. Col is going to bottle some beer

    It seems that appeal to the context will have to do a lot of work. Is it right to appeal to the context at all?

<u>Avoiding denotations</u>

1. We have been considering a theory of meaning for a fragment of English which proceeds by specifying *denotations* for each expression of the fragment:

    a. Names denote particulars; 'alan' denotes alan.
    b. Verb phrases denote properties; 'smokes' denotes the property of smoking.
    c. Sentences denote truth values.
    d. 'alan smokes' is true iff the particular denoted by 'alan' has the property denoted by 'smokes'. So 'alan smokes' is true iff alan has the property of smoking; that is, iff alan smokes.

2. Davidson was actually against the idea of assigning things as denotations of verb phrases and sentences. For at least two reasons.

3. First: **Infinite regress**. What is it for a particular to *have* a property? We might say: it is for the particular to stand in the *having* relation to the property. But what is it for the particular to stand in the having relation? We might say: it is for the particular to stand in the *standing in* relation to the having relation. But what is it for the particular to stand in the standing in relation?

Frege sought to solve this by saying that properties are unsaturated, and require saturation by particulars. But as Davidson points out, this seems to just label the problem rather than solve it.

4. Second: **The slingshot argument**. Suppose that sentences denote something (it doesn't matter what kind of thing). And make two further assumptions:

(A1) that logically equivalent sentences denote the same thing
(A2) that co-referring singular terms can be interchanged without effecting the denotation of the sentences in which they occur.

Then we can argue that any two sentences with the same truth value denote the same thing (no matter what denotations are):

a. 'Grass is green' and '$\{x: x = x\} = \{x: x = x$ & grass is green$\}$' are logically equivalent and hence have the same denotation.
b. '$\{x: x = x$ & grass is green$\}$' refers to the same set as '$\{x: x = x$ & snow is white$\}$', so '$\{x: x = x\} = \{x: x = x$ & grass is green$\}$' and '$\{x: x = x\} = \{x: x = x$ & snow is white$\}$' have the same denotation.
c. '$\{x: x = x\} = \{x: x = x$ & snow is white$\}$' and 'Snow is white' are logically equivalent and hence have the same denotation.
d. So 'Grass is green' and 'Snow is white' have the same denotation.

The same goes for any pair of sentences with the same truth value.

5. Davidson thought we should proceed in this way instead:

a. 'N VP' is true iff VP is *true of* the particular denoted by N.
b. So 'alan smokes' is true iff 'smokes' is true of the particular denoted by 'alan'.
c. 'alan' denotes alan.
d. 'smokes' is true of *x* iff *x* smokes.
e. So 'alan smokes' is true iff alan smokes.

Note: no denotation is assigned to 'smokes'.