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BEYOND TRUTH

Paul Saka
University of Houston

THE CONCEPTS OF TRUTH AND REFERENCE are foundational to contemporary semantic theorizing (section 1). They are incoherent, however, as demonstrated by the age-old liar paradox (section 2). The paradox can be resolved, I suggest, but only by giving up contemporary semantic theorizing in favor of mentalist semantics (section 3).

1. TRUTH... When practicing linguists try to give the meaning of an expression, they usually resort to glosses or translations. This raises a theoretical question, however. By what criterion is a proposed gloss *correct*? Different answers are given by mentalist semantics, speech-act semantics, and denotational or truth-conditional semantics.[1] We can see this in the case where Σ (sigma) is a declarative sentence.

- TRUTH-CONDITIONAL SEMANTICS. For Σ to be correctly glossed by S, Σ and S must describe the same range of situations; in other words, Σ must be true under the same conditions as S; that is, we require that Σ be true iff (if and only if) S.
- MENTALIST SEMANTICS. For Σ to be correctly glossed by S, Σ and S must express the same thoughts; in other words, we require that a given cognitive agent A think Σ iff A thinks S.
- SPEECH-ACT SEMANTICS. For Σ to be correctly glossed by S, Σ and S must say the same thing; in other words, we require that a given speaker A asserts Σ iff A asserts S.

Note that truth-conditional, mentalist, and speech-act semantics need not necessarily be regarded as incompatible. Indeed, it is widely thought that cognitive content is constituted by truth-conditional content.

To make the discussion more concrete, why is German sentence (1) correctly glossed as (2)?

(1) Der Schnee ist weiss.
(2) Snow is white.

It is, supposedly, because they have the same truth-conditions (3), the same cognitive conditions (4), and the same speech-act conditions (5):

[1] On the relation between denotational semantics and truth-conditional semantics, see Saka (2007:20).

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(3) German sentence "Der Schnee ist weiss" is true iff snow is white.
(4) German speaker A thinks "Der Schnee ist weiss" iff A thinks snow is white.
(5) German speaker A says "Der Schnee ist weiss" iff A says that snow is white.

Analysis (3) illustrates truth-conditional semantics by means of a certain German sentence, but of course the theory is supposed to work for all languages. For example, we can state the truth-conditions of English sentence (6), and furthermore we can do it according to different versions of truth-conditional semantics: we can do it by means of componential analysis as in (7), by model-theoretic intensions as in (8), by simple disquotation as in (9), and so forth.

(6) John is a bachelor.
(7) "John is a bachelor" is true iff John is unmarried and John is male.
(8) "John is a bachelor" is true in model M iff PRES (BACHELOR (JOHN)) in M.
(9) "John is a bachelor" is true iff John is a bachelor.

In each case for (7)–(9), instead of quoting "John is a bachelor," we could equally well use the label "(6)."

Truth-conditional semantics is orthodox in linguistics, as measured by its occupation of the key literature of the past twenty years. First, it appears to be endorsed by all the general textbooks that I am familiar with: Akmajian *et al.* (2001:235), Fromkin (2000:378), O'Grady *et al.* (2005:205), Ohio State University Department of Linguistics (1998). (To my knowledge, the only textbook exceptions are those that acknowledge they do not represent mainstream linguistics, e.g., Croft & Cruse 2004). Second, truth-conditional semantics is propagated by nearly every textbook in linguistic semantics that I am acquainted with: Allan (2001), Bach (1989), Cann (1993), Chierchia & McConnell-Ginet (2000), Cruse (1999), Frawley (1992), Heim & Kratzer (1997), Hurford (2007), Jaszczolt (2002), Kearns (2000), Lyons (1995), Portner (2005), Saeed (2003), and de Swart (1998). Finally, it is overwhelmingly represented by the only collections of canonical articles in linguistic semantics: Davis & Gillon (2004) and Portner & Partee (2002). Truth-conditional semantics is also orthodox in philosophy, as documented in Saka (2007:117).

My own position is that mentalist semantics and speech-act semantics both contribute to the correct theory of meaning, and that the former grounds the latter. More to the present point, I shall argue that truth-conditions do not at all explain meaning. They *cannot*, for truth-conditional semantics is contradicted by the liar paradox.

2. ...PARADOX... "I am now lying to you," said Eubulides, some twenty-four hundred years ago. In effect, Eubulides made the following assertion.[2]

[2] The Eubulides statement differs from (L) in being more colloquial, and in other pragmatic ways as well. However, they are equivalent so far as the purposes of this paper go: everything that I say about (L) applies to the Eubulides statement, the only difference being that (L) formulations are less wordy and less vulnerable to deictic misconstrual. For example, speakers can use either the Eubulides statement or (L) for the sake of play, for the sake of pointing out a problem with the concept of truth, or to express a sincere belief. Priest (2006), for instance, thinks that the liar statement is both true and

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(L) (L) is false.

Suppose (L) is true. Then you accept what it says, that it is false, and you contradict your own supposition. Suppose (L) is false. Then you accept the denial of (L), "(L) is not false," and you contradict your own supposition. No matter what you suppose about (L), you contradict yourself.

Assertion (L), let's be clear, is nothing like a simple contradiction:

(10) I am right-handed and I am not right-handed.

The problem is not that (L) is self-contradictory, the problem is that *describing* an assertion of (L) is self-contradictory—at least if what you want to describe is its truth-values and truth-conditions. Those linguists who want to describe truth-conditions contradict themselves.

The argument can be rendered as a formal, deductive proof:

(a) "(L)" has been given as a label for the sentence "(L) is false."
(b) Σ is true iff S, where Σ denotes or labels S.
(c) (L) is true iff (L) is false.
(d) (L) is true and (L) is false.
(e) Therefore line (b), also known as the T-schema (T), is false.

Line (a) is a fact about language. (One might quibble, claiming that "(L)" is an artificial code symbol rather than part of natural English, but if you feel this way you can change the example to a wordier and less precise formulation that works the same way.) Line (b) is a requirement of truth-conditional semantics. It is a highly theoretical principle that, when applied to fact (a), yields line (c) [let Σ = "(L)", S = "(L) is false"]. Line (c) is already a contradiction, but its self-contradictory nature can be brought out more explicitly when (c) is converted, by propositional logic, into (d). The fact that we generate contradiction (d) from two premises—proposition (a) and disputed principle (b)—proves that at least one of the two premises is mistaken. But the soundness of premise (a) is either unimpeachable or at least beside the point (Saka 2007: ch. 8.2). Hence line (e): the T-schema is false.

Several responses to the liar paradox are available, but not one has won general acceptance.

TRUTH-VALUE GLUTS. Could it be that the liar statement is both true and false? Graham Priest (2006) and John Woods (2003) believe so, but if truth and falsehood ever merge into one, it becomes impossible to draw any cognitive distinctions whatsoever. Priest's infamous proposal leads to intellectual collapse (Saka 2007: 225).

TRUTH-VALUE GAPS. One response to the liar paradox is to hold that the liar sentence (L) is neither true nor false on the grounds that it is meaningless or does not express a proposition

false. Because he thinks it is true (as well as false), he regularly asserts (L)—not in jest or confusion, but as an expression of what he believes.

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(William of Ockham, Wittgenstein 1961, Bar-Hillel 1966, Kripke 1984, Rescher 2001, and Smith 2006). Consequently the left-hand side of (11) has a null truth-value, the right-hand side of (11) has a null truth-value, hence the two sides match, hence (11) is actually true:

(11) (L) is true iff (L) is false.

Yet (L) is clearly made up of English vocabulary according to English rules (if you prefer, consider the variant Eubulides statement). Moreover, "(L) is false" must be meaningful because "Graham Priest believes that (L) is false" is meaningful. Finally, the gap solution falls to the following variant of the liar:

(L') (L') is not true.

The gap solution holds that paradoxical statements, such as (L'), are neither true nor not true. This position can be recorded as (12), which entails (13):

(12) (L') is not true and (L') is not untrue.
(13) (L') is not true.

But (13) says exactly what (L') does, according to the standard view.[3] The gap solution, therefore, asserts that which the gap theory regards as meaningless. The position is incoherent.

TRUTH AS AMBIGUOUS. According to another solution (Russell 1956, Tarski 1983, Quine 1950, Patterson 2006, standard logic textbooks), T-schema (T), strictly speaking, is false. It needs to be reformulated as follows:

(T_i) Σ is $true_i$ iff S_j, where i>j.

The basic idea is that every use of language occurs at some logically regimented "level," and that analyst-observers can distinguish among levels by using subscripts. If "snow is white" is truly asserted at one level, then the assertion "'Snow is white' is true" holds at a higher level. When this framework is applied to liar sentence (L), the result is that (L) is true at one level and false at a *different* level, thus avoiding formal contradiction.

(14) (L) is $true_i$ iff (L) is $false_j$.

This approach may work for formal logic, but it does not serve the needs of natural-language semantics. First, although (14) avoids formal contradiction, it seems to remain self-contradictory in some deeper way. Second, discourse in natural language does not come in logically regimented layers. Third, natural languages do not have infinitely many predicates *true*, each pronounced the same and distinguished only by analysts external to the language.

[3] The non-standard view will be considered below, under the heading "truth as indexical."

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(I do not deny that *true* may be polysemous, perhaps even indefinitely so. For example, the truth predicate may be used in various literal and figurative ways:

(15) Well, of course that allegory is not true... and yet it's *true*.

What I deny is that *true* is homonymous in the regimented, hierarchical manner required by the hierarchy solution.)

TRUTH AS INDEXICAL. A variant on the hierarchy solution adopts the same formula (T_i), but now the subscripts do not signal distinct predicates *true*. Now they signal different *uses* of the predicate *true*, or different instances of language more generally. The idea is that, just as different tokens of "I do" express different propositions depending on speaker and other context, so too do different tokens of the liar sentence express different propositions. This approach can be called *token-relativism*.

Let's start with a brand new token of a liar sentence, (M). Which token of "(M)" do I have in mind? In line (M), I mean to refer to the token of "(M)" that appears in line (M). Line (M) might thus be glossed as (M'):

(M) (M) is not true.
(M') (M_M) is not true.

Barwise and Etchemendy (1987), Gaifman (1992), Simmons (1993), Weir (2000), Goldstein (2001, 2007), and Gauker (2003), arguing that (M) is neither true nor false, are committed to the claim that (M) is not true. But in saying that (M) is not true, they do not mean what (M/M') does. Rather, their assertion (16) means (16'):

(16) (M) is not true.
(16') (M_M) is not true.

Lines (M) and (16) look identical, but the fact that (M) has been uttered by a paradox-monger whereas (16) has been uttered by a bystander makes them just as different as two tokens of "I do" spoken in distinct contexts.

Now what do we want to say about (M_{16}), the token produced by token-relativists at (16)? If Goldstein is right, we are committed to saying (17), i.e., (17'):

(17) (M) is true.
(17') (M_{16}) is true.

In short, some tokens of (M) are true, some are false, and some are neither. Tokens that refer to themselves are neither true nor false, tokens that refer to self-referring tokens are true, and tokens that refer to tokens that refer to self-referring tokens are false. This position is logically coherent.

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Nonetheless, it is peculiar. The position is that line (16), and every token of the same type except for line (M), is true. *Why* is there this difference? Token-relativism, moreover, falls to the following liar:

(N) Every token of (N) is false.

Goldstein would want to say that (N_N) is neither true nor false (18), hence not true (19), from which it follows that some token of (N) is true (20), which means that (N_N) is false, which contradicts Goldstein's position (18).

(18) (N_N) is neither true nor false.
(19) "Every token of (N) is not true" is not true.
(20) Some token of (N) is true.

I conclude that available solutions to the liar, formulated in terms of truth-value, all fail. Consequently truth-conditional semantics is self-contradictory, and cannot be even part of a correct theory of meaning.

3. ...AND BEYOND. If truth and meaning are not understood in terms of truth-conditional semantics, how then are they to be understood? To answer this question, I propose that we turn to propositional attitudes. The resulting *attitudinal semantics* belongs to the same mentalist family as conceptual semantics (Jackendoff 1983), cognitive semantics (Fauconnier 1994, Talmy 2000), and natural metalanguage semantics (Wierzbicka 1996). These various forms of mentalism, though distinct from each other, are not necessarily incompatible.

I begin by rejecting the classical T-schema in favor of a psychologized version thereof:

(T_ψ) A believes that Σ is true iff A believes that S.

Instantiating the liar sentence yields:

(21) A believes that (L) is true iff A believes that (L) is false.

If A thinks (21) is true then A thinks (21) is false; and if A thinks (21) is false then A thinks (21) is true. Either way, A is highly irrational. But this is not at all paradoxical. There is a difference between being committed to an inconsistent reality, as truth-conditional semantics is, and reporting an inconsistent system of beliefs. First, inconsistent reality, by its very nature, cannot obtain, yet inconsistent beliefs are not only possible but common, even ubiquitous. Second, though A would be irrational in holding either "(21) is true" or "(21) is false," A can easily escape irrationality by not having any direct beliefs about (21)'s truth-value at all.

My solution to the liar paradox, then, is that in thinking about the liar sentence we should abstain from believing it is either true or false, which is different from believing that it is neither true nor false. Firm abstention in the face of the question "But what is it *really*?"

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is appropriate because truth is not correctly characterized by the objectivist T-schema, it is correctly characterized by (T_{ψ}).

I've argued that the classical conception of truth is inconsistent. This does not mean that everyday exchanges such as the following are illegitimate.

(22) A: Employers systematically discriminate against short people.
B: That's so true!

It is not the truth predicate that is unacceptable. Rather, it is the classical *theory* of truth that is in error, in particular the T-schema.

Orthodox linguists may concede that the T-schema, and truth-conditional semantics, fail to apply to liar sentences, yet insist that the T-schema, and truth-conditional semantics, account for all other sentences. This ad hoc position can be compared to that of a physicist who concedes that Newton's laws of motion fail to apply to astronomically large objects moving near the speed of light, yet insists that they account for the movements of mundane objects. While it is true that Newton's laws serve as a practical and approximate description of everyday motion, they simply do not articulate the underlying universal principles that explain all motion. By the same token, truth-conditional semantics may serve for some practical and rough descriptive purposes, but it is not necessary insofar as proof-theoretic approaches may suffice. More important, truth-conditional semantics does not *explain* meaning, and adopting its principles can lead to serious misunderstanding, for instance regarding the nature of linguistic ambiguity (Saka 2007: ch. 6).

Other problems for truth-conditional semantics can be raised, and have been—for instance, the problems of learnability (Duffley 2007), mood, intensionality, vagueness, polysemy, metaphor, and historical change.[4] The problem of mood has fueled one alternative to truth-conditional semantics, speech-act theory (Barker 2004, Vanderveken 1990), while the problems of polysemy and historical change have fueled another, cognitive semantics (Geeraerts 1997, Sweetser 1990). I think that the problem of the liar, however, stands out from the others. First, the liar paradox is *ancient*. Scholars have been hard at work on it for thousands of years, and still no generally acceptable solution is on the horizon. In contrast, the other topics mentioned—regarded as problems for truth-conditional semantics, not as phenomena in their own right—go back less than a century. Second, the liar paradox *deductively refutes* truth-conditional semantics. In contrast, consider the case of metaphor. The standard truth-conditional semantics response to metaphor—to distinguish between literal

[4] Interrogatives and imperative meaning can be correlated with the mental states of wondering and wanting, but not with ways the world truly is; therefore mood seems to be a special problem for truth-conditional semantics, but not for mentalist semantics. Sentence meaning is vague, or fuzzy and uncertain; human thinking is vague; objective states of affairs are not vague; therefore associating meaning with states of affairs seems to be a special problem for truth-conditional semantics, but associating it with mental states does not. Regarding learnability: meaning is finite, because it can be learned; ideas are finite, for they fit inside the mind; truth-conditions are infinite; therefore learnability seems to be a special problem for truth-conditional semantics, but not for mentalist semantics.

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meaning and non-literal meaning, and to make the study of non-literal meaning someone else's problem—is debatable, but it is not logically self-contradictory. Third, the problems mentioned above are often acknowledged in the linguistics literature. The liar paradox, however, is well nigh *invisible*. Despite the fact that all logicians know it very well, it does not make it into any of the key literature cited above (section 1, penultimate paragraph).

It is unlikely for any expert semanticist in either linguistics or philosophy not to have heard of the liar paradox, and not to know that it seems to prove that the theory of truth is illegitimate; most use the theory of truth in the foundations of their research, and yet practically none at all even acknowledge the inconsistency of their position. It is nothing less than scandalous. It also proves, in case an object lesson were needed, that research programs do not rise and fall according to intellectual merit alone. When a theory is logically refutable, and everyone knows it, yet the theory enjoys orthodoxy nonetheless, then obviously non-rational forces are at work, be they sociological or psychological.

To summarize, (T) is vulnerable to contradiction, and therefore truth-conditional semantics, even if it be approximately correct in limited application, is technically untenable. As an alternative to (T), I propose (T_{ψ}), an instance of mentalist semantics. By containing explicit references to speaker/hearer agents ("A"), cognitive analyses serve as a bridge from linguistic theory to psychology, sociology, history, and biology. If I am right, the object of linguistic analysis is not a sentence or the truth of a sentence. It is an instance of thinking of a sentence, whether that be conjuring a sentence up from imagination, constructing an interpretation for someone else's sentence, believing a sentence to be true, or entertaining or mentally manipulating a sentence in any other way.[5]

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