True premises, false conclusion, yet valid

Isidora Stojanovic
(Institut Nicod, Paris)

Here are two widely accepted assumptions about truth-conditional semantics for natural language:

1. It is **truth-preserving**. That is to say, if a NL semantic framework assigns the value 'true', relative to a given parameter of context c, to sentences $S_1,..., S_n$, and if sentence S is a logical consequence of the set $\{S_1,...,S_n\}$, then, relative to the same c, the framework should also assign the value 'true' to S.

2. It is **intuition-preserving**. That is to say, it the majority of competent speakers are inclined to judge that a given sentence S (again, relative to c) is true, then the framework had better predict that $[[S]]_c$=true (ie that S is true relative to c). In this paper, I discuss a puzzle for any truth-conditional semantics that relies on these two assumptions. The puzzle is, roughly, that there appear to be arguments (ie sequences of sentences of the form $\{S_1,...,S_n\}$, S) that are logically valid, and yet, the utterances of the premises are intuitively true while the utterance of the conclusion is false. I then discuss and compare three tentative solutions, and defend one of them against the other two.

*****

The first puzzling case to be discussed is universal instantiation. Suppose that at the PALMYR, I say:

Everyone is a logician.

Since, let's assume, there are no non-logicians at that conference, (1) should come out as true. But now consider the following, as uttered in the same context:

Eros Ramazzotti is a logician.

By the rule of universal instantiation, (2) logically follows from (1). Yet (2) is false. The puzzle can be summarized as follows:

'Everyone is a logician. Therefore, Eros Ramazzotti is a logician.' is a logically valid argument.

(1) is intuitively true, as uttered in the context of the PALMYR (*mm*, for short). Hence, given assumption 2, $[[(1)]]_{mm}$=true.

(2) is intuitively false. Hence, given assumption 2, $[[(1)]]_{mm}$=false.

i, ii and iii are inconsistent, given assumption 1.

Three already existing strategies are applicable to this puzzle.

a) The *literalist* strategy is to privilege a semantics in which $[[(1)]]_{mm}$=false. The literalist will insist that (1) is literally false, and will underplay the role of competent speaker's intuitions in this case, putting little weight on assumption 2.

b) The *contextualist* strategy is to deny that (2) is a logical consequence of (1). The contextualist will insist that the semantic content of (1) is, really, that everyone *at that meeting* is a logician, which does not entail (2). For instance, Stanley and Szabo's (2000) approach to quantifier domain-restriction would qualify as contextualist.

c) The *relativist* strategy is to explain how the truth of (1) and the falsity of (2) are compatible with i. The quantifier domain restriction is, in this approach, directly taken care of by the circumstance of evaluation. The explanation goes roughly like this. There is logical entailment between (the semantic contents of) (1) and (2). But (1) is true only if evaluated at a circumstance that does not contain any non-semantics, such as *mm*. Now, by mentioning Eros Ramazzotti, a new, larger circumstance becomes salient, one that contains him among others. Evaluated at that circumstance, (2) is false. But at that same circumstance, (1), too, is false, so we don't have a counterexample to universal instantiation. The proposal in terms of "index-shifting" by Predelli (2005) would qualify as relativist in this sense.

The second puzzling case involves existential generalization. Consider the case of Laura who calls the police and says:

> Someone has been at my place and taken my jewellery.

Suppose furthermore that it was Laura herself who has taken her own jewellery. Intuitively, Laura lied to the police, hence her utterance of (3) is false. But (3) logically follows from (4), which is true:

> Laura has been at her place and taken her jewellery.

Again, the most obvious options are: (ii) literalist: insists that, intuitions notwithstanding, (3) is true. (i) contextualist: deny that (3) logically follows from (4), for the semantic content of (3) is, really, that someone in a domain that does not include Laura has been at her place and taken her jewellery. (iii) relativist: deny that the truth of (4) and the falsehood of (3) are inconsistent with (4) logically following from (3). The idea is that (3) gets evaluated this time at a circumstance with a smaller domain that that at which (4) is evaluated, a domain that does not include Laura.

The third puzzling case involves the so-called *structural* rule, which says that if an argument is logically valid, then adding additional premises will not turn it into an invalid argument. Now, compare the following two:

> Everyone is a logician. Therefore, everyone is a logician.
> Everyone is a logician. Eros Ramazzotti is a singer. Therefore, everyone is a logician.

Since (5) is most obviously valid, (6) must be valid too, in virtue of the structural rule. However, if (6) is, again, uttered at the PALMYR, then we would expect the premises to come out as true, yet the conclusion false. This case also raises interesting issues related to what is sometimes called "retrospective assessment" and has recently received considerable attention in philosophy of language (cf. McFarlane and others).

I will argue that, with respect to the three puzzling cases, neither the literalist nor the contextualist strategy are attractive, because they square badly with the two basic assumptions given at the outset. Literalism underestimates the role of competent speakers' intuitions, and contextualism

neglects the role of logical rules that semantics ought to preserve. The relativist strategy thus appears to be the most promising one, and I will show in greater detail how it can be made to work.