Two Kinds of Truth-Conditions

Issue When linguists think of the truth-conditions of a sentence, they usually think of real-world situations which a native speaker of the language would judge as being truthfully described by the sentence, but when they formalize their theory, they like to give the truth-conditions in terms of a model. We argue that such identification of real-world truth-conditions and model-theoretic truth-conditions may be a dangerous business and has to be exercised with caution.

Problematic Data Linguistic semantics, as an empirical science, has primarily two kinds of data at its disposal. The first is speakers' judgments about whether or not a sentence can be used to describe a given scenario (∼ truth value judgments). The second is judgments about whether a given discourse is coherent (∼ judgments of logical consistency).

From a model-theoretic perspective, we would expect these to be two sides of the same coin: two sentences are consistent if and only if there is a situation that can be described with both. However, it looks like this biconditional fails to hold for certain sentences in natural language.

Both (1a) and (1b) can be used to describe a situation with a group of officers sitting around a table, all of them engaged in a game of cards except for a few who are watching and commenting.

(1)   a.   The officers are playing cards.
      b.   Most of the officers are playing cards.

Similarly for bare plurals, both (2a) and (2b) can be uttered to describe the real world.

(2)   a.   Birds can fly.
      b.   Birds can generally fly.

However, the a- and the b-sentences differ in their discourse behavior. Relevant examples include (3) and (4).

(3)   a.   #The officers are playing cards, but/though Bertl is just watching.
      b.   Most of the officers are playing cards, but/though Bertl is just watching.

(4)   a.   #Birds can fly, but/though penguins can't.
      b.   Birds can generally fly, but/though penguins can't.

One might suspect that the a-sentences do in fact logically entail the absence of exceptions, but can be used while speaking loosely. However, even plural and bare plural sentences where the existence of exceptions is blatant do not allow their mention.

(5)   a.   (*In fact only two of five boys handled the model boat. The rest stood aside.*)
           The boys launched their model boat #but/though Peter and Bill just watched.
      b.   Ducks lay eggs #but/though the males don't.

Existing theories of bare plural generics in particular recognize their truth-conditional exception tolerance, but fail to explain why the exceptions cannot be mentioned.

Possible Resolution It is usually assumed that plural definites denote an individual (a sum or group), and it has been argued in [1] on the basis of data seemingly unrelated to the above that bare plurals refer to kinds (a view recently revived by [4] and others).

We propose to take this seriously and to not give truth-conditions for plural and generic predication in terms of other things, but to assume that they are as primitive as those for individual predication are generally held to be — after all, no linguist would ever dream of proposing to use model theory to explain under which conditions speakers categorize an object as a table.

Among the restriction on admissible models is one that says that a model that makes a predicate true of a sum or kind must not make it false of a part of the sum/instance of the kind. Thus, if it makes *The officers are playing cards* true, it must also make true *Bertl is playing cards*) (if it makes true *Bertl is an officer*), or else at least stay silent on Bertl's card-playing status (i.e. assign no truth-value to the sentence); and similarly for generics. Such restrictions may seem arbitray, but we argue that they are not in principle different from others that semanticists assume all the time.

Model-theoretic truth-conditions thus do not alone explain the real-world situations in which a speaker will judge a sentence to be true. Their job is merely to supply the logic, e.g. to explain why *The officers are playing cards* is entailed by *The officers are playing cards and the waiters are bored*. Apart from the question of model-theoretic truth-conditions of expressions, there is now the additional question of which models speakers use under which conditions to model (in the ordinary English sense) a real-world situation. This question is, in fact, always in the background — what counts as running as opposed to walking, for instance? It is a perfectly legitimate and, in the case of sums and kinds (as opposed to tables and manners of movement) interesting object of psychological (cf. e.g. [3] for a work that can be read as considering precisely this for kind predication) and linguistic (especially pragmatic) inquiry. For instance, one could try to conceive of partial models (those that remain silent on Bertl's card-playing, etc.) as equivalence classes of more fleshed-out models with respect to a certain decision task. One may also strive to explain how speakers move between the use of different more or less fine-grained models in the course of a conversation.

Conclusion We argue that linguists should distinguish between the question of model-theoretic truth-conditions and the question of which models are used by speakers for a given scenario, and both levels may be the locus of explanation of linguistic behavior. We furthermore suggest that this could be helpful to deal with certain issues concerning exceptions to definite and bare plural sentences. At the very least, we advise that linguists should always consider the possibility of analyzing a phenomenon at one or the other level.

References

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