

The Role of Propositions in Natural Language Semantics

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The purpose of this paper is twofold: I want to show that (a) the currently most generally applied explication of the notion of proposition in terms of truth-definitional semantics is inapplicable to the notion as it is needed for natural language semantics, and (b) that the intuitive notion of propositions, which arises from our use of natural language, rests on a confusion, so that it is highly questionable that one should even want to reconstruct that notion. The purposes of natural language semantics can probably be served better by a theory that does not make use of propositions.

The best understood and most explicit method of giving the semantics of a language is by giving a truth-definition for the well-formed sentences of that language: i.e. by saying under what conditions each of its sentences may be counted as true or false. Plainly, this method cannot be directly applied to natural languages like English, French, or Yoruba for that matter, unless a number of factors that do not usually play a role in formal languages are taken into account. Indexicality is one of these factors.

If Fred says "I'm tired" and John says "I'm tired", one utterance will make a true statement iff Fred is tired and the other iff John is tired. Obviously, truth-definitions for English will have to take this into account. One way of doing this is given with the following scheme that was, in principle, proposed by Bar-Hillel (1954):

sentence: contexts \rightarrow propositions

proposition: possible worlds \rightarrow {0,1}

where the first line deals with indexicality and yields the objects for which straightforward truth-conditions can be defined: propositions. The second line (which is actually not part of Bar-Hillel's proposal) then comprises the actual semantics, i.e. only here we define truth. It is roughly, and with minor modifications, this scheme that underlies current work in formal semantics for natural language (cf. e.g. Cresswell 1973, Kaplan 1977, Lewis 1980, Stalnaker 1978, and others): sentences are functions from contexts, i.e. utterance-situations, into the set of propositions; and propositions are functions from the set of possible worlds, or, if taken in a wider sense, the set of circumstances of evaluation, into the set of truth-values.

The account is transparent and straightforward. But it must make a number of assumptions about the languages to which it is to be applied. And these assumptions are not automatically fulfilled by just any language. Natural languages in particular would not seem to satisfy all of them. The assumptions I mean are, in particular, the following two:

1. The set of contexts is either finite or, at least, denumerable.
2. The set of propositions consists of elements that are mutually independent, both logically and semantically.

Assumption 1 is certainly not true in the sense that the set of contexts, i.e. utterance-situations, is finite. There is no reason to assume that only in a finite number of situations

sentences should “mean” something, i.e. “express propositions”. This would be no problem however, and assumption 1 could still be true, if, at least, we could give an algorithm that creates the set of all those situations, i.e. creates a set of identifying descriptions of all those situations, in which at least one sentence of the language can be used to “mean” something. If this set of descriptions is to fulfill the purpose at hand, the descriptions would have to differ in each case where the difference in the situation amounts to a difference in the proposition expressed. In brief, such an algorithm would presuppose a parametrization of contexts of utterance that is fine enough to contain any parameter that could make a difference for what is said by a particular sentence-type. But this task is hopeless. The point has been argued very well by Travis (1976), Ziff (1972), and also by Cresswell (1973) (cf. also Bosch 1979b). We conclude for the time being that it would be irresponsible speculation to assume that assumption 1 above is true for natural languages, as long as there is no indication of how contexts are to be parametrized.

The trouble with assumption 1 being doubtful, or, as is more likely, simply being false, is that we lose our way of getting from sentences to propositions. If sentences are functions from the set of contexts into the set of propositions, and if we cannot enumerate the set of contexts, then we will not be able to thus construe the set of propositions.

Another way of trying to get at propositions starts at the other end: if propositions are functions from the set of possible worlds into the set of truth values, then we may equate any proposition with a particular set of possible worlds, e.g. those in which the proposition is true. The familiar problem with this approach is that we will have only one proposition that is necessarily true (which is identified with the set of all possible worlds) and only one that is necessarily false (the one that is identified with the empty set). But suppose this problem is solved somehow. Then we would still need some way or other for identifying possible worlds, i.e. some way of enumerating the set of all possible worlds. One way of trying to do this is by identifying each possible world with the set of propositions that are true with respect to that world. Now this would plainly be circular. But let us grant, in order to put the problem more sharply, that the problem of indexicality is solved and that propositions are identified by their link to sentences of natural language. Then however, those propositions still would not do as means for identifying possible worlds, because there would not only be no guarantee that assumption 2 is fulfilled, but we could even be certain that it would not be fulfilled. For the set of propositions resulting from relativizing the set of well-formed sentences of English to contexts would not consist of semantic or logical atoms. One proposition being true would entail and presuppose a host of other propositions being true or being false. Hence not any arbitrary set of propositions would be consistent or describe a possible world. Some such sets would describe impossible worlds. But if we want to sort the consistent from the inconsistent sets, we need a full truth-theory for the set of propositions. If we have such a theory however, then there is no good reason why we should still aim at identifying possible worlds or at construing the set of possible worlds. Because these aims were only conceived as parts of the task of giving a truth-definition for all propositions.

To sum up: suppose we have solved the problem of indexicality and we have mapped the set of English sentences onto the set of propositions. Then this set of propositions cannot be used, without a semantics for them already assumed, for the identification of possible worlds. And if possible worlds cannot be identified, we cannot give a truth definition (i.e. a semantics) for propositions. Secondly, suppose we have identified propositions as sets of possible worlds, and by some, as yet unknown, device we know how to identify possible worlds. Then these propositions must be atomic ones and hence are not what sentences are mapped on by a theory of indexicality. And in order to analyze into atomic propositions an arbitrary element from the set of mixed complex and atomic propositions that is the result of removing

indexicality from English sentences, we have to assume a full semantic theory for complex propositions.

If the above arguments are correct and the attempt of explicating the notion of proposition in terms of a truth-definitional semantics indeed is a failure, one may want to either improve this account or try and find another account not subject to the above objections.

If we go back to this level of discussion, we had better first ask what it is we want to explicate. What are the intuitions concerning “propositions” we want to base our account on? Fundamentally, propositions tend to be regarded as the things “people express when they make predictions or promises, give orders or advice... things people doubt, assume, believe...” etc. (Stalnaker 1976), in brief: the objects of speech acts and propositional attitudes. Or, again intuitively: a proposition is “what is said” by certain linguistic expressions.

Now if there are to be such “things said”, we may reasonably ask for their identity. “No entity without identity”, as Quine once put it, seems a minimal requirement. But if we take our intuitions about the identity of “what is said” at face value, we end in paradox. Suppose, Fred says “I’ll never do it again” and John says “I won’t do it again”, then we will probably be inclined to say that Fred and John promised the same thing. Now suppose Fred says “I’ll never do it again” and John says “Fred will never do it again”; again, we may say that both promised the same thing, i.e. that Fred will never do it again. Now let us call what Fred promised on the first (and on the second) occasion “A”, and what John promised on the first occasion “B”, and what he promised on the second occasion “C”. Then we get: $A = B$, and $A = C$; hence: $B = C$, i.e. John should be promising the same thing when he says “I won’t do it again”, and when he says “Fred will never do it again”. This however must be false by any stretch of imagination.

What is going wrong? As I have argued elsewhere for synonymy relations (Bosch 1979a), I would claim also here that the notion of identity between what is said, promised, etc. by various utterances or expressions depends on the context in which we ask the question. Native speakers, in order to master their language, must be able to judge identity in each individual context. But they need not be able to judge identity with respect to all contexts, and hence they need not be assumed to possess a general notion of identity of “what is said”. Hence they will ordinarily be able to judge “what is said” by a particular utterance in a particular context (i.e. in comparison with anything else that is or perhaps could be said in that context) without being able to judge “what is said” independent of context, or, which is the same, for all contexts. In effect this means that the native speaker’s competence gives us no reason to assume anything as abstract and general as “propositions”. The assumption of propositions may be understood as a mere mistake: an over-generalization that ignores the dependence of the relevant identity-intuitions on context. But if the notion we wanted to reconstruct thus dissolves into thin air, what is there to be reconstructed?

Applied to the above puzzle, we may say that there are plenty of contexts in which A and B are the same, and there are also plenty of contexts where A and C are the same. But, as it happens, it seems difficult to find a context in which B and C are the same. This is no problem, clearly, as long as we rest with a context-dependent notion of identity of “what is said”. It grows into something like a paradox only, if we assume a context-independent notion of identity of “what is said”, i.e. if we assume propositions.

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