



# THE PROJECTION PROBLEM FOR PRESUPPOSITIONS\*

D. Terence Langendoen Graduate Center and Brooklyn College of the City University  
of New York

Harris B. Savin The University of Pennsylvania

\* This work was supported in part by The Advanced Research Projects Agency, U.S. Department of Defense, under Grant No. DAHC15 68 G-5 to The Rockefeller University.

We are concerned in this paper with the question of how the presupposition and assertion of a complex sentence are related to the presuppositions and assertions of the clauses it contains. This is a question which arises quite naturally within the original Katz and Fodor (1963) conception of semantics within linguistic theory, but one which, to our knowledge, has not previously been asked. By "presupposition" we mean, following Frege (1892), the expression of the conditions which must be satisfied (be true) for the sentence as a whole to be a statement, question, command, and so forth. By taking the notion in this Fregean sense, the projection problem for presuppositions turns out to have a strikingly simple solution, a fact which strongly suggests that this notion has linguistic reality.

To see how the projection rule for presuppositions works, consider first the sentences:

- S1. John accused Mary of beating her husband.
- S2. John stopped doing it.

The sentence S1 makes roughly the assertion A1 and has the presupposition P1; sentence S2 makes roughly the assertion A2 and has the presupposition P2:<sup>1</sup>

- A1. John claimed that Mary beat her husband.
- P1. John judged that it was bad for Mary to beat her husband.
- A2. After time *t*, John didn't do it.
- P2. Before time *t*, John did it.

Now consider the complex sentence, formed by embedding S1 as the object complement of the verb *stop*:

- S3. John stopped accusing Mary of beating her husband.

We want to know how the presupposition and assertion of S3 are related to the presupposition and assertion associated with the main verb *stop* and with the subordinate verb *accuse*. For convenience, let A'' and P'' be the assertion and presupposition respectively of the subordinate clause of S3:

- A'' = A1. John claimed that Mary beat her husband.
- P'' = P1. John judged that it was bad for Mary to beat her husband.

<sup>1</sup> These sentences have other presuppositions as well, for example those concerning the existence and uniqueness of the entity denoted by *John*, but these can be ignored for our purposes.

Notice first of all that S3 presupposes P'', but that it neither presupposes nor asserts A''. Now consider the assertion and presupposition of the main clause of S3, which we call A' and P' respectively:

- A'. After time *t*, John didn't X.
- P'. Before time *t*, John did Y.

where X and Y are things to be found in the subordinate clause of S3. The question is: what things? The obvious possibilities for both X and Y are A'' and P''. Substituting A'' for X, we get:

- A' (A''). After time *t*, John didn't claim that Mary beat her husband.

Substituting P'' for X, we get:

- A' (P''). After time *t*, John didn't judge that it was bad for Mary to beat her husband.

Substituting A'' for Y, we get:

- P' (A''). Before time *t*, John claimed that Mary beat her husband.

Substituting P'' for Y, we get:

- P' (P''). Before time *t*, John judged that it was bad for Mary to beat her husband.

Clearly, S3 does assert A' (A''), and presupposes P' (A''). Clearly also, A' (P'') is no part of the meaning of S3; indeed, it is probably false even if S3 is true. We contend further that P' (P'') is no part of the meaning of S3 either, although it is not obvious from the present example because it is implied by P'', which we have already seen is presupposed by S3. To see why P' (P'') cannot be part of the meaning of a complex sentence like S3, consider the sentence:

- S4. John accused Mary of criticizing him for riding his bicycle to work.

The presupposition P'' of the subordinate clause of S4 is:

- P''. Mary judged that John rode his bicycle to work.

and the presupposition P' of the main clause of S4 is:

P'. John judged that Y was bad.

But, when P'' is substituted for Y in P', we get:

P' (P''). John judged that it was bad that Mary judged that John rode his bicycle to work.

In this case, P' (P'') is not implied by P'', and indeed could well be false even if S4 is true. Other examples show even more dramatically that neither A' (P'') nor P' (P'') are part of the meaning of a complex sentence of the form S' (S''). Consider:

S5. John regretted that he pretended to have bad breath.

S6. John pretended to regret that he had bad breath.

If we construct A' (P'') for example S5, we find that it is:

A' (P''). John wished that he had bad breath.

But clearly S5 makes no such assertion. If we construct P' (P'') for example S6, we find that it is:

P' (P''). John didn't have bad breath.

However, P'' by itself is:

P''. John had bad breath.

But P'' and P' (P'') cannot both be presuppositions of S6, since if they were, the sentence would have a contradictory presupposition and hence it could never be used to make a statement. Since P'' is clearly presupposed by S6, we conclude that P' (P'') cannot be.

The projection principle for presuppositions, therefore, is as follows: presuppositions of a subordinate clause do not amalgamate either with presuppositions or assertions of higher clauses; rather they stand as presuppositions of the complex sentence in which they occur. If either an assertion or a presupposition contains a variable which stands for a subordinate clause (say, an object complement), then it follows that that variable is replaced only by the assertion of the subordinate clause.

We find also that the only constituents of a clause that contribute to its presupposition are the main verbal (verb or adjective) and the nominals which stand in grammatical relation to it as subject or object. Adverbs (including negation) affect the assertion only, never the presupposition. If

adverbs originate as verbals in higher clauses, then the projection rule as stated above explains this fact. If not all adverbials originate in higher clauses, we still need no new machinery to prevent adverbs from affecting presuppositions. The only variables that appear in the semantic representation of presuppositions in the lexicon will be variables standing for nominals and verbals. All the facts will then be described correctly, although there will be no explanation for the invariable absence of adverbials from presuppositions.

It is instructive to restate the projection rule for presuppositions in terms of the Fregean definition of presupposition. The principle that the presupposition of subordinate clauses stand as part of the presupposition of the complex sentence containing them means that a necessary condition for a sentence to be a statement is that each of the subordinate clauses in it must be a statement. This state of affairs has a gratifying air of plausibility about it, even though we have so far been unable to find an argument to show that the world would be an unhappier place otherwise. Given that the presuppositions of clauses do, in fact, stand as presuppositions of the whole sentence, we can, however, explain after a fashion the fact that they do not also amalgamate freely with adverbials, higher clauses, and the like. If a presupposition of a clause amalgamated freely in addition to standing as a presupposition of the whole sentence, then it would be difficult to avoid anomalies and contradictions of the sort discussed in connection with example S6.

We would now like to address ourselves to two of the comments that were raised in the discussion following the presentation of the foregoing material. First, it was claimed that in a conditional sentence such as:

S7. If I hadn't left Bloomington, I would have regretted it.

the presupposition of the object complement of *regret*, which ordinarily would be in this case:

P7. I haven't left Bloomington.

is suspended, and that therefore a mechanism for suspending presuppositions in conditional sentences is required.

But this characterization of the facts is not correct. A conditional sentence has the property that its presupposition is presupposed in a (possibly imaginary) world in which its antecedent is true. This accounts for the anomaly of a sentence such as:

S8. If I hadn't left Bloomington, I would have regretted having left Bloomington.

Therefore there is no reason to suspend P7 as a presupposition of S7, and no mechanism for suspending presuppositions is required.

Second, it was suggested that instead of having a projective mechanism for obtaining the presuppositions of complex sentences, the presuppositions should be represented independently in the mind of the speaker, and that they constrain in the appropriate way the lexical insertion of such verbals as *accuse*, *criticize*, *pretend*, *regret*, and so forth. The proposal is, at present, vague, but insofar as we understand it, it fails to meet its presumed objective—to handle the facts discussed above within the framework of generative semantics. Each presupposition cannot be represented in the minds of speakers as an unanalyzable element, because there are an infinite number of them. If, on the other hand, the presuppositions are given the same sort of semantic representation in the mind of the speaker that they would get if they were assertions instead of presuppositions, there would then be only a finite number of elements in the vocabulary that is used to state lexical insertion rules, but the insertion rules themselves would become so inordinately complex as to make the proposal completely unattractive as an alternative to interpretive semantics. As the following examples illustrate, the lexical insertion rules would no longer replace one subtree with a single lexical item; rather, they would take two trees that stand in a very complex relation to one another, match them up, and then effect lexical insertion into one of them. Consider the sentences:

- S9. John acted as if he didn't wish to have bad breath.
- S10. John acted as if he regretted that he had bad breath.
- S11. John pretended not to wish to have bad breath.
- S12. (=S6) John pretended to regret that he had bad breath.

The assertions of S9–S12 are the same, namely:

- A' (A''). (=S9) John acted as if he didn't wish to have bad breath.

Each of these sentences would therefore receive, under this approach, the same semantic interpretation. In case the speaker had no relevant presuppositions in mind, the expressions *act as if* and *not wish* would have to be lexically inserted, yielding S9. In case the speaker had the presupposition:

- P''. John had bad breath.

then *act as if* and *regret* would have to be inserted, yielding S10. In case he had the presupposition:

- P' (A''). John wished to have bad breath.

then *pretend* and *not wish* would have to be inserted, yielding S11. Finally, if he had the presupposition:

- P'' and P' (A''). John had bad breath and John wished to have bad breath.

then *pretend* and *regret* would have to be inserted, yielding S12. The reader is invited to work out the details of the lexical insertion rules necessary for each of these examples.