IS DEEP STRUCTURE NECESSARY?

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This paper originated as part of a letter from Lakoff and Ross to Arnold Zwicky, written March 1967, and was circulated in duplicated form at that time. It figured in much discussion at the conference on language universals and generative grammar that was held at the University of Texas at Austin in April 1967 (papers of that conference are published as Bach and Harms, 1968), and it greatly influenced the "Postscript" section of my contribution to that conference (McCawley, 1968b). Indeed, Lakoff and Ross's paper is what turned me from a revisionist interpretive semanticist into a generative semanticist. The program that it announces for the description of language in terms of transformational grammars whose base components are essentially universal and specify the set of well-formed semantic structures directly influenced most of the research done by generative semanticists in the late 1960s.

As is natural with a work that is both highly influential and highly programmatic, much of its content has been superceded by subsequent work. Generative semanticists no longer regard the relationship between semantic structure and surface structure as given by a system of "Aspects"-type transformations (see G. Lakoff, 1970b; Postal, 1974; and Lakoff and Thompson, 1975; for more recent generative semanticist treatments of the structure of a grammar), and many of the specific analyses have been rejected in favor of

others or have been greatly refined (see Newmeyer, 1972, on idioms and lexical insertion, McCawley, 1972a, and G. Lakoff, 1970c, on quantifiers, and G. Lakoff, 1970d, on negation). In addition, the reliance on extrinsic rule ordering that figures in the argument about "condition D" has given way to a commitment to find explanations of why rules interact the way they do [*see Kisseberth (1973) for a clear statement of this position with regard to phonology*]. *A German translation of this paper appeared in W. Abraham and R. Binnick, editors, Generative Semantik (Frankfurt/Main: Athenäum, 1972), pp. 66-70.*

We believe semantics may be generative because (i) there has never been any argument that semantics must be interpretive and syntax generative, and (ii) while it has commonly been assumed that the conditions A-D define a single level of structure intermediate between semantic representation and surface structure, it has not been shown that those conditions do define a single level that is of any theoretical significance.

A. *The base of the simplest syntactic component.*

B. *The place where cooccurrence and selectional restrictions are defined.*

C. *The place where basic grammatical relations are defined.*

D. *The place where lexical items are inserted from the lexicon.*

First, we think we can show that D does not exist; lexical items are inserted at many points of a derivation. Lexical items may well be only a special case of idioms, and some idioms seem to have to be inserted before Passivization, and to undergo it or not (*They buried the hatchet--The hatchet was buried*), but others can come in only after it is sure that Passivization has not (or has) applied (**The bucket was kicked by the gladiator; I've been had,* but not **Someone has had me*).

Second, McCawley (1968a) has argued that selectional restrictions are semantic, but so is cooccurrence in general. Picture the absurdity of a verb whose subject could be *a bachelor* but not *an unmarried man*. If one wants to maintain that cooccurrence is syntactic, one must show that cases exist of verbs that are selected by some features other than semantic ones. Der schlagende Beweis is that whenever semantic and syntactic features do not agree, selection is always in terms of the semantic ones. So, while there are

verbs that require semantically female subjects (*menstruate, pregnant*), there are none in any language with gender distinctions that require grammatically feminine subjects. And while there are verbs that require semantically plural subjects (*numerous*), these verbs can never take grammatically plural but semantically singular NPs. So, in *The scissors are sharp,* the subject can be either semantically singular (one pair of scissors) or semantically plural (several pairs). But in *The scissors are numerous,* it can only be semantically plural. This means that the grammatical feature [+pl] never figures in cooccurrence, and in general, no grammatical features do: cooccurrence is all semantic.

Third, subject of and object of are not directly relevant for semantic interpretation. The only reason they are necessary is so that there is some way to keep apart *dog bites man* and *man bites dog,* for as has been realized for a long time, there are many kinds of interpretation of subjects and objects. Compare, for example,

John tortured Max	(*John* = Agent)
John underwent torture	(*John* = Patient)
I wrote a poem	(the poem came into existence through my activity)
I examined a poem	(the poem existed before and after my activity)
I destroyed the snowball	(the snowball ceases to exist through my activity)

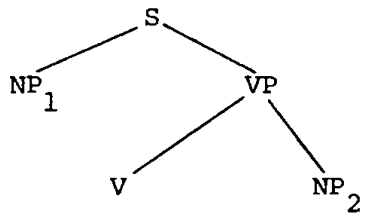
All that is necessary is that subject and object be kept distinct. But they are in surface structure (through different cases) or in the semantic representation, and we see no reason for singling out the level fixed by A above for special merit. The subject and object defined at this level seem to have no semantic or syntactic relevance, so why base a theory on them?

To be sure, A defines a level of representation, but if this level--the level of structure to which transformations can be most simply applied--has no systematic interconnections with any other facts of language, why invent the term "deep structure" for it? Why not reserve that term for the level of representation that results after Passivization or any other arbitrary rule, for that matter, has applied? At present, inventing a term to apply to any such level seems to us to make no claim whatsoever about language, and we therefore suggest purging this term forthwith from linguistic theory.

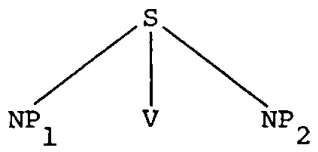
What follows from the above observations? If there never was any reason why syntax had to be generative and semantics

interpretive, and if there is no reason to suppose that the levels of representation defined by A-D coincide or have any significance singly, what is the matter with making semantics generative? As a matter of fact, there is a great deal in common between semantic interpretations, if these are conceived of (roughly) as formulas in predicate calculus, and deep syntax. Propositions are deep sentences, functions are verbs, and arguments are noun phrases. Other differences between deep syntactic representation and formulas in predicate calculus seem to us to be superficial. For instance, in the latter, there is nothing that corresponds to the category "noun". Lakoff has recently pointed out that there seems to be no syntactic rule that refers to N that could not just as easily refer to NP. Another apparent difference, the fact that deep syntax uses VP, while predicate calculus has no use for such a construct, can be reconciled, as Lakoff has observed, because apparently there are no rules that must refer to VP that could not equally well refer to a S whose subject has been deleted. In other words, there seems to be no syntactic reason to group V and NP_2 more closely together than NP_1 and V; diagram (a) can be replaced by diagram (b) in deep structure.

(a)



(b)



One final difference, the fact that quantifiers have been analyzed as predeterminers in deep syntax but as a special entity of their own in predicate calculus, can be dispensed with by discarding both analyses. The following two sentences must be kept apart somehow:

(1) *Every student expects every student to die.*

(2) *Every student expects to die.*

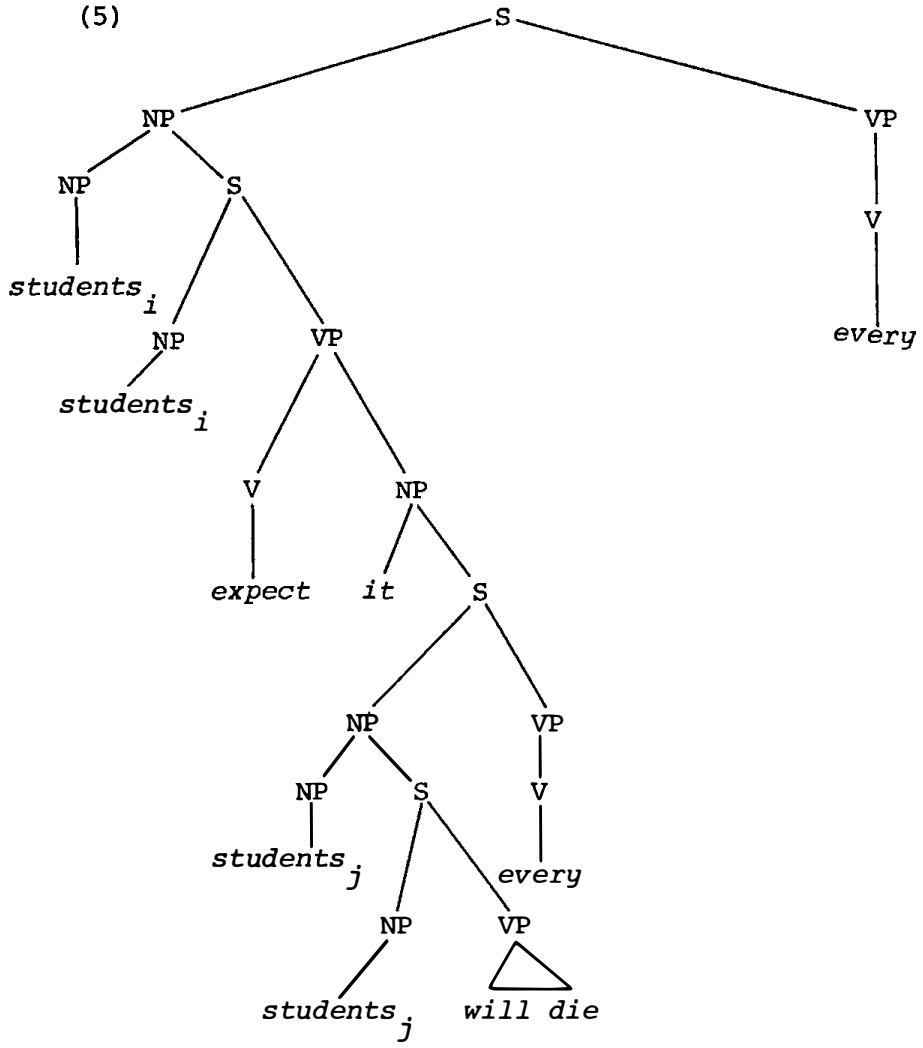
and it is obvious that the predeterminer analysis is unequal to the task. What seems to be necessary is an analysis, in syntax as in semantics, that recognizes *every* (and all other predeterminers) as being simply a kind of adjective, and that converts (3) into (4) by some obligatory transformation.

(3) **The students who will die (are) every.*

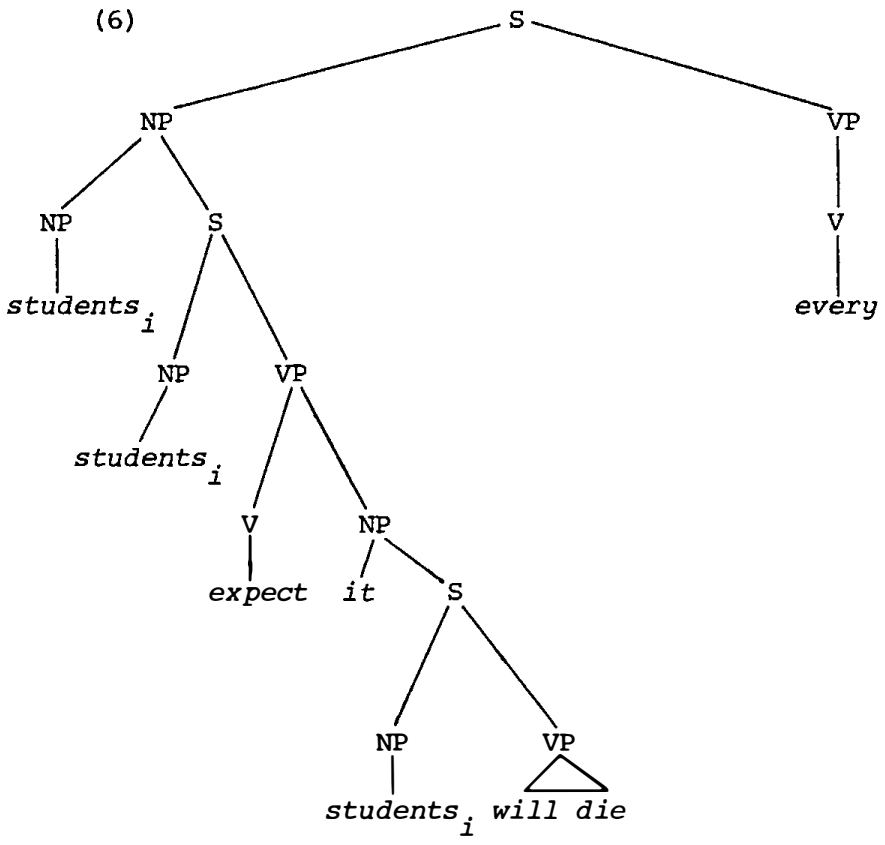
(4) *Every student will die.*

If this is right, then (1) and (2) will have deep structures that look like those of (5) and (6) (except for the reactionary VPs).

(5)



(6)



The only remaining disparity is negation, which we believe to be always represented as a feature on stative verbs, although we have only scant evidence for this as yet.

So the theory of language provides (somehow) the universal set of rules and well-formedness restrictions that generate the correct set of concepts (i.e., well-formed predicate calculus formulas), and every grammar consists of a set of transformations that map each concept (somehow) into the large set of surface structures that can be used to express each concept. Just as no intermediate level of taxonomic phonemics is necessary or possible, no intermediate level of deep structure is necessary (or, we will claim, even possible). However, saying something substantive about the two occurrences of *somehow* in the first sentence of this paragraph will still require a little work.