

## SOME REMARKS ON THE TRANSFORMATIONAL ANALYSIS OF SENTENCES WITH MODAL ADVERBS

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**Abstract:** The problem of a deep structure underlying sentences with modal adverbs and verbs in English will be discussed. First, some similarities, semantic and syntactic, are pointed out, which seem to support the suggestion made by some linguists that both these surface categories have a common deep structure source. Then some possible ways of dealing with modality in a generative grammar are presented and the proposal that seems to be the most feasible one is briefly developed.

A deep structure analysis of a particular linguistic phenomenon is an explanatory hypothesis, formulated in a language of a general theory, that seeks to explain some empirically observable facts of language. When the set of facts to be accounted for is changed in some way, narrowed or broadened, the hypothesis itself is subject to change. It would, therefore, be good to start with a statement of those properties of modal adverbs which we are attempting to account for.

Modal adverbs are words like: *possibly, probably, obviously, certainly, allegedly, undoubtedly* etc. Those words form a set that is an intersection of two broader classes: modal (non-factive) words and sentence adverbs. From this fact follow two of their basic properties recognized almost universally by the authors of traditional grammars (Zandvoort 1966). As sentence adverbs, they are supposed to stay in some syntactic relationship to the rest of the sentence. As modal words, they determine the degree of likelihood, that is truth value, of the proposition with which they are in construction.

The second property is a semantic one and has an obvious intuitive appeal. Let us concentrate on the first one and try to clarify certain points. Indeed, especially when they appear in a parenthetical position, modal adverbs may be felt as relating to the remaining sentence as a whole rather than to any of its particular parts. This observation seems to be confirmed by the possibility of 2) as a paraphrase of 1).

- 1) Probably, John hit Jim.
- 2) That John hit Jim is probable.

The situation gets a bit more complicated when we consider cases like 3) and 4).

- 3) Probably JOHN hit Jim.
- 4) John hit probably JIM.

It may be claimed that modal adverbs in 3-4) modify not the whole sentence but the noun phrase to which they are preposed. Notice that this noun phrase is the one which carries the sentence stress. The problem is essentially similar to the one of a *constituent negation*. One may thus follow Bach's (1968) analysis of negation suggesting that 3) and 4) differ at the deep structure level in that the modal adverb is placed within different embedded sentences. Thus the deep structures of 3-4) will be identical with those of 5-6) respectively.

- 5) John hit the one who was probably Jim.
- 6) The one who was probably John hit Jim.

Another way of dealing with the problem suggests itself. Consider 7-8).

- 7) That JOHN hit Jim is probable.
- 8) That John hit JIM is probable.

Depending on the place of an intonation center within the embedded sentences 2) can be regarded either as a paraphrase of 5) or 6). Since the placement of an intonation center is closely related to the position of a focus phrase of a sentence<sup>1</sup> we may formulate a tentative generalization here saying that whenever a modal word stands in a syntactic relation to the whole sentence it is related in a special way to its focal phrase. If we then accept the theory that analyses focus as the topmost predicate in the deep structure of a sentence<sup>2</sup> we may conclude that our observation is in accord with the popular contention that the predicator is the constitutive element of a sentence and represents it in relation with the external syntactic elements. Notice that our earlier intuition (modal adverb modifies the whole sentence) is not necessarily wrong since the focus phrase may comprise the whole sentence as well as some of its parts.

From the fact that the semantic function of modal adverbs is that of imposing some qualifications on the truth value of the proposition follows their connection with modal verbs, which have a similar function. The synonymy of 9 - 10) is apparent. It led many transformationalists like Seuren (1969), Ross (1967) to the claim that there is a deep structure relationship between such pairs of sentences.

- 9) Possibly, he will go abroad.
- 10) He may go abroad.

The relation between modal verbs and adverbs is viewed by some more semantically bent grammarians as similar to the relation between grammatical tense

time adverbials. Below are some observations which seem to confirm the claim as to the deep structure relationship between 9) and 10). The evidence as usual is an indirect one showing that if modal verbs are treated as a unified phenomenon at some level of analysis some generalizations can be captured.

It seems that modal adverbs and verbs (and perhaps other auxiliary elements and negatives) are peculiar as to the place they may occupy in the focus-presupposition structure of a sentence. There are usually following options in this respect. A phrase (word or group of words) is a) part of a presupposition b) part of a focus. These two possibilities are the only ones as far as for example subject or object noun phrases are concerned. They are illustrated by the following paraphrases of 11)<sup>3</sup> in which focus is made the main predicate of a sentence.

- 11) John hit Jim.
- 12) The one who was hit by John was Jim.
- 13) The one who hit Jim was John.

The same applies to modal words.

- 14) It MAY BE that John hit Jim.
- It is POSSIBLE that John hit Jim.
- 15) The one who may hit Jim is JOHN.
- 16) The one who will possibly hit Jim is JOHN.

14 - 16) are natural answers to 17 - 19) respectively.

- 17) Is it certain that John will hit Jim?  
true

- 18) Who may hit Jim?
- 19) Who will possibly hit Jim?

Modal verbs are peculiar in that they may appear in a sentence functioning neither as its focus nor its presupposition. They "stay outside" this frame of relationship.

20 - 21) may be treated as natural answers to 22) in which there is no modal word of possibility that implies that when it appears in 20 - 21) it is not a part of a presupposition. Neither is it a part of a main focus. This is perceived intuitively and confirmed by the analysis of the intonation contour of the two sentences. There are two intonation centers there one falling on the modal word and another on the predicate nominal in the embedded sentence.

- 20) It may BE that the one who hit Jim is JOHN.
- 21) It is POSSIBLE that the one who hit Jim is JOHN.
- 22) Who hit Jim?

Notice that 21) is an exact paraphrase of a sentence with a parenthetical modal adverb only in case it has this peculiar contour. If the main stress falls only

<sup>1</sup> For the theory of focus and presupposition see Chomsky 1969.

<sup>2</sup> As implicitly, in Lakoff (1965) and McCawley (1968).

<sup>3</sup> Of course 12) is not a transformational paraphrase of 13) since it is presumed here that differences in focus-presupposition structure have semantic relevance and should be reflected in the deep structure of a sentence.



on the modal adjective, as it usually does in structures with extraposition, the sentence has a different focus-presupposition arrangement hence different meaning. Let us call those two intonation patterns A and B patterns and the position in the focus-presupposition structure that is occupied by modal verbs and adverbs in sentences which are exact paraphrases of pattern A constructions with extraposition position 3.

If one tries to determine whether some element in a declarative sentence appears in the position 3, one should try to construct a natural question for this sentence which would not contain this element in its presupposition nor would it ask about it. If this can be done the element is in the position 3. Such a test is possible because presupposition of a question is identical to that of an answer and a questioned element is a focus phrase of declarative sentence.

The second important property of modal adverbs which has to be accounted for in a formal description of English and which links them to modal verbs is that they cannot be "inherently" negative, i.e., they cannot be characterized by Klima's /+Affect/ feature (Klima 1964). This is a constraint that prohibits the formation of adverbs like \**impossibly*, \**improbably*, \**doubtedly*. Notice that it is not the negative prefix that counts here, see \**deniably* versus *undeniably* but rather the overall negative character of the whole word. This observation, which is due to Schreiber, can be generalized in my opinion to include modal verbs that appear in position 3 and to some extent even to modal predicators in *it + Vb + that S* constructions with the intonation pattern A. 23) may have only two interpretations as far as the focus-presupposition assignment is concerned.

23) He may not go abroad.

*May not* may constitute its sole focus and in such a case it would be paraphrasable by 24) and a natural answer to 25) or it may belong to a presupposition with the possible paraphrase and question associated with it 26) and 27) respectively.

24) It may NOT be that he will go abroad.

25) May it be  
Is it possible  
Is it true

26) The place where John may not go is abroad.

27) Where is it that John may not go?

It is in my opinion highly unnatural to answer a question like 28) with 23).

28) a) Where John will go?  
b) Who will go abroad?  
c) What will John do?

If, however, we delete *not* 23) becomes perfectly acceptable here. Thus, "may not" fails the position 3 test mentioned above.

It has been noted that if a modal word appears in a position 3 its paraphrase by a complex sentence with an extraposed clause has the intonation pattern A. Interestingly, there appears to be some connection between the intonation pattern in such constructions and the meaning of some ambiguous modal (non-factive) words which appear in them as main verbs. Wilkinson (1971) has observed that if the main verb *seem* in 29) receives a prominent stress it becomes a non-entailment verb, the one that expresses some doubt in the truth of the proposition conveyed by the embedded clause.

29) It seems that John went abroad.

On the other hand if 29) has the pattern A *it seems* has an entailment meaning roughly equivalent to *I think*. This observation seems to confirm, although very indirectly, our suggestion that the constraint on the class of modal adverbs has to do with their place in the focal structure of the sentence, which is similar to that of modal auxiliary verbs.

The most exhaustive analysis of modal adverbs within the transformational theory has been made Schreiber (1968, 71). According to him, 1) has a deep structure identical to that underlying 30)

30) That John hit Jim is probable.

Without going into details of his analysis and without any examination of the justification he presents one has to admit that his proposal has some evident defects. As he himself admits no principled explanation is offered for the non-occurrence of /+Affect/ modal adverbs since one can add a negative prefix to the modal word in 30) without making the sentence unacceptable. Secondly, this proposal is inadequate if we were to assume that differences in focus-presupposition structure are reflected on the level of deep structure since 1) and 2) are clearly different in this respect the latter corresponding to the sentence with the extra stressed modal verb (in other words, in position 1). This last reservation disappears with the assumption that focus-presupposition is determined on the surface structure level by means of the interpretation rules (Chomsky 1969).

It has been suggested in this paper that modal adverbs and verbs can be treated as different manifestations of a unified deep phenomenon, an obligatory modal element determining the truth value of a communicated proposition. Let us examine now some of the proposals concerning the formal presentation of this *modal frame* in transformational grammar.

Two possible approaches to this problem come immediately to mind. The first approach, which I would call "classical" is the one commonly used since *Syntactic structures* to cope with the generation of modal verbs. The major category symbol *Modal* is introduced by the rules of the base, dominated by the *Auxiliary* node on the tree diagram. *Modal* is a lexical category symbol of modal verbs. Another approach postulates the existence of a set of abstract

markers which are also introduced by PS rules and which are used to signal a particular type of modality.

In the standard theory the marker approach is usually used to account for so-called *sentence modality*, i.e. with variety of sentence types like question-Q, imperative-Imp etc. It has been used also to cope with this type of modality that we are talking about here. In Seuren (1969) the concept of the deep structure category of operators is introduced. They are abstract markers accounting for the quantifier structure, negation, modality and sentence types. Seuren gives the following rules

$$\begin{array}{l} \text{Modal} \text{ --- } \rightarrow \text{M (Neg) Tense} \\ \text{M} \text{ --- } \rightarrow \begin{pmatrix} \text{Poss} \\ \text{Nec} \\ \text{Perm} \end{pmatrix} \end{array}$$

He suggests explicitly that not only modal verbs but also modal adverbs can be derivationally related to the M node. "A transformatinal rule can be set up specifying if Poss is preceeded by the tense qualifier V without Neg it can be rewritten not only as 'may' but also as 'possibly' (Seuren 1969: 161).

Another version of the "marker approach" can be found in Polański (1969). The so-called *verbal modality* markers are presented as *Aux*<sub>1</sub>, *Aux*<sub>2</sub>, ... categories related to the *Auxiliary* node.

Both approaches can be subjected to some criticism. The "classical" one hardly allows a unified treatment of both modal verbs and adverbs since it is not known in what sense the latter can function as auxiliaries (for example in questions). Clearly the deep structure is to shallow here for our purposes. As to the "marker approach" it appears that it risks the danger of introducing syntactically unjustified items to the set of base categories. Besides, the hypothetical markers-*Poss*, *Prob* etc., are to certain extent redundant since they double the independently needed subcategorization of lexical items by means of the lexical features  $|\pm Poss|$ ,  $|\pm Prob|$ ,  $|\pm Nec|$ . This leads us to the observation that McCawley ascribes to Lakoff that the extensive use of curly brackets (which the "marker approach" presupposes) is highly unsatisfactory since it amounts to the failure to capture the relevant generalization-namely that the categories on the right side of such a rule are semantic subcategories of one syntactic class.

Some of the difficulties noted above can undoubtedly be overcome within the given approach after some ad hoc modifications. Others, which I do not even mention here, would most probably stay. Anyway, both of them, in my opinion, are inferior to the third approach which is a transformational, generative-semantic one.

It has been claimed by some linguists (Bellert 1971), Boyde and Thorne (1969), Wierzbicka et al. (1971) that every sentence in its deep semantic structure contains a clause describing what Russell calls "propositional atti-

tude" of the speaker. The clause would consist of a first person subject and the verb expressing some "modal act" that differs depending whether the expression in question is an assertion, question, suspicion or constitutes the presupposition of an utterance. One may think at this place of some way of combining this approach with the performative clause hypothesis put forward in Ross (1970). Let us examine the class of /<sup>+</sup>performative/ verbs like *declare*, *assert*, *say*. It appears that they are not *atomic predicates* but can be subjected to the process of lexical decomposition<sup>4</sup>. Such an analysis would reveal that what these words express is not only the *locutionary* aspect of the act of speaking but also the belief of the speaker in the truth value of the proposition he communicates. Thus we may say that *to say*, *to declare*, *to assert* would have to be represented as *to SAY that it is true that*. SAY is an atomic predicate meaning "to express in words". It has to be distinguished from the complex predicate *say* that is analysed similarly to *to state* or *to declare* being a modal word in the sense that it contains a subjective evaluation of the truth value of its object predication by its deep subject agent. SAY is neutral in respect to modality.

What kind of evidence can be brought about to support this analysis? Let us consider the following dialogue

31 (a) A: Jim says John will go abroad.

B: Does he REALLY think it is true?

In b) the stressed *really* is the focus of the sentence, the rest is the presupposition for which we look in the context of the preceding utterance. Since it is not there in the surface structure we presume that it is present in the deep one. If this way of reasoning is a legitimate one the deep structure of the performative clause of 32) is 33).

32) John went abroad

33) I SAY that I THINK that it is true that

THINK is an atomic predicate denoting the non-modal mental act of some sort and has to be kept apart from the word *think* as in *I think so*, which can be decomposed into *I THINK that it is true*. In the deep structure of 34) we will have the performative clause 35).

34) He may go abroad.

Possibly, he will go abroad.

35) I SAY that I THINK that it is possible that it is true...

35) may undergo following changes as the result of the application of optional transformations

A) The whole performative phrase or any of its parts can be deleted with the exception of the predicate *possible* which is not recoverable.

B) The predicate raising rule applies collecting the three rightmost predicates under one node which is subsequently replaced by the lexical item *suppose*.

<sup>4</sup> The term and the concept was introduced by Lakoff (1965).



C) Adverbialization rule changes *it is possible* into *possibly*, or alternatively D) *is possible* is replaced by *may be* which then becomes an auxiliary verb within what was the subordinate sentence by Ross's subject raising rule.

To show that the proposal sketched above is better than the other two mentioned previously let us see how can we account within its framework for peculiarities in the syntactic behaviour of modal verbs and adverbs.

First of all, the peculiar place of modal words in the focus presupposition structure can be related to the general convention concerning the whole performative phrase. It does not contain the focus of a sentence nor does it constitute a part of its presupposition. Consider the sentence in which the verb of saying is outwardly realized.

36) I (hereby) say that he will go abroad.

The performative clause seems to have a unique grammatical status. Consider the following

37) I say that he went abroad.

38) I SAY that he went abroad.

39) That he went abroad is said by ME.

40) What I say is that he went ABROAD.

It appears that the word of saying in the above expression has lost its performative character. It seems that the addition of *hereby* to modify *say* would make 37 - 40) sound a bit unnatural. All this is explained when we realize that what apparently is the performative phrase in 37 - 39) contains the intonation center i.e. the focus of the whole expression. In 40) the verb of saying is the part of the presupposition and the whole sentence is a natural reaction to 41) rather than 42)

41) What do you say?

42) Did he go abroad?

If modal verbs and adverbs have their deep source in the performative phrase the fact that they appear in position 3 finds principled explanation. It is based on the general, perhaps universal, principle.

The next problem that can be tackled within this approach is the nonexistence of the (+*Affect*) modal adverbs and negated modal verbs in position 3. The notional, intuitive explanation is easy here. Everyone has to believe in what he says or at least to make the linguistic impression that he does. He may not be sure of the truth of the message that may be only a potential one but his modal attitude towards the whole proposition cannot be that of doubt since in such a case it would hardly make any sense him communicating it. Of course one can express a denial or doubt. In such a case, however, the conviction (positive modal attitude) of the speaker in the truth of the fact that something did not happen or it was not X who did the action etc. is always deducible from the sentence. Let us examine the negative performative *deny* and the modal attitude verb *doubt*. They can be decomposed into the complex structures to

*say that it is not true* and *to suppose that it is not* respectively. As we can see then there is an affirmation hidden within every denial. The negative particle can be syntactically isolated and even excluded from the performative phrase proper, that will end with the non factive predicate *true*.

The non-existence of negative modal adverbs and and position 3 modal verbs is thus accounted for with the following two assertions

1. There is not a negative element within the performative clause.
2. Both modal verbs and adverbs come from the deep modal adjectives in performative clause.

What is left to explain here is the derivation of words like *undoubtedly* and *undeniably*, which, if transformationally derived must have come from the phrase with the negative element in it so that one of the generalizations above is not true. Notice that under our analysis in both cases we have to do with the double negation since the decomposition of *deny* and *doubt* reveals that there is a separable negative element in both of them. We will have to weaken now our earlier statement so that it becomes possible for a negative element to appear in deep structure of the performative clause but only on the condition that the proposition following it is negated as it is in 43)

43) I say that I THINK that it is not possible that it is true that it is not so that he went abroad.

The not-transportation transformation moves the second *not* before *true* (which means- into the performative clause) and after the collection process the combination *that it is not possible that it is not true* is replaced by *do not doubt*. Finally, the adverbialization rule, that operates within the performative clause, applies giving *undoubtedly*.

I realize that this explanation has some obvious shortcomings. What appears to be ad hoc reservations have to be added, for example, to prevent the not transportation rule to be followed by adverbialization to render *\*untruly = falsely*. Unfortunately, I cannot think of a more satisfying solution of the problem within the otherwise well motivated framework that has been adopted here.

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