

NOUN PHRASE ANALYSIS OF THE INFINITIVE COMPLEMENT SENTENCES

ALICJA WEGNER

Adam Mickiewicz University, Poznań

In his study of the syntactic theory of complementation in English P. Rosenbaum (1967) develops an analysis for the description of infinitives, gerunds and "that clauses" — three types of sentential complements (*Wh-, if, whether* complements have been disregarded) — within the framework of a generative transformational grammar based on N. Chomsky's *Aspects of the theory of syntax* (1965). Complement sentences have been assumed to be introduced by the complementizers (the infinitival *for-to*, the poss-ing and the sentential *that*) inserted transformationally by the 'complementizer placement' rule and, therefore preserving equivalence.

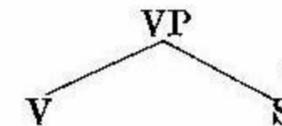
Rosenbaum postulates two phrase structure rules for the introduction of sentential complements;

PS Rule 1 VP → V (NP) (PP) $\left\{ \begin{array}{l} S \\ PP \end{array} \right\}$

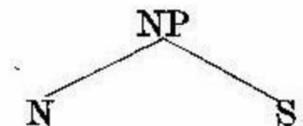
PS Rule 2 NP → Det N (S)

PS Rule 1 and PS Rule 2 provide two basic but distinct underlying structures for noun phrase and verb phrase types of complementation:

(1)



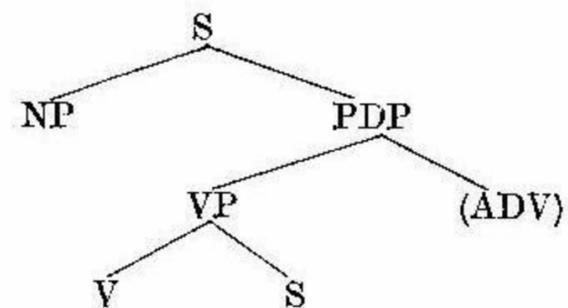
(2)



The former inserts optionally a recursive S under the immediate domination of the VP node, the latter under the immediate domination of the NP node. The two rules enable Rosenbaum to generate seven underlying structures, three of which are instances of verb phrase and the remaining four realizations of noun phrase complementation. This is specified in the following manner at the level of the underlying structure (Rosenbaum 1967: 2 - 5):

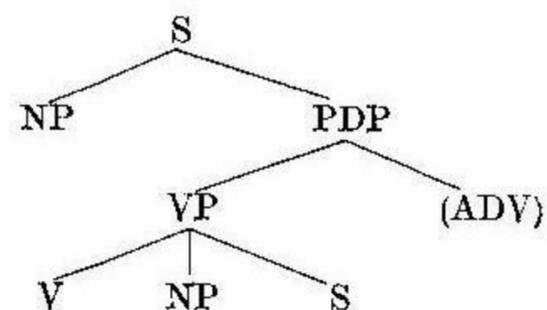
1. Intransitive verb phrase complementation.

(3)



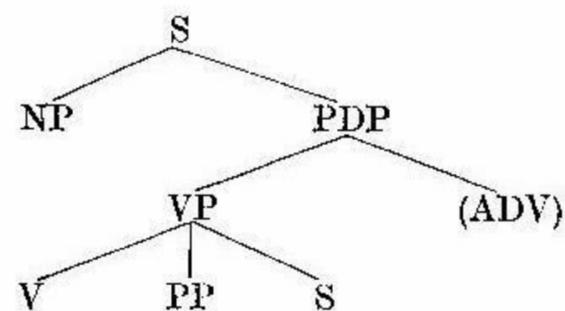
2. Transitive verb phrase complementation.

(4)



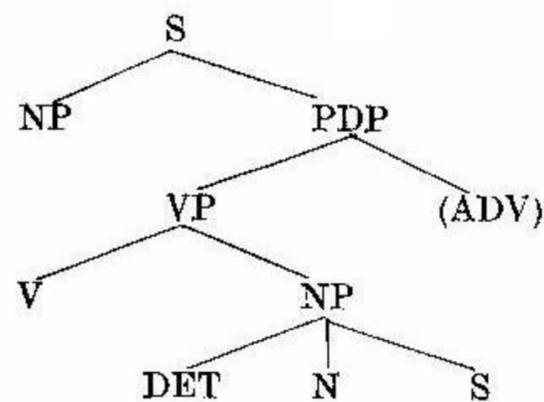
3. Oblique verb phrase complementation.

(5)



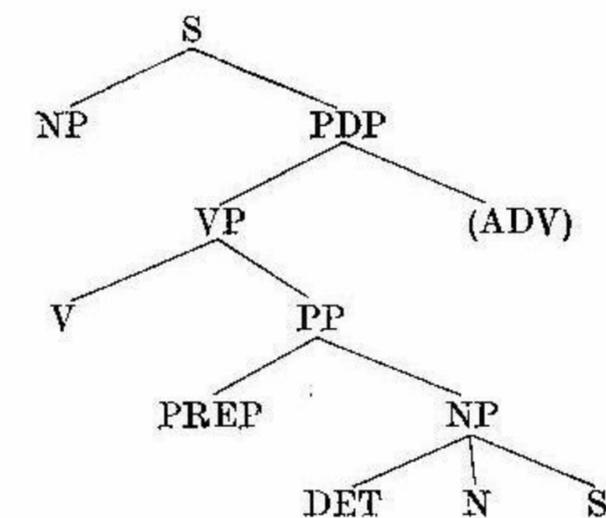
4. Object noun phrase complementation.

(6)



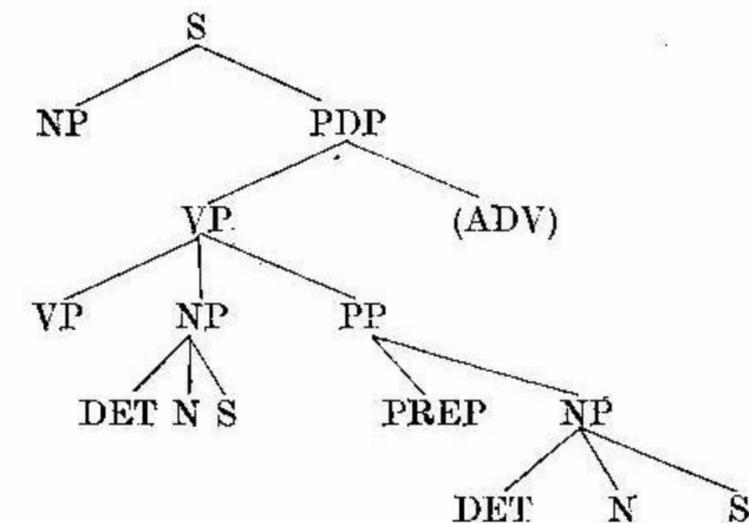
5. Intransitive — oblique noun phrase complementation.

(7)



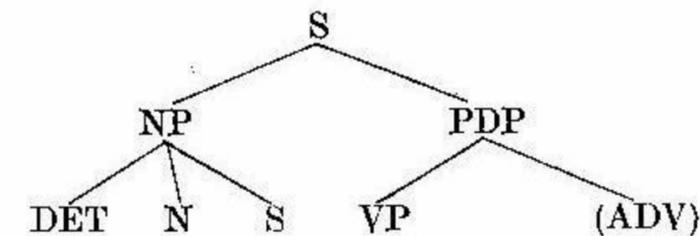
6. Transitive — oblique noun phrase complementation.

(8)



7. Subject noun phrase complementation.

(9)



Rosenbaum bases his argument for the existence of the verb phrase complement on the principle that certain constructions manifest the non-applicability of pseudo-clefting and passivization — transformations which he

assumes test exclusively the noun phrase domination of an embedded sentence. He claims that the element which is moved by the passive rule or clefted by the pseudo-cleft rule is essentially a noun phrase, and since there exist structures which cannot undergo these transformations they obtain the status of VP dominated complements.

Bowers (1968), Wagner (1968), Loffin (1968), among others argue that structures such as *tend* or *condescend*, regarded by Rosenbaum as being not susceptible to pseudo-clefting or passivization when analyzed as structures whose verbs are followed by prepositions at some deep level in their derivation, and are obligatorily deleted (i.e. before infinitival phrases) except under certain conditions (i.e. before some nominalized structures) yield positive results when pseudo-clefted¹.

Wagner (1968) proposes the preposition deletion rule, a low-level transformation operating after the passive and pseudo-cleft rules. Thus, Rosenbaum's ungrammatical² sentence (11) becomes perfectly acceptable.

Let us ponder the following example:

(10) She condescended to talk with us

After the pseudo-cleft rule has been applied, the following ungrammatical structure results according to Rosenbaum's analysis.

(11) *What she condescended was to talk with us

As soon as we account for the preposition in our analysis, a grammatical sentence is obtained.

(12) She condescended to [to talk with us]_s →

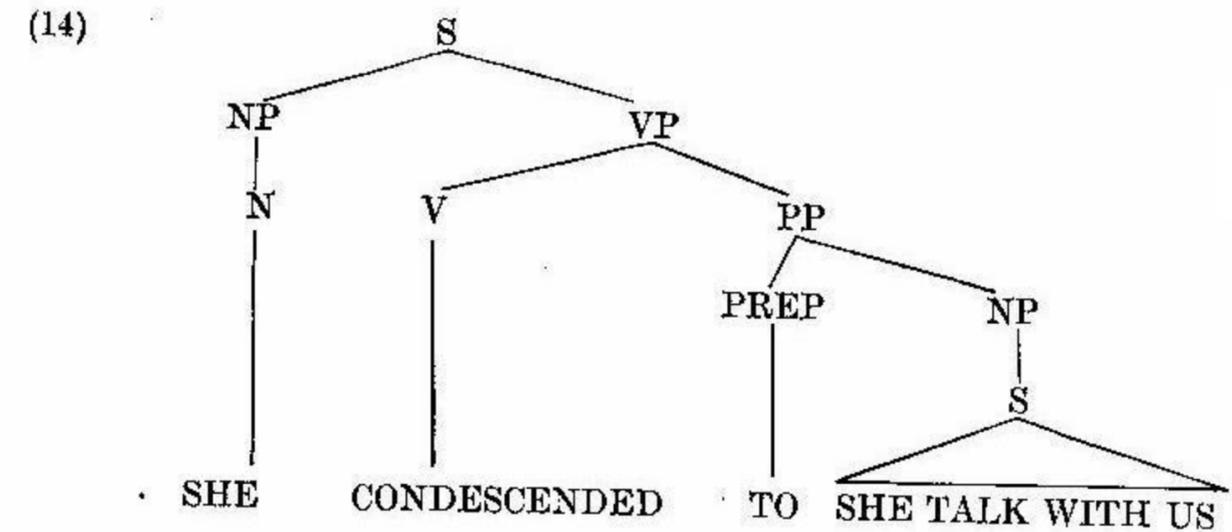
(13) What she condescended to was [to talk with us]_s

Accordingly, we provide the underlying structure for sentence (10) in figure (14) in which the complement sentence, *she talk with us* is dominated immediately by a noun phrase.

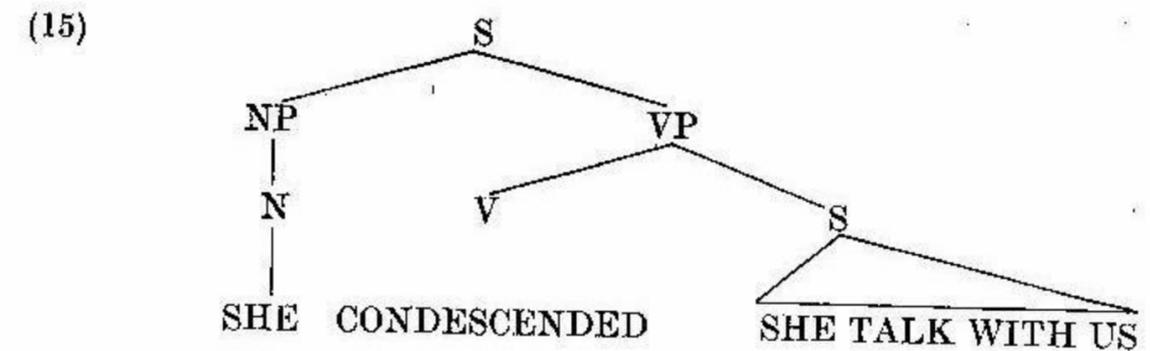
¹ Lakoff (1965), Postal (1967), Fillmore (1968) have claimed that the deepest underlying form of all verbs has a preposition in its deep structure and undergoes (though not always) a transformational operation of preposition deletion in the course of its derivation.

Lees (1963) speaks of infinitival nominals in which, in certain cases, prepositions before *to* are obligatorily deleted.

² The question as to which sentences are grammatical and which are not continues to be a problem for the linguist. It depends generally upon the acceptability of particular structures as grammatical by native speakers, although the degrees of acceptability may vary from speaker to speaker. A number of attempts have been made (e.g. Chomsky 1961, 1964) to establish criterion for degrees of grammaticalness but they have not as yet solved the problem thoroughly. For a more systematic study see Seuren (1969) and Ziff (1964).



Rosenbaum, however, claims that the complement sentence under consideration is VP dominated since the operation of the pseudo-cleft transformation does not yield a grammatical sentence. Figure (15) presents Rosenbaum's underlying structure of the example (10).



On the basis of the assumption that structures analyzed by Rosenbaum as instances of verb phrase complements can be derived from prepositional phrases — thus becoming noun phrase complements, one can argue that PS Rule 1 is "... an unnecessary complication of the grammar of English ... and ... is in disjunction with a prepositional phrase" (Wagner 1968: 89, 90).

Rosenbaum's argument for the validity of pseudo-cleft transformation testing the nominality of a complement structure seems not to be reliable at all.

Consider the following examples:

(16) They were discouraged

What they were were discouraged

(17) John is lucky

What John is is lucky

(18) The Browns can go to New York now

Where the Browns can go now is to New York

After the application of the pseudo-cleft rule we obtain a grammatically

acceptable structure, yet the item which has been clefted is obviously not a noun phrase.

In some idiolects, however, pseudo-clefting on adjectives does not hold and sentences such as (16) and (17) will be regarded as ungrammatical.

The above examples and a number of similar structures prove that in the pseudo-cleft constructions the element clefted is a constituent which is not always necessarily a noun phrase.

The passive transformation rule asserted by Rosenbaum as the next argument for 'the greater plausibility' of the verb phrase complementation seems again to fail its purpose.

The author of *The grammar of English predicate complement constructions* argues that the ungrammaticality of sentence (19)

(19) * To drink beer is condescended by nine out of ten people
is due to the non-applicability of passivization to this construction, maintaining that the passive rule involves the permutation of noun phrases, and since the requirements are not fulfilled, *to drink beer* is not a noun phrase in (19).

It seems, however, that the unacceptability of sentence (19) lies in a constraint on the passive transformation quite independent of pseudo-clefting.

G. Lakoff (1970) disagrees with Chomsky's analysis (1965: 104) of the passive construction with respect to certain groups of verbs, and claims that a set of verbs such as *owe, resemble, possess, weigh, have, equal* etc. are exceptions to the passive. He asserts that "there is no independently motivated syntactic class that distinguishes these verbs from those that do undergo the passive. It is simply an idiosyncratic fact about these verbs that they do not undergo that rule" (Lakoff 1970: 21 - 22). These considerations led him to the formulation of his theory of exception.

There is, however, a restriction on the application of the passive transformation once we draw a distinction between "action" transitive verbs which can take object noun phrase complements and "description" transitive verbs occurring with predicate nominal noun phrase complements, the set of verbs discussed by Lakoff (1970).

For example:

(20) The Browns have a beautiful house

The application of the passive to this sentence produces the ungrammatical structure:

(21) * A beautiful house is had by the Browns

Accordingly, the passive rule applies to structures containing "action" verbs only, since "the noun phrase in the complement must function as an object, not as a predicate nominal" Lester (1971: 130).

It has been observed by Lakoff (1966 a) that the reflexive and passive transformations are mutually exclusive in English, which may be illustrated by the following examples:

(22) George knows himself to be ill-tempered

(23) Jim believes himself to be the prize-winner

There are no corresponding passive sentences

(24) * George is known by himself to be ill-tempered

(25) * Jim is believed by himself to be the prize-winner.

But in case the underlying embedded subject *George* in (26) is replaced by *Paul* as in (27), the passive transformation operates yielding (28)

(26) George knows [George be ill-tempered]

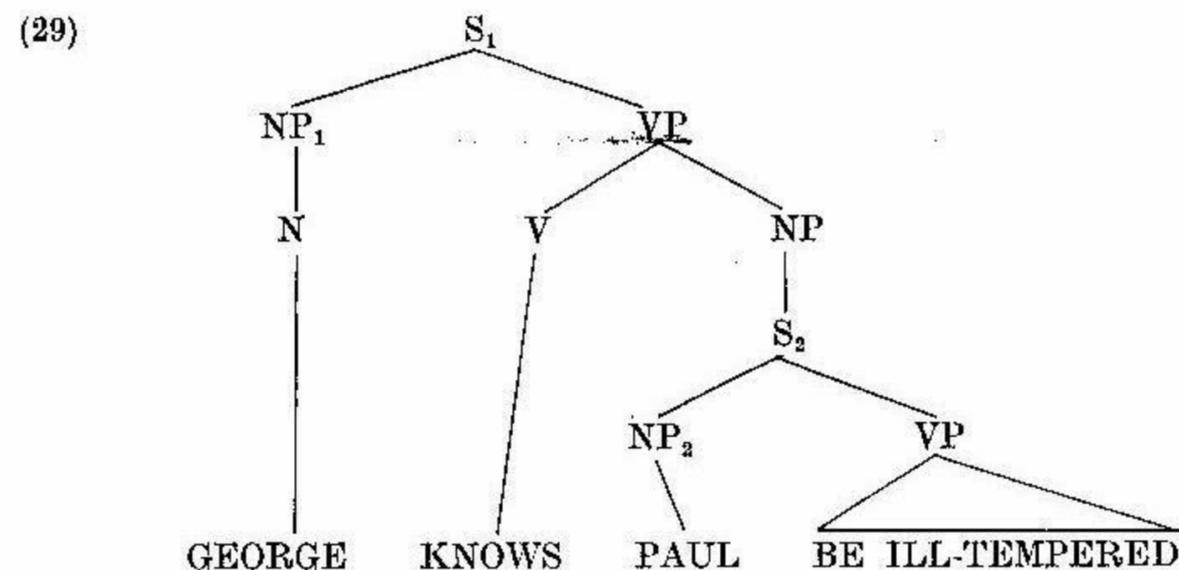
(27) George knows [Paul be ill-tempered]

(28) Paul is known by George to be ill-tempered.

Paul Postal (1967) points out that in order for the passive rule to apply the two elements interchanged cannot be identical and claims that it is not "a language particular fact", but rather a universal constraint.

We assume then, that the matrix subject must be non-identical to the embedded subject at the level of underlying structure at which the passive rule applies.

The underlying structure of (27) has the schema

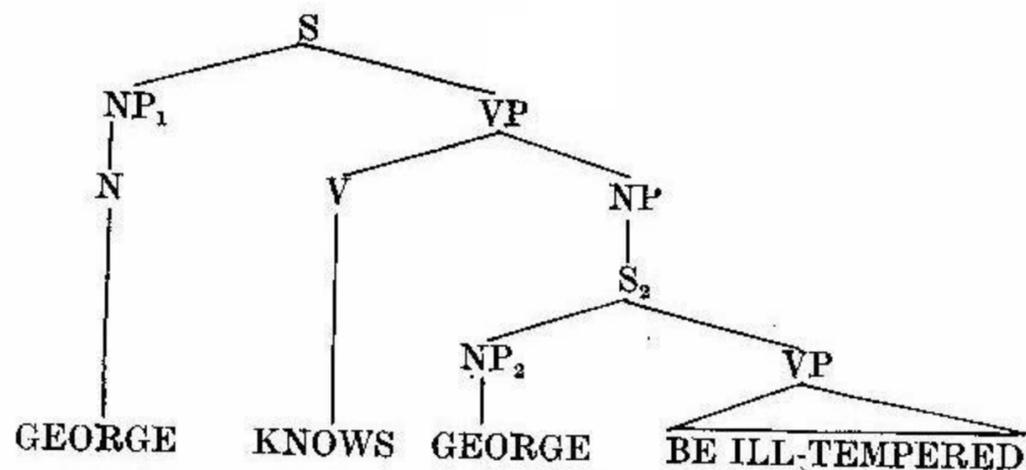


In (29) the subject-raising process³ operates on the second cycle S_2 by means of which the subject of the embedded clause NP_2 is raised out of that clause into the position of a derived object of the main verb *know*. After this rule has applied, passivization or reflexivization can generate structures like (28) or (22) respectively.

The underlying structure of (22) is as presented in the configuration(30):

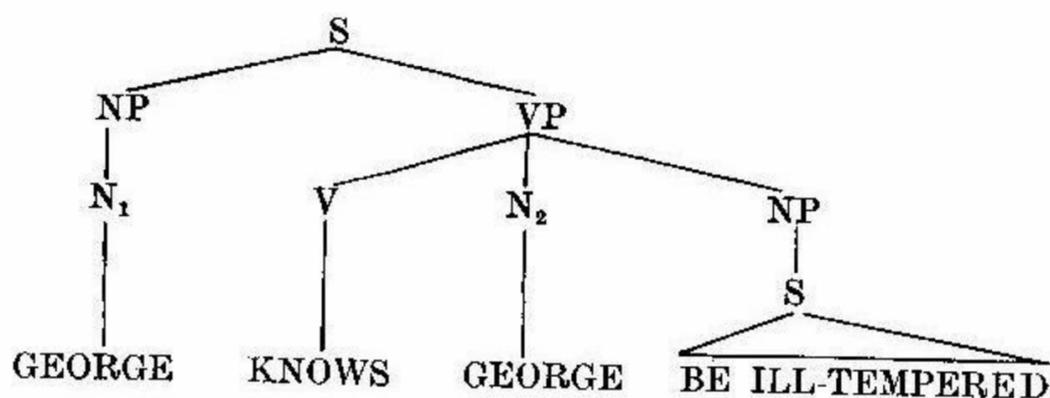
³ For a detailed discussion of the subject-raising process see P. Kiparsky and C. Kiparsky (1970).

(30) a.



At this point 'raising to object' operates yielding (30b):

b.



To (30 b) the reflexive transformation can apply (after subject-raising), deleting the object of the main verb under the identity with the subject and replacing N_2 by the reflexive pronoun *himself*, since the two nouns are dominated by the same S-node at the stage in the derivation where the reflexivization applies.

Accordingly, if the two nouns in question are identical at some point in the derivation, the passive transformation is blocked, which accounts for the ungrammaticality of (24) and (25).

Thus, the subject-raising transformation must precede the passive process so that Postal's principle of non-identity can operate.

It seems, however, that this constraint is not operative if we have a sentential complement, since (32) is a grammatically acceptable sentence. Consider the examples:

(31) George knows that he is ill-tempered

(32) That he is ill-tempered is known by George

We can only account for these sentences as grammatically correct provided that NP_1 equals NP_2 , that is if 'he' in the embedded clause stands for the same person, that is, 'George'.

We have stated this generalization concerning the operation of the passive and the reflexive in terms of intermediate structures (at the level of the deriva-

tion where the two rules can apply)—yet we have not accounted for structures like (33) or (34).

(33) She condescended to do it for us

(34) She expected to win the first prize

which undergo Equi-NP-Del under the identity of the embedded subject to the subject of the matrix sentence.

Lakoff (1965) proposes to mark *condescend*-type verbs as "absolute exceptions" to the rule of Equi-NP-Deletion, requiring that the S.D. of Equi-NP-Del be met and that the rule actually applies, thus introducing the transformational constraint for handling structures like (35), resulting in an ungrammatical sentence

(35) * She condescended for Mary to talk with us

and accounting for (10) which is grammatical.

This claim, although it might have seemed quite convincing at the time it was proposed, has since been proved false.

Perlmutter (1971) has argued persuasively against Lakoff's formalism and insisted upon the introduction into linguistic theory of the notion of deep structure constraint.

On the basis of the analysis of "the like subject constraint" in English presented by Perlmutter⁴, we can assume that structures with *condescend*

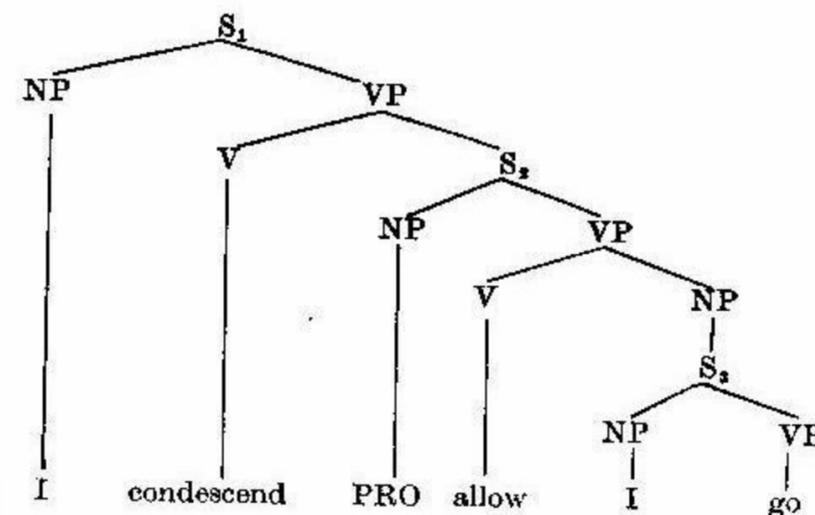
⁴ Perlmutter (1971) — The problem in question concerns the argument that "the like-subject constraint" in English is deep structural. The evidence is presented on the basis of the following examples:

(1) I condescended to allow him to go. (Perlmutter 1971)

(2) * I condescended to be allowed to go. (Perlmutter 1971)

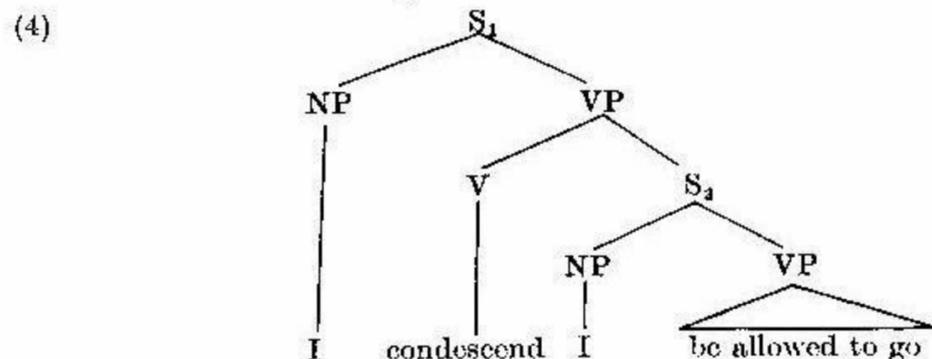
Perlmutter accounts for the fact that while (1) is grammatical, the ungrammaticality of (2) can be precisely predicted provided that in the underlying structure of (2) the subject of the sentence embedded below the main verb, namely *condescend* is non-identical to this subject, whereas according to Lakoff's formalism, example (2) will be grammatical — which is of course false.

(3) is the underlying structure of (2)



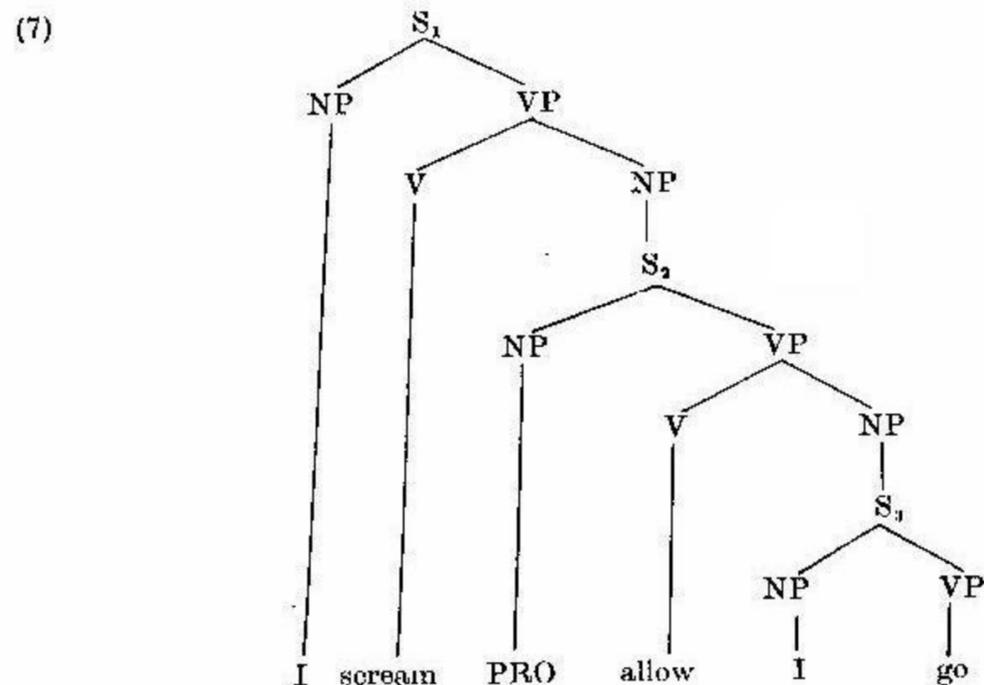
In Perlmutter's analysis it is not relevant whether the embedded sentences are NP or VP dominated.

In the second cycle subject-raising operates first, then the passive applies, yielding an intermediate string (4)



Upon the operation of Equi-NP-Del and infinitivization an ungrammatical structure (2) is produced. The above observation points to the statement that this is not a transformational but a deep structural constraint. "The unlike-subject constraint" is presented by an essentially similar procedure. Sentences (5) and (6) illustrate the claim of the underlying constraint.

- (5) I screamed to be allowed to go.
 (6) * I screamed for Frank to be allowed to go.



The subject-raising rule operates on the second cycle. As a result NP of S₂ becomes a derived object of ALLOW in S₂. Then, the passive applies in S₂ yielding I as a derived subject of ALLOW. Now, the transformation of Equi-NP-Del applies since the S. D. of this rule is met.

As long as the embedded subject below the main verb is non-identical to the matrix subject in the underlying structure, it is not important whether the S. D. of Equi-NP-Del

or attempt verbs are not absolute exceptions to Equi-NP-Deletion, but are structures which require matrix subjects and subjects of their complements to be coreferential in the underlying structure, that is, before the application of any transformations.

Examples (10), (36) and (35), (37) are respectively relevant to the grammaticality and ungrammaticality of the resulting structures.

(36) He attempted to sit this exam once again

(37) * He attempted for Bill to sit this exam once again

The underlying structure of (36) is essentially the same as (30 a) but the structure undergoes Equi-NP-Del instead of subject-raising as was the case in (30 b).

On the other hand, "the unlike subject constraint" disallows the matrix subject to be identical with the complement subject of the main verb in the underlying structure.

Consider the examples;

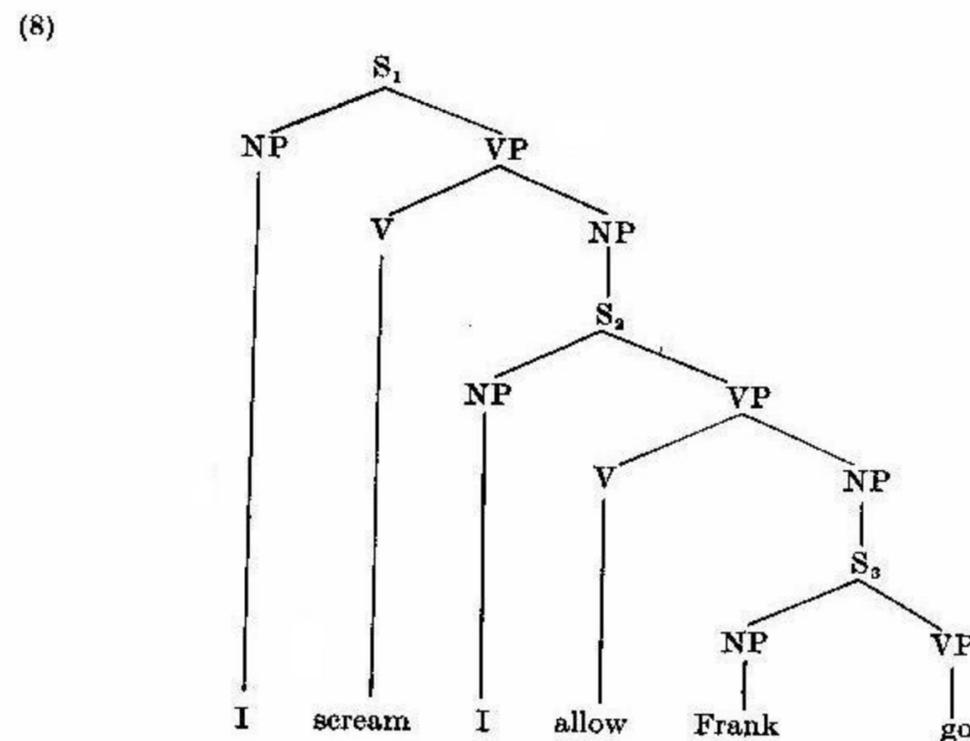
(38) I screamed for Mary to do the work in the garden

(39) * I screamed for me to do the work in the garden

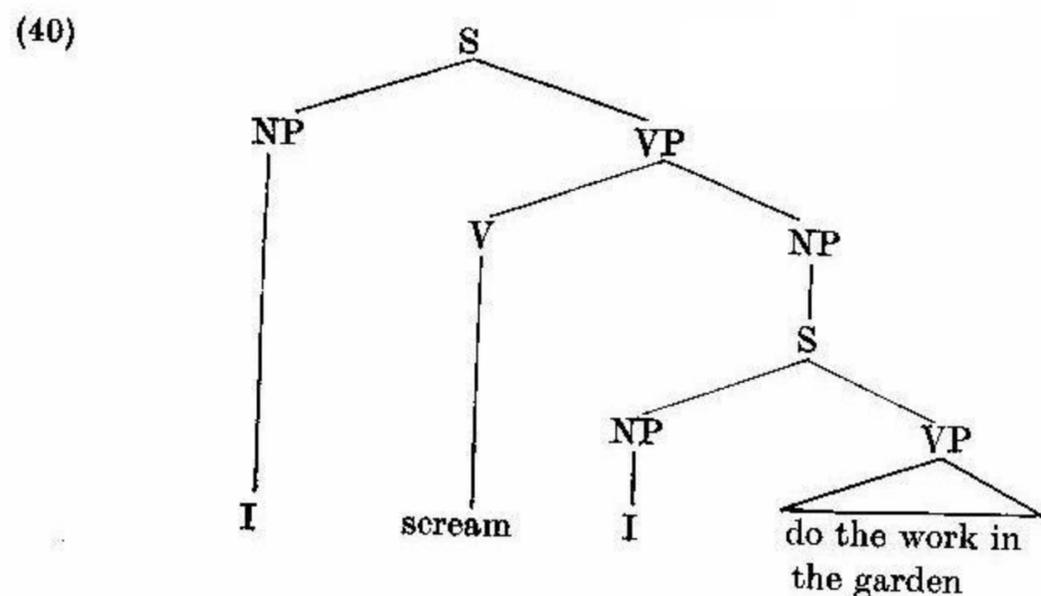
The ungrammaticality of sentence (39) explains why the condition of "the unlike subject constraint" in the underlying structure has not been satisfied for this structure.

is met or the rule actually applies, provided that we are dealing with a deep structure constraint.

Since this condition is not satisfied in the deep structure of sentence (8), the resultant structure (8) is ungrammatical.



The underlying structure of (39) is the following



On the basis of the discussion presented, we can assume that the pseudo-cleft and the passive transformations do not always provide satisfactory proof of the nominality of embedded clauses in all instances tested, which of course does not mean that they exhibit verb phrase domination, the existence of which has not been convincingly justified by Rosenbaum (1967), Jacobs and Rosenbaum (1968) and followers, but seem to be blocked in certain circumstances.

It seems that arguments for the existence of verb phrase complementation provided by Rosenbaum are far from overwhelming, miss the generalization, and seem to add complexity to the phrase structure rules.

Analyzing a derived form of a verb (underlying structure prepositions have been disregarded), and making use of the application of pseudo-cleft and passive rules in order to account for underlying structure differences of noun phrase and verb phrase complements causes certain misinterpretations in the analysis of complementation in Rosenbaum (1967).

Wagner (1968) claims that sentences analysed by Rosenbaum can be derived from noun phrases. Loflin considers the two transformations in question and comes to the conclusion that "susceptibility to pseudo-clefting does not imply susceptibility to passivization and vice versa" Loflin (1968: 286) for testing nominality, but he does not state clearly that the element which is pseudo-clefted is not necessarily a noun phrase, which has been proved by examples (16), (17), (18).

In the Preface to *The grammar of English predicate complement constructions* (1967), Rosenbaum states himself that some of his views expressed in his work have recently been changed. "First, the number of clear cases of verb phrase complementation has diminished to the point where their general

existence becomes questionable (the Appendix which provides verb classifications, is correspondingly unreliable)" (Rosenbaum 1967: 9).

Ross (1967) argued that the verb phrase complement construction does not exist at all and postulated that syntactic environments such as passive constructions, pseudo-cleft and *than* constructions, and equative sentences form the evidence that embedded clauses operate exclusively on noun phrases i.e. are dominated immediately by the NP node at some point in their derivation.

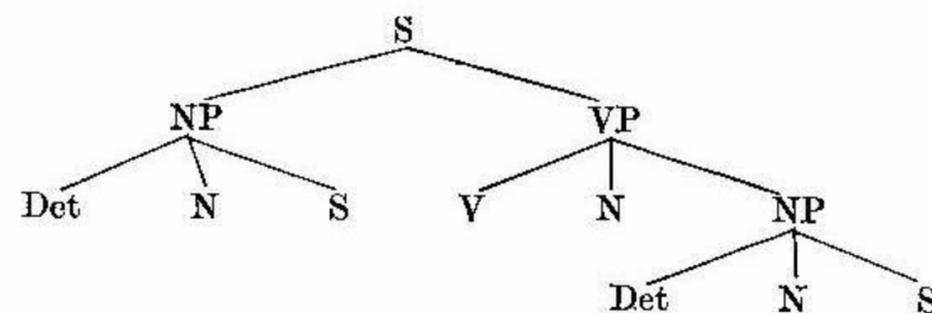
We have presented this reasoning in support of abandonment of the verb phrase complementation which seems to be a controversial structure in the analysis of the complement system and to make the claim that one phrase structure rule (i.e. PS 2.) for the introduction of the embedded sentences is satisfactory.

We subscribe to the proposal that complement sentences such as *that* — clauses, infinitives and gerunds are derived from NP nodes.

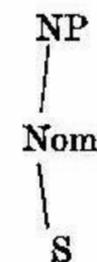
Thus, we shall have

- (41) NP → (Det) N (S)
 VP → V (N) (NP)

This may be illustrated by the following diagram:



Any embedded sentence then, will fall under the immediate domination of the NP node no matter whether it will appear in subject or object position. In this way we account for greater generality in the generation of complement constructions. Consequently, we assume that all Rosenbaum's noun phrase and verb phrase constructions analysed here, are regarded as nominalizations and have the underlying structure of the form



Thus, we assume that nominalizations are derived from noun phrase complement constructions.

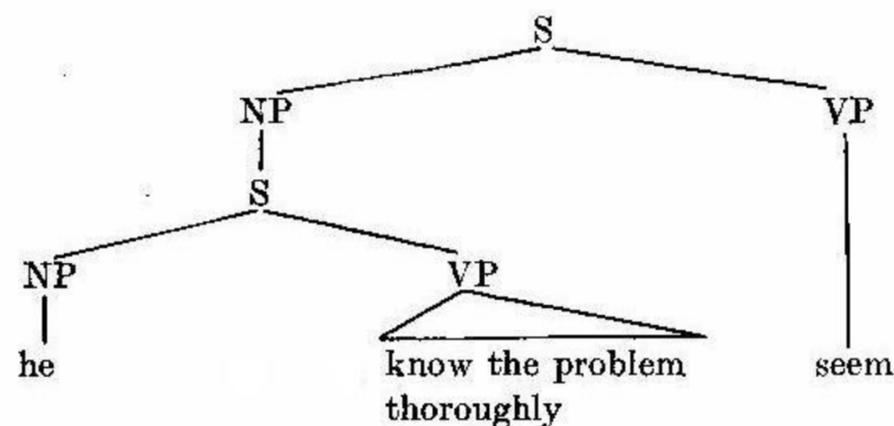
We have eliminated the NP — VP complement distinction, subscribing to the assumption that there are no embedded sentences which would be directly dominated by the VP node.

Hence, Rosenbaum's intransitive, transitive, oblique verb phrase complementations are regarded as instances of noun phrase complements functioning as objects⁵ of verbs or objects of prepositions. The following diagram represents a modified version of Rosenbaum's seven types of the complement structure

1. Subject noun phrase — Subject noun phrase
2. Intransitive verb phrase } Object noun phrase
3. Object noun phrase } Object noun phrase
4. Intransitive oblique noun phrase } Intransitive } object
5. Oblique verb phrase } oblique } noun
6. Transitive oblique noun phrase } Transitive oblique } object noun
7. Transitive verb phrase } noun phrase } phrase

According to the diagram we obtain two kinds of noun phrase complementation: subject and object. This also refers to the noun phrases in the oblique case and hence there is subject oblique noun phrase and object oblique noun phrase⁶. The following configurations account for the syntactical form of the sample examples. *Subject NP complementation*

(42) He seemed to know the problem thoroughly

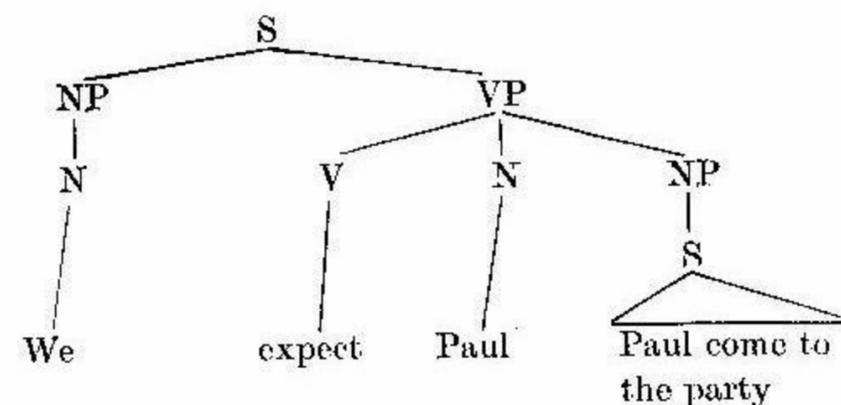


⁵ Sentence complements occur in some syntactic relation to the main sentence in the surface structure, that is in the subject and object positions. In the very deep structure, however, we assume that the noun phrase in question behaves neutrally concerning subject and object relation since the elements at this level of the structure seem not to be ordered at all. Subjectivization and objectivization rules put them in relevant-ordered positions in the intermediate and surface structure relations.

⁶ Cf. Rosenbaum's seven types of the complement structure — examples (3 - 9) and a derivation of sentence (10) in the diagram (15).

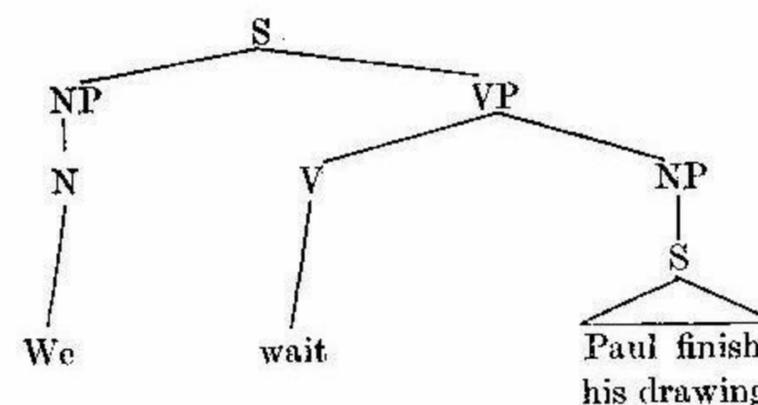
Object NP complementation

(43) We expected Paul to come to the party



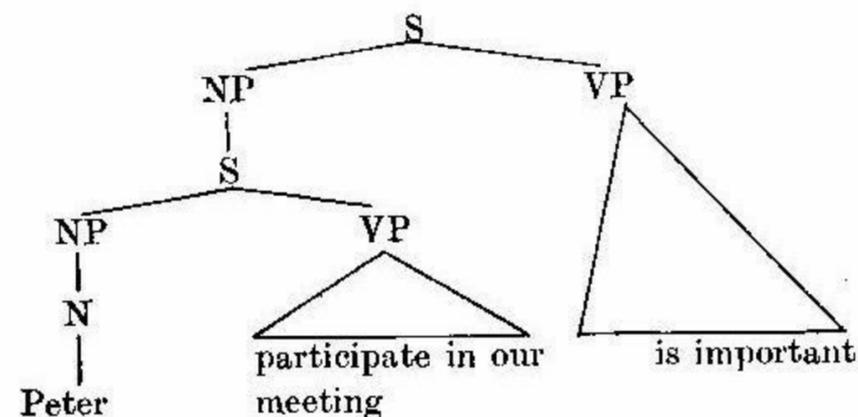
Object oblique complementation

(44) We waited for Paul to finish his drawing



Subject oblique complementation

(45) For Peter to participate in our meeting is important



The preposition for marking the subject of the infinitive structure is inserted transformationally and therefore not reflected in these structural underlying configurations.

REFERENCES

- Bach, E. and Harms, R. T. (eds). 1968. *Universals in linguistic theory*. New York: Holt, Rinehart and Winston.
- Bierwisch, M. and Heidolph, K. E. (eds). 1970. *Progress in linguistics*. The Hague: Mouton.
- Bowers, F. 1968. "English complex sentence formation". *JL* 4. 83 - 88.
- Chomsky, N. 1965. *Aspects of the theory of syntax*. Cambridge, Mass.: The MIT Press.
- Fillmore, C. J. 1968. "The case for case". In: Bach, E. and Harms, R. T. 1968. 1-88.
- Fodor, J. A. and Katz, J. J. (eds). 1964. *The structure of language. Readings in the philosophy of language*. Englewood Cliffs: Prentice Hall.
- Jacobs, R. A. and Rosenbaum, P. S. 1968. *English transformational grammar*. Waltham, Mass.: Blaisdell Publishing Co.
- Kiparsky, P. and Kiparsky, C. 1970. "Fact". In: Bierwisch, M. and Heidolph, K. E. 1970. 143 - 173.
- Lakoff, G. 1965. *On the nature of syntactic irregularity*. Reprinted as *Irregularity in syntax* (Lakoff 1970). New York: Holt, Rinehart and Winston.
- Lakoff, G. 1966a. *Deep and surface grammar*. Reproduced by the Indiana University Linguistics Club. 1 - 84.
- Lees, R. 1963. *The grammar of English nominalizations*. Bloomington: Indiana University.
- Lester, M. 1971. *Introductory transformational grammar of English*. New York: Holt, Rinehart and Winston.
- Loflin, M. D. 1968. "A note on verb phrase complementation". *JL* 4. 285 - 286.
- Perlmutter, D. M. 1971. *Deep and surface structure constraints in syntax*. New York: Holt, Rinehart and Winston.
- Postal, P. M. 1967. *Constituent structure: study of contemporary models of syntactic description*. Bloomington: Indiana University.
- Rosenbaum, P. S. 1967. *The grammar of English predicate complement constructions*. Cambridge, Mass.: The MIT Press.
- Ross, J. R. 1967. *Constraints on variables in syntax*. Ph. D. dissertation. Reproduced by the Indiana University Linguistics Club.
- Souren, P.A.M. 1969. *Operators and nucleus*. London: Cambridge University Press.
- Wagner, K. H. 1968. "Verb phrase complementation: a criticism". *JL* 4. 89 - 91.
- Ziff, P. 1960. Semantic analysis. "On understating 'understanding utterances'". In: Fodor, J. A. and Katz, J. J. 1964. 390 - 399.