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## **DOCTOR OF PHILOSOPHY**

**Aspects of phrases and clauses in Syrian within the framework of head-driven phrase structure grammar.**

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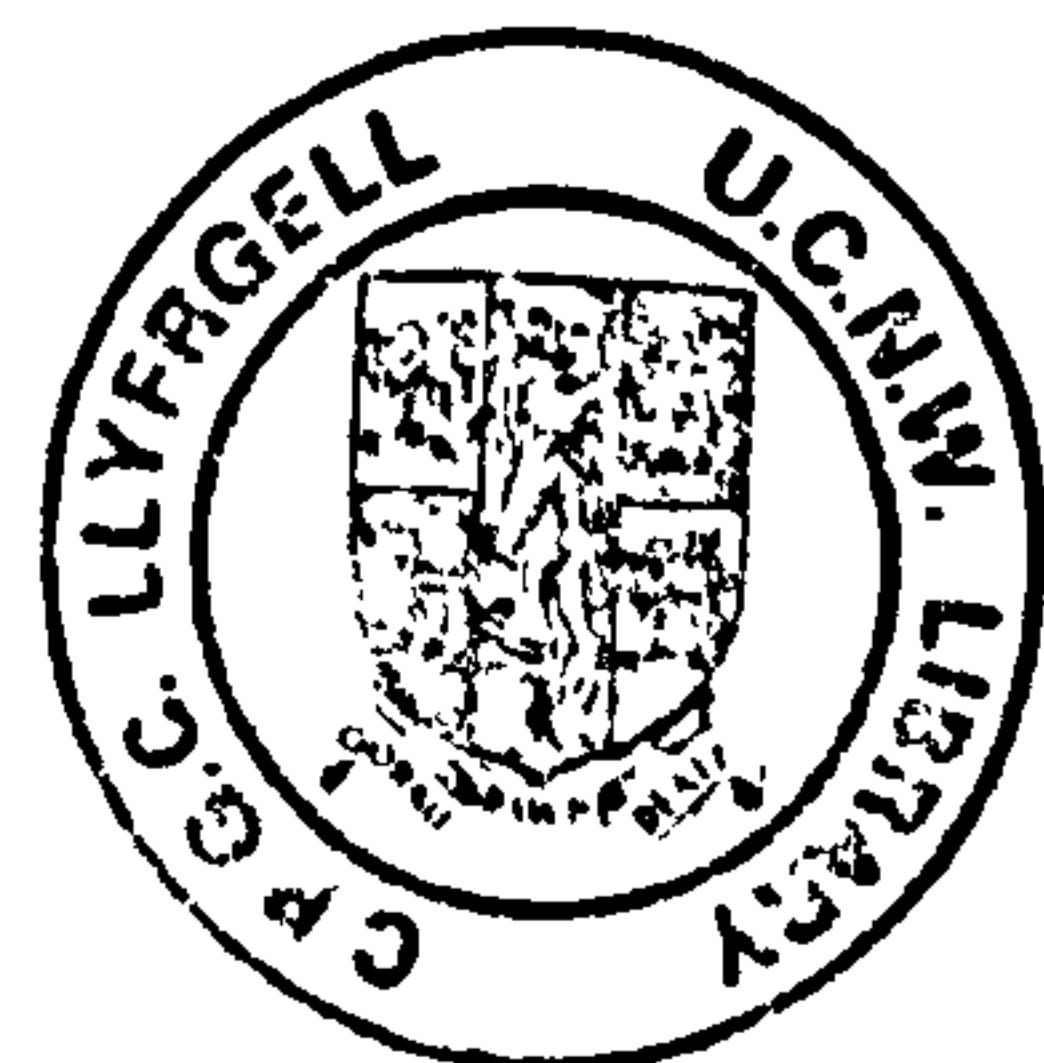
**ASPECTS OF PHRASES AND CLAUSES IN SYRIAN WITHIN THE  
FRAMEWORK OF HEAD-DRIVEN PHRASE STRUCTURE GRAMMAR**

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**SUBMITTED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY AT  
THE UNIVERSITY COLLEGE OF NORTH WALES**

**DEPARTMENT OF LINGUISTICS  
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**NOVEMBER: 1991**



**DEDICATION**

**TO MY FATHER AND MOTHER**

## ACKNOWLEDGEMENT

I should first like to thank my supervisor Dr. Robert D, Borsley for his patient, enthusiastic guidance and his help during my work on this thesis.

My thanks are also due to Dr. Michelle Aldridge for her valuable pieces of advice which helped so much the shaping of this work.

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## ABSTRACT

The aim of this work is show how certain aspects of Syrian phrases and clauses can be analyzed within the Head-Driven Phrase Structure Grammar (HPSG) framework. This is a framework developed and advanced by Carl Pollard, Ivan Sag and others. This approach draws on many recent theories such as Generalized Phrase Structure Grammar, Categorical Grammar, Lexical Functional Grammar, and Government and Binding.

I will be mainly concerned in this work with the revised version of HPSG advanced in Borsley (1986,1987, forthcoming), on which ideas of this study are based.

In chapter one, some theoretical matters will be discussed which are worth considering in relation to the topic of this study. I will more specifically be concerned with a brief description of distinguishing features of Phrase Structure Grammar. I will also introduce some ideas of Categorical Grammar which is one of the main influences on HPSG.

In chapter two, I will discuss the important role verb phrases play in Syrian. I will also look at clitic facts. The analysis that I will propose will be based on the revised version of HPSG.

Chapter three will be devoted to prepositional phrases. I will consider a variety of Syrian prepositions and argue in great length that they are heads of prepositional phrases. As in the verb phrases chapter, clitics will be a major concern.

In chapter four, I will study adjective phrases and show that adjectives can be used predicatively and attributively.

In chapter five, I will introduce some noun phrase data and investigate their internal structure. I will show that nouns in Syrian, unlike in English, can take noun phrases which always follow the head noun they modify. In other words, I will show that Syrian noun phrases have what might be called a 'subject' preceded by the head noun and followed by a complement. The reason for calling them 'subjects' is that they seem to occupy a similar position in noun phrases to subjects in verb initial clauses and are interpreted in the same way as a subject when the noun is derived from a verb. However, I will argue that they are not 'subjects', but in fact complements. I will also assume that the definite article is essentially a kind of clitic. That is, it can be analyzed as a realization, like clitics, of the clitic feature. As I did in the previous chapters, I will consider clitics.

In chapter six, I will discuss the structure of Syrian clauses. I will look at ordinary clauses where I will argue that Syrian has two possible word order: subject-verb-object, which is the unmarked word order, and verb-subject-object which is also used very frequently. I will proceed to consider

English small clauses and Syrian verbless clauses. It is not too surprising, perhaps, that some similarities and some differences will be found between the two languages.

In chapter seven, I will study and analyze 'Unbounded Dependency Constructions'. This is a term introduced in Generalized Phrase Structure Grammar during the last decade to refer to a class of constructions standardly analyzed by transformational grammarians as involving WH-Movement. For English, such constructions include Topicalization, Relative Clauses, wh- Questions, etc. It is used because it does not suggest that the correct analysis involves movement. I will also introduce Pollard and Sag's (forthcoming) approach to unbounded dependency constructions.

Finally, in chapter eight, I will sum up this work and look at topics for further research.

Phonetic Symbols adopted in the study	The International Phonetic Alphabet	Examples
[ḍ]	ḍ	ḍarb
[ḥ]	ħ	Aħmed
[g̣]	ġ	ġabi
[ʒ]	ʒ	ʒabqari
[ṭ]	ṭ	ṭawleh
[ʃ]	ʃ	ʃaf
[kh]	x	Khalid
[q]	q	qal
[ph]	f	Mustapha
[ṣ]	ṣ	ṣaḥb
[ʔ]	ʔ	suʔl

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## CHAPTER ONE

### Preliminaries

#### 1.0. Introduction:

The aim of this chapter is to introduce some central concepts of Phrase Structure Grammar (henceforth, PSG). We would like to make it clear that we are introducing the theoretical framework which we will be assuming in the rest of the thesis. We will more precisely be concerned with a brief description of distinguishing features of PSG together with its modern versions that have been developed over the last decade. We will also consider the differences between what can be called 'Traditional Phrase Structure Grammar' (TPSG, hereafter) and what can be called 'Modern Phrase Structure Grammar' (henceforth MPSG). By TPSG we mean the approach that was implicit in Pre-Chomskyan linguistics. This was mainly concerned with methodology and did not look carefully at the properties of the descriptions. By contrast, what we mean by MPSG is both 'Generalized Phrase Structure Grammar' (GPSG) and 'Head-Driven Phrase Structure Grammar' (HPSG). These modern versions of PSG were developed as an alternative to 'Transformational Grammar' (TG). GPSG is a theory developed in the late 1970's and early 1980's by Gerald Gazdar and others, and advanced later in Gazdar, Klein, Pullum, and Sag (1985). HPSG, on the other hand, was developed from 1985 by Carl

Pollard, Ivan Sag and others, and advanced in Pollard and Sag (1988 and forthcoming). We will also highlight certain weaknesses of GPSG and argue that these weaknesses disappear if we adopt HPSG. We will also introduce the two versions of HPSG; i.e., the standard version developed by Pollard and Sag and the revised version advanced in Borsley (1986, 1987 and forthcoming (a)). Finally, we will say something about the theory of 'Categorial Grammar' (CG) which is one of the main influences on HPSG. In fact, HPSG is largely a combination of GPSG and CG.

The organization of this introductory chapter is as follows. In section one, we will introduce Traditional Phrase Structure Grammar. In section two, we will discuss Modern Phrase Structure Grammar. In section three, we will look at Categorial Grammar. In Section four, subsection one, we will introduce the Standard Version of HPSG developed by Pollard (1985) and Pollard and Sag (1988). In section four, subsection two, we will present the Revised Version of HPSG as outlined in Borsley (1986, 1987 and forthcoming (a)). As a conclusion, we will see how these versions of HPSG are preferable to TPSG and GPSG.

### 1.1. Traditional Phrase Structure Grammar:

Traditional phrase structure grammar, as noted at the outset, is a reconstruction of the ideas of Pre-Chomskyan linguists. They were concerned mainly with methodology and took

little interest in the formal properties of their descriptions. Chomsky (1957), Postal (1964) and others argued that their descriptions were effectively what they called phrase structure grammars. TPSG was also studied and exploited within computer science (Gazdar and Mellish (1989)).

From about 1980, modern versions of PSG (i.e. GPSG and HPSG) were developed as an alternative to Transformational Grammar. TPSG together with GPSG and HPSG and other similar theories such as CG share the same property of being non-transformational theories. They are similar in two important ways which will be outlined below:

- 1. A sentence has only one level of syntactic representation, i.e., a surface structure.**

This relates to the fact that they are non-transformational but it is a general point. This is because it is possible to be non-transformational but to assume more than one level of structure as is the case in 'Lexical Functional Grammar' (Bresnan ed. (1982)).

- 2. There are no rules or principles affecting anything larger than a local tree.**

As a result, a tree is well formed if and only if every local tree consisting of a category and its daughters is well-formed. The relation between trees and local trees is the same in all versions of PSG. Whereas the relation between rules and trees is different in different versions of PSG. Whether or not a local tree is well-formed is a simple matter in TPSG and a more complex matter as we will see later in MPSG. We will



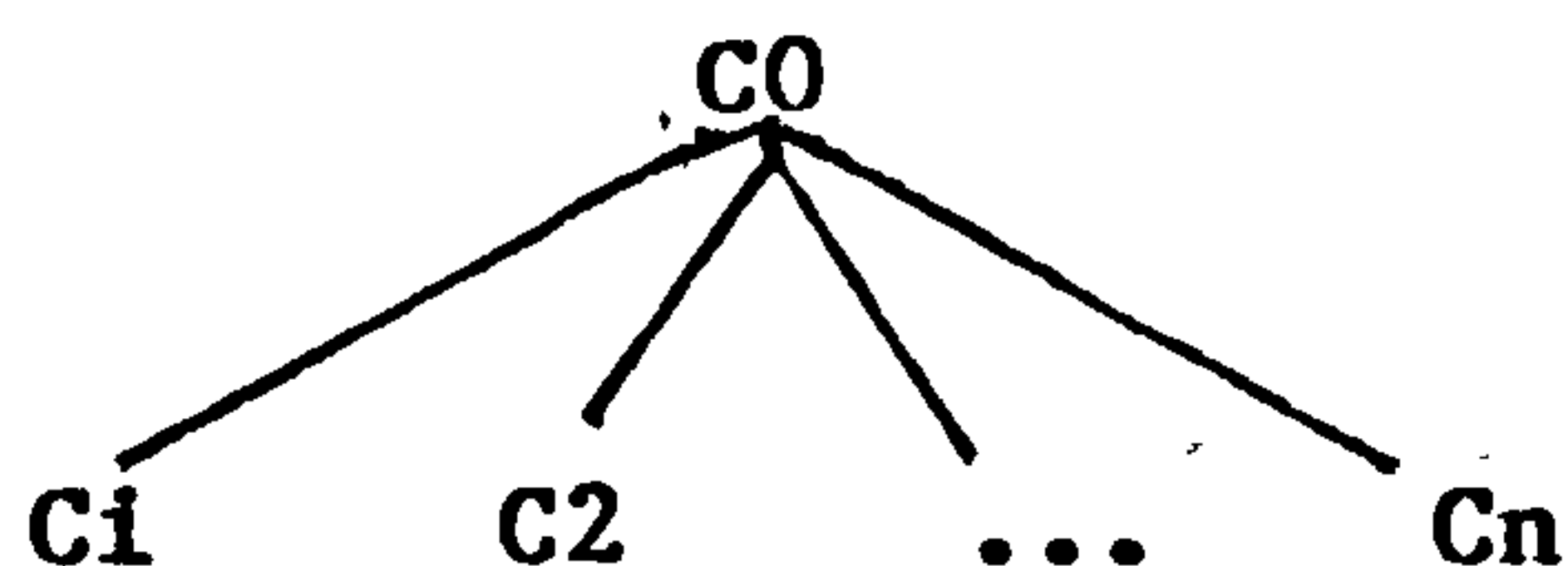
concentrate here on TPSG and leave out GPSG and HPSG to be considered fully in the following sections.

For TPSG, a grammar is a set of Phrase Structure Rules (PS rules) involving simple, unanalyzeable categories (categories that are not made up of smaller components, in other words, categories that have no internal structure). Consider the following illustration of the form of PS rules:

3.  $C_0 \rightarrow C_1 C_2 \dots C_n$

We can interpret this rule as saying that a  $C_0$  can immediately dominate a  $C_1$  followed by a  $C_2$ ...followed by a  $C_n$ . In other words, it licenses the following local tree:

4.



PS rules in a TPSG can be interpreted in a number of ways. One way of interpreting such rules following the standard view and McCawley (1968:93) is that, they can be interpreted as rewrite rules. Consider the following PS rule:

5.  $S \rightarrow NP VP$

This rule says that an  $S$  can be rewritten as  $NP$  and  $VP$ . That is, a rule which maps strings into strings. Hence, PS rules derive strings of symbols from strings of symbols giving rise to derivations which are sequences of strings of symbols, from which trees can be constructed.

A second way of interpreting PS rules is as 'Tree-Formation Rules'. PS rules can be interpreted as forming trees either from top to bottom or from bottom to top. The following statements illustrate the point:

6. a. An S can be expanded as an NP followed by a VP.

b. An NP can combine with a following VP to form an S.

Since we are dealing with what is and what is not possible, not with how speakers actually form sentences, then there is good reason for interpreting PS rules differently. That is, PS rules can be interpreted as 'Node Admissibility Conditions' on local trees. To put it another way, PS rules can be interpreted as follows:

7. An S can immediately dominate an NP followed by a VP.

8. An NP followed by a VP can be immediately dominated by an S.

9. A local tree consisting of an S and immediately dominating an NP followed by a VP is well-formed.

The relation, moreover, between rules and trees in TPSG is as follows:

10. A local tree is well-formed if and only if it matches a PS rule.

Having introduced TPSG, we can conclude this section by noting that PS rules, as we will see in the following section when we introduce MPSG, are unsatisfactory and we can overcome their weaknesses by assuming complex categories and different rules.

## 1.2. Modern Phrase Structure Grammar:

In this section, we will consider the differences between TPSG and MPSG and show that TPSG is unsatisfactory because it misses generalizations. We will also highlight some weaknesses within GPSG and indicate how these weaknesses disappear if we assume HPSG.

As mentioned earlier, what we mean by MPSG is GPSG and HPSG. MPSG differs from TPSG in a number of ways: The most important distinction is the use of 'Complex Categories'. MPSG assumes that the categories we are concerned with are complex, i.e. made up of smaller features instead of the simple categories used by TPSG. An important piece of evidence for complex categories comes from agreement facts. The point is highlighted in Gazdar and Mellish's (1987) discussion, in which they base their argument on French examples. But since we are concerned with Syrian, we will illustrate the argument using Syrian data. The following data is relevant:

- |                             |                            |
|-----------------------------|----------------------------|
| 11. a. ʔana(1SG) akalt(1SG) | e. hyyeh(3SGF) akalt(3SGF) |
| 'I ate'                     | 'She ate'                  |
| b. ʔanteh(2SGM) akalt(2SGM) | f. nihneh(1PL) akalna(1PL) |
| 'You ate'                   | 'We ate'                   |
| c. ʔanti(2SGF) aklti(2SGF)  | g. ʔanto(2PL) akaltu(2PL)  |
| 'You ate'                   | 'You ate'                  |
| d. huwéh(3SGM) akle(3SGM)   | h. hinneh(3PL) akalou(3PL) |
| 'He ate'                    | 'They ate'                 |



The point is that TPSG misses generalizations of various kinds. This is because it cannot handle NP VP clauses with a single rule if it is to capture the subject-verb agreement. It also cannot license each type of VP with a single rule if it is to handle agreement. More specifically, if we have simple categories we will require different rules, one S rule and one VP rule, for each of the cases in (11). The following illustrate this:

12. a. S ---> NP1SG VP1SG    b. S ---> NP1PL VP1PL  
      c. S ---> NP2SGM VP2SGM    d. S ---> NP2SGF VP2SGF  
      e. S ---> NP2PL VP2PL    f. S ---> NP3SGM VP3SGM  
      g. S ---> NP3SGF VP3SGF    h. S ---> NP3PL VP3PL
13. a. VP1SG ---> V1SG    b. VP1PL ---> V1PL  
      c. VP2SGM ---> V2SGM    d. VP2SGF ---> V2SGF  
      e. VP2PL ---> V2PL    f. VP3SGM ---> V3SGM  
      g. VP3SGF ---> V3SGF    h. VP3PL ---> V3PL

In brief, if we posit simple categories, sixteen rules are required to satisfy Syrian subject-verb agreement: eight different S rules and eight different rules for each type of VP.

By contrast, it is easy to handle subject-verb agreement if our categories are complex. All we need in MPSG is two rules and variables having the same value to ensure that the agreement between the head verb and its subject is properly captured. The two rules can be formulated as follows:

14. a. S -----> NP[ $\alpha$ ] VP[ $\alpha$ ]  
      b. VP[ $\alpha$ ] ---> V[ $\alpha$ ]

Where  $\langle \rangle$  is a variable ranging over person, number and gender feature specifications. (14a) ensures agreement between NP and VP and (14b) between VP and V.

There is more to say about subject selection which is a broader term than the traditional notion of subject-verb agreement. What we have in mind, following Borsley (1991), are sentences such as the following:

15. a. It (\*Mary) rained yesterday  
b. It (\*Mary) is clear that he is handsome
16. a. There is a car in the garage  
b. \*There is cooking a meal

In the examples above, we have either the dummy subject it or the dummy there instead of an ordinary NP subject. The point is that some verbs require dummy it and some but not others allow dummy there.

We can, furthermore, have a clause as a subject instead of an NP if we have the right verb or the right adjective. The following examples illustrate the point:

17. a. That she was ill annoyed/\*avoided John  
b. That she was ill was obvious/\*obese.

One way of handling subject selection following Hukari (1989) is with a category-valued SUBJ feature. The important point is that we have got different sorts of features here. The following category-valued features illustrate the point:



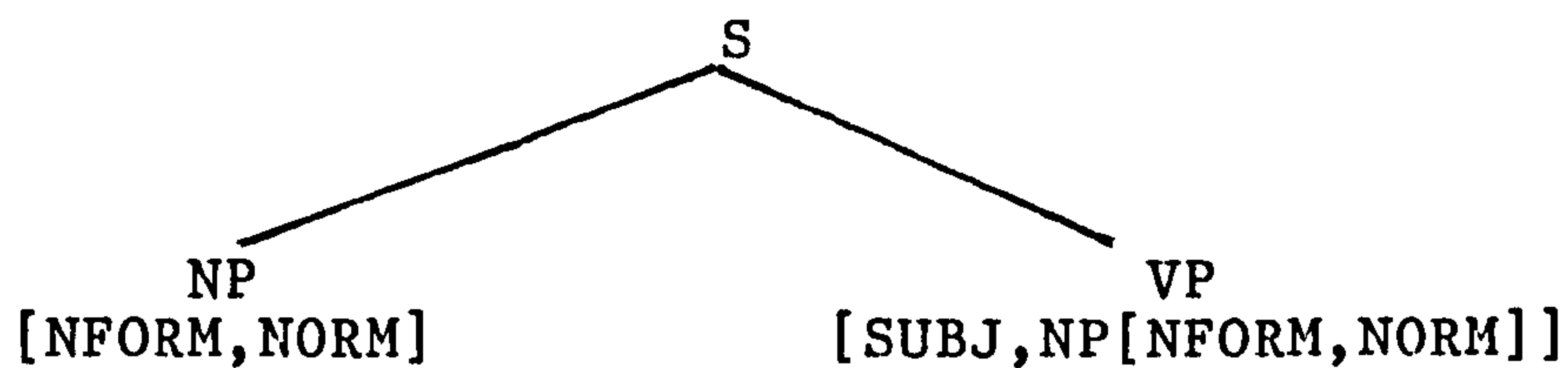
18. a. [SUBJ, NP[NFORM, NORM]]  
 b. [SUBJ, NP[NFORM, IT]]  
 c. [SUBJ, NP[NFORM, THERE]]  
 d. [SUBJ, S]

(18a) is a feature specification which indicates that a normal NP is required as a subject. (18b) is a feature specification which denotes that a dummy it is required as a subject as in (15). (18c) is a feature specification which requires a dummy there as a subject as in (16a), and finally (18d) contains a clause as its value and relates to examples such as those in (17).

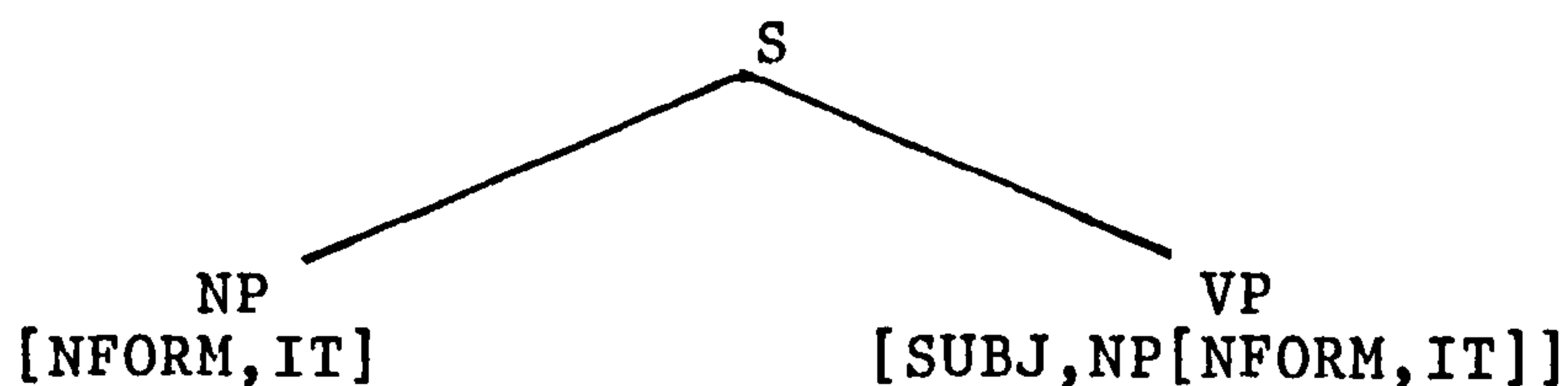
All we need now is a rule such as that in (19) below to interact with the feature specifications in (18) to give the trees in (20), respectively:

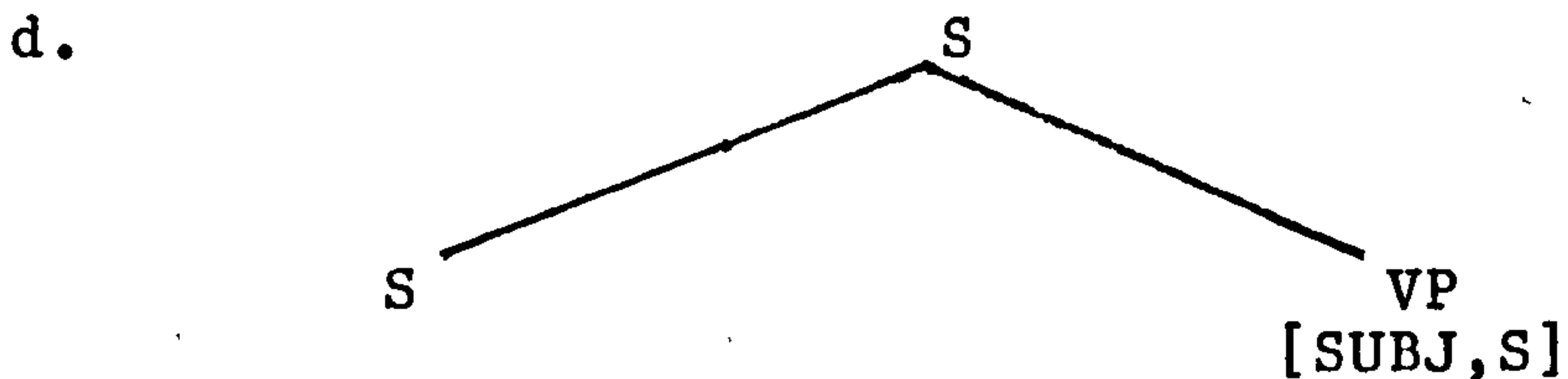
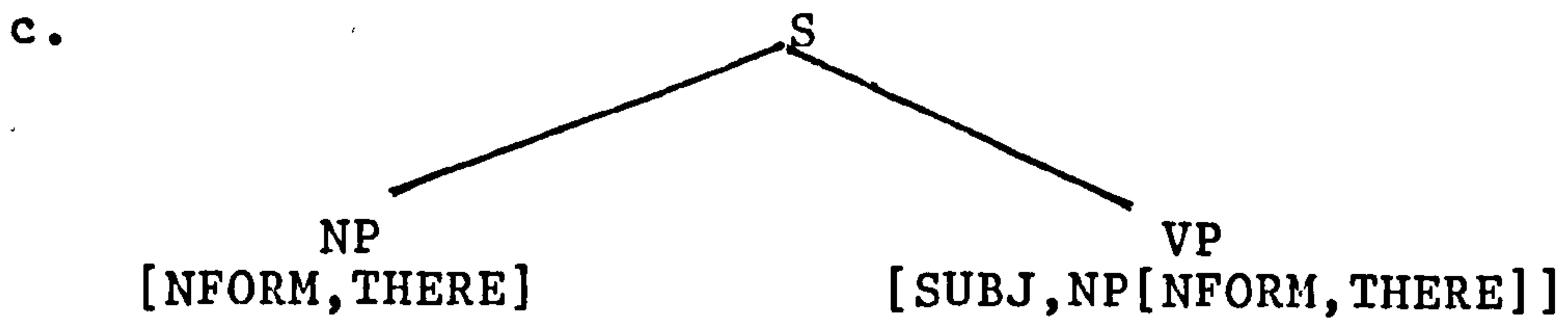
19.  $S \rightarrow \alpha \cdot VP[\text{SUBJ}, \alpha]$

20. a.



b.





To conclude, we can note that a PS rule containing simple categories can only license one local tree, whereas a PS rule involving complex categories can license a number of local trees. To summarize, the relationship between rules and local tree types is one-to-one if we assume PS rules with simple categories. By contrast, if we assume that PS rules involve complex categories, then the relationship between rules and local trees is one-to-many.

A second difference between TPSG and MPSG is the use of separate 'Immediate-Dominance' (ID) rules and 'Linear-Precedence' (LP) rules by MPSG. Consider now the following PS rules:

- |        |              |                |              |                 |
|--------|--------------|----------------|--------------|-----------------|
| 21. a. | VP ---> V NP | b.             | VP ---> V PP |                 |
|        | c.           | VP ---> V S    | d.           | VP ---> V NP PP |
|        | e.           | VP ---> V NP S | f.           | VP ---> V PP S  |
| 22. a. | NP ---> N PP | b.             | NP ---> N S  |                 |
| 23. a. | AP ---> A PP | b.             | AP ---> A S  |                 |
| 24. a. | PP ---> P NP | b.             | PP ---> P PP |                 |
|        | c.           | PP ---> P S    | d.           | PP ---> P NP PP |

Such PS rules are abandoned in MPSG for the following reason: PS rules cannot capture generalizations about 'Linear Precedence' order. We can state the first generalization as follows:

**25. A lexical category can precede any phrasal category that is its sister.**

This is illustrated by the rules in (21) to (24).

A second generalization can be stated as follows:

**26. An NP can precede any other phrasal category that is its sister.**

This is demonstrated by the rules in (21d), (21e) and (24d).

A third and final generalization is given in (27) below :

**27. A complement S can follow all its sisters.**

This is illustrated by the rules in (21c), (21e), (21f), (22b), (23b) and finally in (24c).

In order to capture the generalizations above, MPSG replaces all PS rules mentioned earlier by separate immediate-dominance, and linear precedence statements. We will refer to the first set of statements as ID rules and distinguish them from PS rules by using commas to separate the right hand side categories from each other. Consider the following rule:

**28. S ---> NP, VP**

The rule in (28) means that an S can immediately dominate an NP

and a VP. It says nothing about the order of NP and VP.

We will call the second set of statements LP rules. This is exemplified by the following general rule:

29. NP < XP

Where ( X ≠ N )

(29) indicates that an NP precedes XP which is its sister.

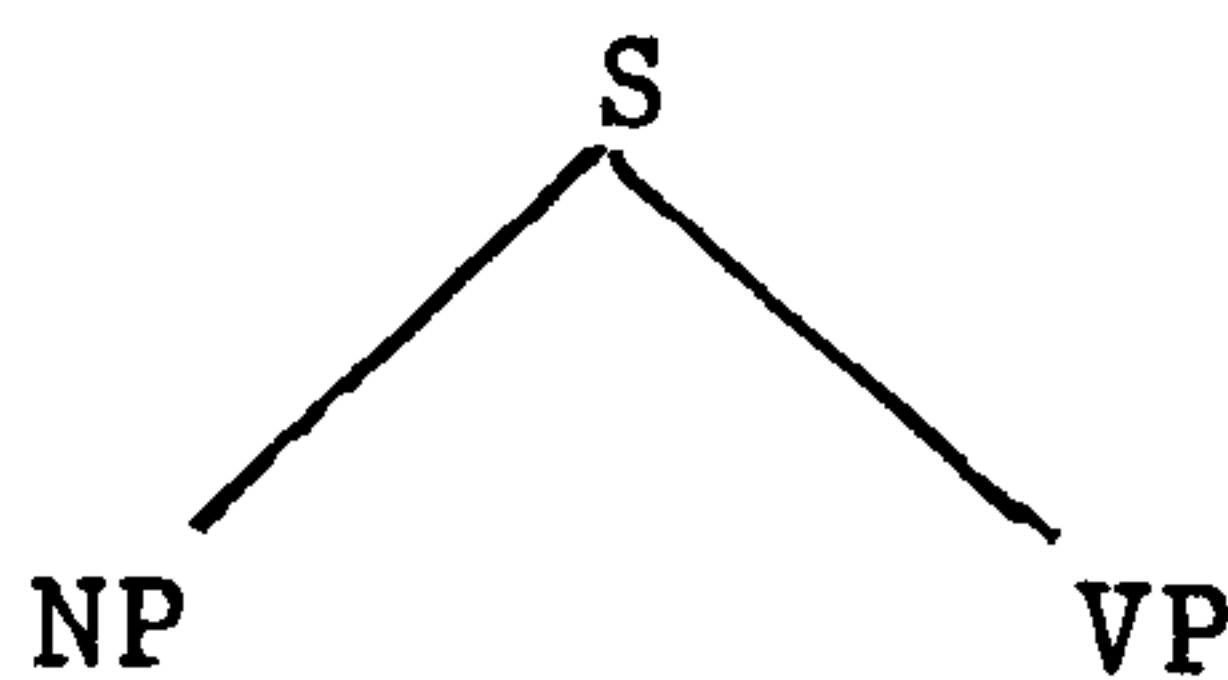
If we assume that our grammar consists of ID and LP rules, we can reformulate the statement in (10) repeated here in (30a) by the statement in (30b):

30. a. A local tree is well-formed if and only if it matches a PS rule

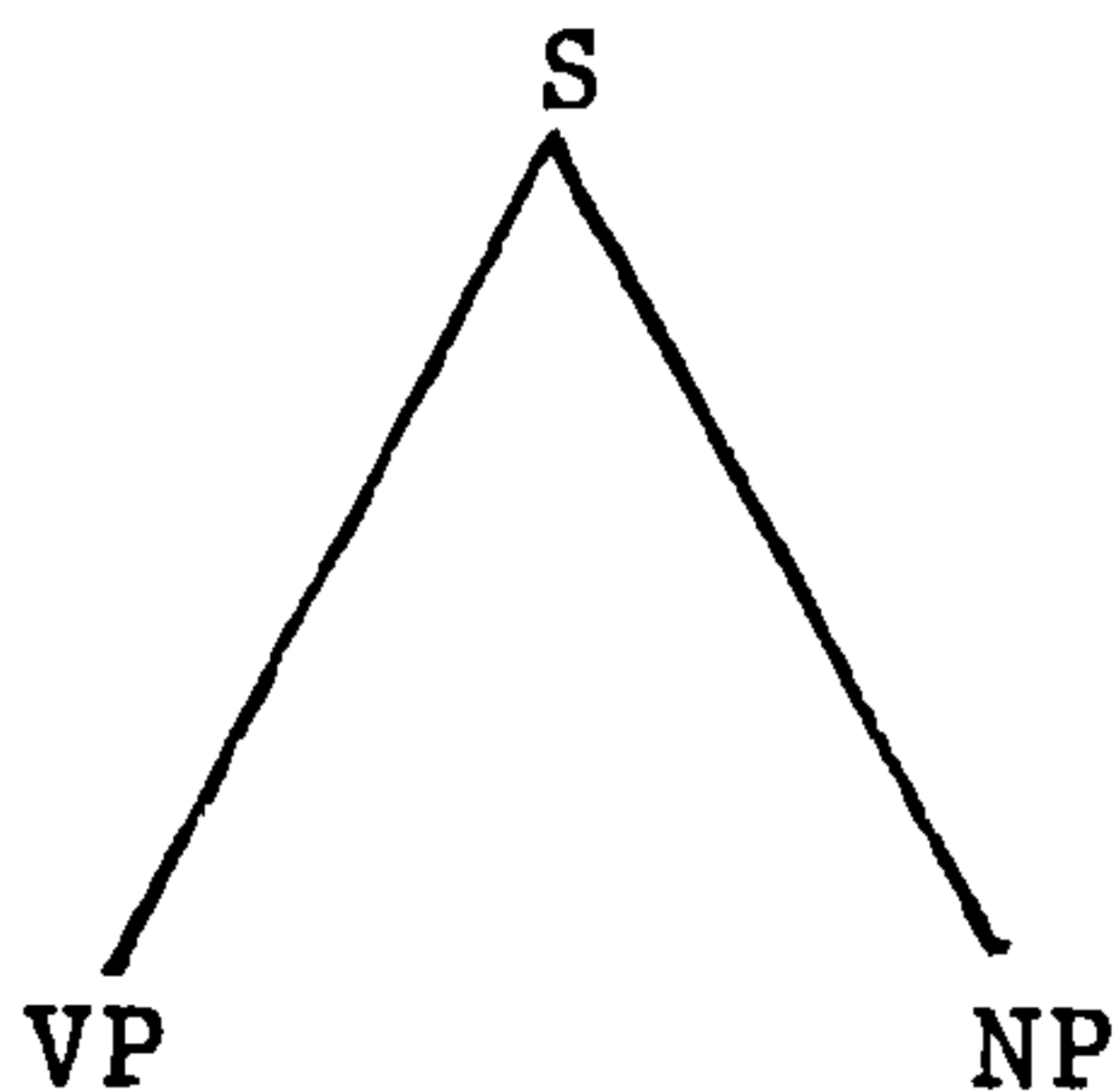
b. A local tree is well-formed if and only if it matches an ID rule and conforms to all relevant LP rules.

This can be illustrated with the following local trees:

31.



32.



The local trees in (31) and (32) match the ID rule in (28). Only (31), however, matches the LP rule in (29). Hence, only (31) is well-formed in languages like English and Syrian.



A third and related distinguishing feature to the first difference is the adoption of general principles of feature distribution. Universal principles such as the 'Head Feature Convention' (HFC) in GPSG, or the 'Head Feature Principle' (HFP) in HPSG could allow us to avoid using different ID-rules in which head and mother have the same value for certain features. In other words, we are concerned with the relation between head and mother which are largely identical. Consider the following rules:

33. a. VP ---> V,NP                      d. PP ---> P,NP  
      b. VP ---> V,PP                     e. PP ---> P,PP  
      c. VP ---> V,S

In order to capture this generalization, we need universal principles such as the HFP, which can be formulated as follows:

34. A head and its mother have the same HEAD feature specifications.

This principle says that heads and mothers are identical in most respects. That is, a verbal head has a verbal mother, a nominal head has a nominal mother, and so on. We will revise this principle later when we introduce HPSG.

Since MPSG involves not only complex categories but also various rules and principles, then the relation between rules and local trees is many-to-many. In other words, we have complex relation between rules and local trees.

A fourth and final difference is associated with 'Semantic Interpretations'. All forms of MPSG, unlike TPSG, are concerned not just with how expressions are combined to form

larger expressions but also with how the interpretations of complex expressions depend on the interpretations of their parts. The use of the term 'sign' in HPSG, for example, is a reflection of the concern with semantics. This term which is borrowed from de-Saussure (1915), is used to refer to a linguistic expression with an associated meaning.

Having argued that MPSG differs from TPSG in a number of ways, we can proceed to discuss the main differences between GPSG and HPSG.

#### 1.2.1. Generalized Phrase Structure Grammar:

In this subsection, we will briefly look at GPSG approach and highlight certain weaknesses of GPSG which have been eliminated in HPSG. As mentioned earlier, the structural description of a sentence in GPSG is a single level syntactic representation: the surface structure, which is matched with a semantic interpretation. There are, moreover, no phrase structure (PS) rules in GPSG framework. They are abandoned completely and replaced, as we noted earlier, by separate ID-LP rules. These rules, unlike the PS rules in TPSG, involve complex categories instead of the simple ones, and we have many-to-many relation between rules and local trees. GPSG also contains, as demonstrated before, a set of grammatical restrictions including universal principles and language-particular constraints such as the HFC and the Foot Feature Principle. In other words, GPSG has the same characteristics as

MPSG outlined above.

Having introduced briefly the main ideas of GPSG, we can suggest now that HPSG is preferable to GPSG in a number of ways, and is a more advanced theory (as we will point out in the following subsections when we discuss this framework). Let us begin by discussing the weaknesses of GPSG. Firstly, it needs many different rules to handle head-complement structures. That is, one rule for each distinct head-complement combination. (Whereas, HPSG as we will see later involves more complex categories but just one rule). This can be illustrated with the following rules:

35. a. VP ----> H[1]   e. A'----> H[26],S[FIN]  
      b. VP ----> H[2], NP                                    f. A'----> H[27],S[BSE]  
      c. N' ----> H[30]   g. P'---->H[38],NP  
      d. N' ----> H[31],PP[with],PP    h. P'---->H[39],PP[of]

For further illustration, see the appendix in Gazdar et al. (1985:247-249), in which they propose fifty different rules for head-complement structures. The point is that we have similar structures but this is ignored by GPSG.

A second unsatisfactory point about GPSG comes from the fact that it can only handle subject-verb agreement in subject-initial sentences. Hence GPSG, as noted by Borsley (1988), Hukari (1988) and Ojeda (1988), faces a problem since this agreement process does not extend to verb-initial sentences. To put it differently, this version of GPSG cannot accommodate VSO languages because the 'Subject-Auxiliary-Inversion' (SAI) metarule applies to any VP-node, but only those which introduce



an auxiliary verb will ever be used in the definition of well-formed trees. By contrast, HPSG as we will see later can account for VSO languages.

Finally, a minor point relates to the treatment of subjects. In GPSG, the agreement between a subject and its verb is handled by a rule such as that in (36) and governed by a category-valued feature AGR such as that in (37):

36. S ----> XP, VP

37. VP[AGR,NP[3SG]]

This AGR is essentially the SUBJ feature introduced earlier. Clearly there is unnecessary repetition as it is redundant to state that the subject should be a phrase: in this system the AGR feature and the rule in (36) ensure that subjects are maximal projections. This repetition would disappear if the following rule is assumed:

38. S ----> X, VP

where X does not necessarily refer to a phrase.

To conclude this section, we have distinguished TPSG from MPSG and highlighted some weaknesses of GPSG. We have also suggested that HPSG is preferable to GPSG because it does not have the three weaknesses outlined above as will be argued later.



### 1.3. Categorial Grammar:

In this section, we will consider briefly some versions of Categorial Grammar. Although HPSG has largely been influenced by GPSG, some of its central features derive from CG. The theory of Categorial Grammar we are concerned with was developed by a Polish logician called Ajdukiewicz around 1935. This theory has further been developed by Bar-Hillel, Lambek and other contemporary linguists and logicians, notably Steedman (1985b) and Dowty (1982a,b).

All versions of CG distinguish between basic and derived categories. In one version of CG all categories apart from a small number of basic categories are of the form  $\alpha/\beta$  or  $\alpha\backslash\beta$ , where  $\alpha$  and  $\beta$  are categories. An  $\alpha/\beta$  is an expression which combines with a following  $\beta$  to form an  $\alpha$ , and a  $\alpha\backslash\beta$  is an expression which combines with a preceding  $\beta$  to form an  $\alpha$ . These categories, as we will see below when we give appropriate structures, involve a binary branching instead of the normal branching used by GPSG and HPSG.

Given this approach, following Steedman (1985b) and others, categories are divided into two fundamental types: 'Basic' and 'Derived'. Some basic categories are given in (39) below:

39.	<u>Category</u>	<u>Informal Description</u>
	NP	Noun Phrases
	S	Finite, Non-relativized, & Non-Topicalized Sentences

Some of the derived categories are illustrated in (40):

40.	<u>Category</u>	<u>Informal Description</u>
	$S \backslash NP$	VP's seek an NP on the left This is both a VP and an intransitive verb, which are not distinguished in CG.
	$(S \backslash NP) / NP$	Transitive verbs first seek the object on the right, then subject on the left
	$((S \backslash NP) / NP) / NP$	Ditransitive verbs first seek 1st object on the right then 2nd object on the right then subject on the left.

The subcategorization requirements of a word or a phrase are encoded in its category. In other words, all complex categories explicitly encode their combinatorial properties. We will not be discussing CG in detail or consider whether or not HPSG is preferable to CG. We will only be concerned with the ideas adopted by HPSG from CG.

An important idea that HPSG borrowed from CG is that grammars can be simplified considerably if categories incorporate information about the categories with which they combine. That is, complex categories allow a small number of general rules, specifically the two application rules given below in (41):

41. a. Forward Application:  $X \dashrightarrow Y \ X \backslash Y$   
 b. Backward Application:  $X \dashrightarrow X / Y \ Y$

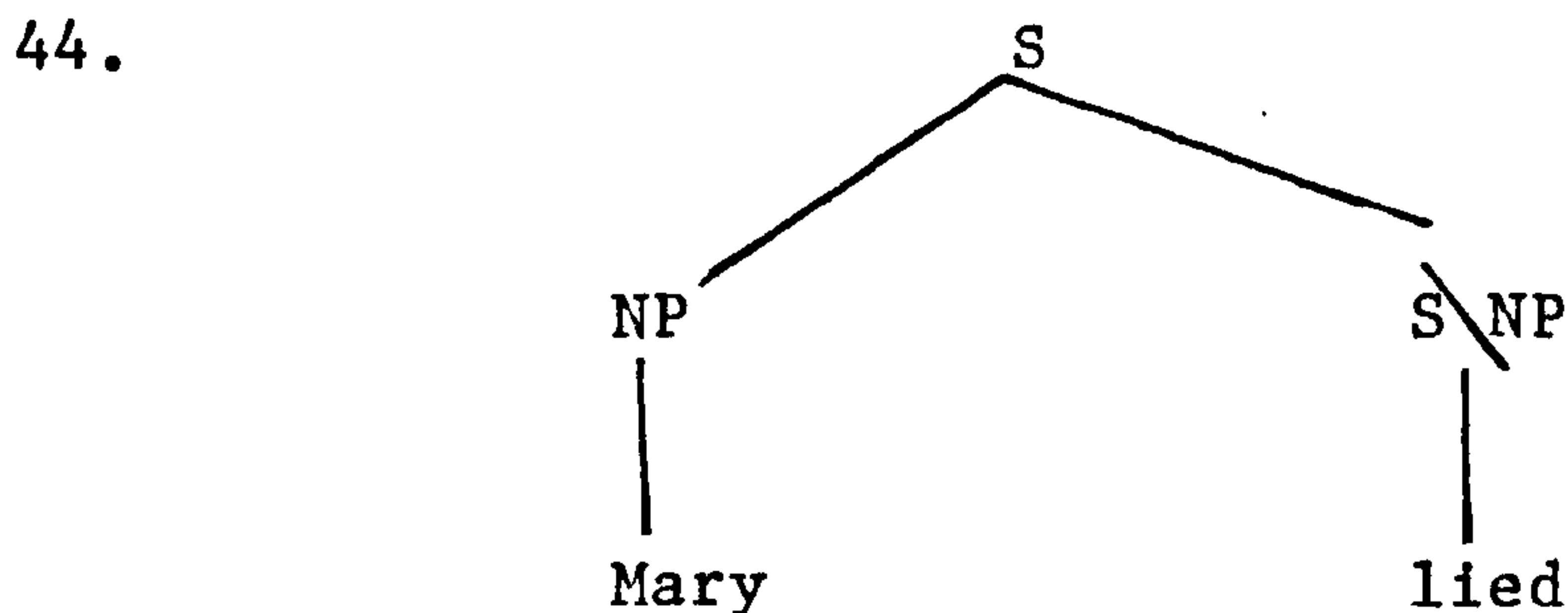
These are the only rules assumed in some versions of CG. A theory with this mechanism is able to eliminate a large number of specific grammar rules.

Within this approach, an intransitive verb such as lied in (42) below will have the category in (43):

42. Mary lied.

43.  $S \backslash NP$

The category says that the verb lied in (42) combines with a preceding NP to give an S. The example in (42) will have the following structure:



Notice that there is no distinction between a VP and an intransitive verb. There is just one node for both.

For verbs such as liked in (45), all we need is the category in (46):

45. Mary liked John.

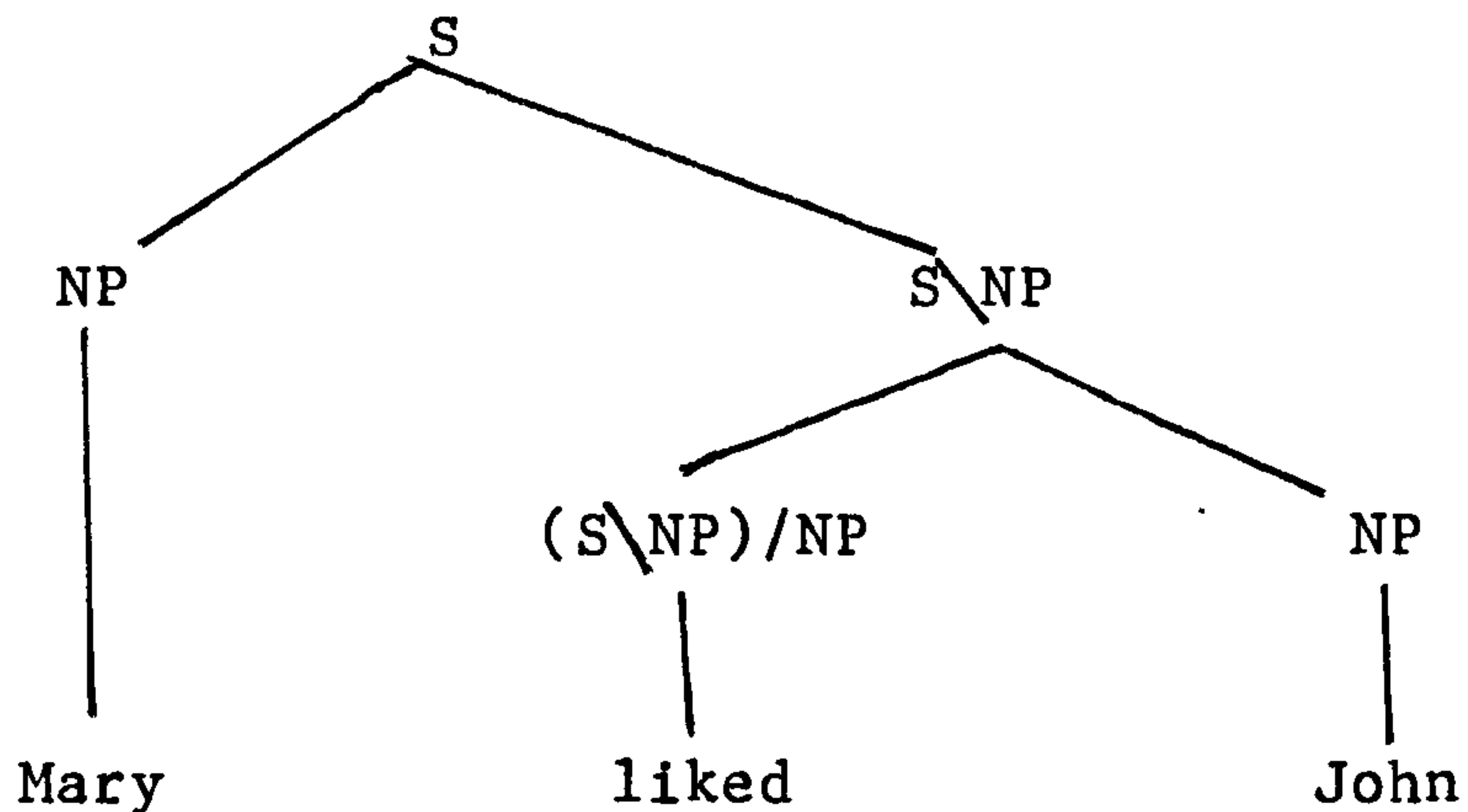
46.  $(S \backslash NP) / NP$

This category says that the transitive verb liked in (45) first combines with an object on the right, then with a subject on

the left.

The sentence in (45) will have the following tree:

47.



Finally, a ditransitive verb like gave in (48) will have the category in (49):

48. Mary gave John a present.

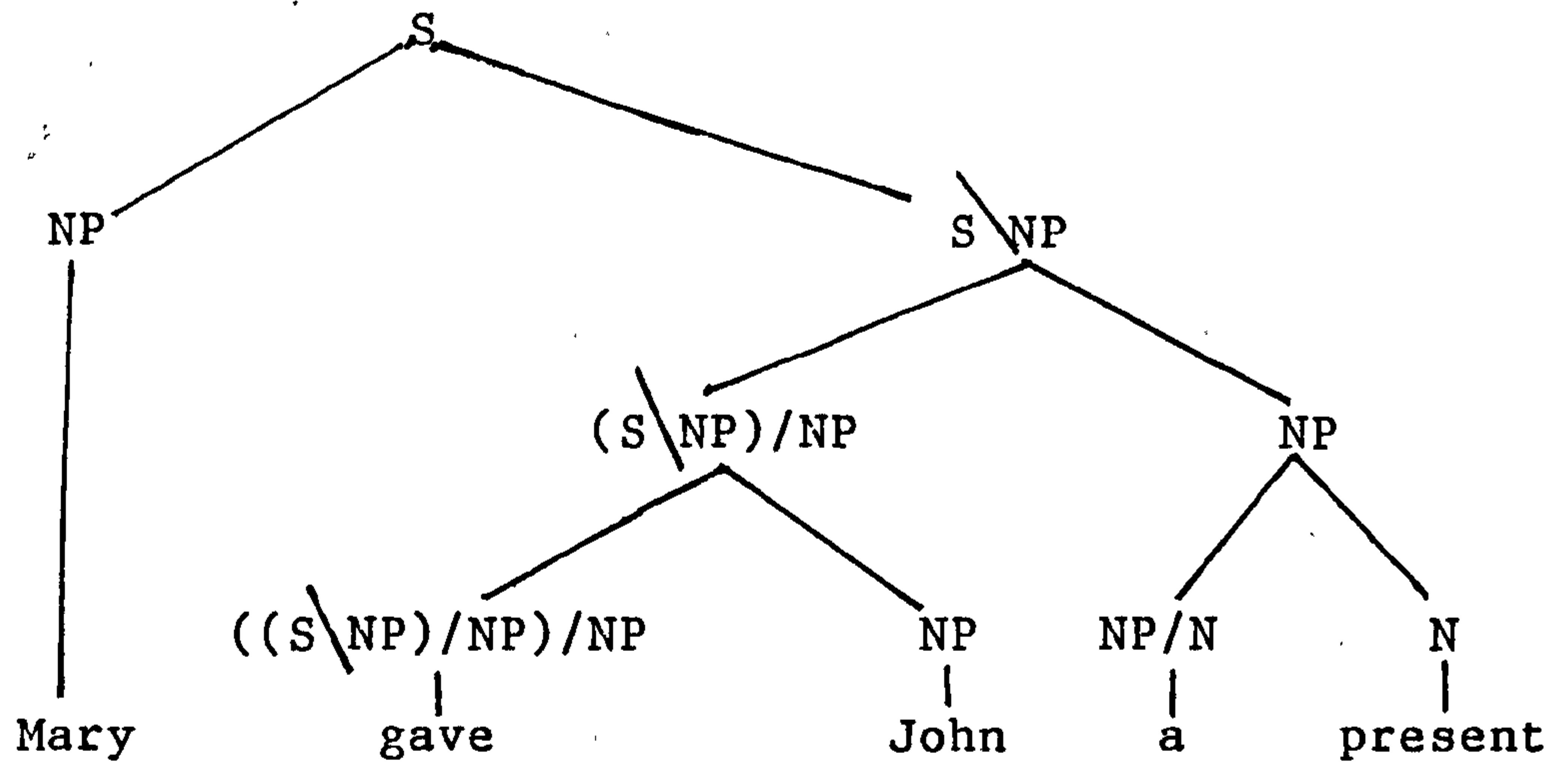
49 ((S \ NP) / NP) / NP

The category in (49) says that a ditransitive verb such as gave first combines with the first object on the right, then the second object on the right, and finally, combines with a subject on the left.

This will give us the following structure:



50.



This makes it clear that CG is committed to binary branching.

Having introduced CG theory, we can proceed to discuss in some detail HPSG and its versions, which is the next topic.

#### 1.4. Head-Driven Phrase Structure Grammar:

As we noted at the outset, HPSG has been developed in the work of Carl Pollard, Ivan Sag and others. It draws, as we said earlier, on Categorical Grammar Steedman (1985b) and Dowty (1982a,b) and Generalized Phrase Structure Grammar Gazdar et al. (1985). It also borrows ideas from a number of recent other theories such as Lexical Functional Grammar Bresnan, ed. (1982) and Government & Binding theory (GB) Chomsky (1981). There are two versions of HPSG to consider here. I will refer to one advanced by Pollard and Sag as the standard version and the other developed by Borsley as the revised version. We will begin by introducing the standard version.

#### 1.4.1. The Standard Version of HPSG:

Central to HPSG as we mentioned in the previous section is the idea that grammars can be simplified considerably if heads carry explicit information about the categories with which they combine. This is an idea that derives from Categorical Grammar. All the information about the categories with which a head combines is encoded in the SUBCAT feature. This feature takes as its value a list of linguistic signs, combinations of syntactic, semantic and phonological information. More precisely, a list of signs in early HPSG and a list of SYNSEM feature structures in recent HPSG. We will say more about the feature SYNSEM later when we discuss signs. We will assume for simplicity in subsequent discussion that the value is a list of categories. The SUBCAT list indicates the kind of complements it takes and also the type of subject or specifier it usually requires. The elements of the list appear in the order most oblique to least oblique with the subject or the specifier as the final item on the list. Consequently, the order of complements in the SUBCAT list does not necessarily correlate to surface order.

We can start now by giving some categories. Within this version of the framework, a verb such as 'put', for example, will have the following category:

51. V[FIN+;LEX+;SUBCAT<PP[on],NP,NP>]

The feature [FIN+] differentiates finite verbs from non-finite verbs. Whereas the feature specification [LEX+] differentiates

lexical signs from phrasal signs. A simple transitive verb like 'bought' will have the following category:

52. V[FIN+;LEX+;SUBCAT<NP,NP>]

Whereas a simple intransitive verb such as 'dance' will have the following category:

53. V[FIN+;LEX+;SUBCAT<NP>]

SUBCAT can have the empty list, represented as '<>', as its value. This situation occurs when S's and NP's are analyzed as V[LEX-;SUBCAT<>] and N[LEX-;SUBCAT<>], respectively. Hence, 'NP' and 'S' are convenient abbreviations.

As noted earlier, there is no fundamental difference between subjects and complements since both are associated with the SUBCAT feature. Hence, the SUBCAT feature does the work of both the SUBCAT and the AGR feature in GPSG.

What we need now, following Pollard and Sag (1988), are rules like those in (54) and (55) below to license local trees:

54. [SUBCAT<>] -----> H[LEX-], C

55. [SUBCAT<[]>] -----> H[LEX+], C\*

(54) can be called the subject-predicate rule, and (55) the head-complement rule. Both rules are immediate dominance rules. Hence the order of elements on the right hand side is of no importance. H is a head, C is a subject or a complement, and [] is an arbitrary category. The two rules above can be paraphrased as follows:



56. a. A category with the feature specification [SUBCAT<>] can immediately dominate a phrasal head and a single non-head.
- b. A category with the feature specification [SUBCAT<[]>] can immediately dominate a lexical head and any number of non-heads.

We would like to stress here that HPSG, unlike GPSG, uses only a single rule such as that in (55) above to handle head-complement structures, and thus avoids the first weakness of GPSG.

HPSG avoids the second weakness of GPSG by accounting for VSO languages. Relevant here are the following Syrian examples:

57. a. akal        Aḥmed l-    tiffaḥa  
          ate-3SGM Ahmed the apple  
          'Ahmed ate the apple'
- b. ḍarabt      Salwa l-    kalb  
          hit-3SGF Salwa the dog  
          'Salwa hit the dog'

In order to account for such examples we need a rule such as that in (58) below:

58. [SUBCAT<>] ---> H[INV+;LEX+],C\*

This rule was proposed by Pollard and Sag (1988) for auxiliary-initial sentences and says that a category with the feature specification [SUBCAT<>] can immediately dominate an inverted lexical head and any number of non-heads.

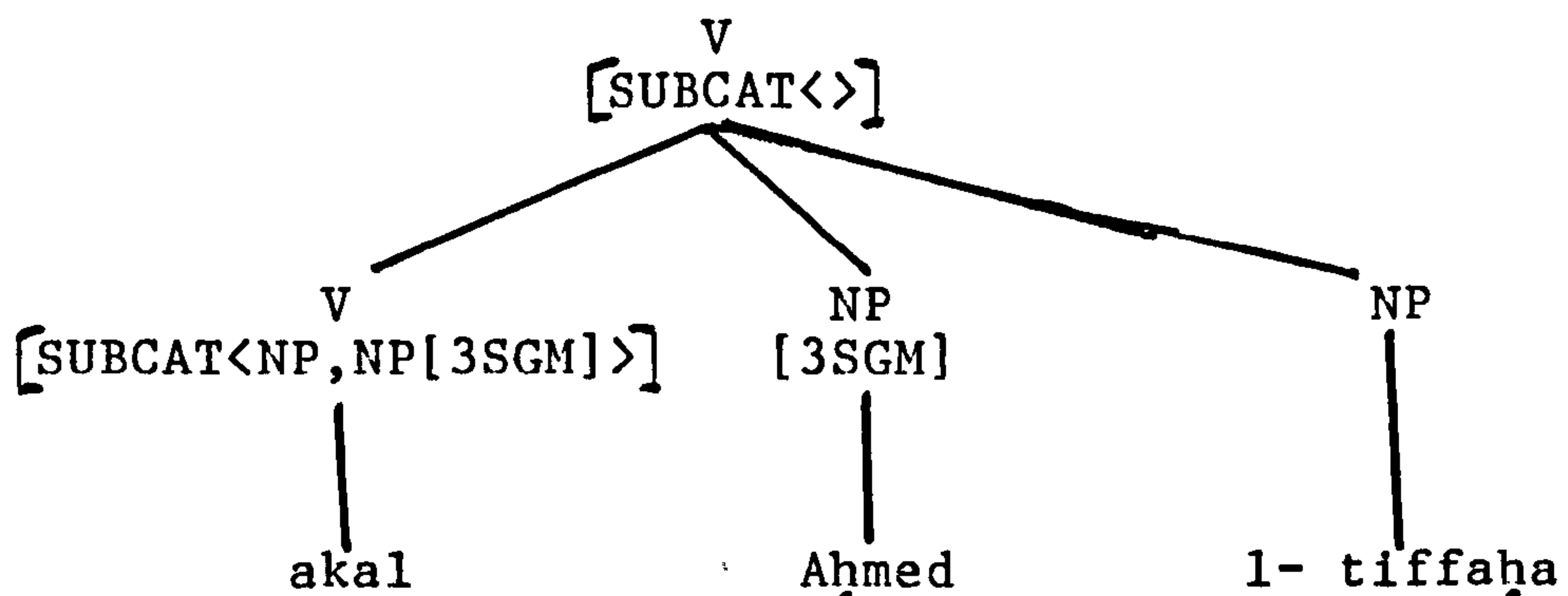


We can assign now the following category for the verb akal in (57a):

59. V[SUBCAT<NP,NP[3SGM]>]

The category in (59) will interact with the rule in (58) together with the two universal principles given in (61) and (62) below to give trees such as that in (60) for the example in (57a):

60.



The final weakness of GPSG that we identified in the last section also disappears if we assume HPSG. In HPSG, unlike GPSG, there is no need for such duplication (i.e. the rule and the AGR feature) because the subject-predicate rule given in (54) does not ensure that subjects are maximal projections. That is, the subject does not necessarily refer to a phrase.

The rules given in (54) and (55), moreover, do not ensure that a category immediately dominates the right kind of head, i.e., that a verbal category has a verbal head, a nominal category has a nominal head, etc., nor that we have the right type of non-heads. These are ensured by the Head Feature

Principle and the Subcategorization Principle. The HFP can be formulated as follows:

61. The value of HEAD in a mother is identical to the value of HEAD in its head.

This means that the features on the head are identical to those on the mother except SUBCAT, the so called NONLOCAL features, e.g. SLASH involved in the analysis of 'unbounded dependencies', and the feature LEX.

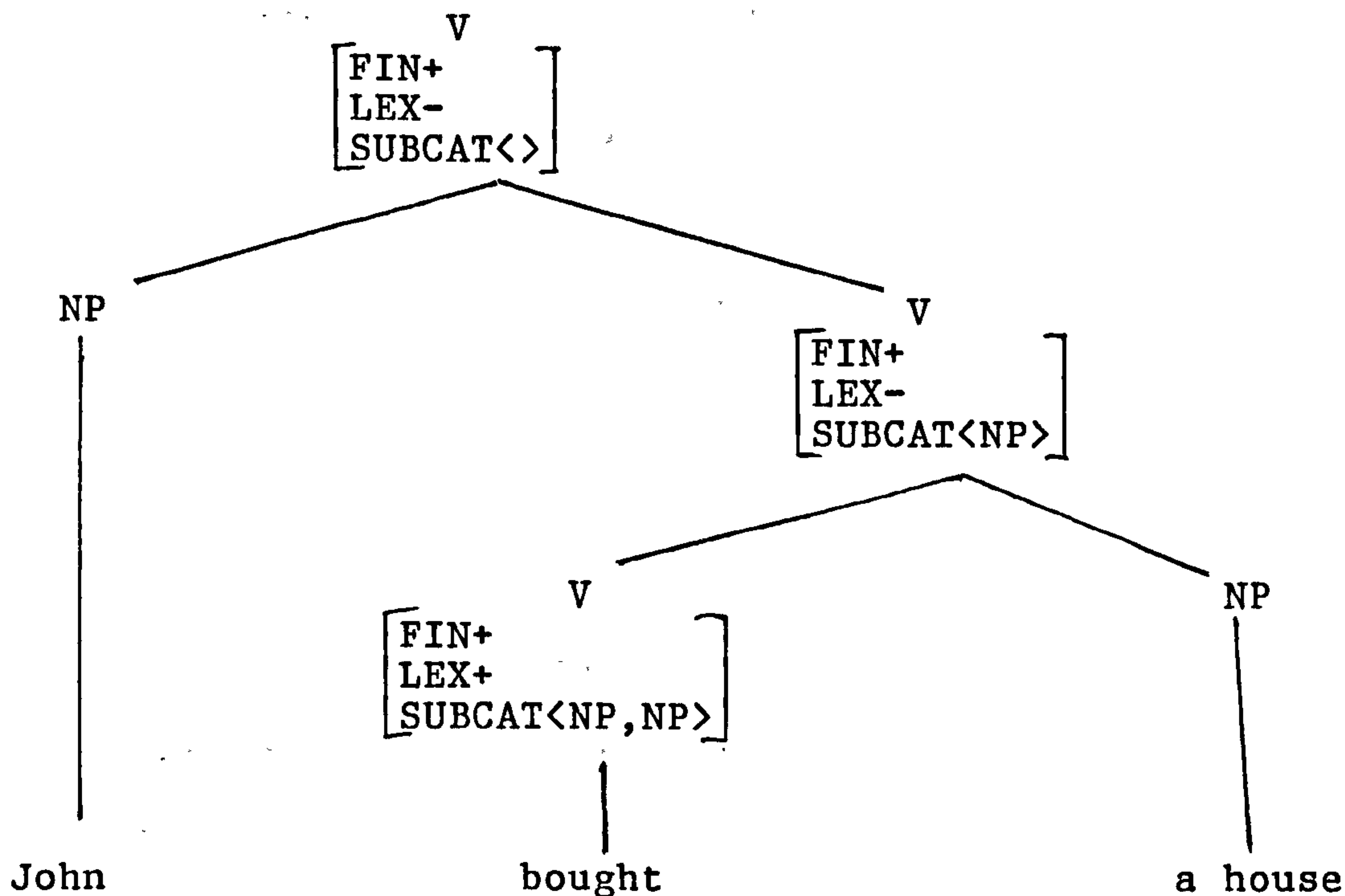
The other universal principle is the Subcategorization Principle which can be defined as in (62) below:

62. The value of SUBCAT in a head is the value of SUBCAT in its mother together with the sisters of the head.

This ensures that heads have the right complements.

Given the two universal principles, i.e., the HFP and the Subcategorization Principle together with the two rules and the category in (52), we allow a tree such as the following:

63.



The higher local tree is licensed by the subject-predicate rule and the lower local tree by the head-complement rule and in each case the rules interact with the two universal principles stated earlier.

This illustrates the fact that HPSG is a Unification-Based framework. This means that linguistic expressions combine or unify information from a number of sources. More precisely, whether or not an expression is well-formed depends on a number of different factors. In other words, the central point is that local trees conform to a number of different grammatical rules and principles none of which takes precedence over any other. The two noun phrase description in (64a) and (64b), for example, can be unified to give that in (65):

64. a.  $\left[ \begin{array}{l} \text{AGR} \\ \text{CASE} \end{array} \left[ \begin{array}{ll} \text{PER} & \text{2nd} \\ \text{NOM} & \end{array} \right] \right]$
- b.  $\left[ \begin{array}{l} \text{AGR} \\ \text{MAJ} \end{array} \left[ \begin{array}{ll} \text{NUM} & \text{SNG} \\ \text{GEN} & \text{FEM} \\ & \text{A} \end{array} \right] \right]$
65.  $\left[ \begin{array}{l} \text{AGR} \\ \text{CASE} \\ \text{MAJ} \end{array} \left[ \begin{array}{ll} \text{PER} & \text{2nd} \\ \text{NUM} & \text{SNG} \\ \text{GEN} & \text{FEM} \\ & \text{NOM} \\ & \text{A} \end{array} \right] \right]$

We have simply combined the information in (64a) and (64b) to give (65). Therefore, (65) is called their unification.

Notice that specifiers have not been introduced yet in the above analysis. Pollard and Sag (1988) also argue that nominal and adjectival specifiers are a realization of the final item on the SUBCAT list of nouns and adjectives. In other words, specifiers behave here like subjects. We can assign now the category in (67) for the noun in (66):

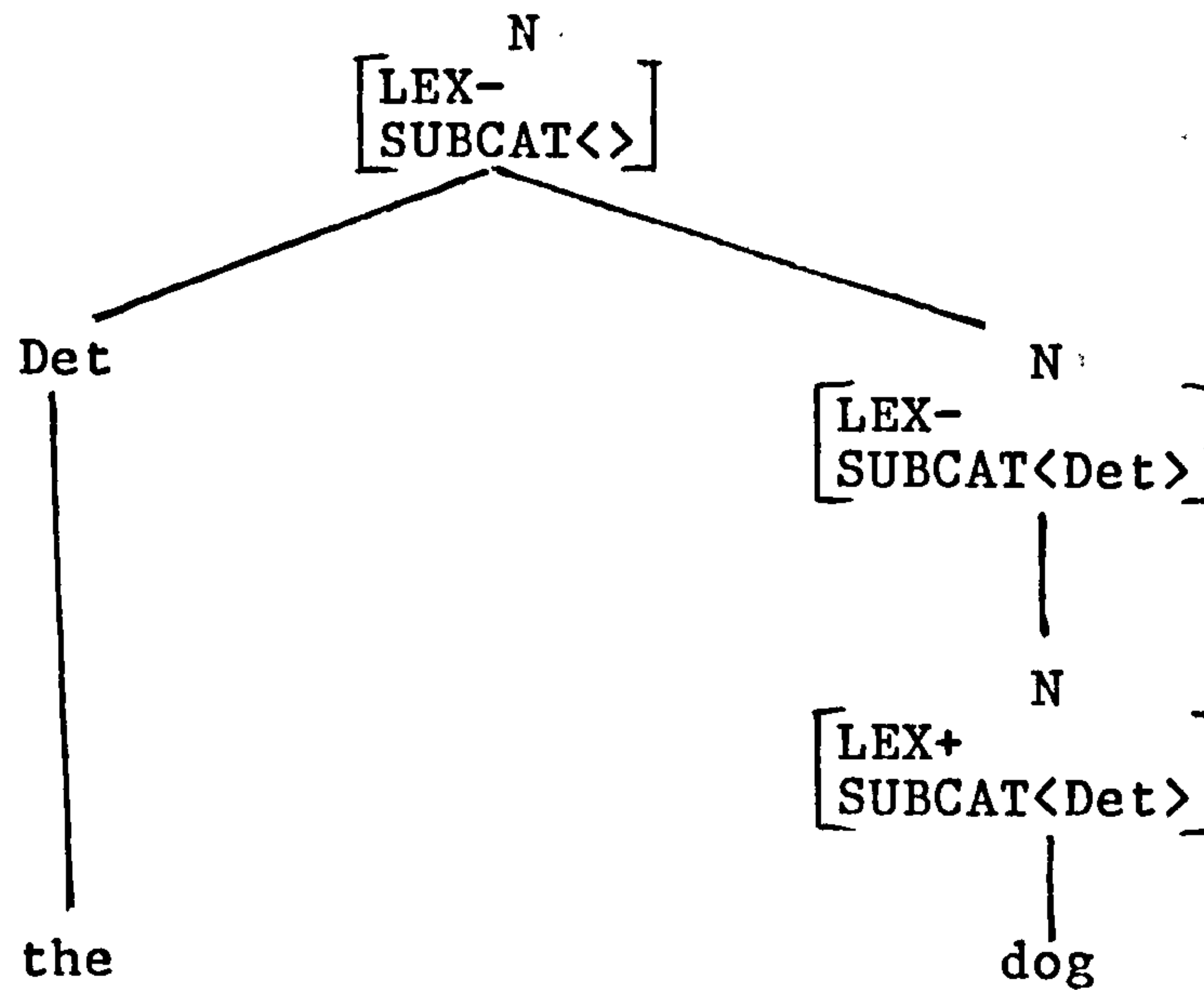
66. The dog.

67.  $N[\text{LEX+}; \text{SUBCAT}\langle \text{Det} \rangle]$

Assuming that specifiers are like subjects, the subject-predicate rule and the two principles together with the category in (67) will give the tree in (68):



68.



Before we proceed to discuss the revised version of HPSG, it is important to consider the term Sign and its organization because it is central to HPSG. For the sake of completeness, we are looking at technical matters here.

#### 1.4.1.1. HPSG Signs:

As noted earlier, HPSG is concerned with signs. A sign is a linguistic expression with associated meaning. For HPSG, not only syntactic categories but all aspects of signs are analyzed in terms of features. Hence, feature structures can be formally notated by attribute-value matrices (AVM's) as given in (69) below:

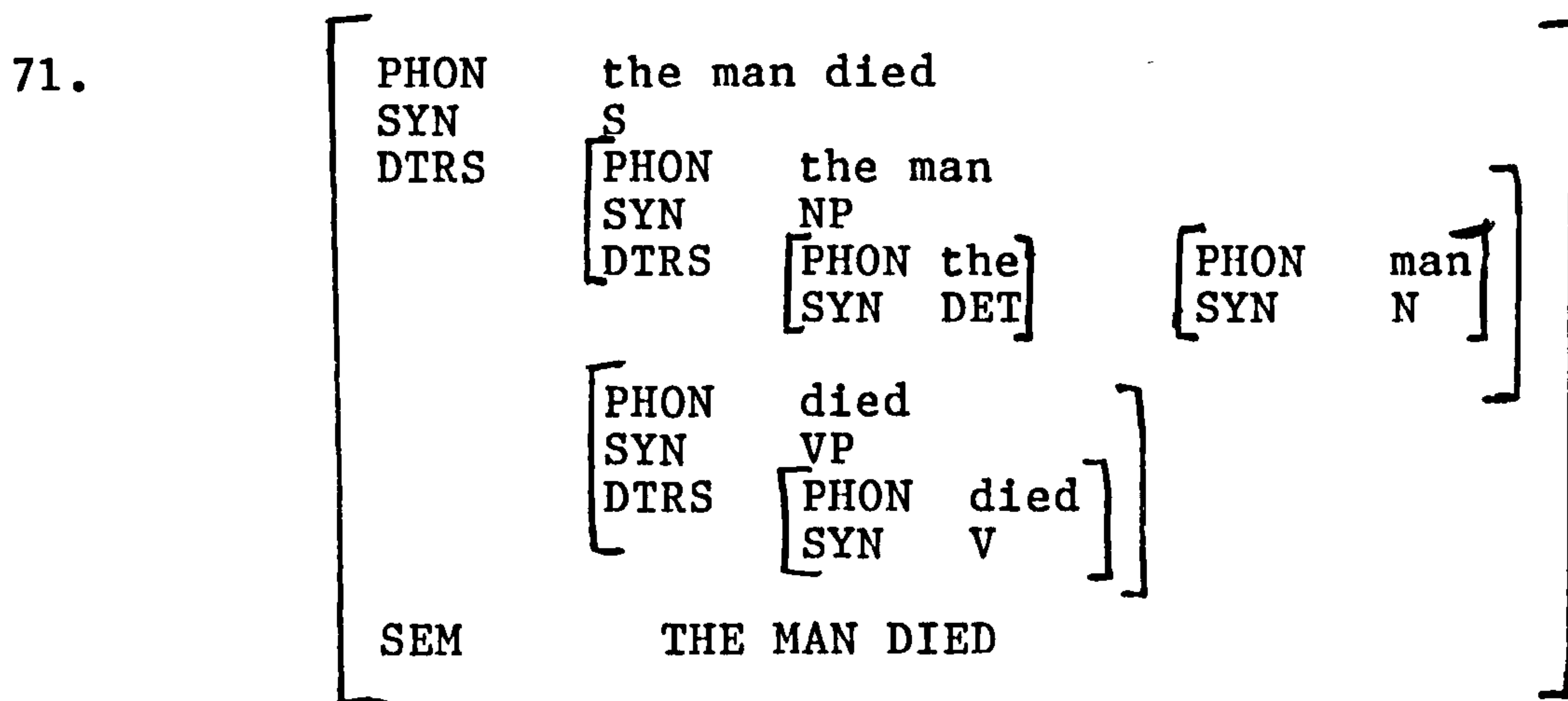
69.             $\left[ \begin{array}{ll} \text{PHONOLOGY} & / \text{ man} / \\ \text{SYNTAX} & \text{NOUN} \\ \text{SEMANTICS} & \text{MAN} \end{array} \right]$

This is a lexical sign.

Feature structures can also be illustrated by using phrasal signs where the DAUGHTERS feature is included. That is, all phrasal signs have a DAUGHTERS attribute that gives information about the immediate constituent structure of the sign. Consider now the following example:

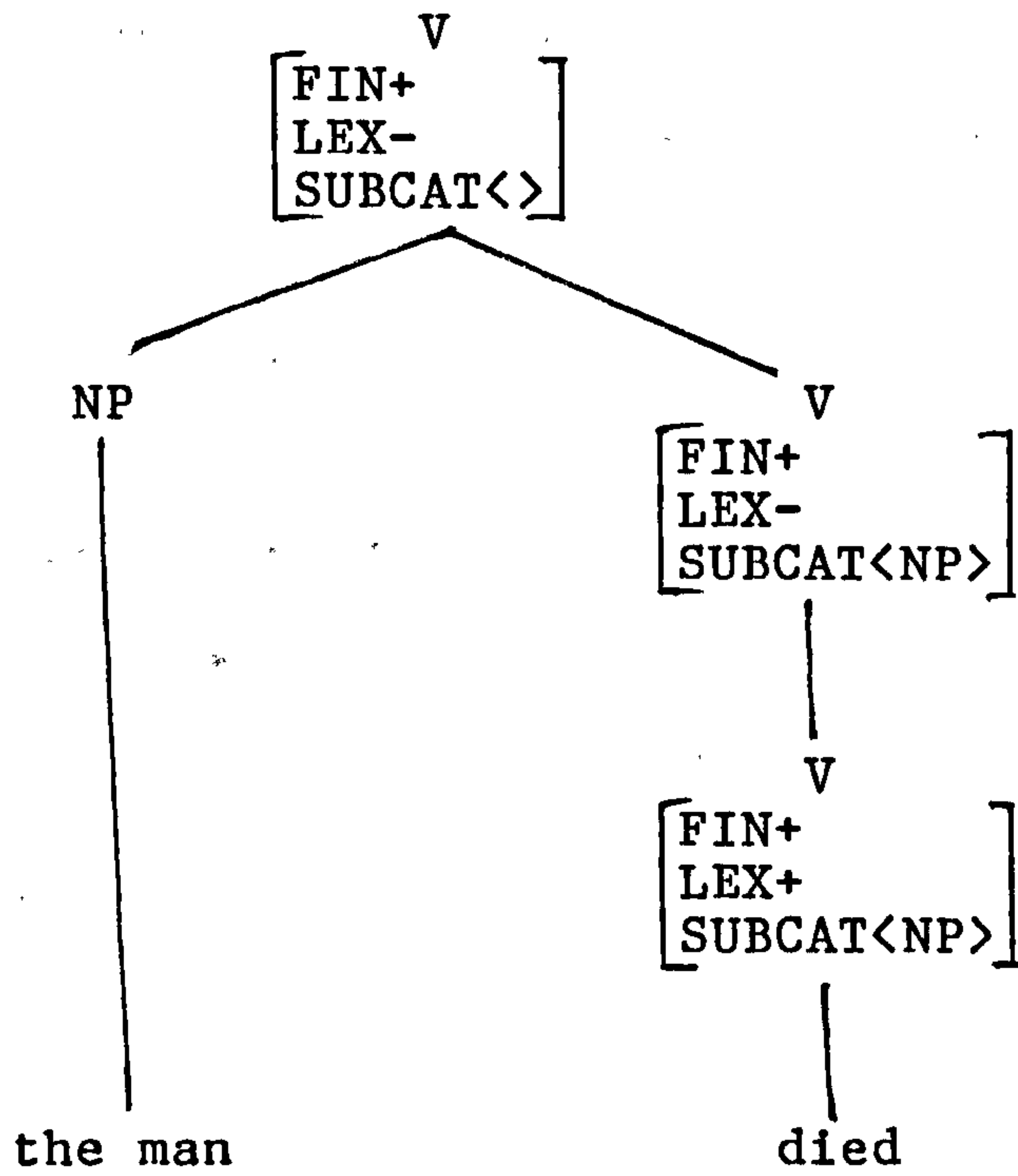
70. The man died.

This example can be sketched as follows:



This is, of course, an official notation of feature structures. We would like to stress here that the tree diagrams used earlier are an informal alternative to the official notation. It is more convenient to describe phrasal signs in terms of informal trees which are familiar and more acceptable among linguists. The following simplified tree illustrates this:

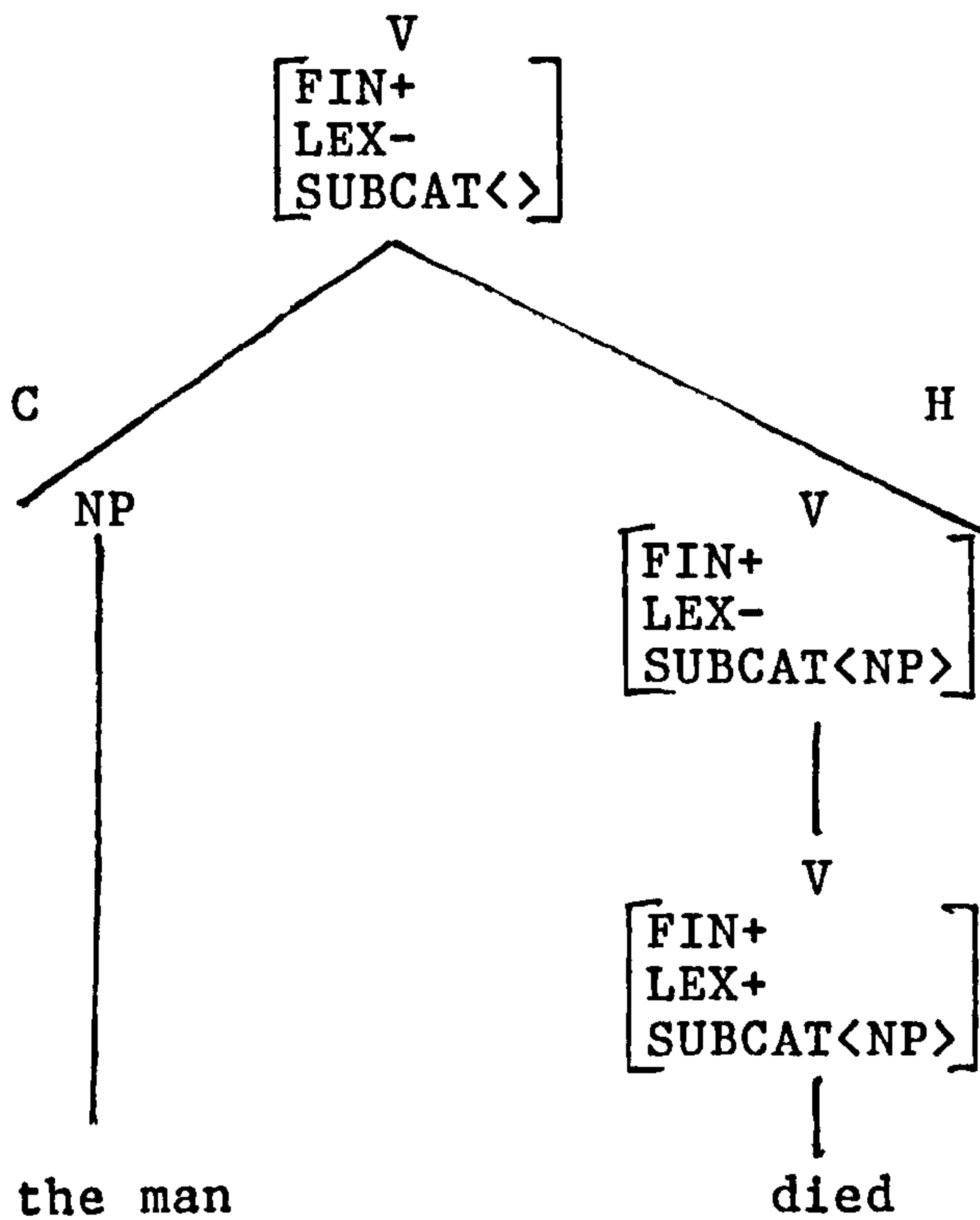
72.



We will use tree diagrams in later discussions.

We can also have labelled branches such as H and C as illustrated in (73):

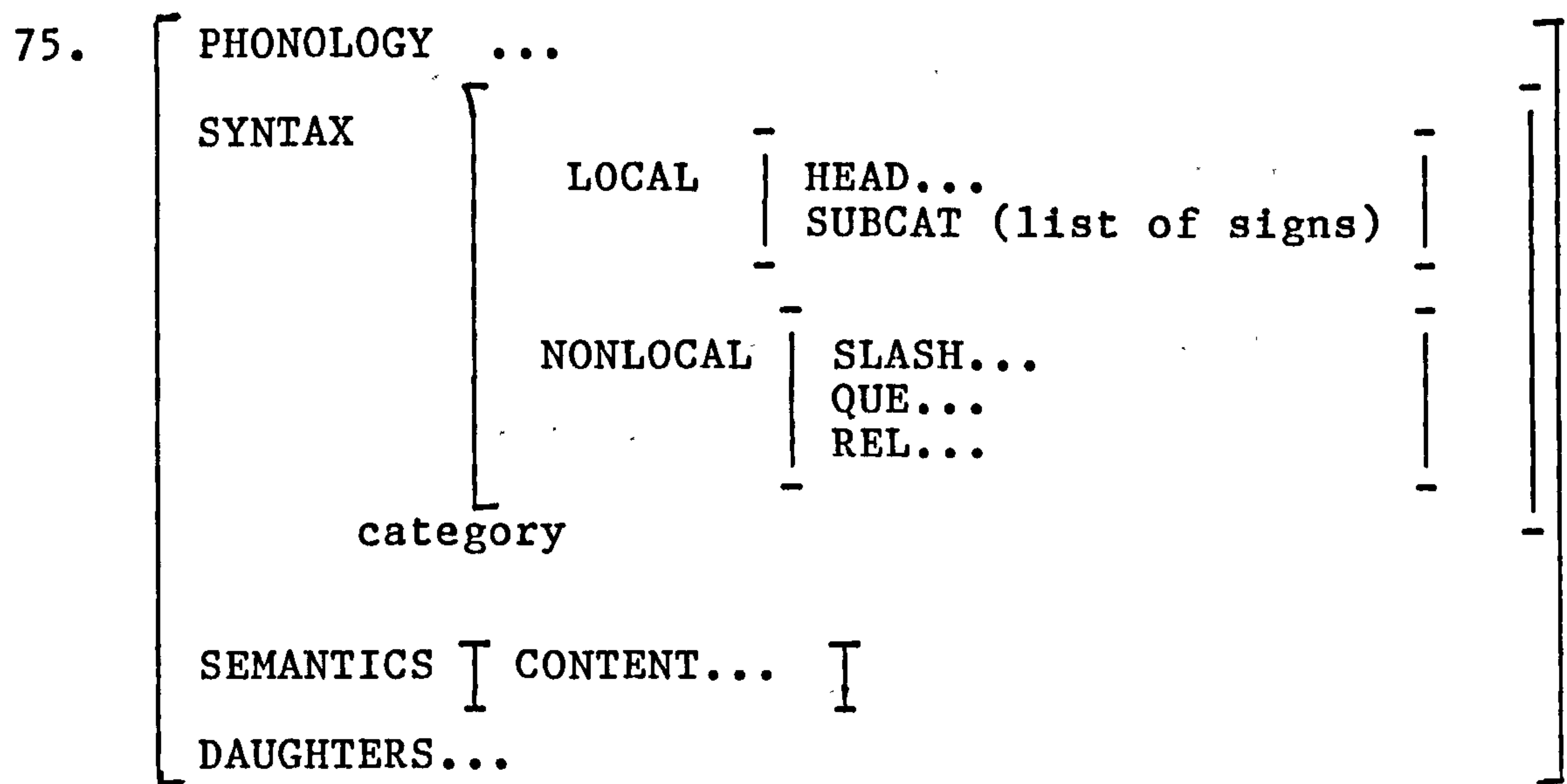
73.



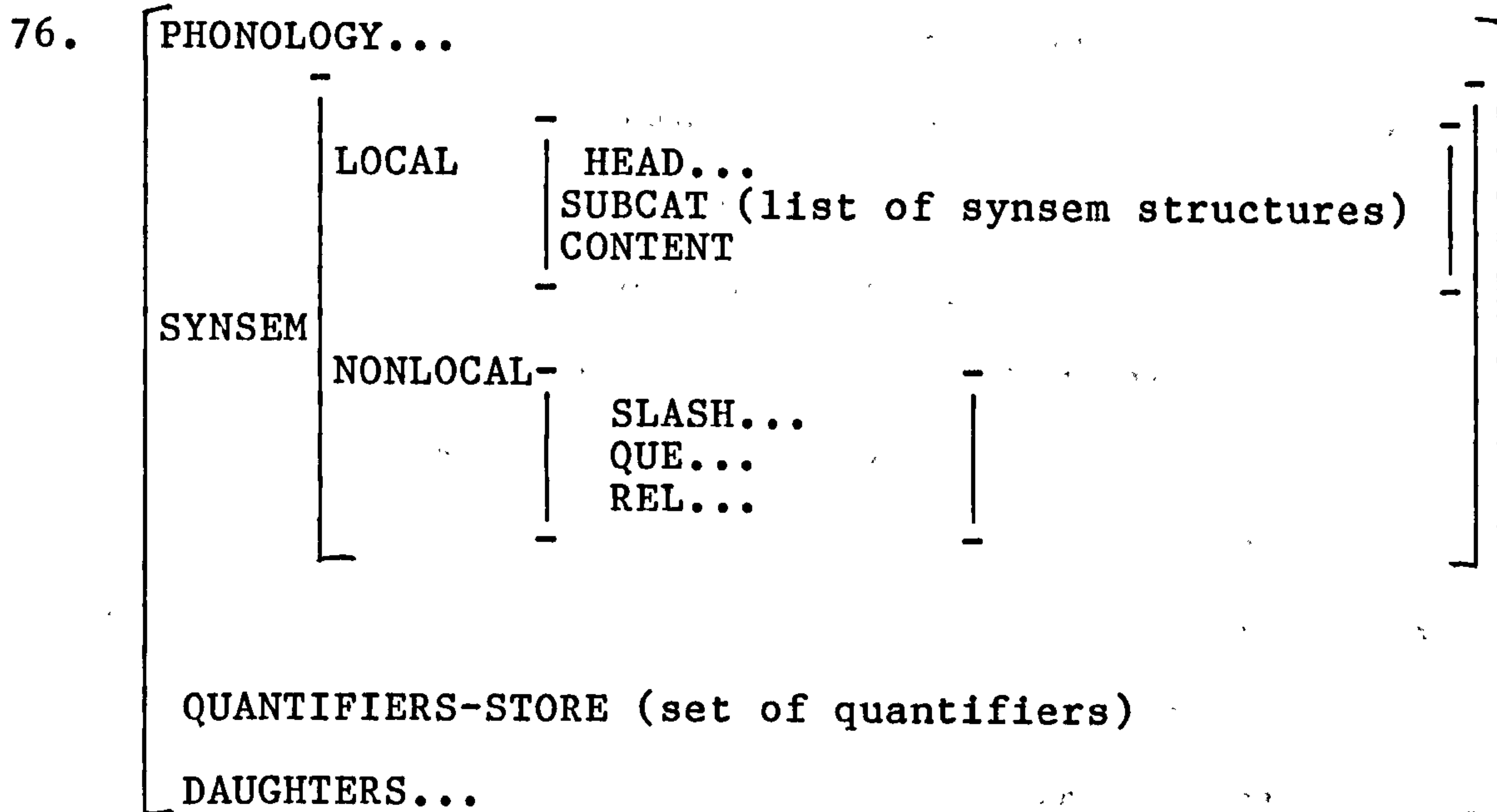
This is an informal notation which is closer to the standard notation of syntactic theory mentioned earlier. The labels H and C on the branches refer to the following constituent-structure attributes, respectively:

- 74. i. HEAD-DAUGHTER (henceforth, HEAD-DTR)
- ii. COMPLEMENT-DAUGHTERS (COMP-DTRS)

Finally, for the sake of completeness, it should be noted that several changes within the theory of HPSG have been proposed recently by Pollard and Sag (forthcoming) concerning the linguistic information structure. In volume 1, the linguistic information structure would look similar to that in (75), while the new structure will look like that in (76):







The SYNSEM value of a sign, which constitutes a natural class and takes a list of synsem feature structures as its value, contains both syntactic and semantic information. In other words, syntactic and semantic information are combined and the main distinction is between local information on the one hand and non-local syntactic and semantic information on the other. We have so far discussed the standard version of HPSG and the organization of linguistic signs. We will now proceed to introduce the revised version of HPSG as developed in Borsley (1986, 1987 and forthcoming (a)), which is the topic of the following subsection.

#### 1.4.2. The Revised Version of HPSG:

Within this framework, there are three important arguments to be focused on. The first one relates to subjects. The second concerns specifiers and the third to the use of the default

HFP. In this version of HPSG, Borsley argues that complements and subjects are different and should be separated. More precisely, the SUBCAT feature should be restricted to complements only and subjects should be introduced by a separate SUBJ feature. Pollard (forthcoming) has himself accepted arguments in favour of the revised version of HPSG.

A number of arguments are advanced in Borsley (1987 and forthcoming (a)) for adopting the idea that subjects should be analyzed as the realization of SUBJ feature. We want to make it clear that the arguments involve identifying certain weaknesses in the standard framework and we will show that they disappear in the revised framework. We will mention here some of the arguments which are relevant to Syrian. The first problem is that there are three different kinds of non-heads in the standard version. They can be either SUBCAT<> categories, SUBCAT<[]> categories (predicative AP's, subjectless infinitives, etc.), or minor categories like Det or Deg. This means that it has a complex characterization of the notion possible non-head instead of a simple one like other frameworks. In the revised version, non-heads are either [SUBCAT<>] categories or minor categories. In the standard version of HPSG we have got a category such as the following:

77. V[SUBCAT<[]>]

By contrast, we will have the following category in the revised version of HPSG:

78. V[SUBCAT<>;SUBJ<[]>]

This means that all non-heads within the revised framework are [SUBCAT<>].

A second problem arises if subjects are analyzed as the realization of a separate SUBJ feature as this allows us to recognize heads that require a complement but not a subject. This is in contrast to the standard framework where an item at least requires a subject. In the revised version, an item can be analyzed as [SUBJ<>;SUBCAT<[]>]. Predicative pp's like fi l- bet in (79) will have the category in (80):

79. Ahmed fi l- bet  
Ahmed in the house  
'Ahmed is in the house'

80. P[SUBCAT<NP>]

By contrast, an argument PP's such as ʒala Haytham in (81) will have the category in (82):

81. Salwa ʒtamdit ʒala Haytham  
Salwa relied-3SGF on Haytham  
'Salwa relied on Haytham'

82. P[SUBCAT<>]

The idea here is that argument PP's will be licensed by the head-complement rule, while predicative PP's will be licensed by the subject-head rule despite the fact that they have a similar internal structure.



Given the assumption that complements are different from subjects, we need to revise the rules and categories given earlier in order to account for the SUBJ feature. Consider now the following examples:

83. Mary put the book on the table.

84. John bought a house.

85. Mary danced.

We can now assign the category in (86) to the ditransitive verb 'put' in (83):

86. V[FIN+;LEX+;SUBCAT<PP[on],NP>;SUBJ<NP>]

By contrast, the transitive verb 'bought' will have the category in (87):

87. V[FIN+;LEX+;SUBCAT<NP>;SUBJ<NP>]

Whereas the intransitive verb 'danced' will have the following category:

88. V[FIN+;LEX+;SUBCAT<>;SUBJ<NP>]

Having given the categories above, the rules in (54) and (55) can be reformulated as follows:

89. a. [SUBJ<>] ----->H[LEX-;SUBCAT<>;SUBJ<[]>], C

b. [SUBCAT<>]----->H[LEX+;SUBCAT<...>], C\*

[Borsley (forthcoming (c))]

These rules, which are the revised version of the subject-predicate rule and the head-complement rule mentioned earlier in (54) and (55), can be paraphrased as follows:



90. a. A category with the feature specification SUBJ<> can immediately dominate a phrasal head with the feature specifications SUBCAT<> and SUBJ<[]> and a single non-head.
- b. A category with the feature specification SUBCAT<> can immediately dominate a lexical head with the feature specification SUBCAT<...> and any number of non-heads

The HFP and the Subcategorization Principle must also be revised. Borsley (forthcoming (c)) suggests that SUBCAT and SUBJ are HEAD features and reformulates the HFP as a 'Default' principle. The HFP will ensure that head and mother have the same value for SUBJ and SUBCAT in structures licensed by the subject-predicate rule.

Given the revised rules above, we can reformulate the HFP as follows:

91. The value of HEAD in a mother is identical to the value of HEAD in its head unless some rule says otherwise

What we have here as we mentioned above is a 'Default' Condition. This is like the HFC of GPSG. A default condition is one that applies unless something else is specified. By replacing the SUBCAT feature of standard HPSG by three valency features, we have a good reason for revising the HFP as a default principle as discussed in Borsley (forthcoming (c)). Therefore, HPSG is not a purely unification-based framework

because no rule or principle takes precedence over any other in a unification-based framework.

The Subcategorization Principle, on the other hand, can be revised along the following lines in order to affect both SUBCAT and SUBJ:

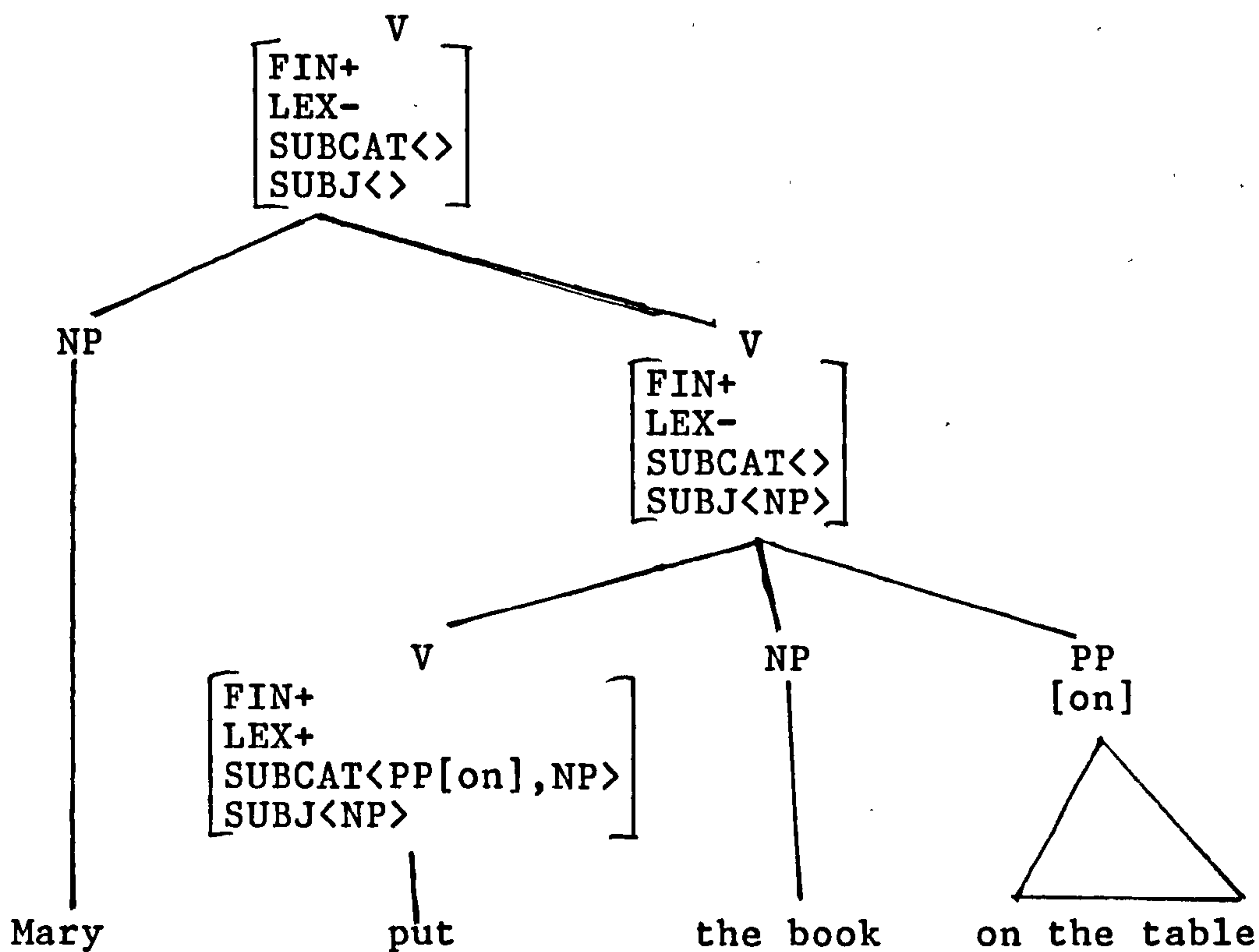
92. A category that is (a) on the SUBCAT list of a head and not on the SUBCAT list of its mother or (b) on the SUBJ list of a head and not on the SUBJ list of its mother must be matched by a sister of the head.

[Borsley (forthcoming (c))]

Note that the principle above does not include the SPEC feature. We will reformulate this principle later in order to include it.

Given the two reformulated principles together with the rules and the category in (86) for the verb 'put', we can have a structure such as the following:

93.



The higher local tree is licensed by the subject-predicate rule and the lower local tree by the head-complement rule.

We turn now to look at further problems. As we mentioned earlier, the standard version equates subjects and specifiers. To put it differently, since the standard version has no separate feature for SUBJ, both subjects and specifiers are a realization of the final item on the SUBCAT list.

By contrast, Borsley (forthcoming (a)) differentiates between subjects and specifiers by introducing an additional feature for specifiers called SPEC. More precisely, the SUBCAT feature is replaced by three different valency features. The SUBCAT, SUBJ and SPEC. We have already argued in favour of a separate SUBJ feature. We will argue below for a separate SPEC



feature. In fact, we want to show that the standard version of HPSG faces a number of weaknesses. We will mention one major weakness which is associated with predicative NP's and AP's. Pollard (1985b) suggests that predicative NP's and AP's require a particular kind of subject, i.e., they are SUBCAT<[]>. It would be surprising if we equate subjects and specifiers because predicative NP's and AP's can occur with different kinds of specifiers without requiring a particular kind of specifier if they are the product of the subject-predicate rule. What we need here is a SPEC feature because there are items that take a specifier and a subject at the same time. The following examples illustrate:

94. a. With John a student, everything is possible  
b. With Mary too tired to walk, John called a taxi

In (94a), the noun student is preceded by both a specifier a and a subject John. Similarly, in (94b), the adjective tired takes both a specifier too and a subject Mary.

This problem will disappear if we adopt the revised version of HPSG developed in Borsley (forthcoming (a)). The main argument is that the revised version differentiates between subjects and specifiers by introducing an additional feature called SPEC, which is the product of a rule called specifier-head rule. This rule can be formulated as follows:



95. [SPEC<>] ---->H[LEX-;SUBCAT<>;SPEC<[]>], C

[Borsley (forthcoming (c))]

Given the specifier-head rule, we need now to revise the Subcategorization Principle in order to include the SPEC feature, as given in (96):

96. A category that is (a) on the SUBCAT list of a head and not on the SUBCAT list of its mother or (b) on the SUBJ list of a head and not on the SUBJ list of its mother or (c) on the SPEC list of a head and not on the SPEC list of its mother must be matched by a sister of the head

The SPEC feature, like the SUBJ feature, is a HEAD feature, which takes a single member list as its value. This means that the HFP ensures that head and mother have the same value for SPEC and SUBCAT in structures licensed by the subject-predicate rule. The HFP will also ensure that head and mother have the same value for SPEC and SUBJ in structures licensed by the head-complement rule.

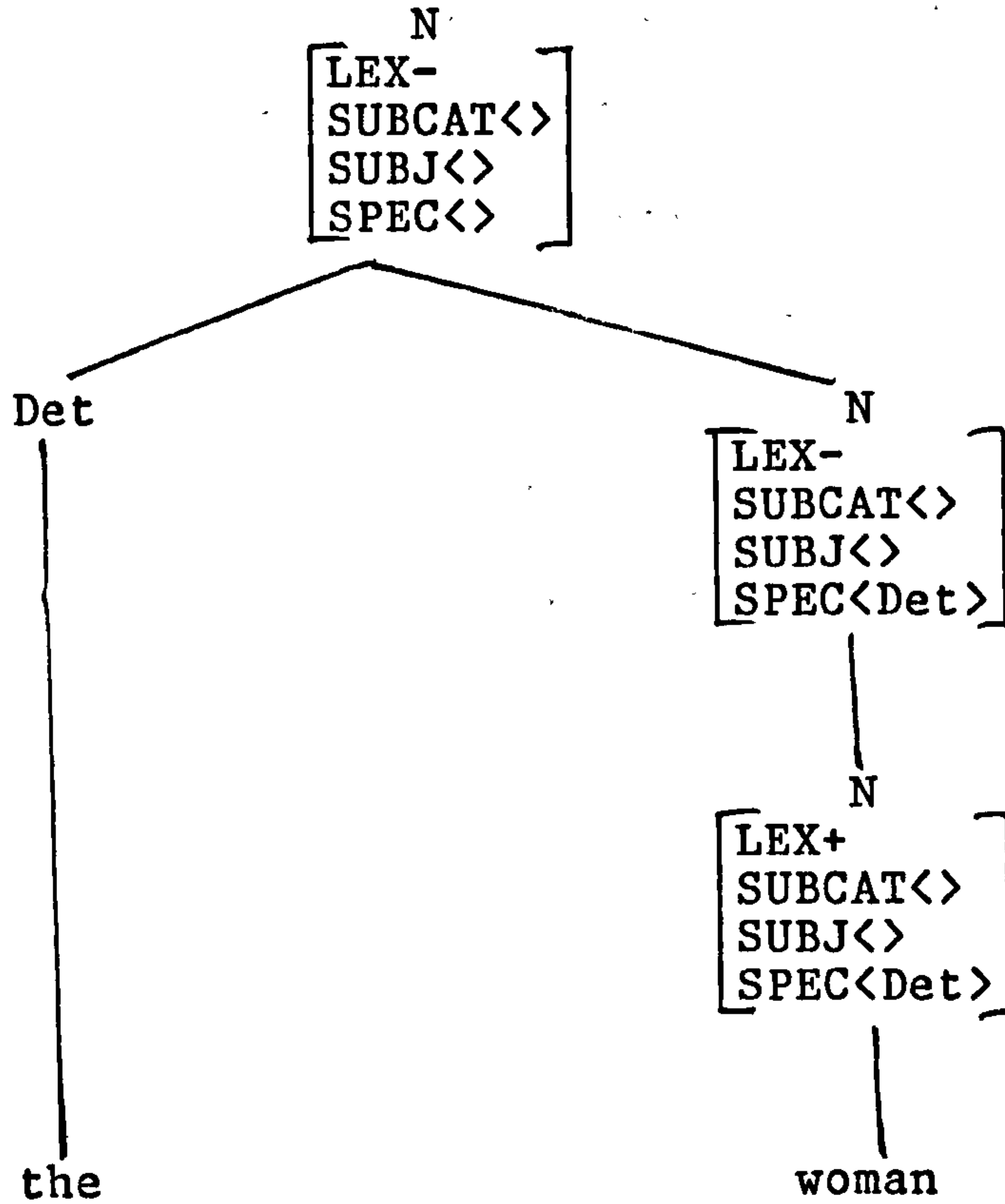
Given a separate SPEC feature, a simple common noun such as 'woman' in (97) will have the category in (98):

97. The woman is in the house.

98. N[LEX+;SUBCAT<>;SUBJ<>;SPEC<Det>]

This category will interact with the specifier rule together with the two revised principles to give the following tree:

99.



### 1.5. Summary:

To conclude, we have argued that TPSG misses a number of generalizations and that MPSG is preferable to TPSG by virtue of its capturing these generalizations. We have also highlighted some weaknesses of GPSG and proposed that all these weaknesses disappear if we adopt HPSG. In section three, we have introduced some ideas of CG that have been taken by HPSG. In section four, we have introduced two different

versions of HPSG. The standard version of HPSG developed by Pollard (1985) and Pollard and Sag (1988 and forthcoming), which suggests that subjects and complements are similar and that subjects and specifiers are essentially the same thing. And the revised version of HPSG, which argues that subjects should be distinct from complements where subjects have a separate feature SUBJ. Similarly, specifiers should not be identified by SUBCAT feature but by an additional feature called SPEC. Finally, despite the considerable differences between GPSG and CG, on the one hand, and HPSG on the other, we were able to show how HPSG has taken a number of important and central ideas from GPSG and CG.

## CHAPTER TWO

### Verb Phrases

#### 2.0. Introduction:

In the previous chapter, we discussed the theoretical framework that we are adopting in this thesis. We considered both TPSG and MPSG and looked at some ideas adapted by HPSG from CG. We also introduced the two versions of HPSG and argued that the revised version is preferable to the standard version because of the arguments given in the introductory chapter in favour of the three different features, SUBCAT, SUBJ, and SPEC. Our main concern in this chapter is to provide an analysis of verb phrases (henceforth VP's) in Syrian Arabic. Among other grammatical properties we will look at clitics in VP's. The proposed analysis will be based on the revised version of HPSG developed in Borsley (1986, 1987 and forthcoming (a)).

This chapter falls into five main sections. In section one, we will argue that subject-initial sentences are simply ordinary SVO clauses and not topicalized VSO clauses and that the head verb with its complement forms a VP constituent. In section two, we will look at the internal structure of VP's. More specifically, in subsection one, we will highlight the differences between complements and adjuncts; in subsection two, we will examine verbs which subcategorize for either one or two NP complements; in subsection three, we will examine



verbs which take an NP complement followed by a PP complement, and verbs which take two PP complements; and in subsection four, we will deal with verbs that take an S' complement. In section three, we will be concerned with both simple and clitic doubling within VP's. In section four, we will look at the ordering of complements and the question of whether adjuncts can ever precede complements. Finally, in section five, we will summarize the main points discussed in this chapter.

### 2.1. The Existence of Simple SVO Clauses in Syrian:

When we look in more detail at the Syrian data, it will become apparent that clauses can either have the structure: subject-verb-object (SVO), (the unmarked case) or verb-subject-object (VSO) which is also frequently used. Moreover, we will argue that subject initial clauses in Syrian, unlike Breton SVO clauses which are considered in Borsley and Stephens (1989) to be instances of topicalization, are ordinary SVO clauses.

It is because Syrian has a topicalization process such as those in (1) that one might suppose that examples like those in (2) and (3) are instances of topicalization:

1. a. 1- bent ḥabb-a                      Aḥmed  
           the girl loved-3SGM-3SGF Ahmed  
           'The girl Ahmed loved.'

- b. 1- haʔb sakkart-o                      Salwa  
the door closed-3SGF-3SGM Salwa  
'The door Salwa closed.'
2. a. Aḥmed ḥab                      1- bent  
Ahmed loved-3SGM the girl  
'Ahmed loved the girl.'
- b. Salwa sakkart                      1- baʔb  
Salwa closed-3SGF the door  
'Salwa closed the door.'
3. a. Nawal saʔlt                      Nadir souʔl  
Nawal asked-3SGF Nadir question  
'Nawal asked Nadir a question.'
- b. Samir ɣaʔa                      Nahid sayyara  
Samir gave-3SGM Nahid car  
'Samir gave Nahid a car.'

The examples in (1) are different from (2) and (3) because the verbs host a clitic as we will see when we look at clitics.

One argument for rejecting the view that examples (2) and (3) are instances of topicalization comes from the fact that they can be preceded by a topic. The following examples illustrate this:

4. a. [fi ḥalab] Aḥmed ḥab                      1- bent.  
in Aleppo Ahmed loved-3SGM the girl  
'In Aleppo Ahmed loved the girl.'

- b. [b1- madrased] Nawal sa2lt Nadir sou2l.  
 in the school Nawal asked-3SGF Nadir question  
 'In the school Nawal asked Nadir a question.'

These examples suggest that the subject is not a topic but an ordinary subject because it is preceded by a topic.

Another argument for proposing that subject-initial sentences are really ordinary SVO clauses comes from the fact that SVO word order is common place in subordinate clauses. Topicalization, on the other hand, is impossible in subordinate clauses. That is, topics can only occur in main clauses. The following examples illustrate:

5. a. Aḥmed ṣaf Salwa baḡd-ma Riyad ṣaf Maha  
 Ahmed saw-3SGM Salwa after Riyad saw-3SGM Maha  
 'Ahmed saw Salwa after Riyad saw Maha.'
- b. \*Aḥmed ṣaf Salwa baḡd-ma Maha, Riyad ṣaf  
 Ahmed saw-3SGM Salwa after Maha, Riyad saw-3SGM
6. a. Sami qal la Hayyam annu Aḥmed raḡ ḡal madrased  
 Sami said-3SGM to Hayyam that Ahmed went to-the school  
 'Sami said to Hayyam that Ahmed went to school'
- b. \*Sami qal la Hayyam annu ḡal madrased Aḥmed raḡ  
 Sami said-3SGM to Hayyam that to-the school Ahmed went

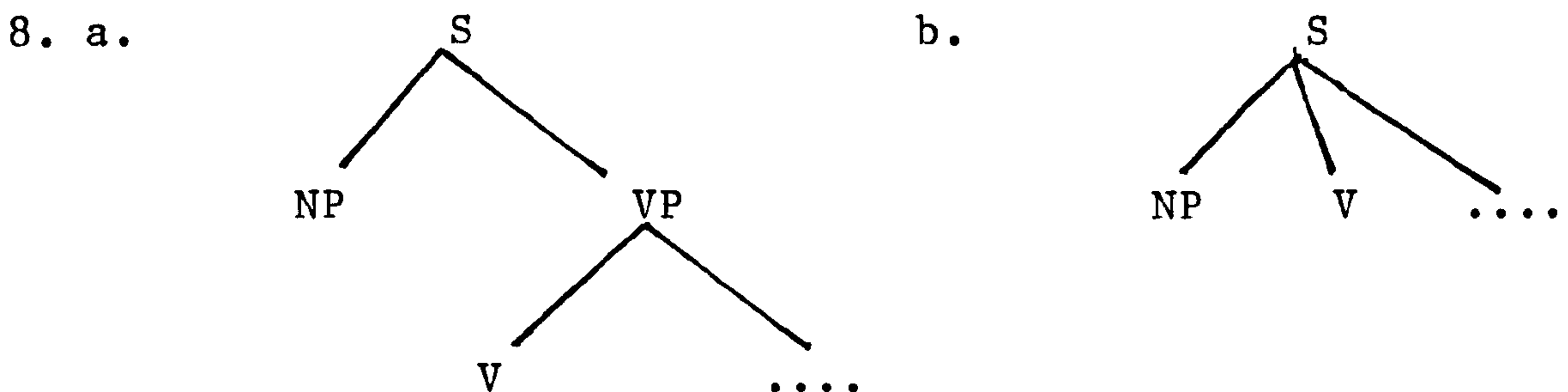
(5a) and (6a) show that ordinary SVO clauses are possible in subordinate clause position, while (5b) and (6b) are

ungrammatical because in Syrian, it is not possible to have a topicalized element in a subordinate clause.

This point is made by Emonds (1976) concerning English. In English, it is not possible to get a topicalized element in subordinate clauses. The following examples illustrate the point:

7. a. John saw Mary before Bill saw Sue.  
 b. \*John saw Mary before Sue, Bill saw.

Having argued that subject-initial sentences are ordinary SVO clauses, we can now look in detail at these sentences. We will propose that in SVO sentences the head verb together with its complements form a VP constituent. In other words, we can argue in favour of the structure in (8a) and against a flat structure such as that in (8b):



Evidence in favour of the structure in (8a) comes from coordination facts. Consider the following examples:

9. a. Nabil biḥeb            Nilly w bikrah            Salwa  
 Nabil likes-3SGM Nilly and hates-3SGM Salwa  
 'Nabil likes Nilly and hates Salwa'



- b. Nabil biḥeb Nilly w huweh bikrah Salwa  
 Nabil likes-3SGM Nilly and he hates-3SGM Salwa  
 'Nabil likes Nilly and he hates Salwa'

One interpretation might be that these examples involve conjoined S's. This interpretation however is false as such constituents involve conjoined VP's. Moreover, the addition of the pronoun huweh in (9b) could entail a different interpretation from (9a). However, since in Syrian the subject could be null, bikrah Salwa 'hates Salwa' might be a null subject clause.

In order to overcome this ambiguity, further examples can be given which add support to the argument that conjoined elements are actually VP constituents. The following examples illustrate this:

10. a. maḥada [biḥeb Nilly] w [bikrah Salwa]  
 nobody likes-3SGM Nilly and hates-3SGM Salwa  
 'Nobody likes Nilly and hates Salwa'
- b. \*maḥada [biḥeb Nilly] w [huweh bikrah Salwa]  
 nobody likes-3SGM Nilly and he hates-3SGM Salwa
11. a. kəll waḥd [biḍreb Aḥmed] w [hibus Samira]  
 every one hit-3SGM Ahmed and kiss-3SGM Samira  
 'Every one hits Ahmed and kisses Samira'
- b. \*kəll waḥd [biḍreb Aḥmed] w [huweh bibus Samira]  
 every one hit-3SGM Ahmed and he kiss-3SGM Samira

(10a) and (11a) cannot be considered as being conjoined clauses with null subjects because of the ungrammaticality of (10b) and (11b). Therefore, (10a) and (11a) are conjoined VP's.

Having demonstrated in the first section that subject-initial sentences are ordinary SVO clauses, and having shown that they involve VP's, we can now proceed to discuss their internal structure.

## 2.2. The Internal Structure of Verb Phrases:

Before we proceed to discuss the internal structure of VP's, we will highlight the distinction between complements and adjuncts.

### 2.2.1. The Complement-Adjunct Distinction:

In this section, we will only consider the differences between complements and adjuncts and we will postpone an analysis of adjuncts until section four where we discuss the ordering of complements. The main issue here is that the relationship of a complement to its head differs syntactically and semantically from that of the adjunct. The distinction between the two elements is based on several factors argued by Radford (1988:179-196) and Pollard and Sag (1988:134-138).

One difference between complements and adjuncts is that complements are usually closer to the associated head than

adjuncts. The following examples illustrate this:

12. a. Ziad ḍarb      l- wald l- ḡabi      m-barḥa  
Ziad hit-3SGM the boy the stupid yesterday  
'Ziad hit the stupid boy yesterday'
- b. \*Ziad ḍarb      m-barḥa      l- wald l- ḡabi  
Ziad hit-3SGM yesterday the boy the stupid

The complement l-wald in (12a) is closer to its head verb than the adjunct yesterday, that is why (12b) is ruled out.

Another difference is that complements are normally obligatory, while adjuncts are always optional. This entails that obligatory constituents following a verbal head should be complements. Consider the following examples:

13. a. Aḥmed ḡamal      Salwa b-qasweh m-barḥa  
Ahmed treated-3SGM Salwa by badly yesterday  
'Ahmed treated Salwa badly yesterday.'
- b. Aḥmed ḡamal      Salwa b-qasweh  
Ahmed treated-3SGM Salwa by badly  
'Ahmed treated Salwa badly.'
- c. \*Aḥmed ḡamal      b-qasweh m-barḥa  
Ahmed treated-3SGM by badly yesterday
- d. \*Aḥmed ḡamal      Salwa m-barḥa  
Ahmed treated-3SGM Salwa yesterday

Both (13a) and (13b) are grammatical because the adjunct m-barḥa is optional. The examples in (13c) and (13d) are ungrammatical since they lack the obligatory complements Salwa



and b-qasweh. Therefore, the examples above show that adjuncts are always optional, whereas complements are normally obligatory.

A third difference between complements and adjuncts, following Pollard and Sag (1988), is 'Order-Dependency of Content': This means that the semantic content of adjuncts is determined by the relative order of the adjuncts themselves, while this is not the case with complements. Consider the difference between the two examples in (14):

14. a. Aḥmed ṣtagel l-mədit xams saḡat martin fl- ysbouḡ  
Ahmed worked-3SGM the for five hours twice in the week  
'Ahmed worked for five hours twice a week'
- b. Aḥmed ṣtagel martin fl- ysbouḡ l- mədit xams sənin  
Ahmed worked-3SGM twice in the week the for five years  
'Ahmed worked twice a week for five years'

While (14a) involves a frequency, (14b) indicates duration. That is, in (14a) five hours duration is a property of the situation type whose frequency is described. Whereas twice a week in (14b) is a property of the situation type whose duration is described.

A fourth difference between complements and adjuncts is 'Iterability': Two or three adjuncts of the same type can combine with the same head, but two or three complements of the same type cannot. This is exemplified in the following examples:



15. a. Šaf Jamal salwa fi ḥalab fi madxal l- madineh fi nisan  
 saw Jamal Salwa in Aleppo in entrance the city in April  
 'Jamal saw Salwa in Aleppo in the entrance of the city  
 in April'
- b. \*l- banat raḥu ʕl- madradeh, ʕl- souq  
 The girls went-3PL to the school, to the market

(15a) shows that it is possible for three adjuncts of the same type to combine with the same head, whereas (15b) indicates that it is not possible for two complements of the same type to combine with the same head, hence its ungrammaticality.

Having discussed the distinction between complements and adjuncts, we can proceed to look more closely at the variety of complement sets that verbs take. We will start first by considering verbs involving no clitics, then we will move on to survey clitics.

### 2.2.2. Noun Phrase Complements:

A verb in Syrian, as we mentioned earlier, often combines with an NP complement to form a VP constituent. The following examples illustrate the point:

16. Layla [ḍarabt Aḥmed]  
 Layla hit-3SGF Ahmed  
 'Layla hit Ahmed'

17. Bassam ʕaf Nawal

Bassam saw-3SGM Nawal

'Bassam saw Nawal'

Given revised HPSG assumptions, the verb darabt 'hit' in (16) will have the following category:

18. V[FIN+;LEX+;SUBCAT<NP>]

As we noted before in the introductory chapter, the features SUBCAT and SUBJ are central to the revised version of HPSG. In this chapter, we will only use the SUBCAT feature as in (18) and ignore the SUBJ feature until we discuss clauses. For simplicity, we will exclude the feature [LEX] in what follows.

The only rule that we need here is the head-complement rule mentioned before in the introductory chapter and repeated here in (19) below:

19. [SUBCAT<>] ----> H[LEX+;SUBCAT<...>],\*C

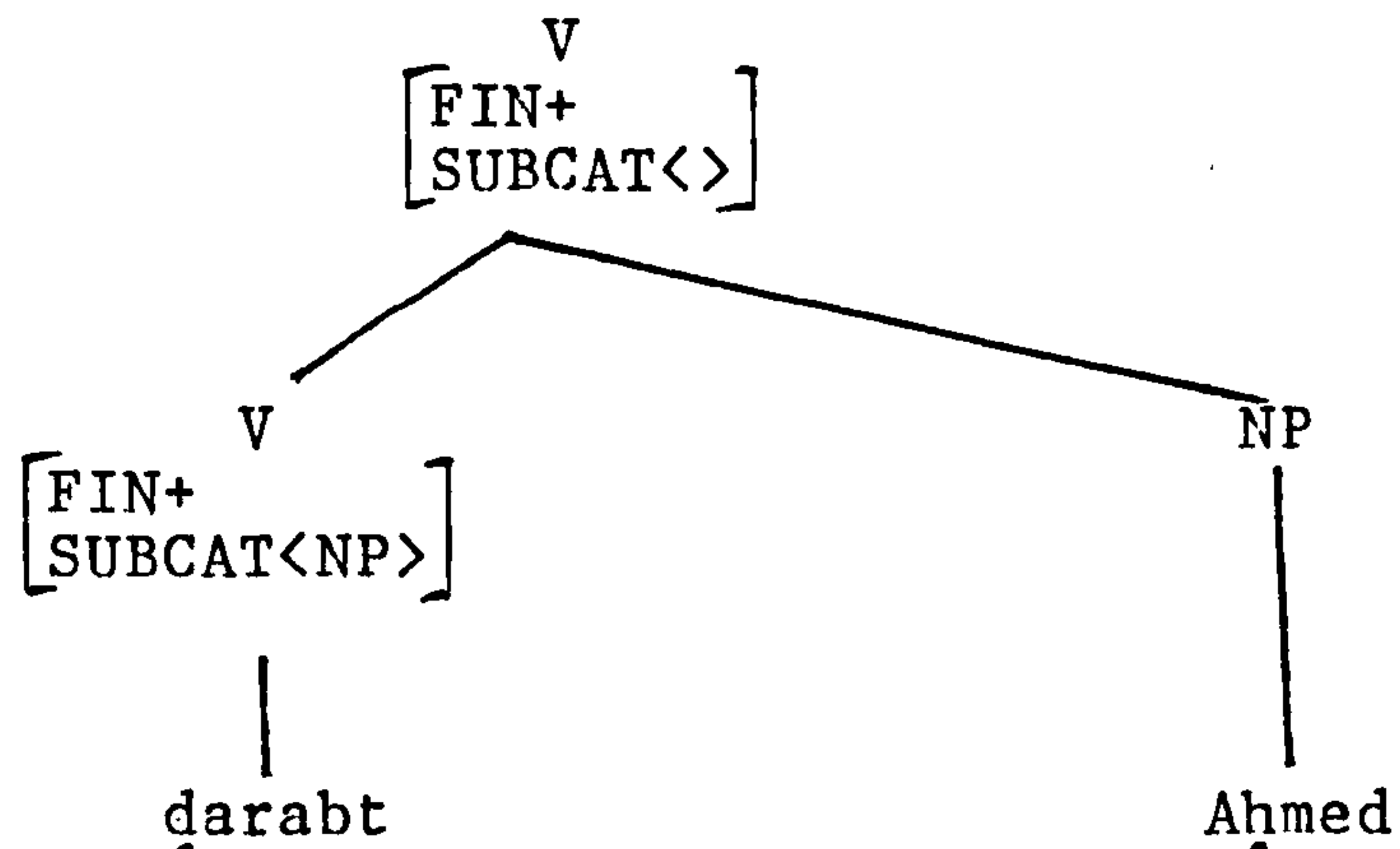
Where <...> stands for any list including the empty list.

Given the category in (18) together with the rule in (19) and the two universal principles, i.e., the HFP and the Subcategorization Principle given in the first chapter and repeated here in (20), we will allow trees such as that in (21) for the Verb darab in (16):

20. a. The value of HEAD in a mother is identical to the value of HEAD in its head unless some rule says otherwise.

- b. A category that is (a) on the SUBCAT list of a head and not on the SUBCAT list of its mother or (b) on the SUBJ list of a head and not on the SUBJ list of its mother or (c) on the SPEC list of a head and not on the SPEC list of its mother must be matched by a sister of the head.

21.



We would like to make it clear that some LP rule is necessary to ensure that the daughters are in the right order.

Verbs can also combine with two NP complements. The following examples demonstrate this:

22. Riyad [zar mustapha ktab]

Riyad lent-3SGM mustapha book

'Riyad lent Mustapha a book.'

23. Riyad zar Mustapha ktab (m-barha)

Riyad lent-3SGM Mustapha book yesterday

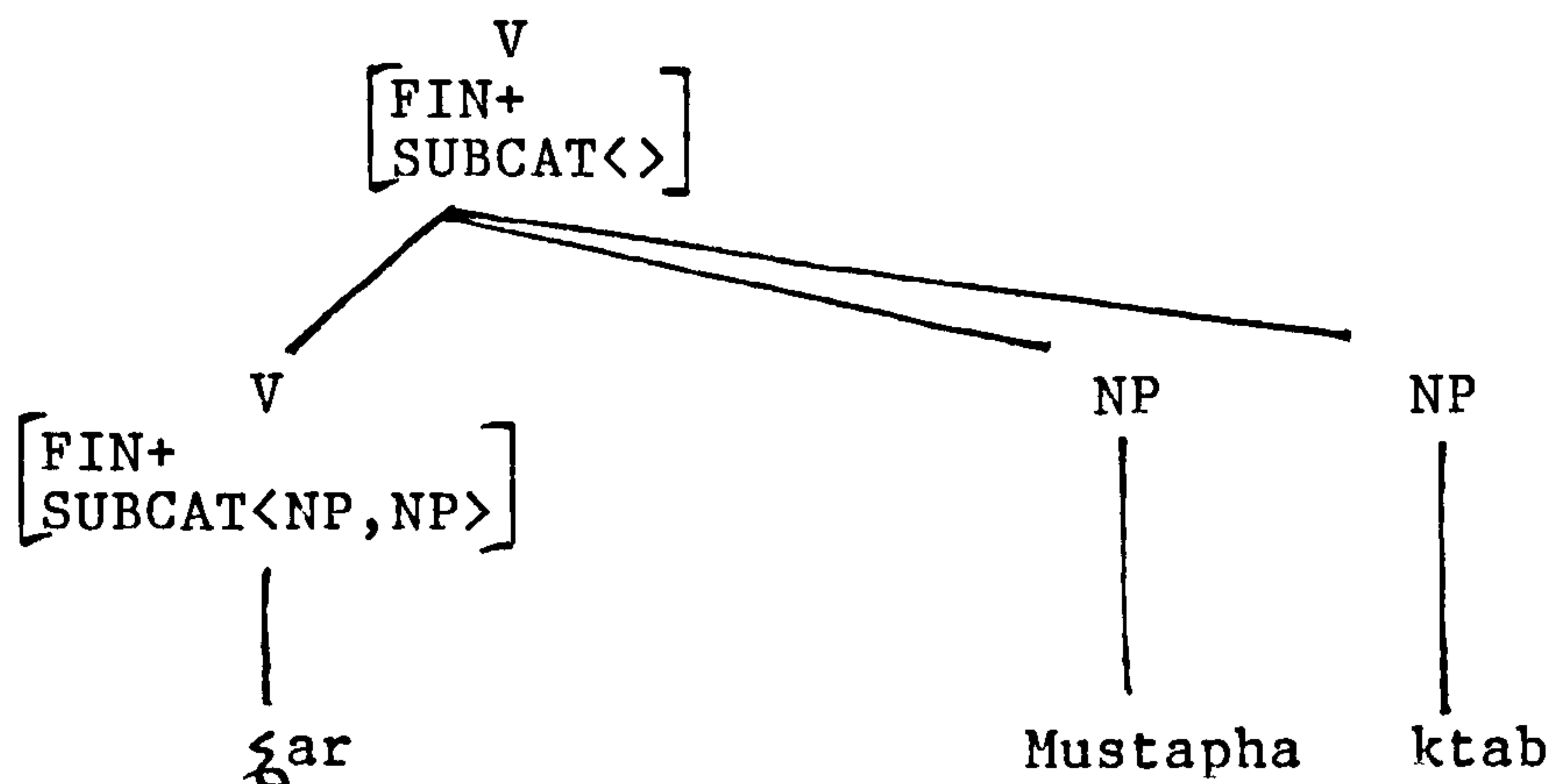
'Riyad lent Mustapha a book yesterday.'

For zar 'lent' in (22), all we need is the following category:

24. V[FIN+;SUBCAT<NP,NP>]

This category will interact with the head-complement rule together with the two universal principles to give the following structure:

24.



Having dealt with verbs that take two NP complements, we turn now to consider verbs subcategorizing for an NP complement followed by a PP complement. Consider the following examples:

25. a. 1- rījal [ḡaṭu ward la- Nawal]

the men gave-3PL flowers to Nawal

'The men gave flowers to Nawal.'

b. \*1- rījal [ḡaṭu ward]

the men gave-3PL flowers

26. a. 1- banat [wadaḡu sayyaraton fi 1- garag]

the girls put-3PL cars-3PL in the garage

'The girls put their cars in the garage.'

b. \*1- banat [wadaḡu sayyaraton]

the girls put-3SGF cars-3PL



The complements la-Nawal and fi l- garag in (25a) and (26a) are obligatory. They are therefore complements and not adjuncts.

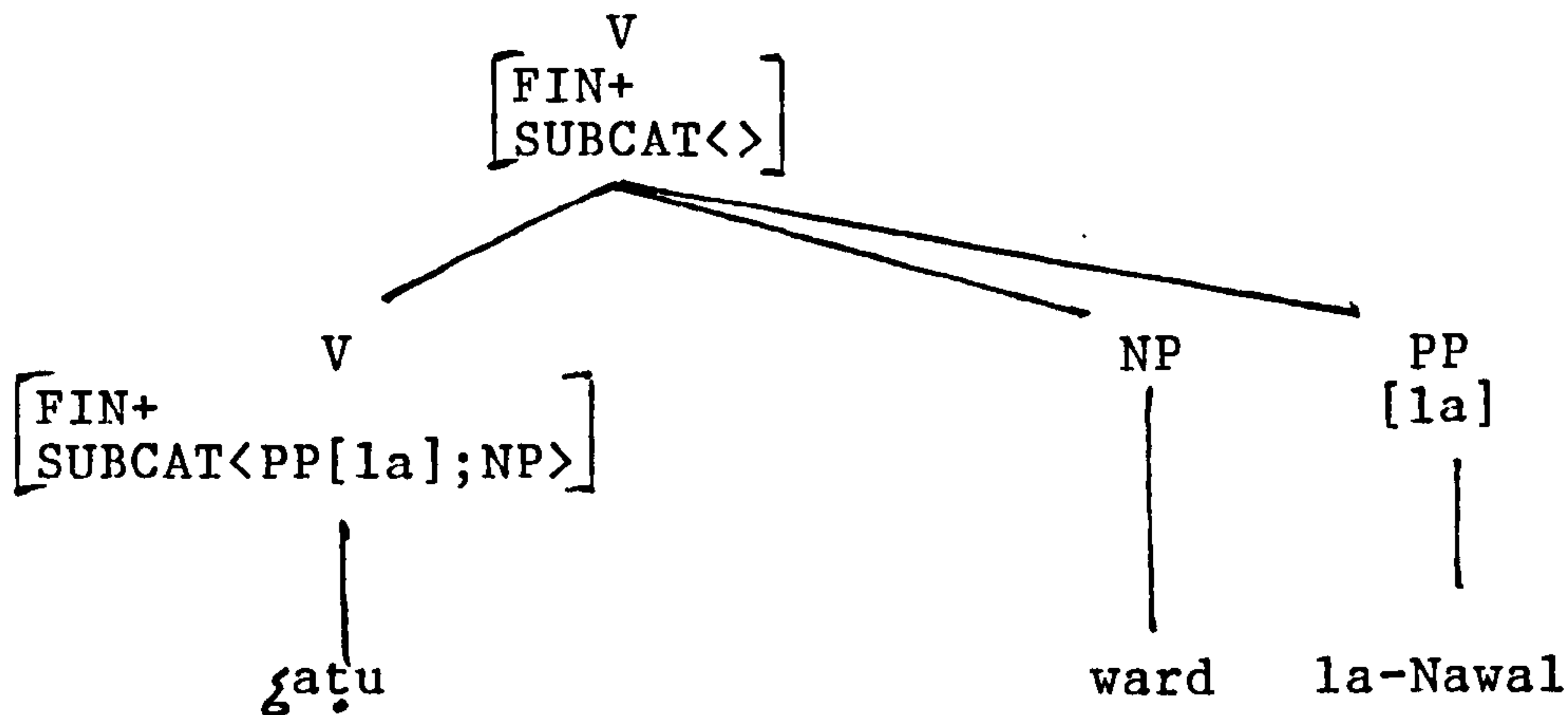
The verb ḡaṭu (25a) can be assigned the category in (27), while the verb wadaḡu (26a) has the category in (28):

27. V[FIN+;SUBCAT<PP[la];NP>]

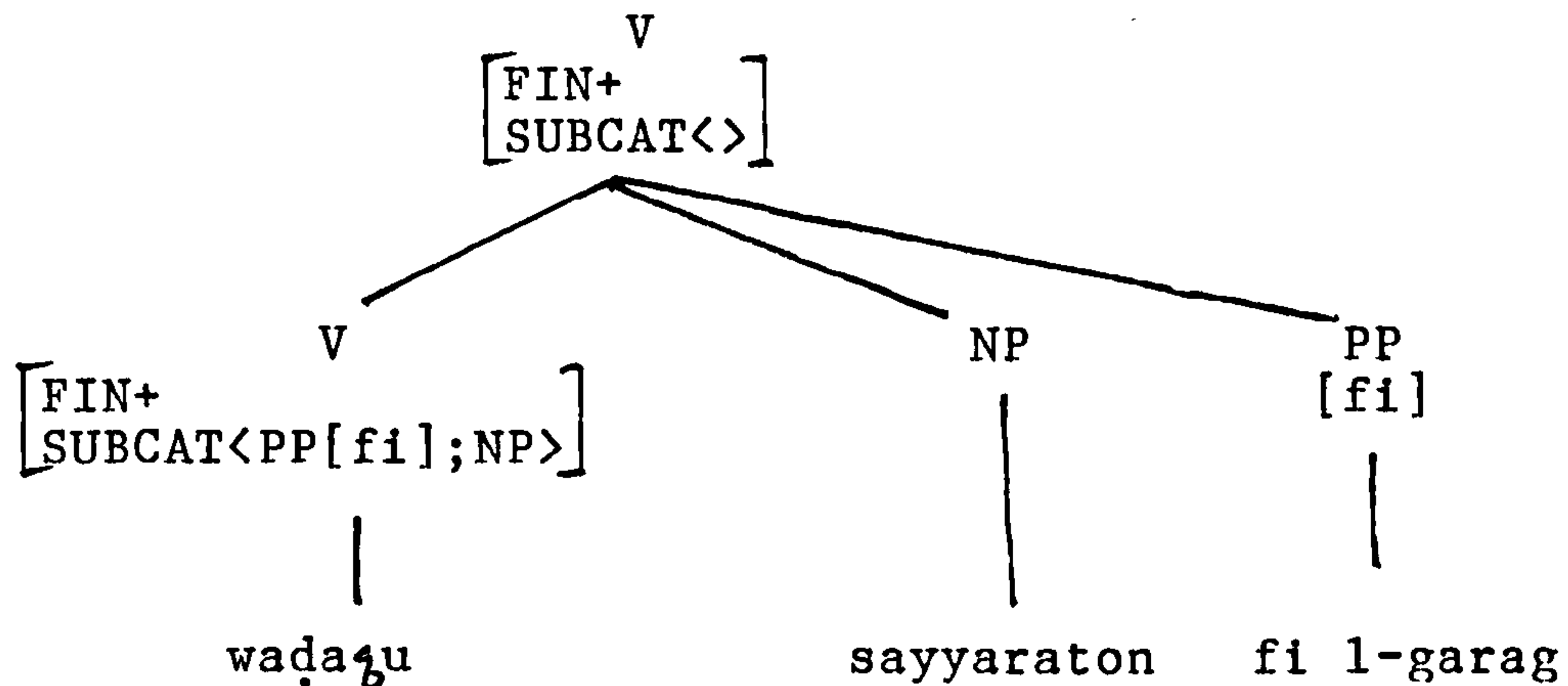
28. V[FIN+;SUBCAT<PP[fi];NP>]

These categories will interact with the head-complement rule together with the HFP and the Subcategorization Principle to give the following structures:

29.



30.



Having looked at verbs taking NP complements, we turn now to consider verbs taking PP complements.

### 2.2.3. Prepositional Phrase Complements:

Verbs can also subcategorize for either a single PP complement or two PP complements. The following examples illustrate the point:

31. a. Aḥmed raḥ                    ḡal        madraseh

Ahmed went-3SGM to-the school

'Ahmed went to the school'

b. Salwa safert                    mən ḥalib la dimašq

Salwa travelled-3SGF from Aleppo to Damascus

'Salwa travelled from Aleppo to Damascus'

We can assign the category in (32) for the verb raḥ (31a):

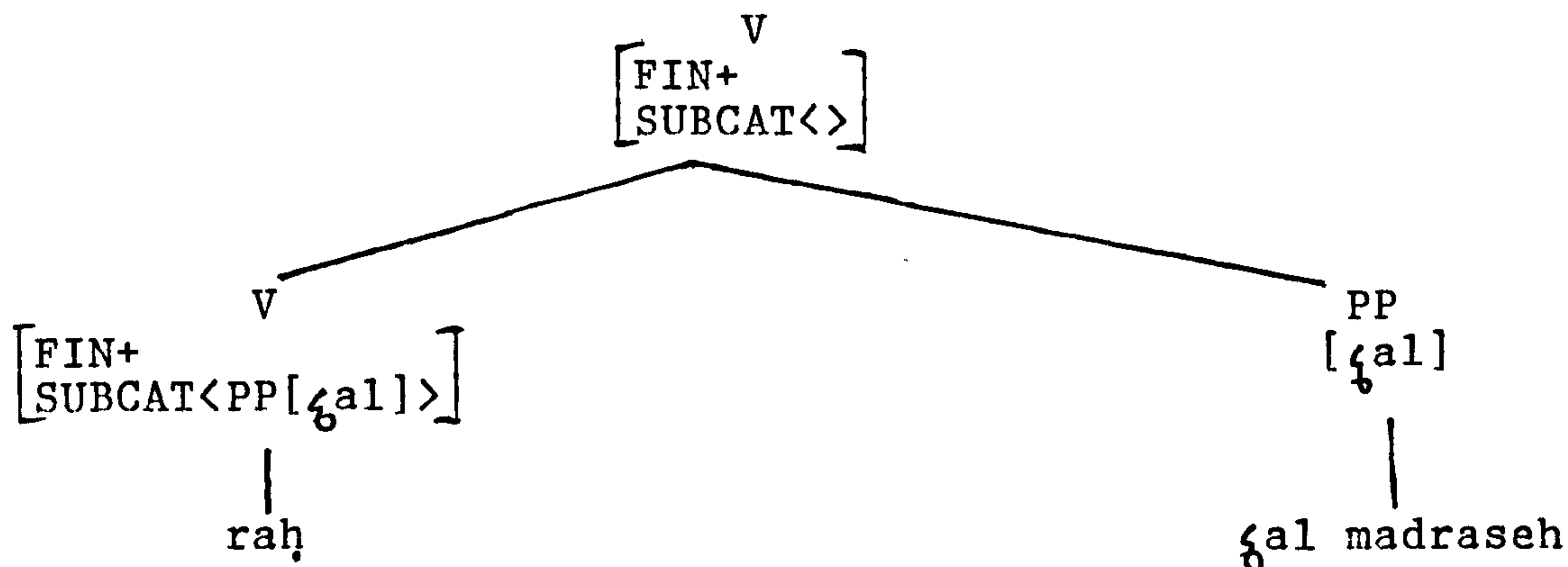
32. V[FIN+; SUBCAT<PP[ḡal]>]

For verbs like safert in (31b), we need the following category:

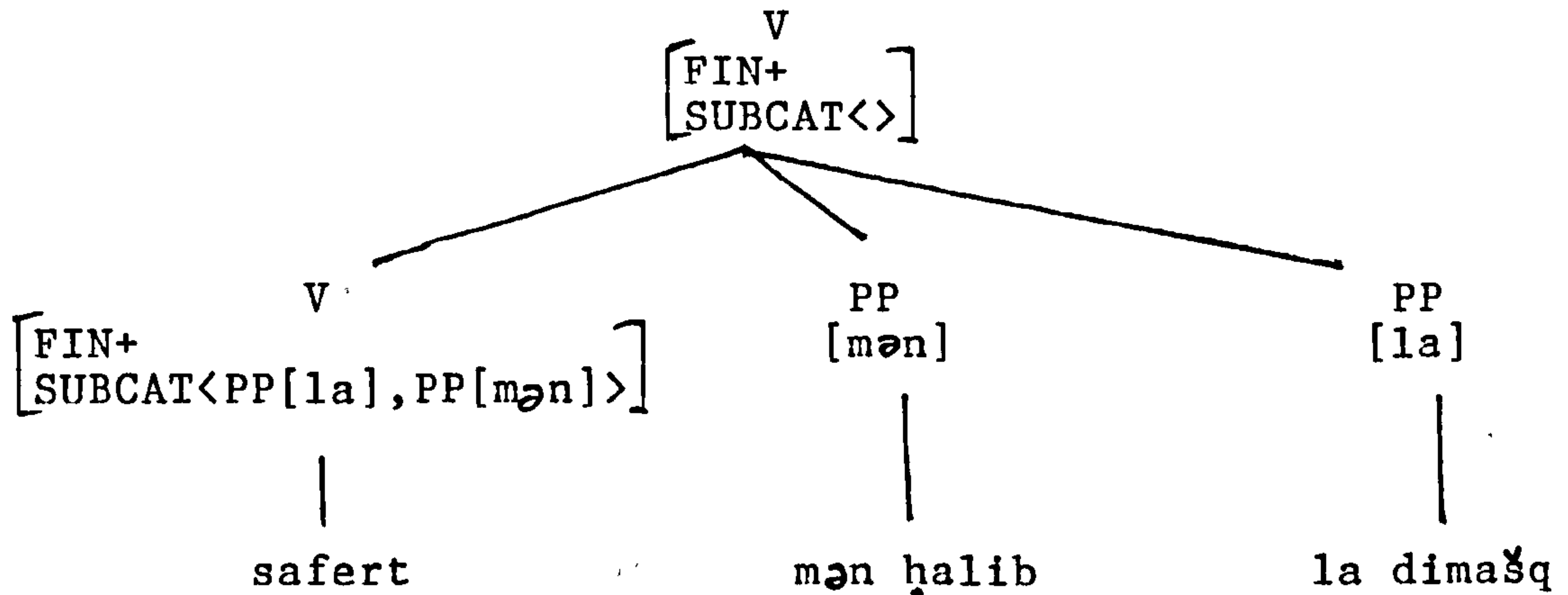
33. V[FIN+; SUBCAT<PP[la], PP[mən]>]

Given the categories in (32) and (33) together with the head-complement rule and the two universal principles, trees such as the following are formed:

34.



35.



We have so far considered phrasal complements. We proceed to look at sentential complements.

#### 2.2.4. Sentential Complement:

Verbs can also be followed by a sentential constituent. Consider the following example:

36. 1- muḥami [ḍan            ʔannu 1- ḥarami harb mən 1- segin]  
 the lawyer thought-3SGM that the thief escaped from prison  
 'The lawyer thought that the thief has escaped from prison'  
 For verbs such as ḍan 'thought' in (36), we need the following category:

37. V[FIN+; SUBCAT<S'>]

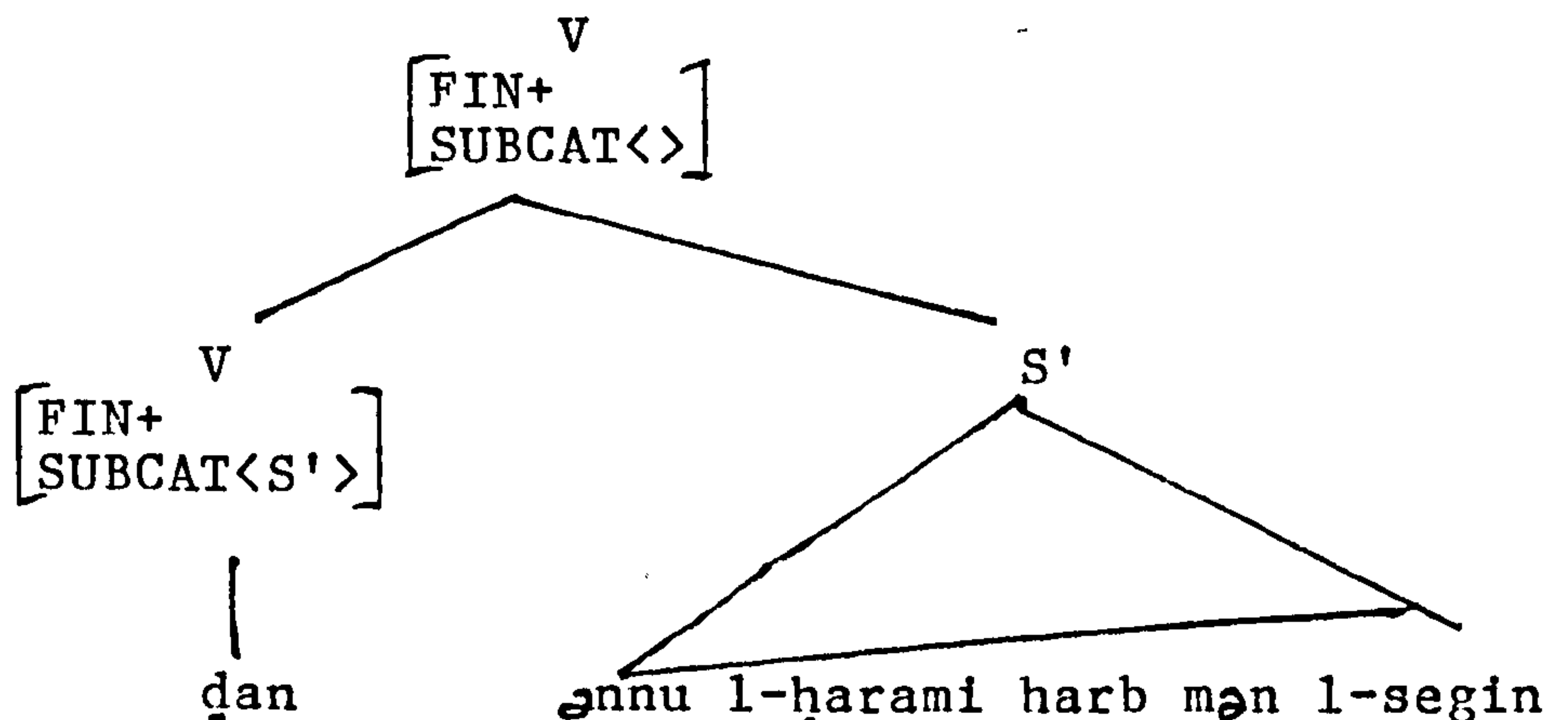
Where S' is an abbreviation dependent on the analysis of complementizers.

Complementizers, following Pollard and Sag (forthcoming), are not heads. They are simply a type of marker. A marker is an empty sign which combines with a following phrase to form a single constituent. It usually marks the head. These markers

have values of sort marking which has the subsorts marked and unmarked. They can also be distinguished from non-markers, and from each other by having the attribute MARKING. These markers have a head feature called SPECIFIED (SPEC). This head feature is different from the SPEC feature given in the revised version to handle specifiers such as ktir 'very', qalil 'less', kamman 'too', etc. The head feature SPEC has a synsem value which combines with the synsem value of the head sign to form a constituent. We will not decide which is the right analysis for complementizers, leaving this problem for further research.

The category in (37) will interact with the head-complement rule together with the HFP and the Subcategorization Principle to give the following tree structure:

38.



We turn now to consider verbs taking a PP complement followed by an S' complement. The following example illustrates this:

39. Nadir [qal la-Hayyam annu Fayez harb maḡ Maha]  
 Nadir said-3SGM to Hayyam that Fayez fled-3SGM with Maha  
 'Nadir said to Hayyam that Fayez fled away with Maha.'

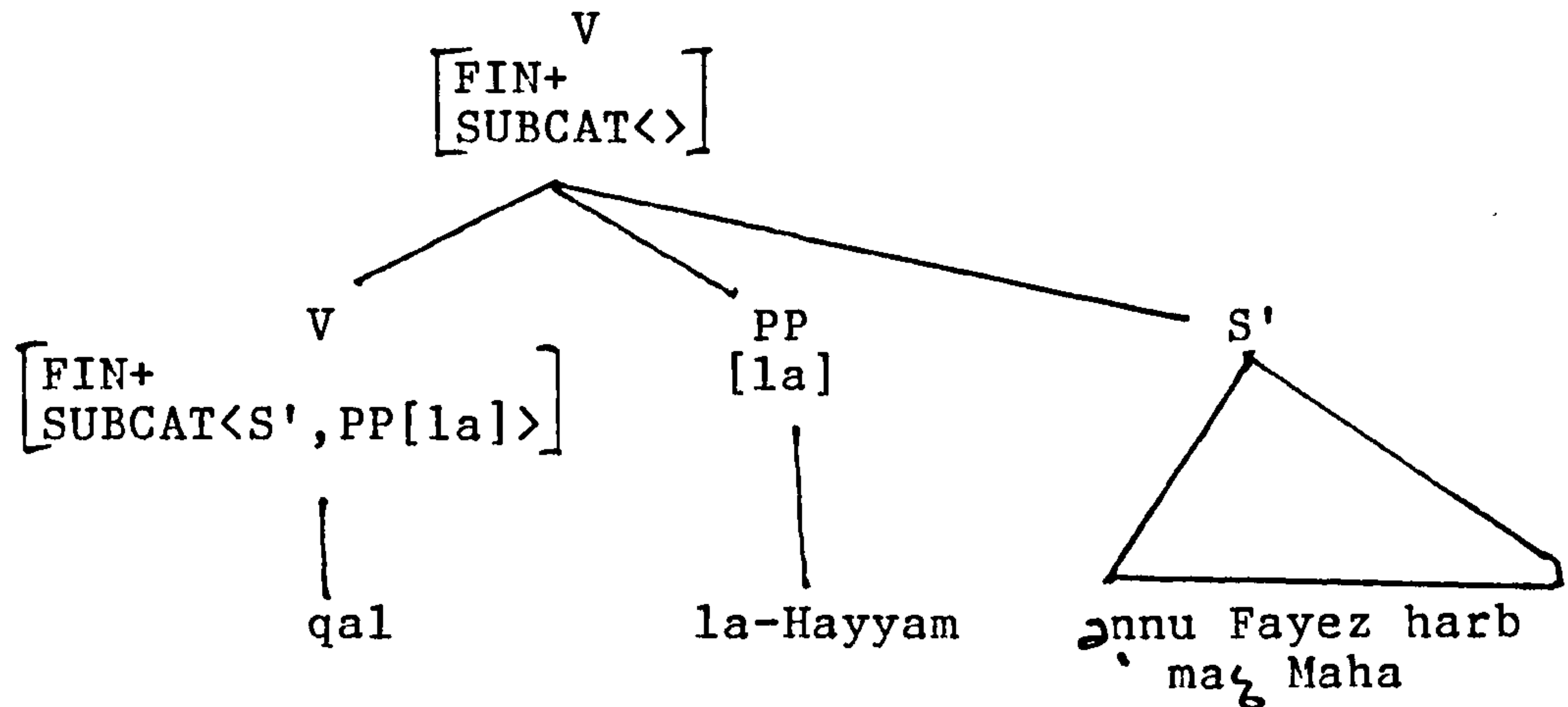


We can assign the category in (40) to the verb qal 'said' (39):

40. V[FIN+,SUBCAT<S',PP[1a]>]

This category will interact with the head-complement rule together with the two universal principles to give the following structure:

41.



Finally, some verbs can combine with an NP complement followed by an S' complement. The following example demonstrates this:

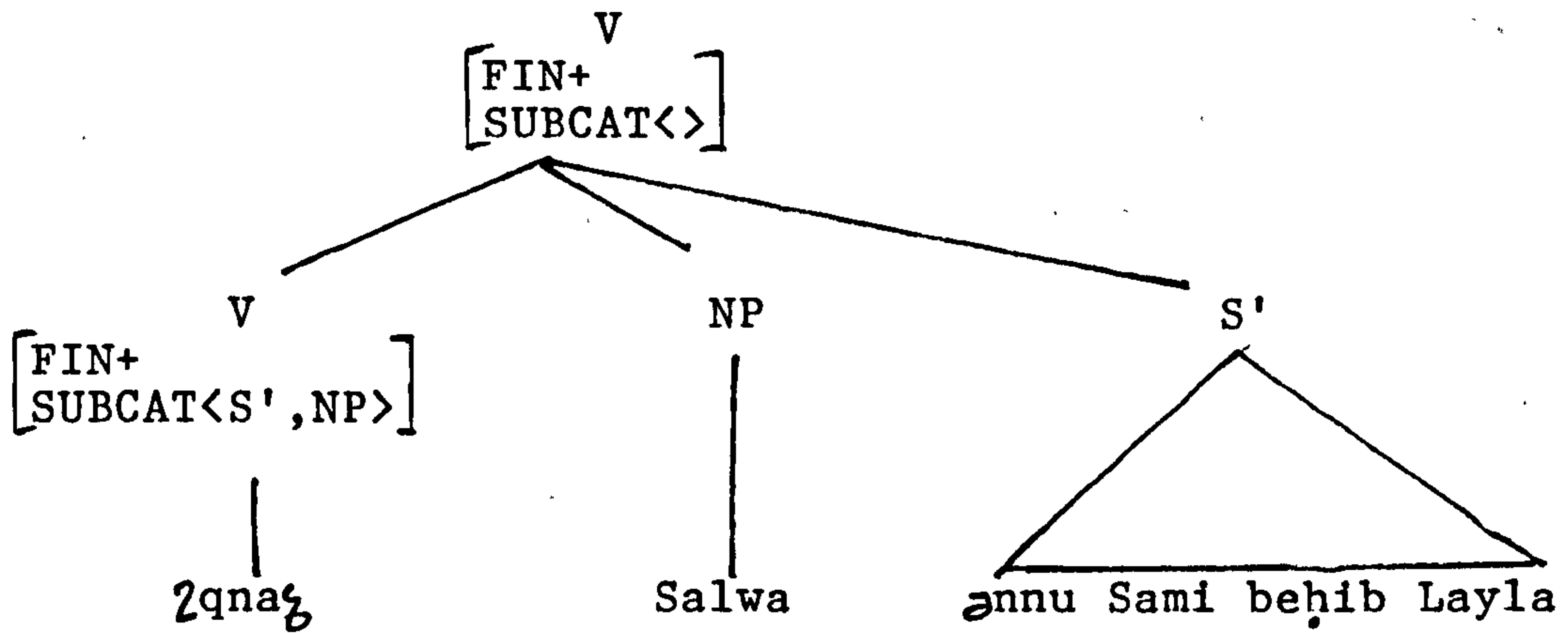
42. Aḡmed 2qnaḡ Salwa annu Sami beḡib Layla  
 Ahmed convinced-3SGM Salwa that Sami likes-3SGM Layla  
 'Ahmed convinced Salwa that Sami likes Layla'

The verb 2qnaḡ (42) has the following category:

43. V[FIN+,SUBCAT<S',NP>]

This category will interact with the head-complement rule and the two universal principles to give the tree in (44):

44.



Having discussed the internal structure of VP's in their simple forms and the possible complements which they take, we turn now to look at VP's involving clitics.

2.3. Verb Phrases involving Clitics:

An important fact about Syrian Arabic (SA) is that a non-pronominal object in a subject initial clause cannot be replaced by a pronoun. Consider the following example:

45. \*Aḥmed ḥab hyyeh  
 Ahmed loved-3SGM she

Instead of (45), (46) is required. Here, the verb hosts a clitic agreeing with a following optional pronoun:

46. a. Aḥmed [ḥabba hyyeh]  
 Ahmed loved-3SGM-3SGF she  
 'Ahmed loved her'
- b. Aḥmed [ḥabba ]  
 Ahmed loved-3SGM-3SGF  
 'Ahmed love her'

It should be noted that when a pronoun is present, we have an example of so-called clitic doubling. When there is no overt pronoun it is assumed that there is an empty pronoun as is the situation with (46b).

Moreover, examples such as (47) are ill-formed because a verb+clitic construction cannot be followed by a non-pronominal NP:

47. \*Aḥmed ḥabba                      Salwa  
       Ahmed loved-3SGM-3SGF Salwa

These facts suggest that a clitic occurs if and only if the clause contains a pronominal complement. However, the data in (48) below suggests that the above fact is inaccurate. Let us examine this point by giving examples involving 'Prepositional Clitic Doubling'. Such clauses contain a preposition la:

48. a. Aḥmed [ḍaraba                      la Salwa]  
       Ahmed hit-3SGM-3SGF to Salwa  
       'Ahmed hit Salwa'
- b. \*Aḥmed ḍarab                      la Salwa  
       Ahmed hit-3SGM to Salwa

Note that instead of an NP complement (which we would expect) we have a PP complement headed by la and a clitic agreeing with the object of la. (48a) is a well-formed example of prepositional clitic doubling, in contrast (48b) is ungrammatical because the verb should host a clitic.

We now proceed to look at the range of Syrian clitics and to argue that they are in fact clitics. Consider the following table:

49.	<u>Personal Pronouns</u>	<u>Clitics</u>
	huweh(3SGM) 'he'	-o
	hyyeh(3SGF) 'she'	-a
	hənnəh(3PL) 'they'	-on
	ʔana (1SG) 'I'	-i
	nahneh(1PL) 'we'	-na
	ʔanteh (2SGM) 'you'	-k
	ʔanti (2SGF) 'you'	-ek/ki
	ʔantim(2PL) 'you'	-kon

These clitics are always attached to preceding words, as the following examples illustrate:

50. a.	ḍarab-o	b.	ḍarab-a	c.	ḍarab-on
	hit-3SGM		hit-3SGF		hit-3PL
	'he hit him'		'he hit her'		'he hit them'
d.	ḍarab-ni	e.	ḍarab-na	f.	ḍarab-k
	hit-1SG		hit-1PL		hit-2SGM
	'he hit me'		'he hit us'		'he hit you'
g.	ḍarab-ek	h.	ḍarab-kon		
	hit-2SGF		hit-2PL		
	'he hit you'		'he hit you'		

The data in (50) shows that we have eight forms of clitics corresponding to the eight personal pronouns. But clitics differ from these pronouns in that free pronominal forms occur in subject and object positions, whereas clitics have to be attached to a verb, (as will be discussed in later chapters) a



preposition or a noun. That is, clitics can only mark an object dependency.

Before we look at clitics in detail, we will first discuss the distinction between clitics and inflections.

### 2.3.1. Clitics VS. Inflections:

Here, we examine the status that the items we are concerned with are in fact clitics and not inflections. It is difficult to decide whether an item is a syntactically independent word or an affix, since two kinds of bound morphemes (i.e. clitics and inflections) in many languages can be attached to a word or an affix. In Syrian, there are three types of inflectional affixes attached to three different stems as in (51) below:

51. (i) nouns are inflected for number and gender  
(masculine/singular, feminine/singular,  
plural/masculine or feminine)
- (ii) adjectives are inflected for number and gender  
(masculine/singular, feminine/singular, plural/  
masculine or feminine)
- (iii) verbs are inflected for:
- a. Person (First, Second, Third)
  - b. Number and Gender (MASC,  
FEM, PL)
  - c. Tense (Perfect & Imperfect)
  - d. Mode (Indicative,  
Subjunctive, Imperative)

The inflected word in Syrian, moreover, can be distinguished either by internal changes in form or by affixes. The plural of the adjective tawil 'long', for example, is formed by changing it internally to twal; whereas the plural of the adjective ṭṣan 'thirsty' is formed by adding the suffix -in as in ṭṣanin, and the base inflection is formed without any affixation. The base inflection of verbs, for example, is either the third person masculine/singular perfect or the masculine/singular imperative. The base inflection of nouns is the singular; and masculine/singular of adjectives.

Since there are two different types of bound morphemes, namely clitics and inflections, attached to words in Syrian, criteria are needed to distinguish between them. Zwicky and Pullum (1983) suggest six criteria distinguishing clitics from inflectional affixes, which are applicable to English in particular and other languages including Syrian in general. These criteria are as follows:

52. a. Clitics can exhibit a low degree of selection with respect to their hosts, while affixes exhibit a high degree of selection with respect to their stems.
- b. Arbitrary gaps in the set of combinations are more characteristic of affixed words than of clitic groups.
- c. Morphophonological idiosyncrasies are more characteristic of affixed words than of clitic groups.
- d. Semantic idiosyncrasies are more characteristic of affixed words than of clitic groups.

- e. Syntactic rules can affect affixed words, but cannot affect clitic groups.
- f. Clitics can attach to material already containing clitics, but affixes cannot.

Most of the criteria above can be applied to Syrian. To begin with Criterion A, clitics can be attached to three different categories (i.e. verbs, nouns, prepositions) in Syrian, satisfying the criterion that clitics can have a low degree of selection with respect to their hosts. The following examples are relevant here:

- |        |                 |             |            |
|--------|-----------------|-------------|------------|
| 53. a. | ʔstaralo        | b. sayyarto | c. mənno   |
|        | bought-3SGM     | car-3SGM    | from-3SGM  |
|        | 'he bought him' | 'his car'   | 'from him' |

Since the same particle -o can be attached to three different categories, it is probably a clitic. Inflectional affixes, on the other hand, exhibit a high degree of selection with respect to their stems. This means that inflectional affixes must be attached to one lexical category only. That is, the adjectival plural markers cannot appear with nouns and vice versa. The following examples are relevant here:

- |        |             |            |             |             |
|--------|-------------|------------|-------------|-------------|
| 54. a. | mufideh     | b. mufidin | c. ʔugaʔa   | d. ʔugaʔan  |
|        | useful(Fem) | useful(PL) | brave(Fem)  | brave(PL)   |
|        | 'useful'    | 'useful'   | 'brave'     | 'brave'     |
| e.     | bant        | f. banat   | g. ʔameleh  | h. ʔamlat   |
|        | girl(Fem)   | girls(PL)  | worker(Fem) | workers(PL) |
|        | 'a girl'    | 'girls'    | 'worker'    | 'workers'   |



55. a. bənt            b. \*bəntin        c. ʒameleh        d. \*ʒamlan  
       girl(Fem)        girls(PL)        worker(Fem)     workers(PL)  
       e. mufideh       f. \*mufidat       g. šugaʒa        h. \*šugaʒat  
       useful(Fem)     useful(PL)       brave(Fem)       brave(PL)

The examples in (55) show that adjectival plural endings cannot appear with nominal plural endings and vice versa.

Criterion b states that arbitrary gaps are unlikely to be found with host-clitic combinations. The following data is relevant here:

56. a. štarali            b. štaralk            c. štaralek  
       bought-1SG            bought-2SGM            bought-2SGF  
       'bought me'            'bought you'            'bought you'  
       d. štaralo            e. štarala            f. štaralna  
       bought-3SGM            bought-3SGF            bought-1PL  
       'bought him'            'bought her'            'bought us'  
       g. štaralkon        h. štaralon  
       bought-2PL            bought-3PL  
       'bought you'            'bought them'

The examples in (56) show that one particular host can take a whole range of clitics. This is true of any potential host, as noted in (53).

Looking now at inflectional affixes, such arbitrary gaps can be found in inflectional paradigms especially with first and third persons in the imperative form. The following data illustrate:



57.	<u>Perfect</u>	<u>Imperfect</u>	<u>Imperative</u>	<u>Meaning</u>
1SG	mšit	bamši	—	'to walk'
2SGM	mšit	btamši	mši	= =
2SGF	mšiti	btamši	mši	= =
3SGM	māši	byamši	—	= =
3SGF	māšyet	btamši	—	= =
1PL	mšina	bnamši	—	= =
2PL	mšitu	btamšu	mšu	= =
3PL	māšyu	byamšu	—	= =

Here we see that Syrian verbs cannot be inflected for imperatives in the first and third person both the singular and plural. It is clear, then, that inflections have arbitrary gaps.

Criterion c states that words are not phonologically or morphophonologically affected by a clitic. The attachment of clitics to the three categories (i.e. verb, noun, or preposition) is regular. The following data is relevant here:

58. a.	ḥabb-ni	b.	ḥabb-na	c.	ḥabb-k
	liked-1SG		liked-1PL		liked-2SGM
	'He liked me'		'He like us'		'He liked you'
d.	ḥabb-ek	e.	ḥabb-kon	f.	ḥabb-o
	liked-2SGF		liked-2PL		liked-3SGM
	'He liked you'		'He liked you'		'He liked him'

- |                |                 |
|----------------|-----------------|
| g. ḥabb-a      | h. ḥabb-on      |
| liked-3SGF     | liked-3PL       |
| 'He liked her' | 'He liked them' |

Where we can see that the form of the verb 'ḥab' remains the same. We would like to make it clear that the situation is the same with nouns and prepositions hosting clitics.

Inflectional affixes together with their stems, on the other hand, can show morphophonological idiosyncrasies. That is, they can have both regular and irregular forms. This is exemplified in the following examples:

- |        |                |             |    |            |            |
|--------|----------------|-------------|----|------------|------------|
| 59. a. | walad (SG)     | ḥawlad (PL) | b. | saḥa (SG)  | saḥat (PL) |
|        | 'boy'          | 'boys'      |    | 'an hour'  | 'hours'    |
|        | c. ṭawleh (SG) | ṭawlat (PL) | d. | saneh (SG) | snin (PL)  |
|        | 'table'        | 'tables'    |    | 'year'     | 'years'    |

The plural counterpart of the singular noun 'walad' in (59a), for example, is formed by the prefixation of ḥa and deletion of the vowel a intervening between the w and l. Whereas the plural version of the singular noun 'sa a' in (59b) is formed by the suffixation of t. It is clear, then, that inflections show morphophonological idiosyncrasies.

Criterion d states that clitics do not show semantic idiosyncrasies. This means that the meaning of the whole word is formed from the meanings of its part. The following examples are relevant here:

60. a.  $\dot{d}$ arab-on            b. sayyart-on            c. ma $\dot{g}$ -on  
       hit-3PL                    car-3PL                    with-3PL  
       'hit them'                'their car'                'with them'

The combination between the verb and the clitic in (60a), the noun and the clitic in (60b), and the preposition and the clitic in (60c) does not give a new meaning distinct from the original meaning of the host.

Inflectional affixes, on the other hand, show semantic idiosyncrasies. This means that the meaning of the inflected word is not always predictable from the meanings of the stems and the affix. The following examples illustrate:

61. a. qader                            b. Salwa qadera             $\dot{g}$ al  $\dot{g}$ i $\dot{s}$   
       faith                                Salwa capable-3SGF of cheating  
       'faith'                                'Salwa is capable of cheating'

Adding an inflection a to the noun qader as in (61b) will affect the meaning intended.

Criterion e states that clitics and their hosts cannot be treated as a unit by syntactic operations, whereas inflected verbs, nouns, and prepositions can. It is hard to see how this could be applied here, given that the host + clitic is rather different from the English example given by Zwicky and Pullum (1983). They suggest that 'no syntactic operations exist which treat a word combined with one of the clitics s or ve as a unit. Indeed, given the wide variety of hosts to which these clitics attach, it is hard to imagine what such an operation would be like.' All we can say here is that the host + clitic



in Syrian, unlike X + contracted auxiliary in English, is a syntactic unit, as we will see in later discussions.

Criterion f states that clitics can be attached to preceding words already having a clitic, but inflectional affixes cannot. There do not seem to be any Syrian examples corresponding to the examples given by Zwicky and Pullum (1983).

We conclude this subsection by noting that the majority of the criteria suggested by Zwicky and Pullum (1983) apply to Syrian and successfully differentiate clitics from inflections. We can conclude that the items we are considering are clitics and we will now provide an analysis.

### 2.3.2. An analysis of Clitics within VP's:

As noted earlier, clitics can be attached to verbs, prepositions, and nouns. But since we are concerned here with VP's, we will only look at verb+clitic combinations. Firstly, we will analyze examples involving simple clitic doubling, then proceed to provide an analysis for prepositional clitic doubling.

We will suggest following from Borsley's (forthcoming (b)) arguments that Syrian has a clitic (CL) feature which indicates what kind of clitic a head requires. More specifically, it



takes as its value a category that contains feature specifications such as person, number and gender. This feature will be utilized by the clitic rule which can be formulated as follows:

62. [ ~ CL ] -----> H[CL, α], α

(62) states that a category unspecified for the CL feature can immediately dominate a head with a clitic category as the value of its CL feature and the appropriate clitic.

Given the clitic rule, the verb in (46a) repeated in (63a) will have the category in (63b) :

63. a. Aḥmed [ḥabba hyyeh]

Ahmed loved-3SGM-3SGF she

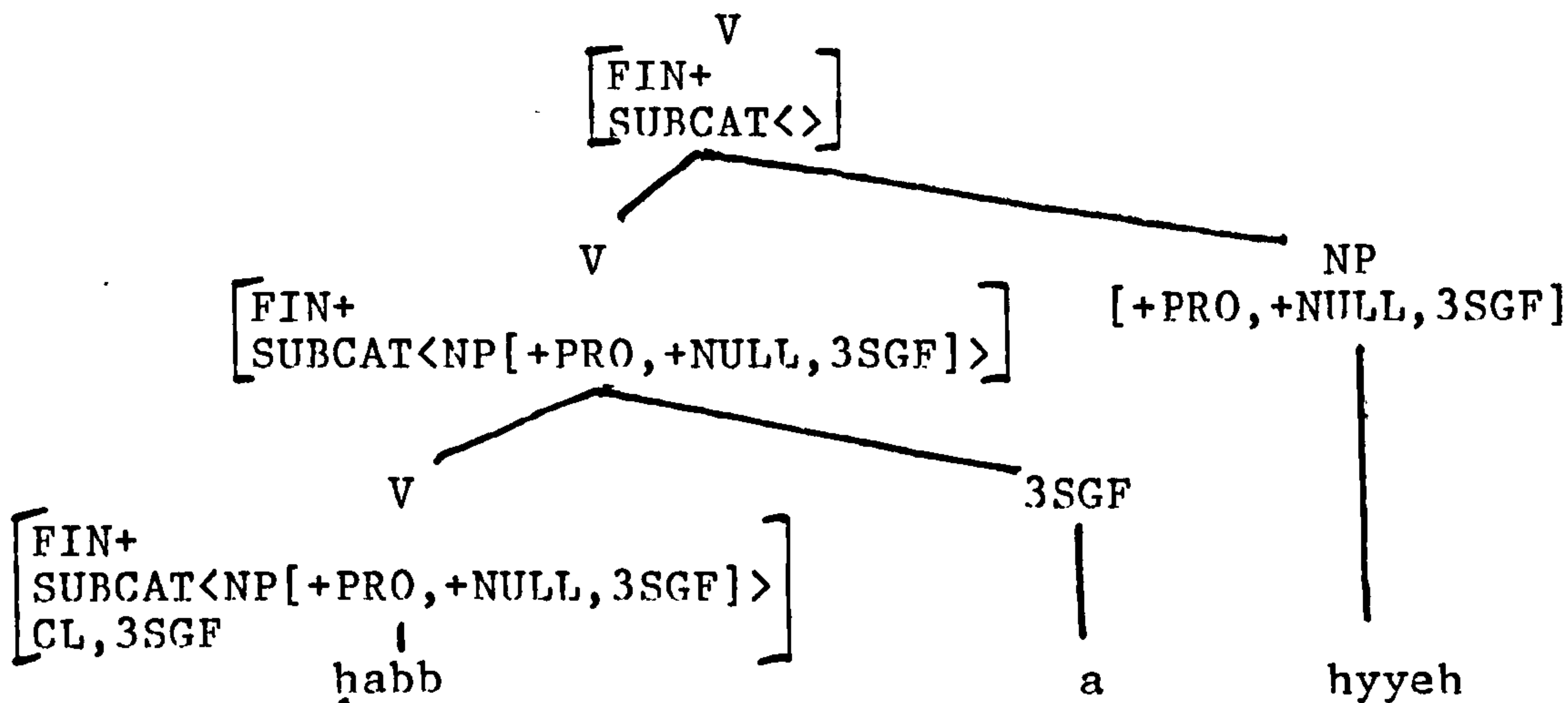
'Ahmed loved her'

63. b. V[FIN+; SUBCAT<NP[+PRO, +NULL, α]>; CL, α]

where α refers to person, number and gender feature specifications, and a [+NULL] NP is one that may be empty. The two 's ensure that the clitic and the pronoun agree.

As a result, trees such as the following are formed:

64.



The top part of the structure is licensed by the head-complement rule and the bottom part by the clitic-head rule.

Having introduced this analysis of clitics, we need to reformulate the Head-complement rule to make sure that a head combines first with a clitic before it combines with a complement. The rule can be reformulated as follows:

65. [SUBCAT<>]-----> H[ $\sim$ CL;SUBCAT<...>], C\*

We want also to stress that clitics always follow the head verb in Syrian by assuming the following 'Linear Precedence (LP) Rule':

66. [CL,  $\alpha$ ] < $\alpha$

This is similar to Borsley's (forthcoming) rule advocated for Welsh but with a significant difference. That is, clitics in Welsh always precede the head verb but in Syrian clitics, as noted above, follow the head verb.

Having argued that the object NP following the combination of verb+clitic should be pronominal, we can say that the categories we have discussed earlier in section two should be NP[-PRO] because they do not involve clitics. In other words, the category in (18) repeated in (67a) will be revised as in (67b):

67. a. V[FIN+;SUBCAT<NP>]

b. V[FIN+;SUBCAT<NP[-PRO]>]

We can assume that the category in (63b) can be derived from the category in (67b) by the specific lexical rule given in (68):

68. V[FIN+;SUBCAT<...,NP[-PRO]>...]======>  
 V[FIN+;SUBCAT<...,NP[+PRO,+NULL,⌘]>;CL,⌘...]

We can look next at prepositional clitic doubling. In order to analyze structures such as V+CL+LA+NP[-PRO], we need to posit, following Borsley (personal communication), the categories in (63b) above without the feature [FIN+] and categories like the following:

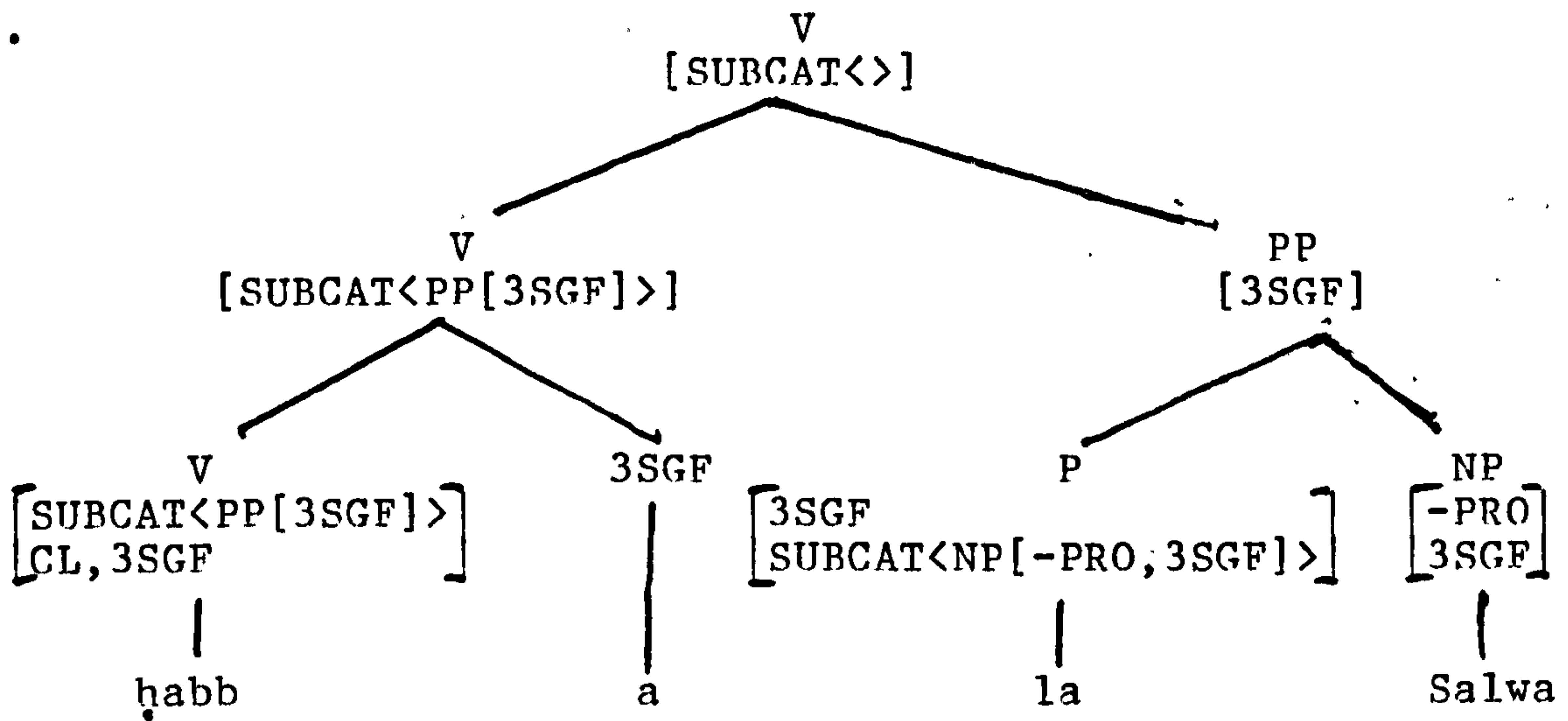
69. V[SUBCAT<PP[⌘]>;CL,⌘]

All we then need to complete the analysis is the following category for la:

70. P[SUBCAT<NP[-PRO;⌘]>;⌘]

The Head Feature Principle will ensure that a PP containing person, number and gender features will be headed by a P with the same features. The category in (70) will ensure that the complement of la will have whatever person, number and gender features la itself has. The result will be structures of the following form:

71.



We can assume that the category in (70) could be derived from the category in (63b) by the following lexical rule:

72.  $V[\text{SUBCAT}\langle\dots, \text{NP}[+\text{PRO}, +\text{NULL}, \alpha]\rangle; \text{CL}, \alpha] \text{====} \Rightarrow$   
 $V[\text{SUBCAT}\langle\dots, \text{PP}[\alpha]\rangle; \text{CL}, \alpha]$

As we noted above, this rule applies to categories such as those in (63b) and (70). These require a clitic and a pronoun agreeing with the clitic (which are themselves the product of a lexical rule) and give categories which require a clitic and a PP agreeing with the clitic.

Having discussed the internal structure of VP's with and without clitics, we can proceed to look at the order of complements.



#### 2.4. The Ordering of Complements:

We can suggest, following Pollard and Sag (1988:169), that every language has a 'Constituent Ordering Principle'(COP). Since we are concerned with Syrian, then we can say that what we have is a  $COP_{\text{Syrian}}$ . There are two important points to consider here. Both GPSG and HPSG (and the Government and Binding theory for that matter) assume separate ID and LP statements. For HPSG, the LP statements of a language constitute its constituent ordering principle. These LP-rules state constraints on the ordering of the daughters that may appear in constituent structures. But, unlike GPSG, in HPSG the order of the constituents can be related to a grammatical hierarchy of dependent elements. Since head verbs precede their complements, the phrasal sign would have an LP constraint as follows:

##### 73. Linear Precedence Constraint 1(LP1)

$V < [ ]$

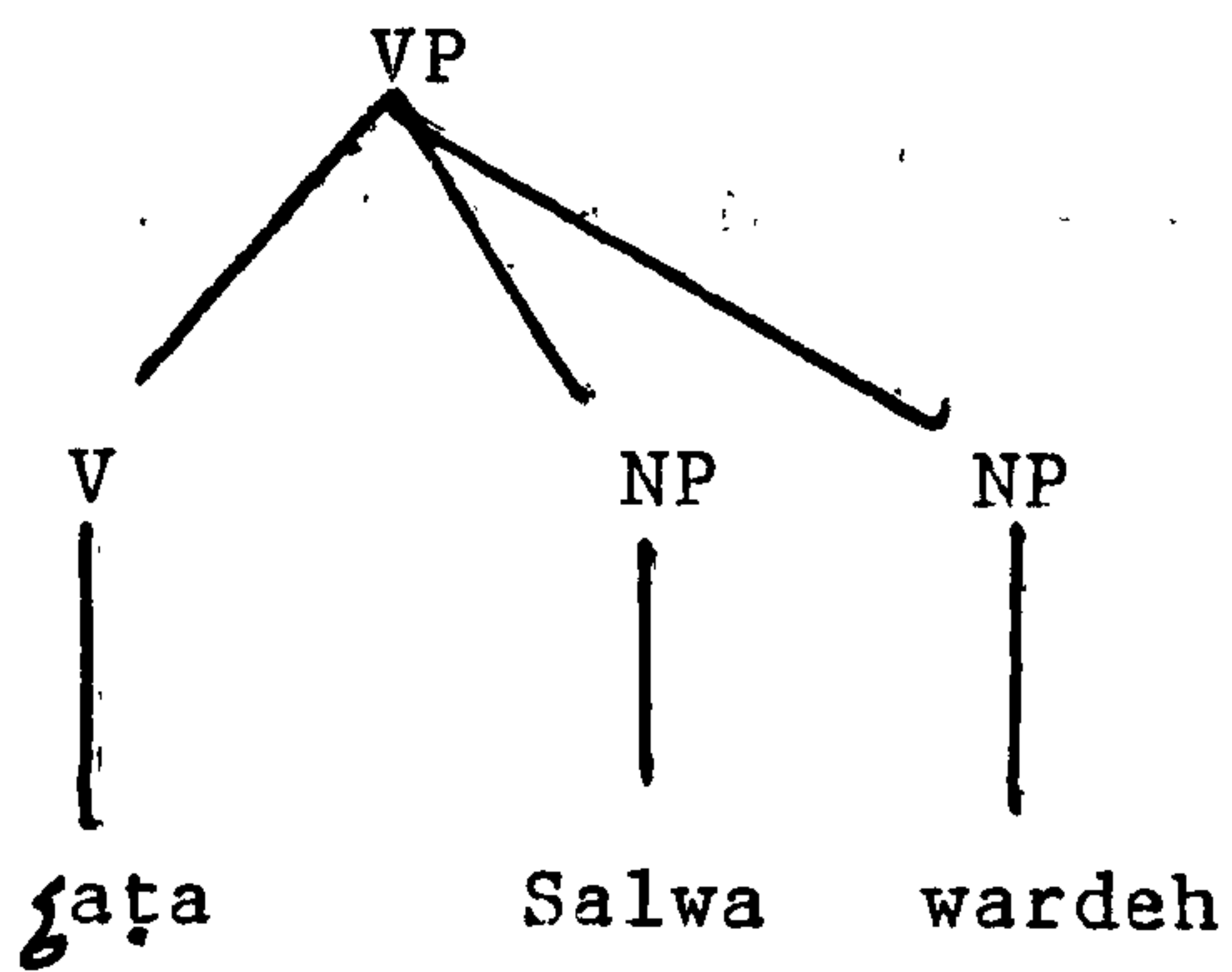
The LP constraint in (73) says that head verbs are phrase-initial. This is true with other phrases as we will see later when we look at PP's, AP's, and NP's.

Since head verbs are phrase-initial, any complement within that phrase must follow the head. Syrian phrases however may consist of more than one complement and these will occur in a prescribed order. If there were no other LP rules sister complements would be freely ordered with respect to each other. Consider the following sentences:

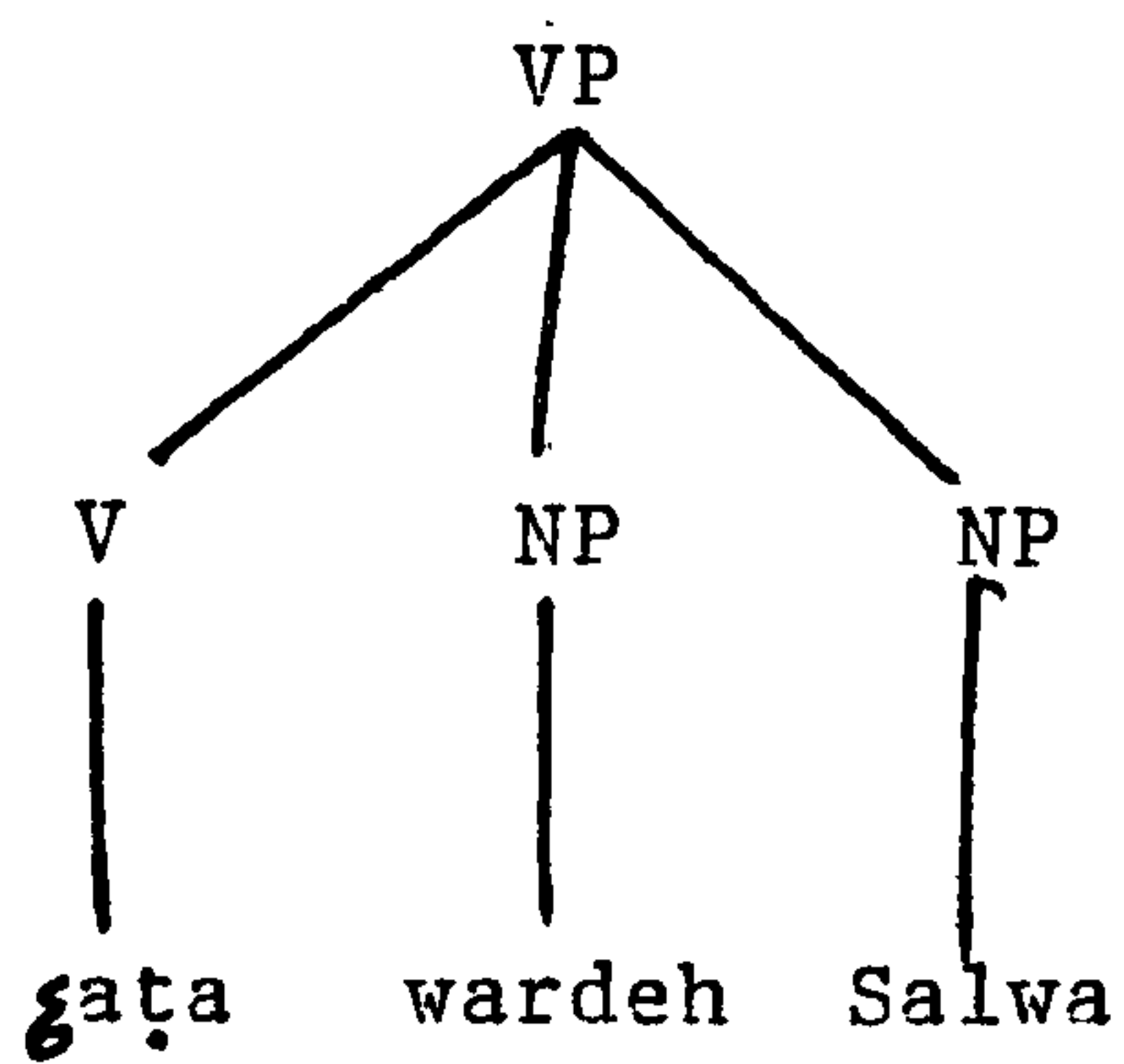
74. a.  $\xi a\dot{\tau}a$  Salwa wardeh  
 gave-3SGM Salwa flower  
 'He gave Salwa a flower'
- b. \* $\xi a\dot{\tau}a$  wardeh Salwa  
 gave-3SGM flower Salwa
75. a. waḍ $\xi$  l- ktab  $\xi al$  ṭawleh  
 put-3SGM the book on-the table  
 'He put the book on the table'
- b. \*waḍ $\xi$   $\xi al$  ṭawleh l- ktab  
 put-3SGM on-the table the book
76. a.  $\mathcal{Z}qna\xi$  Maha  $\mathfrak{a}nnu$  tsafir  $\xi l-\mathfrak{S}am$   
 convinced-3SGM Maha that travel to Damascus  
 'He convinced Maha to travel to Damascus'
- b. \* $\mathcal{Z}qna\xi$   $\mathfrak{a}nnu$  tsafir  $\xi al-\mathfrak{S}am$  Maha  
 convinced-3SGM that travel to Damascus Maha
77. a.  $\mathfrak{t}aref$  la Ahmed  $\mathfrak{a}nnu$  Salwa sarqt l- qalim  
 confessed-3SGM to Ahmed that Salwa stole the pen  
 'He confessed to Ahmed that Salwa stole the pen'
- b. \* $\mathfrak{t}aref$   $\mathfrak{a}nnu$  Salwa sarqt l- qalim la Ahmed  
 confessed-3SGM that Salwa stole the pen to Ahmed

These sentences have the following constituent structures where multiple complements occur in a fixed order:

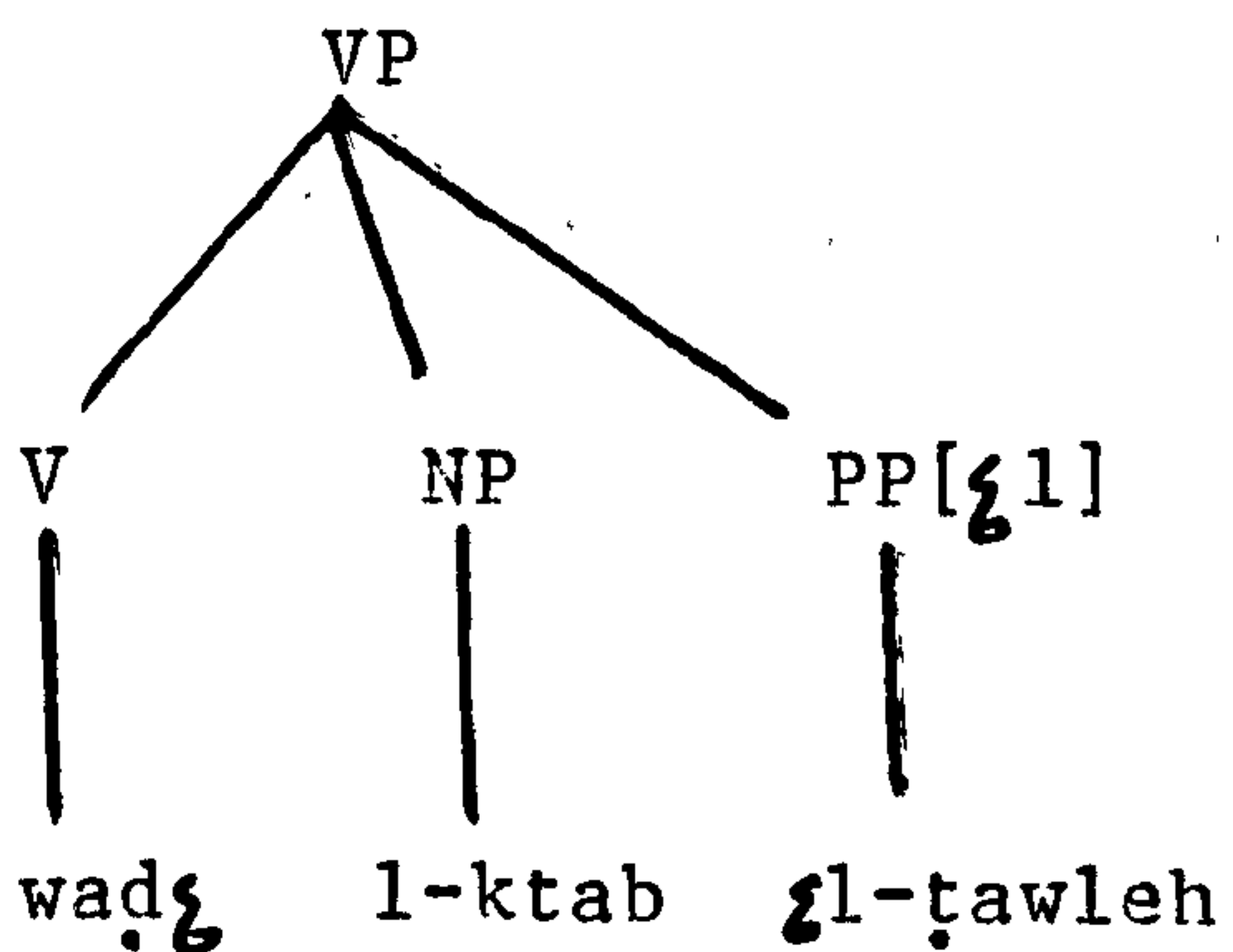
78. a.



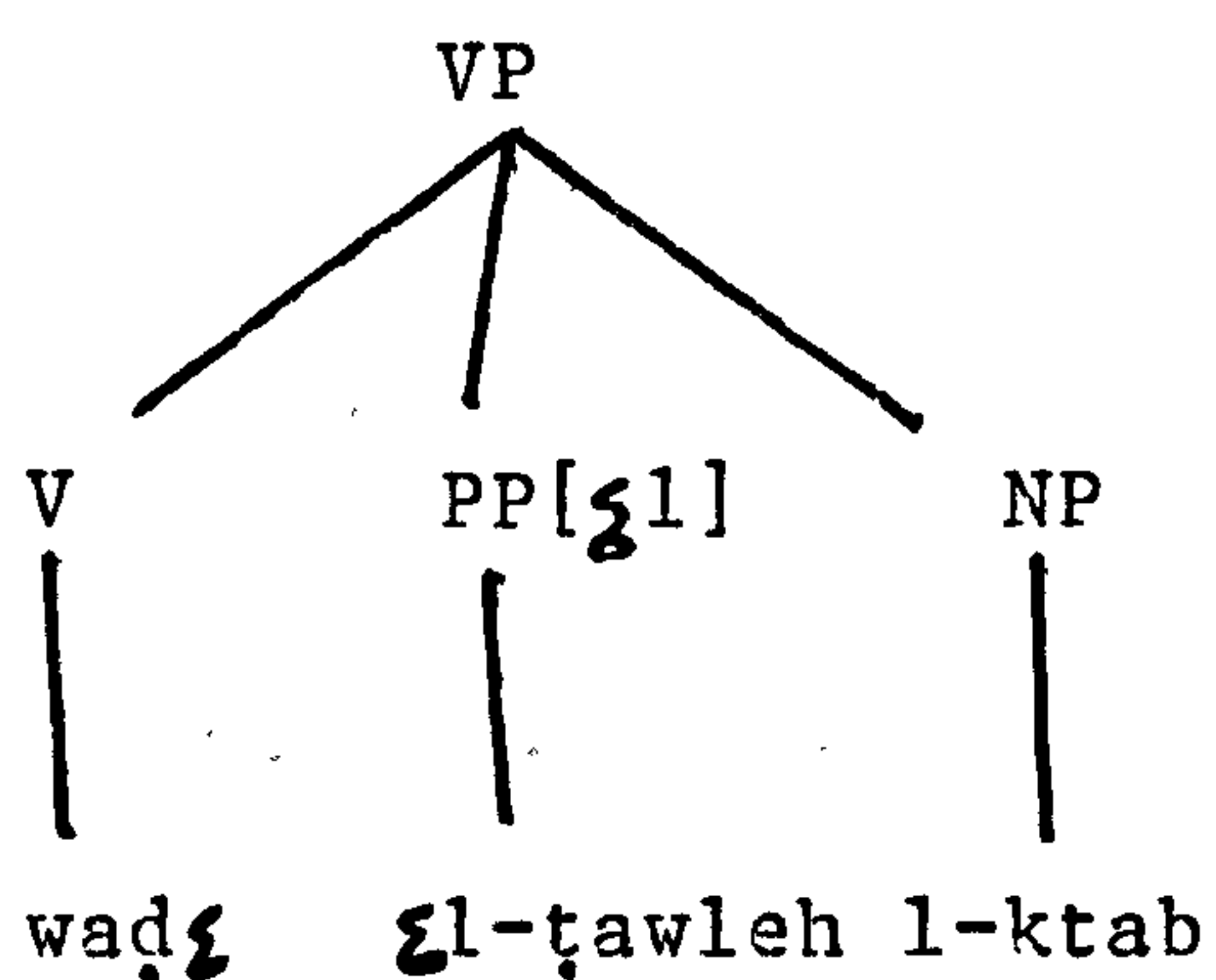
b.\*



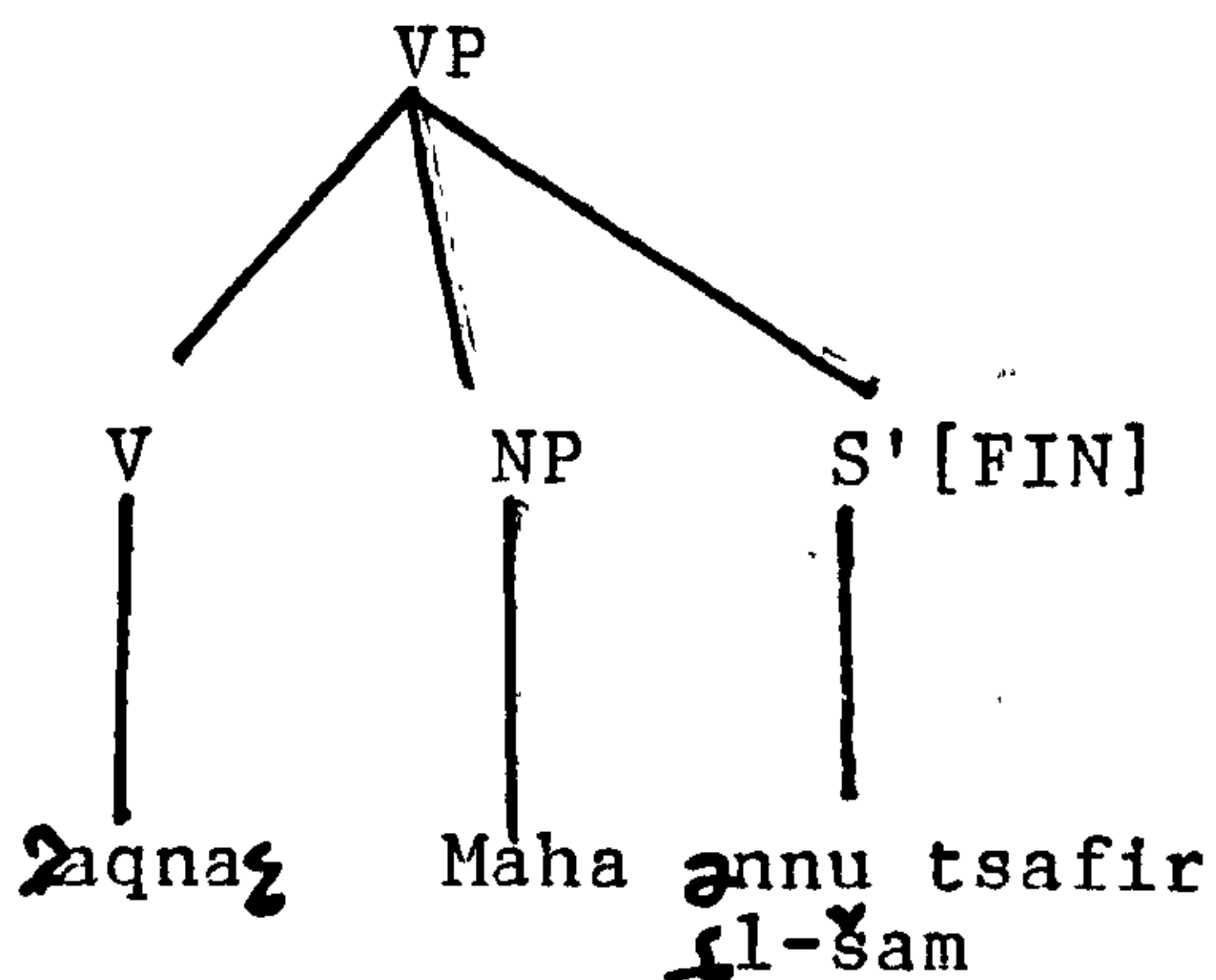
79. a.



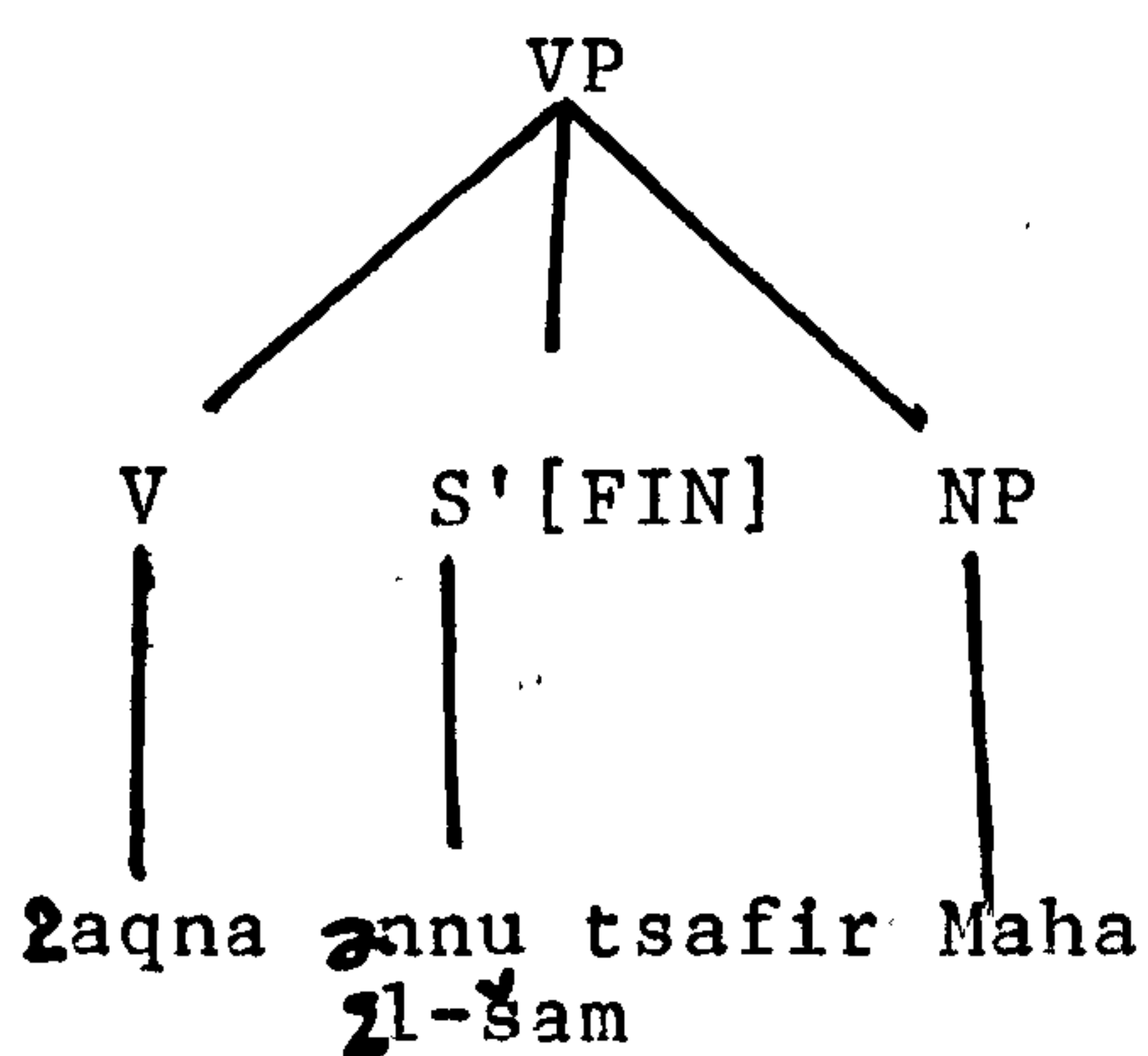
b.\*



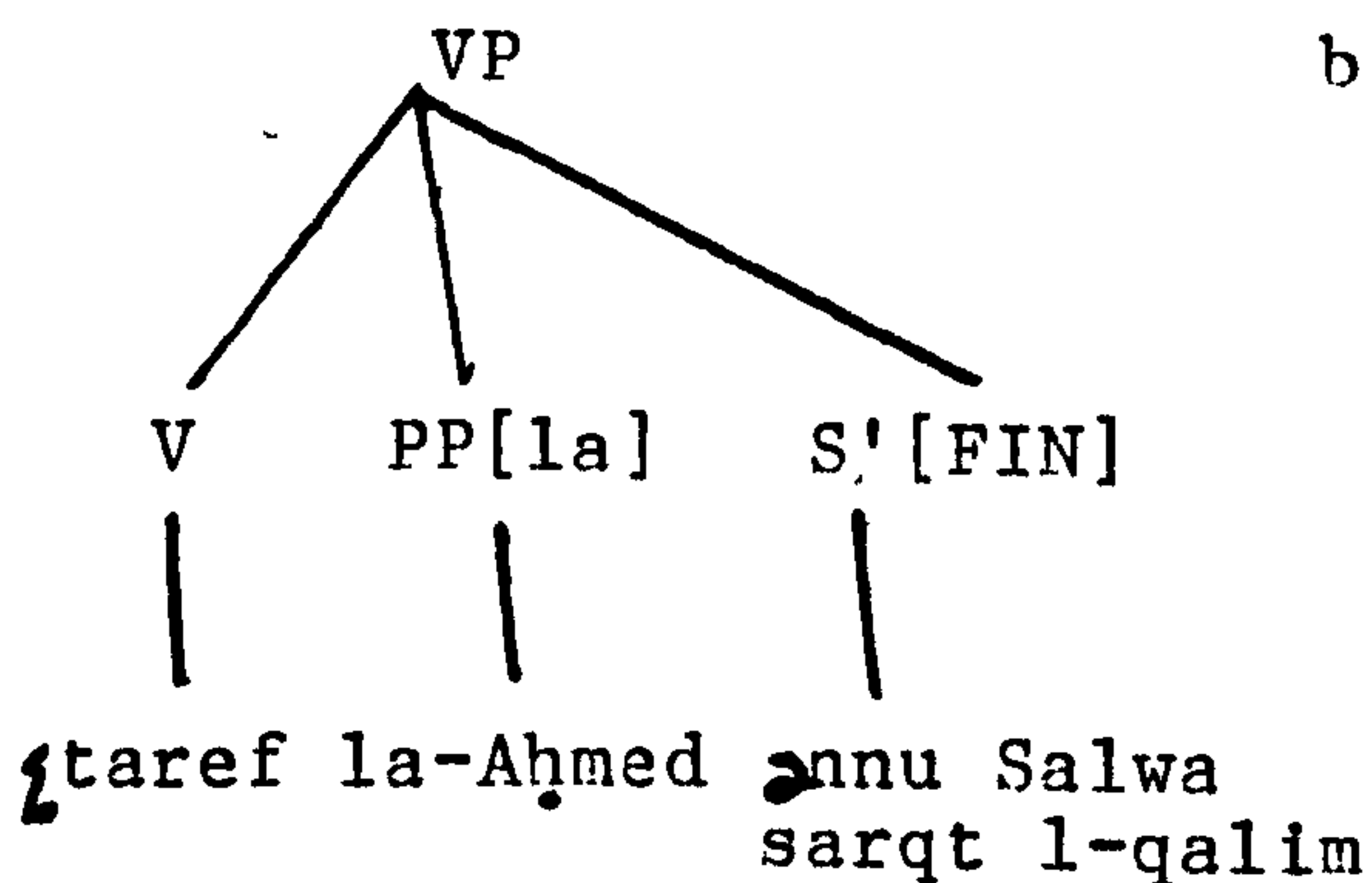
80. a.



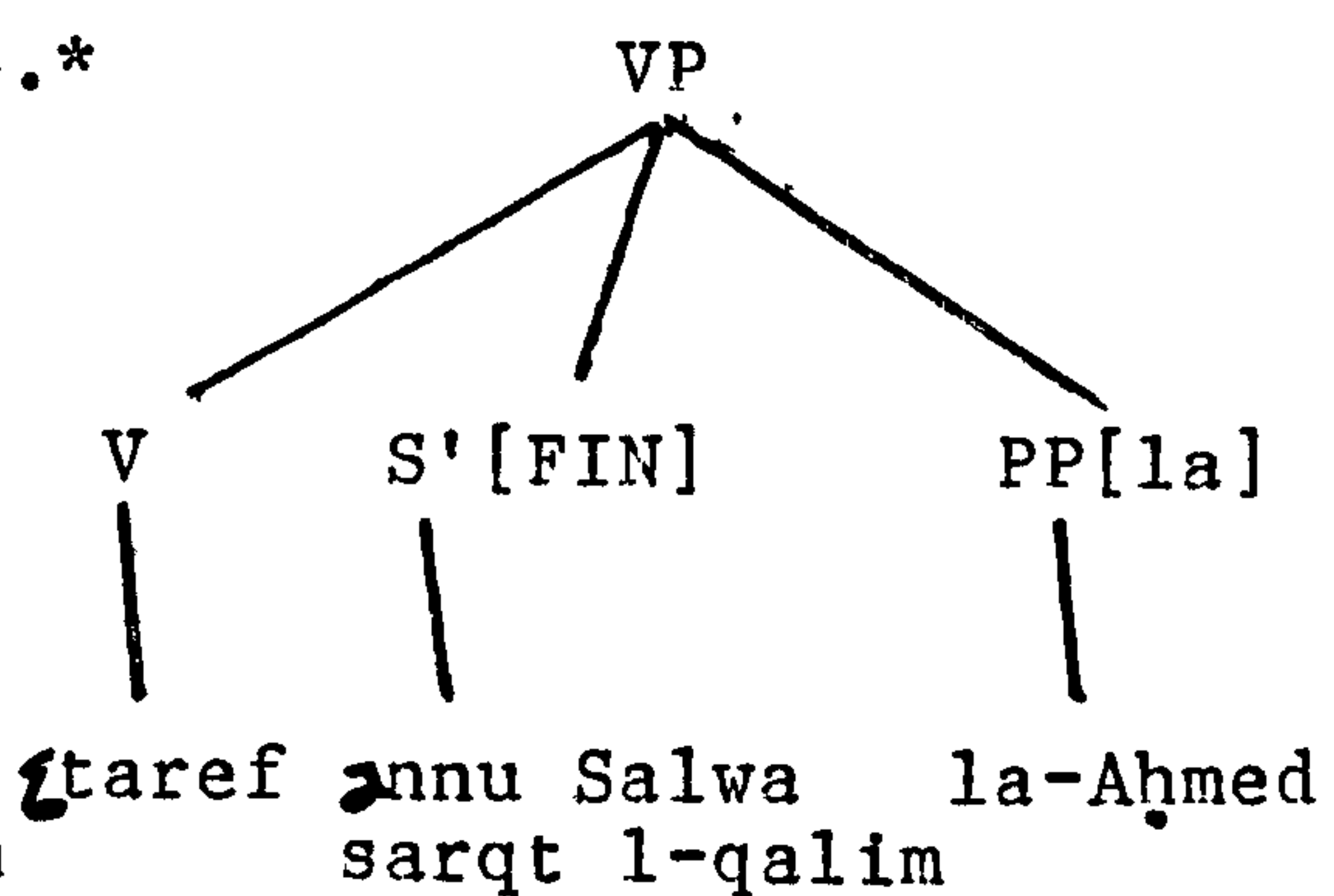
b.\*



81. a.



b.\*



The structures above indicate that less oblique complements precede more oblique complements as anticipated in Pollard and Sag (1988). This generalization can be stated as follows:

82. LP2

COMPLEMENT << COMPLEMENT

[Pollard and Sag (1988:174)]

The symbol << indicates a special kind of restricted linear precedence constraint, and posits that any complement daughter must precede any of its more oblique sister constituents.

Having dealt with the ordering of complements, we turn now to the positioning of adjuncts. All types of complements within VP's precede adjuncts except S'-complement. The following example illustrates this:

83. Samira qalit m-barḥa annu Aḥmed raḥ ḡl- bet  
 Samira said-3SGF yesterday that Ahmed went-3SGM to house  
 'Samira said yesterday that Ahmed went home.'

This shows that a clausal complement can follow an adjunct. We want to show however that other types of complements cannot follow adjuncts. Consider the following examples:

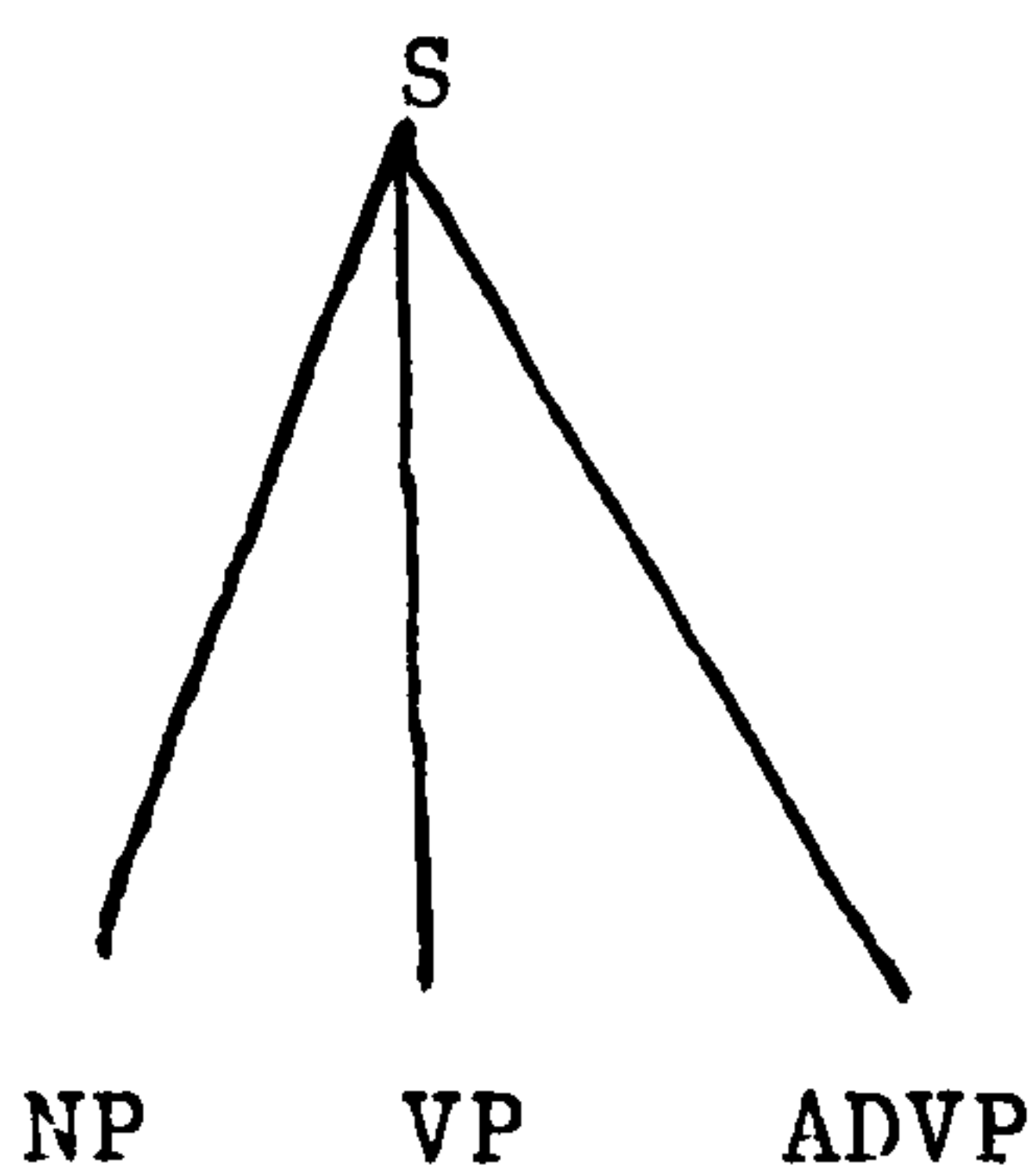
84. a. \*Samir ḡaṭa Salwa m-barḥa ktab  
 Samir gave-3SGM Salwa yesterday book  
 b. \*Nawal waḡaṭt m-barḥa l- ktab ḡal- ṭawleh  
 Nawal put-3SGF yesterday the book on-the table  
 c. \*Haytham raḥ m-barḥa ḡl- madraseh  
 Haytham went-3SGM yesterday to-the school



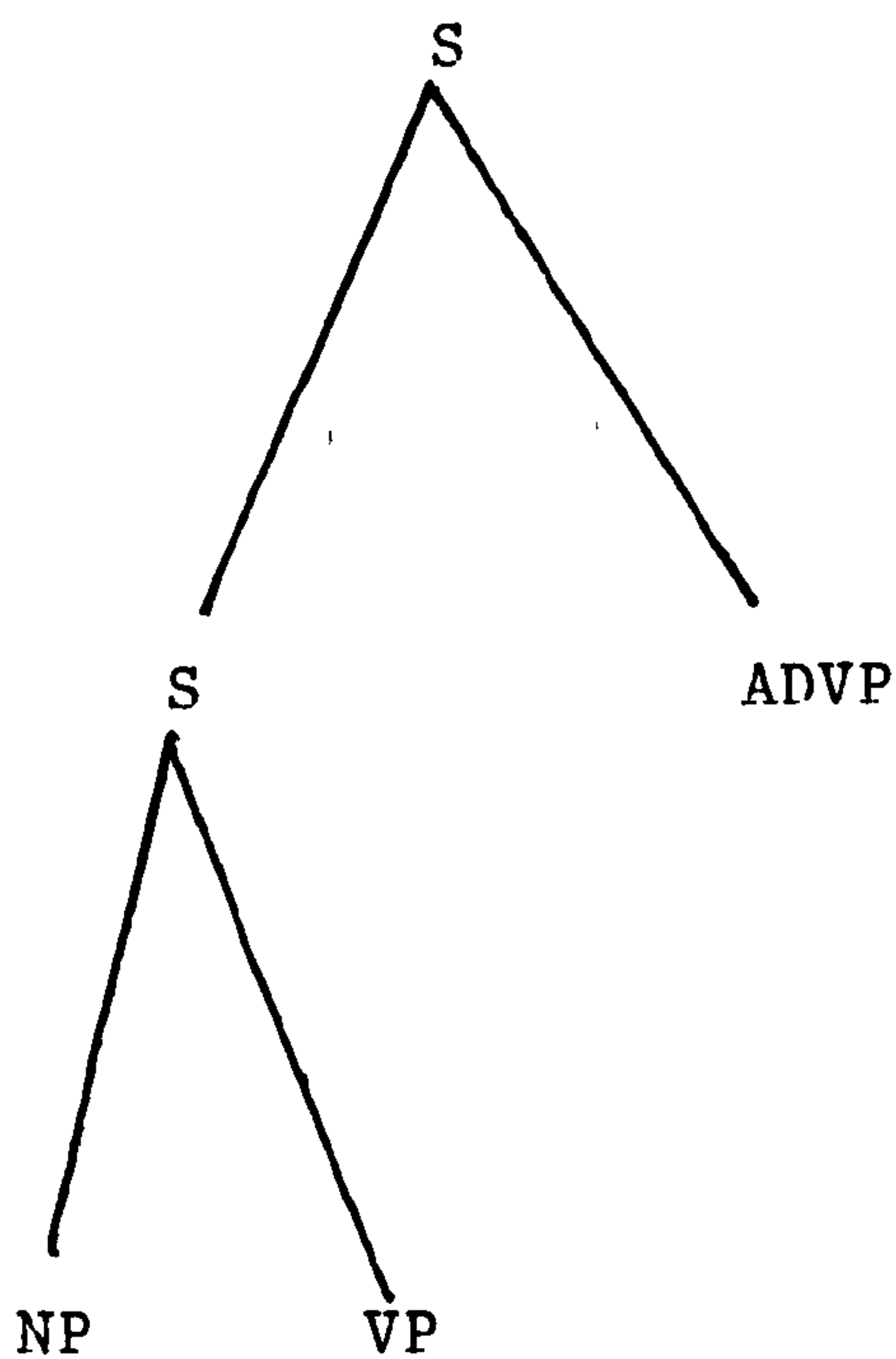
The examples in (84) show that phrasal complements cannot follow adverbial adjuncts.

Given that adjuncts within VP's must follow their complement sisters except when we have S'-complements, one might conclude that adjuncts can be positioned higher in the tree. In other words, one might think that they can be attached either to S or to VP. The following structures respectively illustrate this:

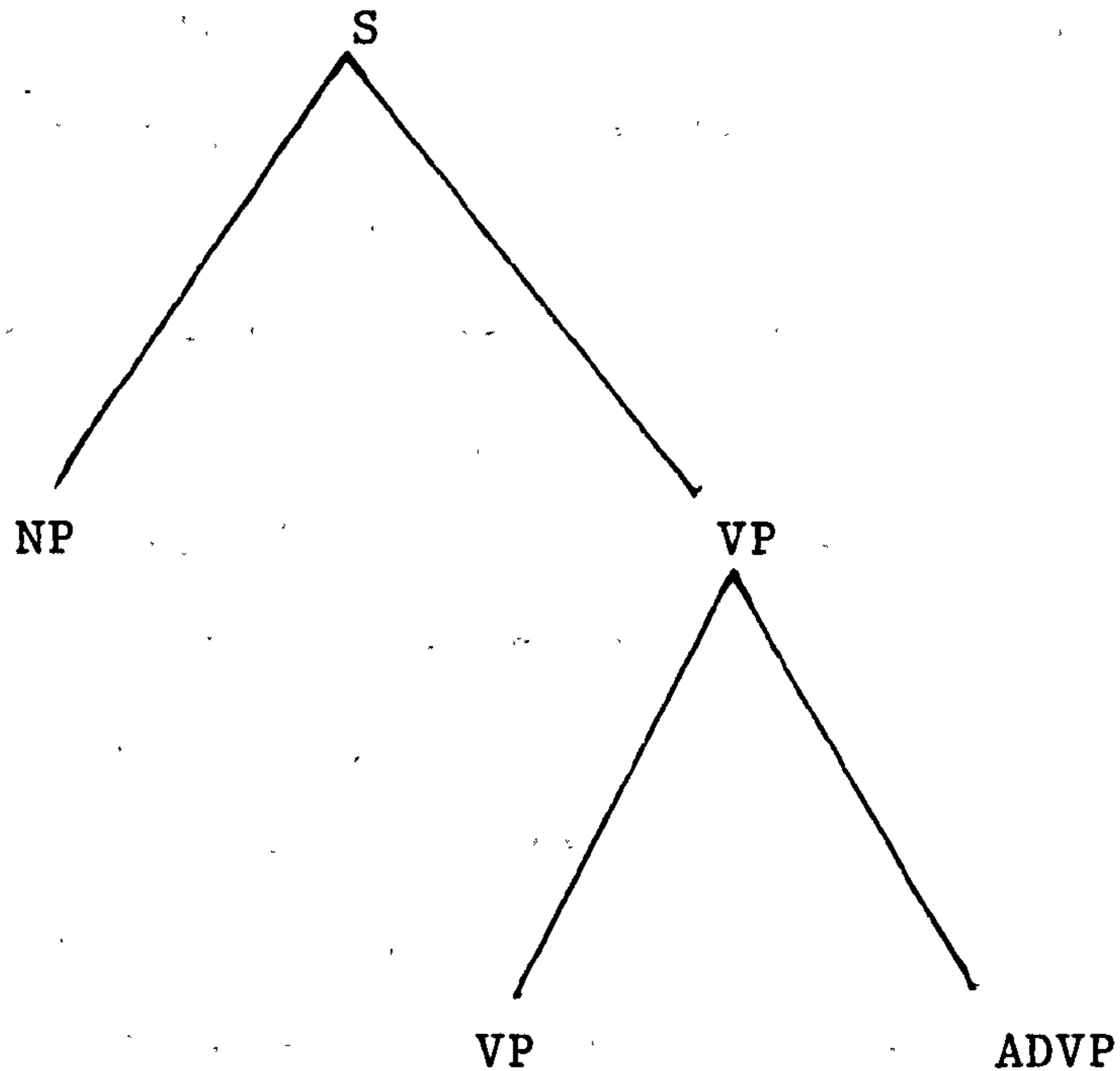
85. a.



b.

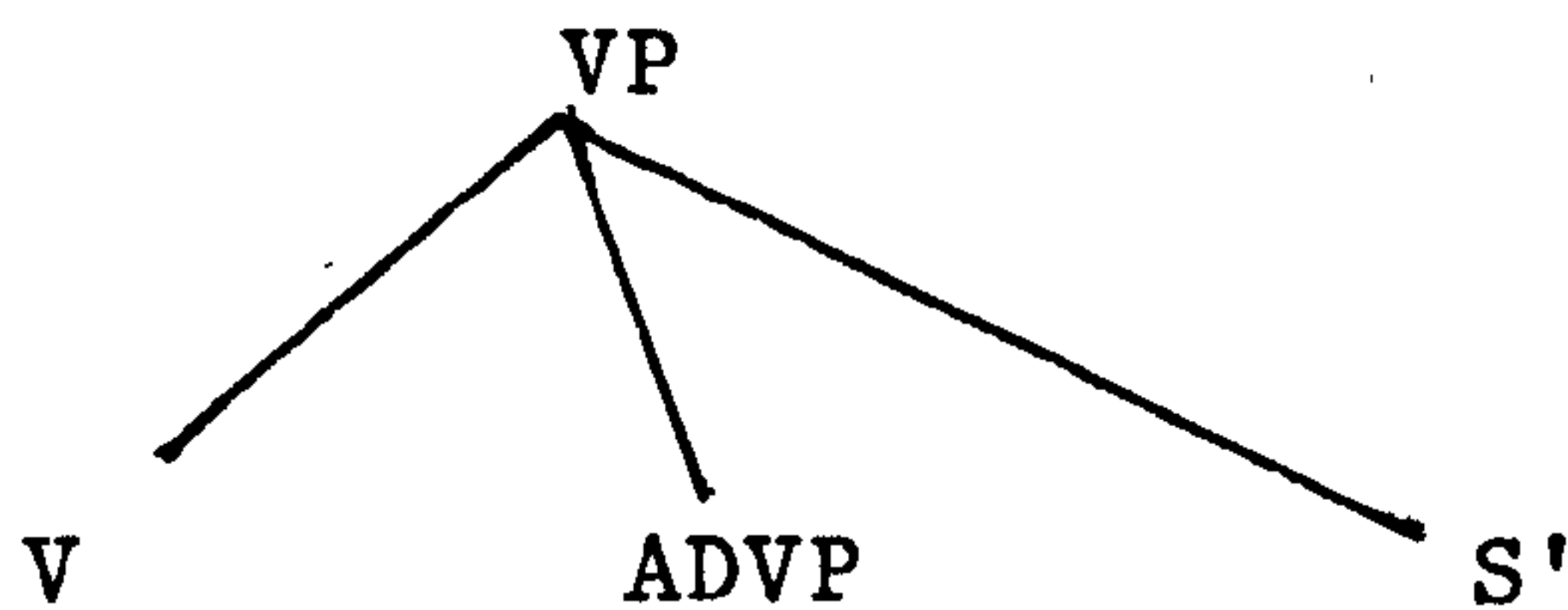


86.



But since, as we noted earlier, that S'-complement follows adjuncts, then adjunct phrases can be considered as daughters of VP. This is sketched in (87) below:

87.



A structure such as (87), following Pollard and Sag (1988:chapter 6), can be analysed in terms of the attribute 'ADJUNCTS-DAUGHTERS'. That is, adjuncts are the realization of an ADJUNCTS feature which indicates what kind of adjuncts heads can combine with. They can either be sisters of a head or 'aunts'. The order is not important here. To put it differently, what is important is the ADJUNCTS feature on the

head. This ADJUNCTS feature will have as its value, unlike the case with complements, as many adjuncts as possible.

Having introduced adjuncts, we can ask what type of LP constraints can govern the ordering of adjuncts relative to complements. In other words, how do we analyze adjuncts? Following Pollard and Sag (1988:181), we need to reformulate LP2 to include adjuncts. If we stipulate that adjuncts are more oblique than complements, then LP2 which states that less oblique complements precede more oblique complements, can be extended to specify that complements can also precede adjuncts. Note that S'-complements which follow adjuncts are excluded from the domain of application of the generalization of LP2 reformulated in (88) below:

88. LP:

COMPLEMENT[MAJ-V] << LEX-

The generalization in (88) states that NP, PP and AP complements can be ordered before more oblique sister phrases, whether they are complements or adjuncts.

Because the formulation excludes S'-complement as being positioned before more oblique sisters, it correctly permits examples such as (83), and its reordered counterpart (89):

89. Samira qalit      annu Ahmed rah      ğ1- bet      m-barħa  
Samira said-3SGF that Ahmed went-3SGM to house yesterday  
'Samira said that Ahmed went home yesterday.'

To summarize this section, we argued that adjuncts in general should follow their complements and that complements must be closer to their heads than adjuncts.

## 2.5. Summary:

We can conclude this chapter by saying that we have given an analysis of VP's within the revised version of HPSG advanced in Borsley (1987 and forthcoming (a)). In section one, we have argued that subject initial clauses are ordinary SVO sentences and that the head verb together with its complements form a VP constituent. In section two, we have considered the possible complements that the Syrian verb can subcategorize. We have also argued that the lexical head must precede its sister constituents. In section two, subsection one, we have discussed the differences between complements and adjuncts and we have concluded that adjuncts must follow complements except in cases of S'-complements where an adjunct can be positioned before the complement in question. In section three, we have considered clitic constructions and distinguished them from inflections and provided an analysis for clitics within VP's. In section four, we have suggested that complements occur in a fixed order. We have also introduced syntactic and lexical rules. In brief, it is clear from the data above that the revised version of HPSG can provide a satisfactory analysis of Syrian VP's.



## CHAPTER THREE

### Prepositional Phrases

#### 3.0. Introduction:

In the preceding chapter, our main concern was with the internal structure of VP's. We looked at clitics and considered adjuncts. In this chapter, we will be examining Syrian prepositional phrases. As in the last chapter, clitics will be a major concern.

The organization of this chapter is as follows. In section one, we will consider a variety of Syrian prepositions and argue on a number of grounds that they are heads of prepositional phrases (PP's). In section two, we will be concerned with the possibility of combining the definite article l- with preceding prepositions. Section three will be devoted to a discussion of the internal structure of PP's in particular the possibility of prepositions taking NP's, PP's, or S complements. In section four, we will deal with clitics in PP's. In section five, we will consider different types of phrases functioning as specifiers of PP's. In section six, we will discuss the distribution of prepositional phrases arguing that they can appear as complements to verbs, nouns, etc., and show that they can also function as adjuncts and predicates. Finally, in section seven, we will offer some concluding remarks about the approach we have explored.

### 3.1. Prepositions as Heads:

There are a variety of prepositions in Syrian. The most common and important ones are the following:

- |       |                    |    |                 |    |                     |
|-------|--------------------|----|-----------------|----|---------------------|
| 1. a. | fi                 | b. | ʒan             | c. | bi-                 |
|       | 'in or at'         |    | 'from or about' |    | 'in,at,by, or with' |
| d.    | la-                | e. | mən             | f. | ʒand                |
|       | 'for or to'        |    | 'from or of'    |    | 'at or with'        |
| g.    | ʒala               | h. | maʒ             |    |                     |
|       | 'to,on,or against' |    | 'with'          |    |                     |

Consider the following examples where different kind of prepositions are followed by noun phrases:

2. Aḥmed raḥ [maʒ Salwa]  
Ahmed went-3SGM with Salwa  
'Ahmed went with Salwa.'
3. Hayyam namet [fi l- maxzan]  
Hayyam slept-3SGF in the cellar  
'Hayyam slept in the cellar.'
4. Nawal raḥet [ʒal- souq]  
Nawal went-3SGF to-the market  
'Nawal went to the market.'

Before we provide evidence to show that prepositions are heads of their phrases, we will consider whether the preposition in (2) to (4) together with the following NP can form a constituent. This will be done by using tests for constituency.

The first piece of evidence for suggesting that the bracketed strings in (2) to (4) are constituents comes from the fact that it is possible for the strings to occur clause-initially . If a sequence of words can be fronted in this way, then it forms a single constituent. The following examples illustrate this:

5. a. [maḡ Salwa] Aḥmed raḥ  
with Salwa Ahmed went-3SGM  
'With Salwa Ahmed went'
- b. [fi l-maxzan] Hayyam namet  
in-the cellar Hayyam slept-3SGF  
'In the cellar Hayyam slept'
- c. [ḡal- souq] Nawal raḥet  
to-the market Nawal went-3SGF  
'To the market Nawal went'

Since the bracketed phrases in (5) are fronted, then they are constituents.

The second piece of evidence involves coordination. If a sequence of words or phrases can be conjoined with another similar sequence of words or phrases, then that sequence is a constituent. The following example illustrates this:

6. b. akal Aḥmed fawakeh [maḡ Salwa] W [Nawal].  
ate-3SGM Ahmed fruits with Salwa and Nawal  
'Ahmed ate fruits with Salwa and Nawal.'

Having argued that the bracketed phrases are constituents and that they have the structure P+NP, we can proceed to argue that the prepositions in (2) to (4) are heads

of the phrases in which they appear. This is controversial point as some linguists (see Burton (1986)) argue that prepositions are not heads of the phrase. That is, they claim that English PP's are not similar to noun phrases in which the noun is the head of that phrase or adjective phrases where the adjective is the head.

There are really two important features of heads to consider here: Firstly, heads largely determine the distribution of phrases including their occurrence as complements. The verb naṭ 'jumped' in (7) below, for example, takes a PP complement containing the preposition foq:

7. a.   naṭ                    Ziad foq l- sayyara  
           jumped-3SGM Ziad above the car  
           'Ziad jumped over the car'
- b.   \*naṭ                 Ziad l- sayyara  
           jumped-3SGM Ziad the car
- c.   \*nat                 Ziad ḡan l- sayyara  
           jumped-3SGM Ziad from the car

Similarly, the verb raḡ 'went' in (8) takes a PP containing the preposition ḡala 'to':

8. a.   George raḡ             ḡala l- madraseh  
           George went-3SGM to   the school  
           'George went to school'
- b.   \*George raḡ         l- madraseh  
           George went-3SGM the school



c. \*George raḥ fi l- madraseh

George went-3SGM in the school

(7b,c) and (8b,c) are ungrammatical because the complement of the verbs naṭ and raḥ does not contain the preposition required. Either it contains no preposition as in (7b) and (8b) or the wrong preposition as in (7c) and (8c).

Secondly, heads largely determine the internal structure of phrases by selecting complements and specifiers of various kinds. Prepositions can allow, for instance, for an NP or a PP to appear as their complements, but not for VP's. The following examples illustrate this:

9. a. nam Ziad [fi l- bet]

slept-3SGM Ziad in the house

'Ziad slept in the house'

b. Salwa Ṣafet Ryaḍ [mən wara l- Ṣibbak]

Salwa saw-3SGF Ryaḍ from behind the window

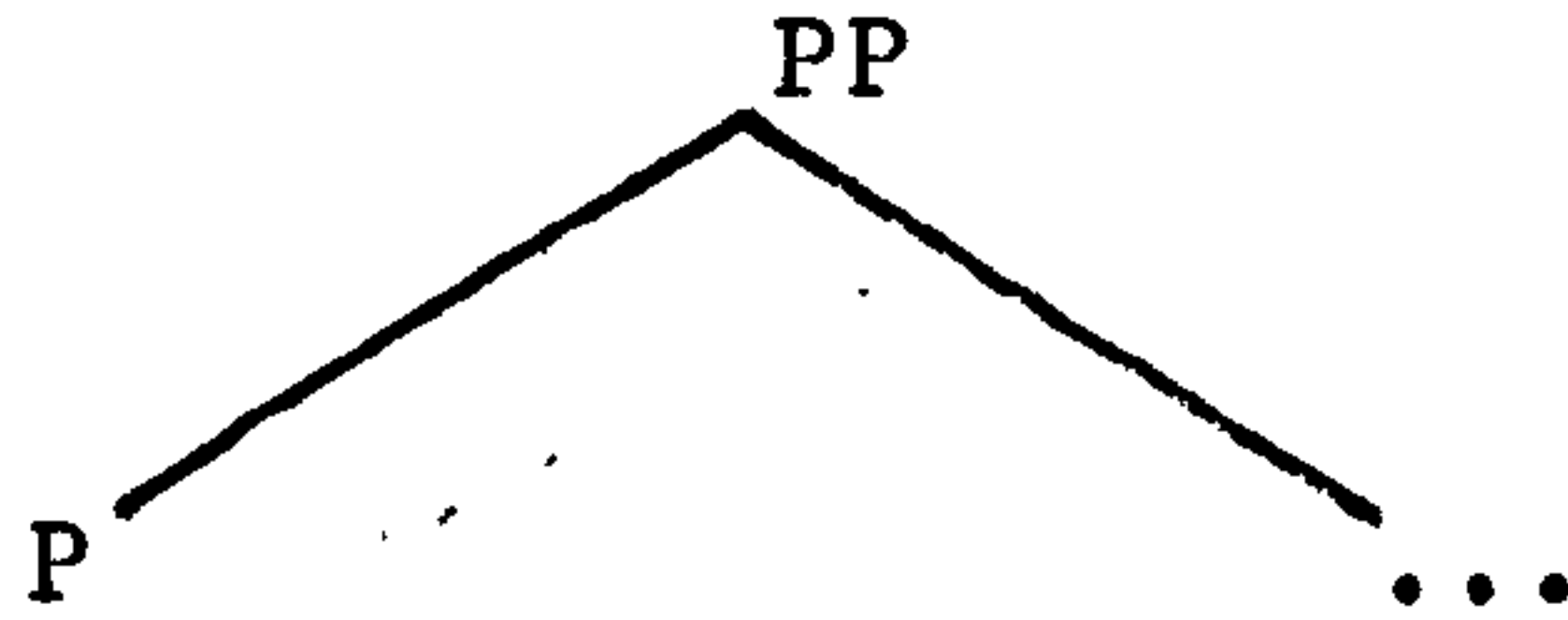
'Salwa saw Ryaḍ from behind the window'

c. \*waḍaṣ saṣto ḡala sa2lt su2l

put-3SGM watch-3SGM on asked question

We can sum up this section by saying that the prepositions are heads in phrases that we have been looking at because they have the two characteristic properties of heads outlined above. Hence, a variety of syntactic considerations have forced us to consider PP's as having a constituent structure such as that in (10) below:

10.



We can proceed now to discuss the attachment of the definite article to preceding prepositions.

### 3.2. The Combination of Prepositions with the Definite Article:

As noted in the previous section, prepositions are words that head prepositional phrases just as verbs head VP's, and as we will see when we consider AP's and NP's, adjectives head AP's and nouns NP's. A number of Prepositions such as 'b-', 'ka-', 'fi-' and 'la-' can combine with the definite article 'l-'. The following illustrate:

11. a. b- + l- = bəl- or bl-  
'in + the' = 'in the'
- b. la- + l- = ləl- or ll-  
'to + the' = 'to the'
- c. fi- + l- = fəl- or fl-  
'in + the' = 'in the'
- d. ʒala + l- = ʒal-  
'to + the' = 'to the'

The combination of prepositions with the definite article can be illustrated in the following examples:

12. a. Aḥmed raḥ ʔal- bet  
 Ahmed went-3SGM to+the house  
 'Ahmed went home'
- b. dafaʔu l- rawatib ll - mouwazafin  
 paid-3PL the salaries to+the workers  
 'They paid the workers their salaries'
- c. ʔafet Salwa Ziad fl - ḥadiqua  
 saw-3SGF Salwa Ziad in+the garden  
 'Salwa saw Ziad in the garden'
- d. akalna bl - maṭʔam  
 ate-1PL in+the restaurant  
 'We ate in the restaurant'

A preposition can attach only to an article as the following examples illustrate:

13. a. \*Aḥmed raḥ ʔahal- bet (cf(11a))  
 Ahmed went-3SGM to+this house
- b. \*ʔafet Salwa Ziad fhal- ḥadiqua (cf(11c))  
 saw-3SGF Salwa Ziad in+this garden

This combination of prepositions and articles is not particularly unusual since prepositions in other languages such as French, German and Italian can combine with articles as well. We will look first at French examples. Consider the following example:

14. le chapeau du garçon  
 the hat of+the boy  
 'the boy's hat'

We turn now to look at German examples (Hinrichs (1986:939-940)):

15. a. Ich habe die kette für'n Basar gemacht.

'I made the necklace for the fund raiser.'

b. Ich habe die kette für den Basar gemacht.

'I made the necklace for the fund raiser.'

16. a. Für's millagessen ist alles vobereitet.

'Everything has been prepared for lunch.'

b. Für das millagessen ist alles vobereitet.

'Everything has been prepared for lunch.'

(15a) and (16a) show that the articles are combined with preceding preposition.

In German, it is also possible for indefinite articles such as ein and eine to combine with preceding prepositions. The following examples illustrate this:

17. a. Für'ne Mark kannst Du 30 sekunden telefonieren.

'For one mark you can call for 30 seconds.'

b. Für eine Mark kannst Du 30 sekunden telefonieren.

'For one mark you can call for 30 seconds.'

There are also similar examples from Italian. As Napoli & Nevis (1987:195) point out, a number of prepositions can combine with the article in Italian. The following examples demonstrate this:

18. a. Sta nella terza camera  
is in/the (fem sg) third bedroom

'It's in the third bedroom'



- b. C' è abbastanza carta sulle scrivanie  
 there is enough paper on/the (fem pl) desks  
 'There's enough paper on the desks'
19. a. Ci va col vicino  
 there goes with/the (masc sg) neighbour  
 'He's going there with his neighbour'
- b. L' ho dato ai ragazzi  
 it I-have given to/the (masc pl) boys  
 'I gave it to the boys'

The combination of the definite article with preceding prepositions raises complex questions. The main question that we have to consider is this: are they combined in the Syntax or only in the Morphology? It cannot be a syntactic process because the relevant examples are syntactically ordinary PP's. There are, in fact, two points to consider: The first point is that P+Art-N sequences have the same distribution as ordinary PP's. The following examples illustrate:

20. a. Aḥmed ʔaṭa sayyara l1- ʔstad  
 Ahmed gave-3SGM car to+the teacher  
 'Ahmed gave a car to the teacher'
- b. Aḥmed ʔaṭa sayyara la-Nawal  
 Ahmed gave-3SGM car to Nawal  
 'Ahmed gave a car to Nawal'
21. a. Aḥmed kan f1- bet  
 Ahmed was-3SGM in+the house  
 'Ahmed was in the house'

- b. Aḥmed kan fi ḥaleb  
 Ahmed was-3SGM in Aleppo  
 'Ahmed was in Aleppo'

The examples in (20a) and (21a) show that P+Art-N sequences appears in the same contexts as P-NP, as given in (20b) and (21b).

The second point is that the noun is definite just as it is when it is preceded by an ordinary article. Consider the following examples:

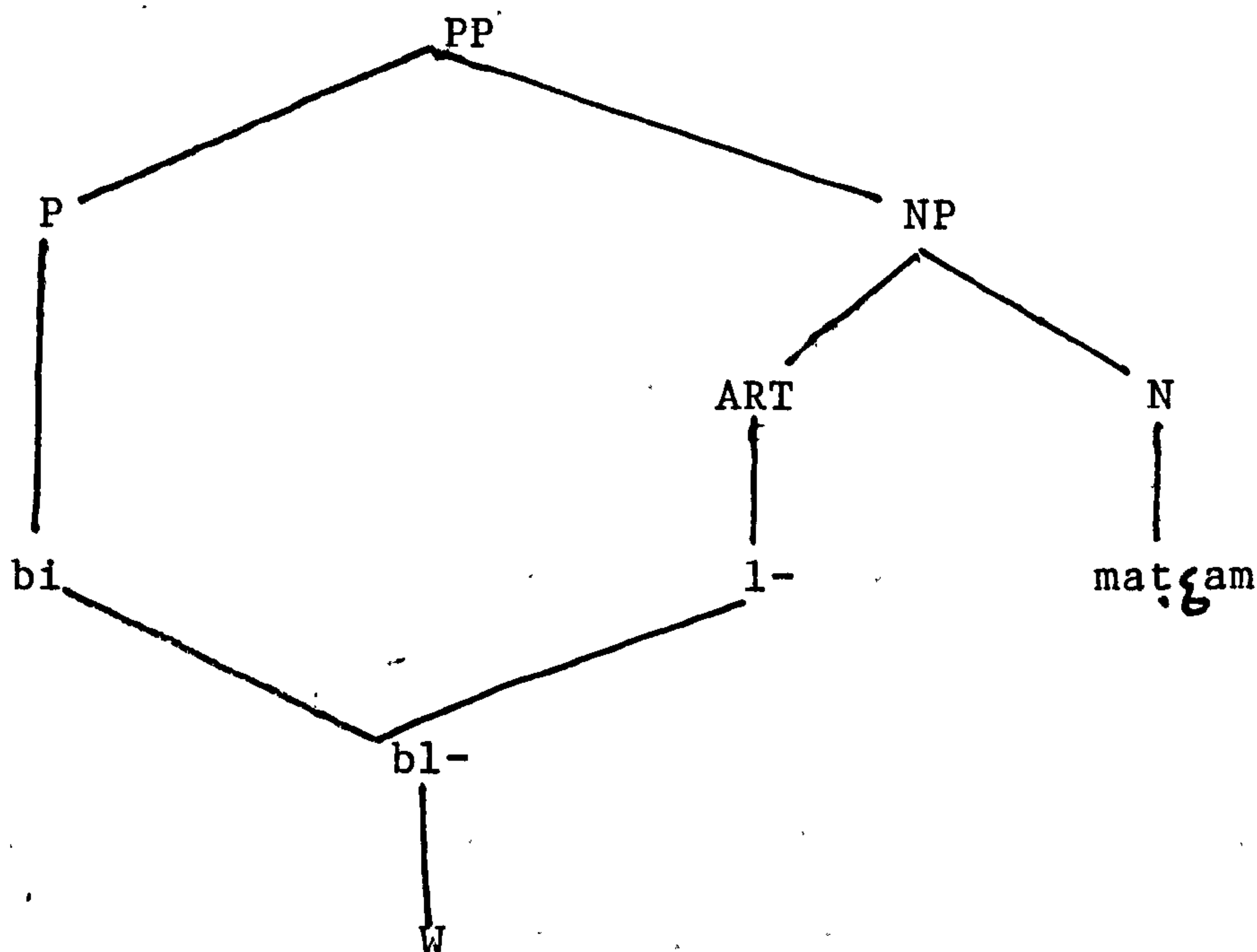
22. a. Aḥmed ḡaṭa sayyara l1- bant l- ḥilweh  
 Ahmed gave-3SGM car to+the girl the pretty  
 'Ahmed gave a car to the pretty girl'
- b. Aḥmed ṡaf l- bant l- ḥilweh  
 Ahmed saw-3SGM the girl the pretty  
 'Ahmed saw the pretty girl'
- c. \*Aḥmed ḡaṭa sayyara l1- bant ḥilweh  
 Ahmed gave-3SGM car to+the girl pretty
- d. \*Aḥmed ṡaf l- bant ḥilweh  
 Ahmed saw-3SGM the girl pretty

The examples in (22a-b) show that a noun is preceded by an ordinary article and followed by a definite adjective. In both cases, the article is obligatory on the adjectives. We conclude that P and Art are only combined in the morphology.

How can we exactly analyze the combination of prepositions and article? One possibility is the autolexical approach of Sadock (1991). We will outline a basic analysis without going into detail.

Within an autolexical approach, every expression, following Sadock (1991), will have two distinct representations, one morphological, and the other syntactic. In other words, what is a word from a morphological point of view need not be a word from a syntactic point of view. In an autolexical analysis, we may analyze bl- (12d), as given in the following structure:

23.



We would like to make it clear that this is essentially the analysis proposed by Sadock (1991) for French du. The tree in (23) shows that bl- is syntactically two separate elements P and Art but morphologically a single word.

We proceed now to consider the internal structure of PP's.

### 3.3. The Internal Structure of Prepositional Phrases:

In this section, we will look more closely at the variety of complements that prepositions take. As we noted in the first section, prepositions can be followed by an NP complement to form a prepositional phrase. The following examples illustrate this:

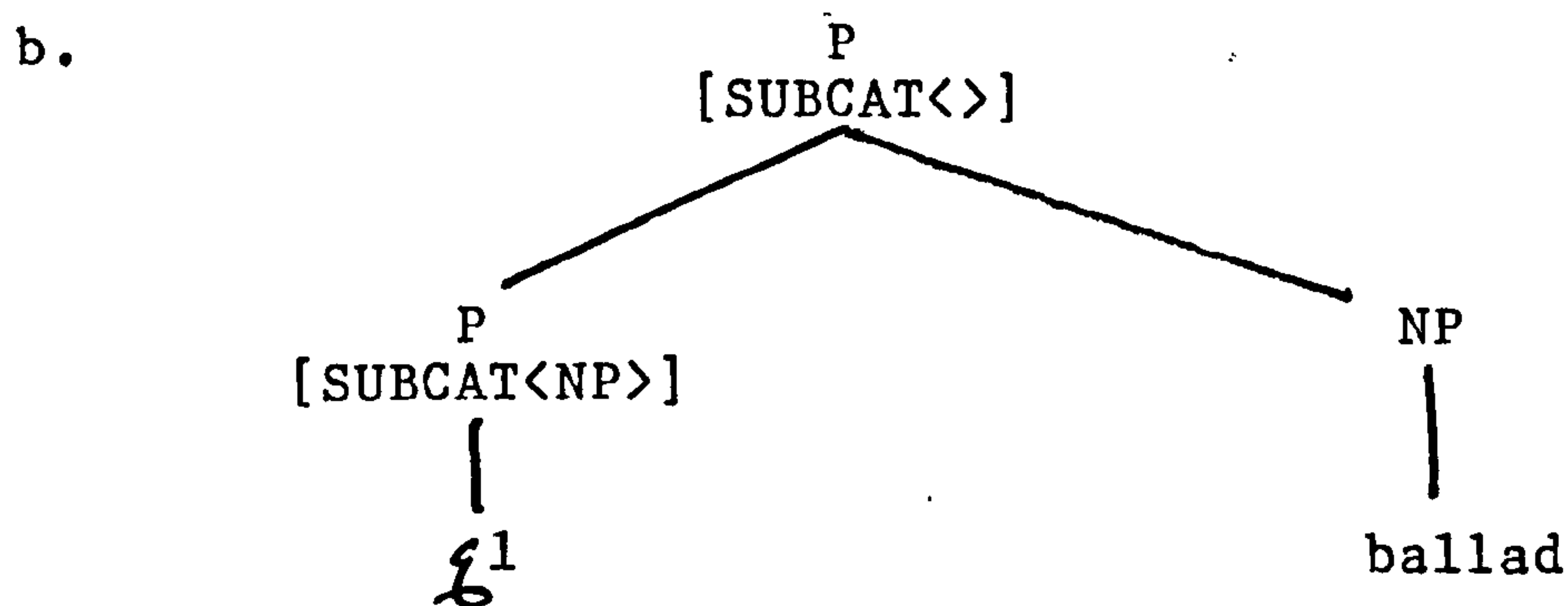
24. a. Souad raḥet ʔl- ballad  
 Souad went-3SGF to the town  
 'Souad went to town'

b. ʔakal Aḥmed fawakeh maʔ Salwa  
 ate-3SGM Ahmed fruits with Salwa  
 'Ahmed ate fruits with Salwa'

Given the data above, we can assign ʔl 'to' in (24a) above to the following category:

25. a. P[SUBCAT<NP>]

We will revise this category slightly in 3.4 when we discuss clitics. This category will interact with the head-complement rule together with the two universal principles, i.e., the HFP and the Subcategorization Principle introduced in previous chapters, to give trees such as that in (25b):





Having looked at prepositions taking an NP complement, we can move on to consider prepositions subcategorizing for PP-complements. The following examples illustrate this:

26. Hayyam      ṭilṣet      mən wara    l- bab  
 Hayyam appeared-3SGF from behind the door  
 'Hayyam appeared from behind the door'

27. George ḍal                      ḥatta baḣd l- ḣaṣa  
 George stayed-3SGM until after the dinner  
 'George stayed until after dinner'

Before we provide an analysis for prepositions taking PP-complements we need to show that sequences such as mən wara l-bab in (26) and ḥatta baḣd l-ḣaṣa in (27) are constituents. We can do this by applying the constituent tests outlined above. That is, preposing and coordination tests. We will apply the preposing test first. Consider the following examples:

28. [mən wara    l -bab] Hayyam ṭilṣet  
 from behind the door Hayyam appeared-3SGF  
 'From behind the door, Hayyam appeared.'

29. [ḥatta baḣd    l- ḣaṣa] George ḍal  
 until after the dinner George stayed-3SGM  
 'Until after the dinner, George stayed'

(28) and (29) show that the bracketed phrases can occur in clause initial position, therefore they are constituents.

We turn now to coordination test. The following examples illustrate this:

30. Hayyam  $\dot{t}$ il $\zeta$ et [m $\bar{a}$ n wara 1- bab] W  
 Hayyam appeared-3SGF from behind the door and  
 [ta $\dot{h}$ t 1-  $\dot{y}$ ibbak]  
 under the window  
 'Hayyam appeared from behind the door and under the  
 window.'
31. George  $\dot{d}$ al [h $\dot{a}$ tta ba $\zeta$ d 1-  $\zeta$ a $\dot{s}$ a] W [qabl  
 George stayed-3SGM until after the dinner and before  
 1- film]  
 the film  
 'George stayed until after the dinner and before the  
 film'

The sequences inside the brackets in (30) and (31) are constituents because they can apply to coordination test.

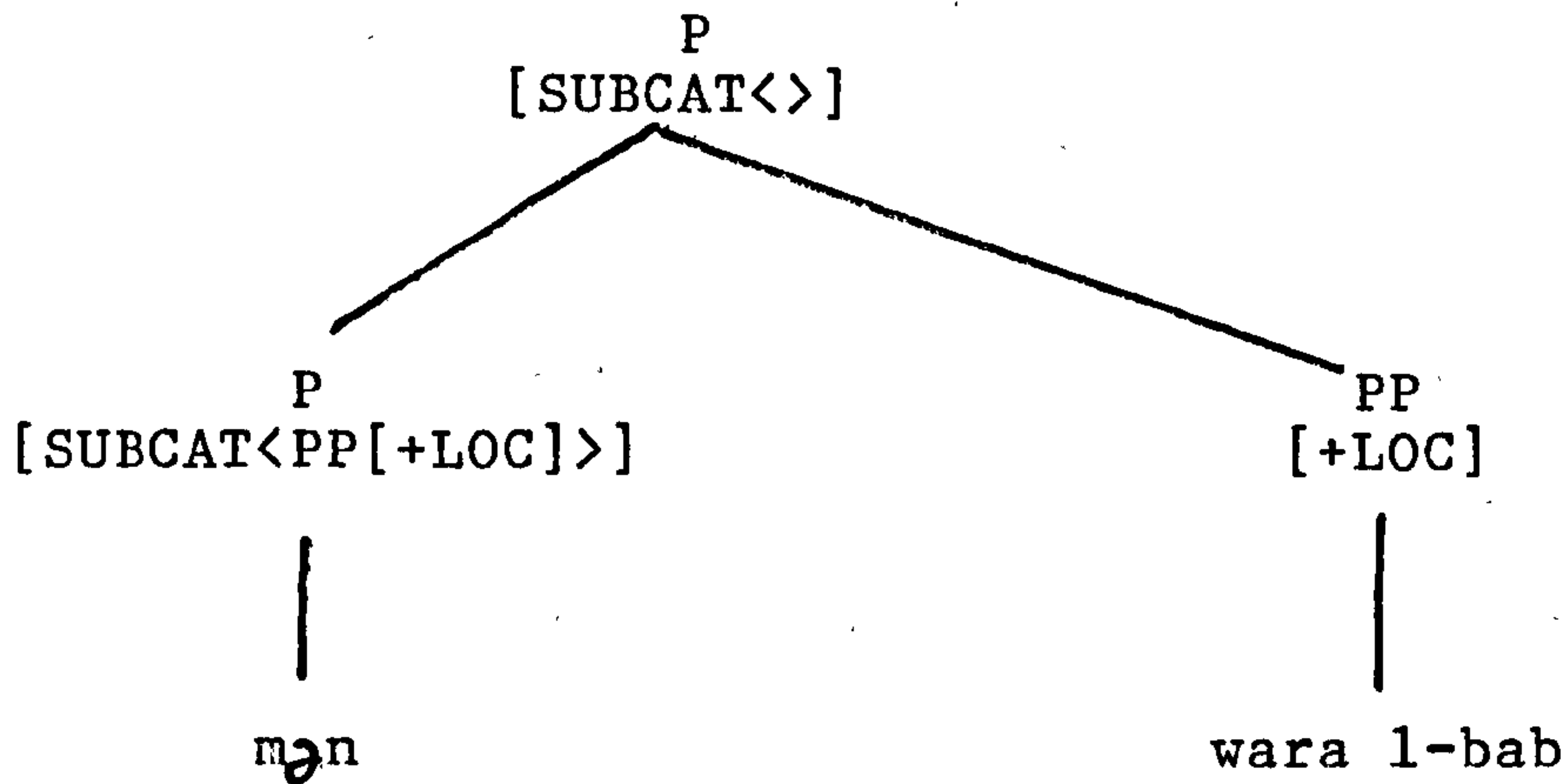
Having given the tests above, we can argue that the prepositions together with the following PP's in (26) and (27) above are constituents. They, therefore, have the structure P+PP.

A preposition such as m $\bar{a}$ n in (26), then, will have the following category:

32. P[SUBCAT<PP[+LOC]>]

Given the category in (32) together with the head-complement rule, the HFP and the Subcategorization Principle the following tree results:

33.



Prepositions can also take a sentential constituent.

Consider the following examples:

34. Faye<sup>z</sup>    ḍal                    ḥatta    namet            Samira  
 Faye<sup>z</sup>    stayed-3SGM    until    slept-3SGF    Samira  
 'Faye<sup>z</sup> stayed until Samira slept'

35. daxal                    Khalid ḡal-    bet    qabl    raḥil            Maha  
 entered-3SGM    Khalid to the house before leave-3SGF    Maha  
 'Khalid entered into the house before Maha left'

Words such as ḥatta 'until', baḡd 'after' and qabl 'before' might be regarded as complementizers, but there are good reasons for assuming that they can function as prepositions.

One reason for saying that the above words are prepositions and not for example complementizers is that they can precede an NP constituent as ordinary prepositions do. The following examples illustrate this:

36. namet Salwa qabl l- ḡaṣa  
 slept-3SGF Salwa before the dinner  
 'Salwa slept before dinner'

37. ḡader Jamal baḡd l- xetbeh mubaṣarətn  
 left-3SGM Jamal after the engagement immediately  
 'Jamal left immediately after the engagement party'

By contrast, complementizers cannot precede an NP constituent. That is, in Syrian, we do not get the following example:

38. \*feemaida [l-rejjal]  
 whether the man

Another reason for suggesting that they are prepositions is that complementizers cannot co-occur. Consider the following examples:

39. Salwa namet ḡatta baḡd mantaha l- ḡaṣa  
 Salwa slept-3SGF until after ended the breakfast  
 'Salwa slept until after the breakfast ended.'

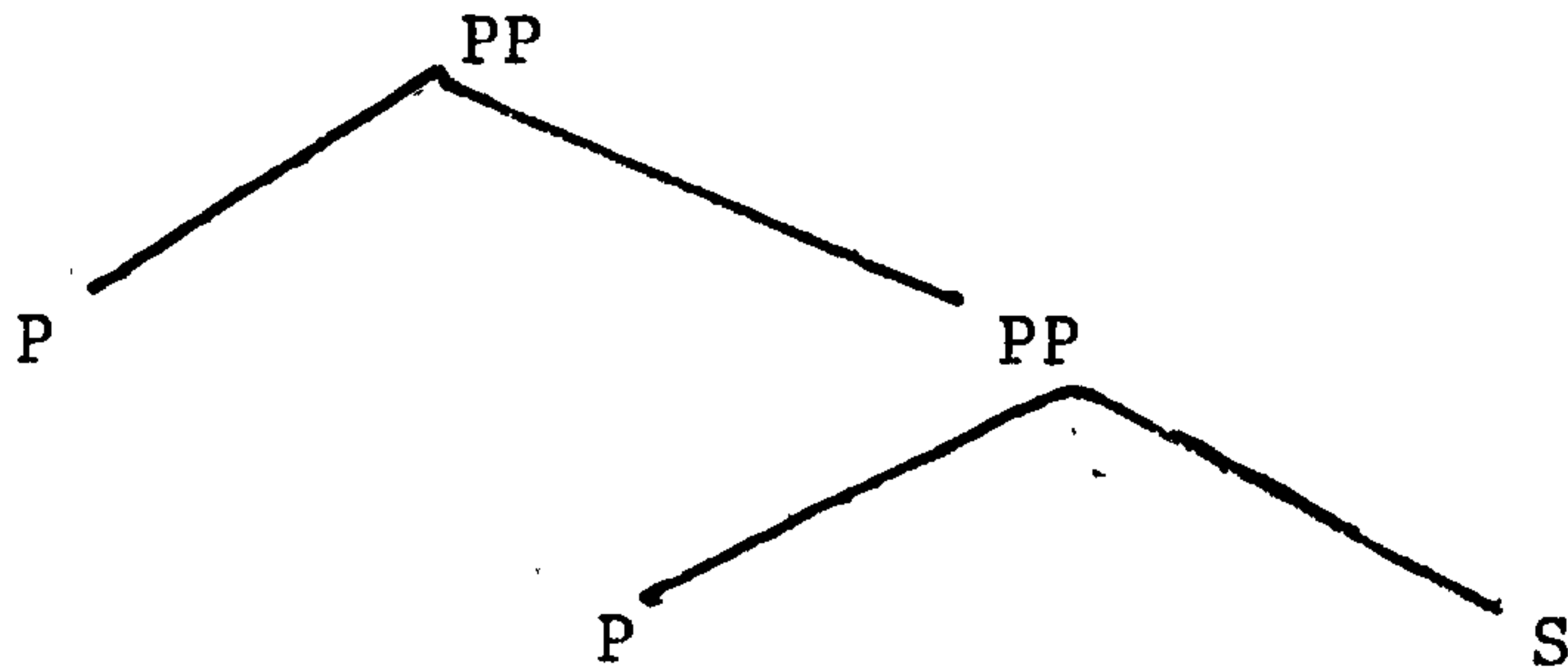
40. ḡanneh laḡbo waraq ḡatta qabl matibda l- muḡadara  
 they played-3PL cards since before began the lecture  
 'They played cards since before the lecture began.'

The argument is that if 'after' and 'before' are analyzed as complementizers 'until' and 'since' cannot be because complementizers cannot co-occur. But if 'until' and 'since' are prepositions we have prepositions with clausal complements.



Hence, what we seem to have in (39) and (40) is the following structure:

41.



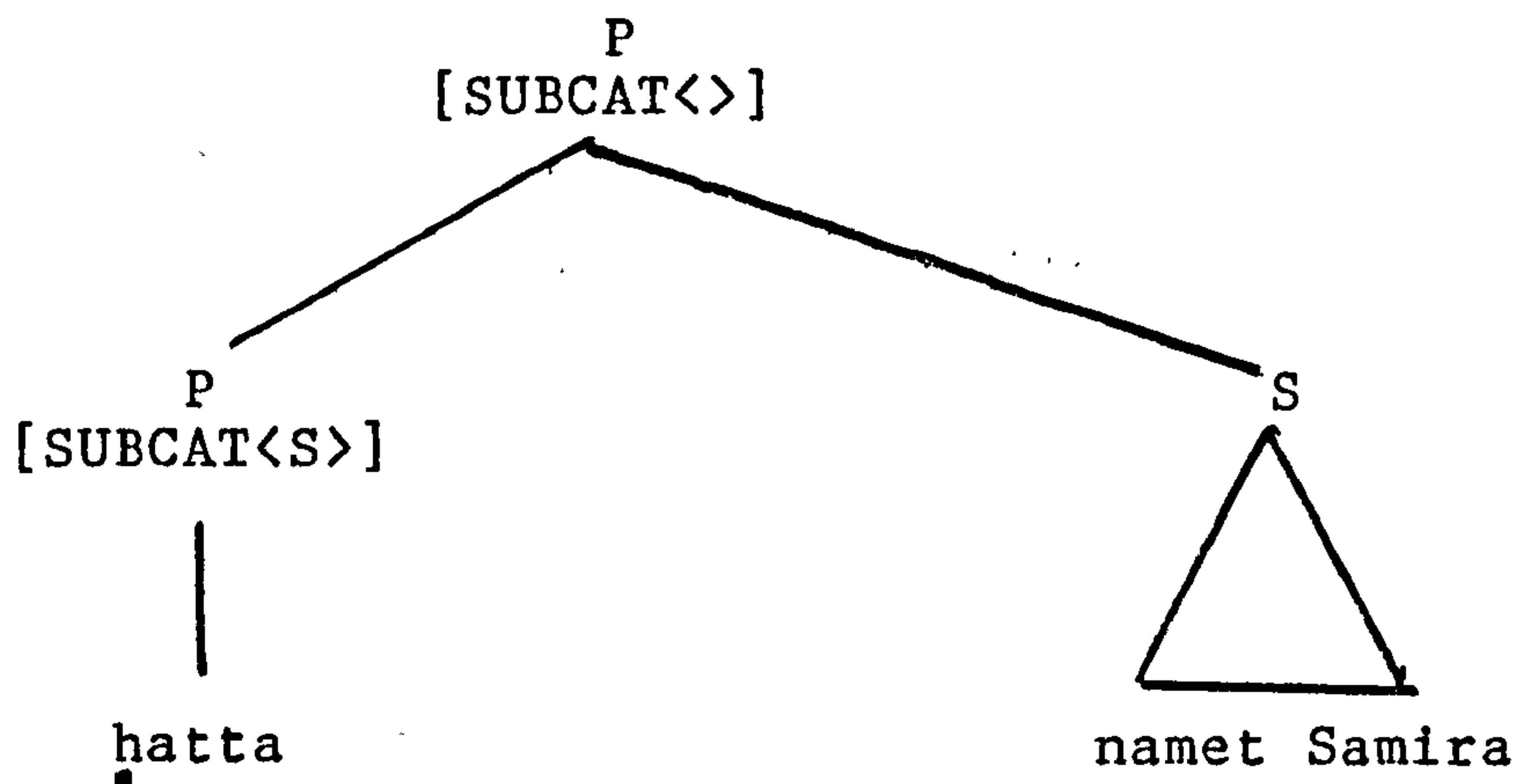
A preposition such as hatta 'until' in (34) will have a category like that in (42):

42. P[SUBCAT<S>]

where S is an abbreviation of V[SUBCAT<>;SUBJ<>].

The category in (42) above will then interact with the head-complement rule, together with the two universal principles to give trees such as the following:

43.



It is worth mentioning here, before we proceed to discuss clitics within PP's, that Syrian (as we will see later in section five when we discuss specifiers) unlike English, seems

to have one type of intransitive preposition. Consider now the following examples:

44. a. Mary was in the house.

b. Mary was in.

45. a. kamal kan fi l- bet.

Kamal was-3SGM in the house

'Kamal was in the house.'

b. \*Kamal kan fi

Kamal was-3SGM in

(44b) is grammatical because English has intransitive prepositions. By contrast, (45b) is ungrammatical since Syrian has only one type of intransitive preposition.

Let us consider other English intransitive prepositions such as 'beforehand', 'before', 'after', 'down', 'out', and 'afterwards':

46. a. Mary has been there before dinner.

b. Mary has been there before.

(46) shows that 'before' can occur with and without a complement.

If we translate the examples above into Syrian, we will get ungrammatical sentences such as those in (47b):

47. a. Salwa kanet hunek qabl l- ḡaṣa

Salwa was there before the dinner

'Salwa has been there before dinner.'

b. \*Salwa kanet hunek qabl

Salwa was there before

We can conclude this section by saying that Syrian, unlike English, has only one type of intransitive prepositions.

We have so far discussed the internal structure of PP's without clitics. We turn now to look at clitic constructions.

### 3.4. Clitic Constructions:

Clitics, as we mentioned in previous chapters, can be attached to three different categories, namely verbs, prepositions and nouns. Since we are concerned here with prepositions, we can say that all prepositions have the capability of hosting a clitic agreeing in number, person, and gender with a following optionally empty pronoun. Consider the following examples:

48. Salwa raḥet ʕl- souq maʕ Ahmed

Salwa went-3SGF to the market with Ahmed

'Salwa went to the market with Ahmed'

49. \*Salwa raḥet ʕl- souq maʕ huweh

Salwa went-3SGF to the market with he

50. Salwa raḥet ʕl- souq maʕo (huweh)

Salwa went-3SGF to the market with-3SGM he

'Salwa went to the market with him'

51. \*Salwa raḥet ʕl- souq maʕo Ahmed

Salwa went-3SGF to the market with-3SGM Ahmed

We can summarize the data above as follows:

52. a. P+NP[-PRO]  
 b. \*P+NP[+PRO]  
 c. P+CL (NP[+PRO])  
 d. \*P+CL NP[-PRO]

(52a) is grammatical with a preposition without a clitic followed by a non-pronominal NP, (52b) is ungrammatical since the preposition should host a clitic when the NP complement is a pronoun. (52c) is grammatical because a preposition requires a clitic when it followed by a pronominal complement. It is clear also from (52c) that the ordinary pronoun is optional. Finally, (52d) is ungrammatical because the NP following the P+CL combination should be a pronoun.

Given the facts above, we can suggest that the category given in (24) above should be revised as follows:

53. P[SUBCAT<NP[-PRO]>]

That is, a preposition which does not host a clitic takes a non-pronominal NP.

As we noted in chapter two, clitics agree in number, person, and gender with a following independent pronoun, which may be empty. This pronoun is not a case of right dislocation as one might think, because the preposition plus clitic and the pronoun itself can be followed by either an adverbial or a PP complement. This is exemplified in the following examples:

54. Ahmed rah maga (hyyeh) m-barha  
 Ahmed went-3SGM with-3SGF she yesterday  
 'Ahmed went with her yesterday'



55.  $\text{ʔaklna ma}\zeta\text{o}$  (huweh) fi.l- bet  
 ate-1PL with-3SGM he in the house  
 'We ate with him in the house'

We can say now that the preposition ma $\zeta$ o in (50) has a clitic attached to it when it has a pronominal complement. But before we proceed to propose an analysis of the above data, we should note that we have introduced in the VP's chapter a clitic (CL) feature and said what sort of feature it is. That is, we will again assume as we did with verbs in the previous chapter, that Syrian has a clitic (CL) feature which shows what kind of clitic a head requires. It takes as its value a category that contains person, number, and gender feature specifications.

Given the data above, we can say that the preposition ma $\zeta$ o 'with' will have the category we had in (53), while the preposition that hosts the clitic will have the category in (56):

56.  $P[\text{SUBCAT}\langle\text{NP}[+\text{PRO},+\text{NULL},\alpha]\rangle;\text{CL},\alpha]$

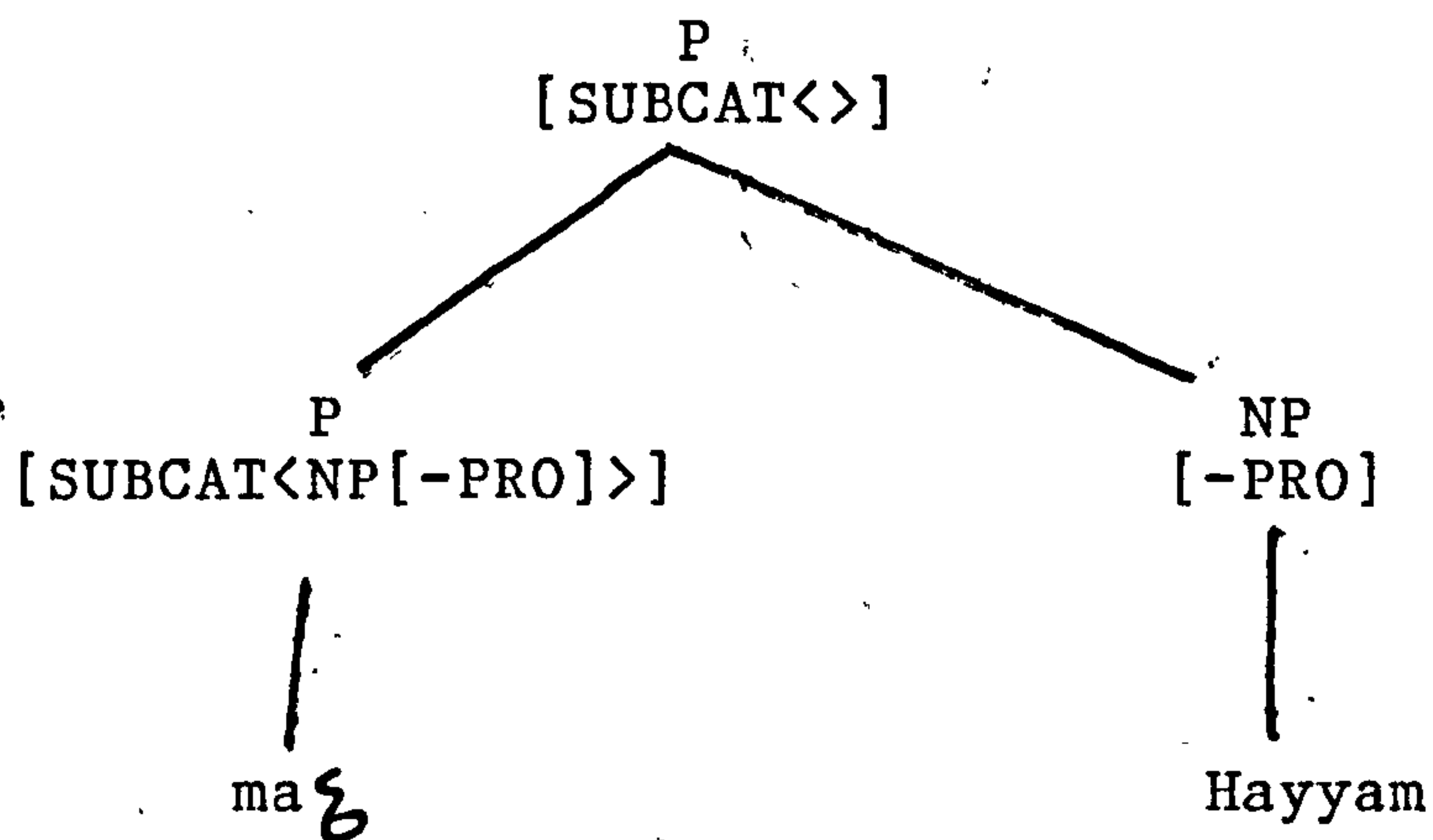
where  $\alpha$  is a variable ranging over person, number, and gender feature specifications, and a [+NULL] NP is one that may be empty but need not be. It is clear to us now that the category in (53) doesn't take a clitic, whereas the category in (56) does.

The categories in (53) and (56) together with the clitic-head rule given in chapter two (repeated below), the head-

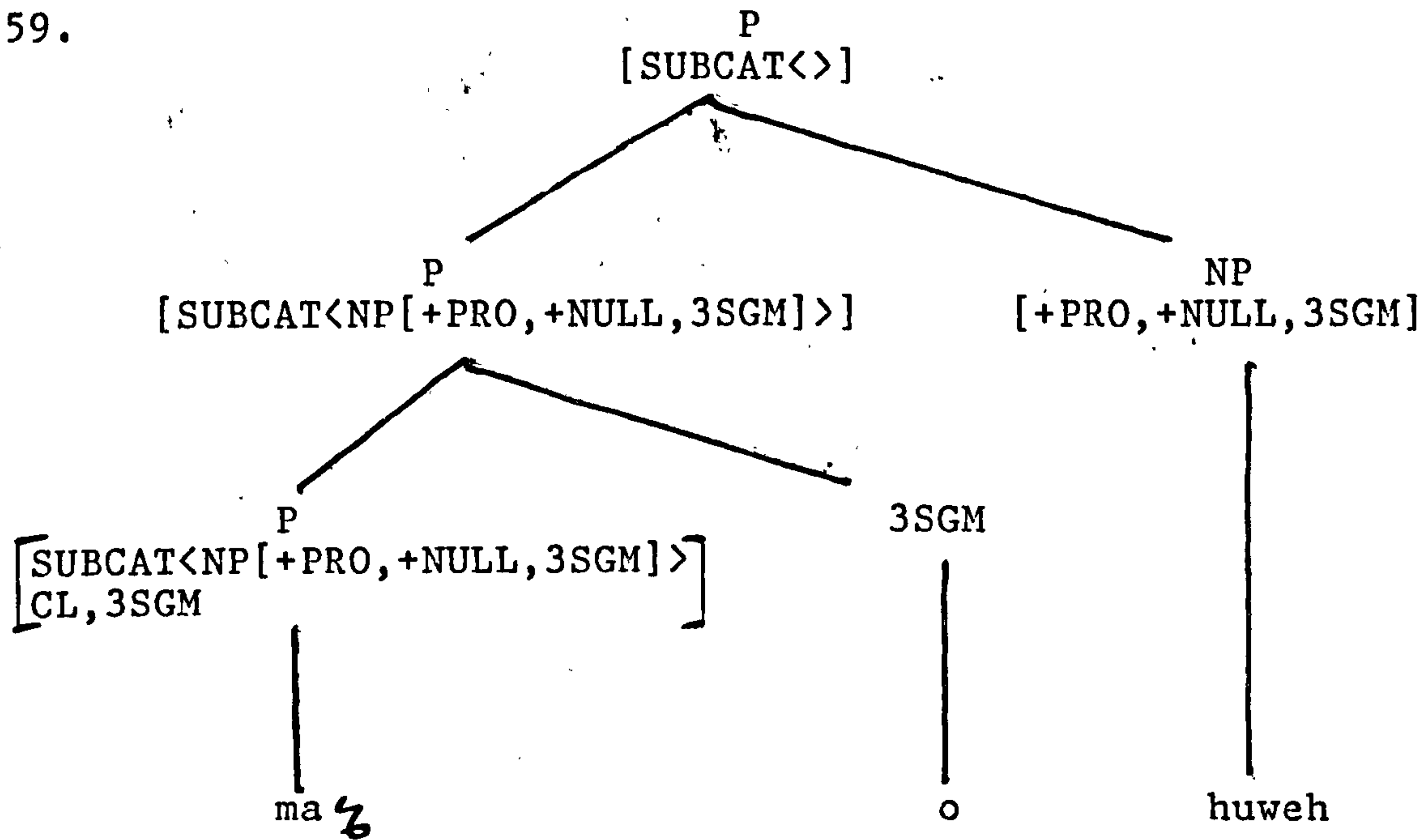
complement rule and the two universal principles mentioned before combine to produce the structures in (58) and (59), respectively:

57.  $[\sim\text{CL}] \rightarrow H[\text{CL}, \alpha], \alpha$

58.



59.



These are similar to the trees that we had for verbs in the previous chapter. The tree in (58) is licensed by the head-complement rule, while the structure in (59) is licensed by both the head-complement and the clitic-head rules.

We can assume that the category in (56) is derived from the category in (53) with the lexical rule given in chapter two. Here the V node has to be replaced within the lexical rule by X to include prepositions and the necessary categories have to be derived: see (60) below:

60. X[SUBCAT<...,NP[-PRO]>...] =====>  
 X[SUBCAT<...,NP[+PRO,+NULL,  $\alpha$  ]>;CL,  $\alpha$  ...]

Where X = V or P

Having dealt with clitics within PP's, we proceed now to look at prepositional specifiers.

### 3.5. Prepositional Specifiers:

In this section, we will discuss different types of phrases that can function as specifiers of PP's. The following examples are relevant:

61. Samira haṭiṭo [PP foq] fl- zawyeh  
 Samira put-3SGF-3SGM up in the corner  
 'Samira put it up in the corner'

62. Mariam safeto [pp taḥt] fl- maxzan  
 Mariam saw-3SGF-3SGM down in the cellar  
 'Mariam saw it down in the cellar'

We can assume that the bracketed phrases together with the following PP in (61) and (62) form a single constituent and not two separate constituents. As we have argued in previous sections, we can argue for this by applying several tests for constituency. The first piece of evidence in favour of a single constituent analysis comes from the fact that it is possible for the bracketed strings to be fronted. The following examples are relevant here:

63. [PP foq] fl           zawyeh Samira ḥaṭiṭo. (cf(61))

up    in the corner Samira put-3SGF-3SGM

'Up in the corner, Samira put it'

64. [PP taḥt] fl         maxzan Mariam ṣafeto.         (cf(62))

down in the cellar Mariam saw-3SGF-3SGM

'Down in the cellar, Mariam saw it.'

Since (61) and (62) can occur initially as shown in (63) and (64), then the bracketed strings and the following PP's are constituents.

Another piece of evidence comes from coordination facts. The following examples illustrate the point, as (61) and (62) can be coordinated, thus offering further evidence that they are indeed single constituents:

65. Samira ḥaṭiṭo           [PP foq] fl         zawyeh W [PP taḥt]

Samira put-3SGF-3SGM         up    in the corner and         down

ʕl l- ṭawleh

on the table

'Samira put it up in the corner and down on the table'



66. Mariam  $\dot{y}$ safto [PP taht] fl- maxzan W [PP foq]  
 Mariam saw-3SGF-3SGM down in the cellar and up  
 ʕl l- raf  
 on the shelf

'Mariam saw it down in the cellar and up on the shelf.'

Having argued that the bracketed strings above are constituents, we proceed to show that 'taht', 'qabl', etc., function as specifiers of PP's. One piece of evidence for this claim comes from the fact that they are optional. This is exemplified in the following examples:

67. Samira ḥaṭiṭo fl zawyeh (cf(61))  
 Samira put-3SGF-3SGM in the corner  
 'Samira put it in the corner'

68. Mariam  $\dot{y}$ safeto fl- maxzan (cf(62))  
 Mariam saw-3SGF-3SGM in the cellar  
 'Mariam saw it in the cellar'

A second piece of evidence comes from the fact that two such items in Syrian cannot occur before the PP constituent. The following ungrammatical sentence illustrates the point:

69. \*ḥaṭ kamal l- koutb foq tamaman fl- zaweh  
 put-3SGM Kamal the books over right in the corner

If we change the order of these two items in (69), we will still get ungrammatical sentences such as the following:

70. \*ḥaṭ Kamal l- koutb tamaman foq fl- zaweh  
 put-3SGM Kamal the books right over in the corner

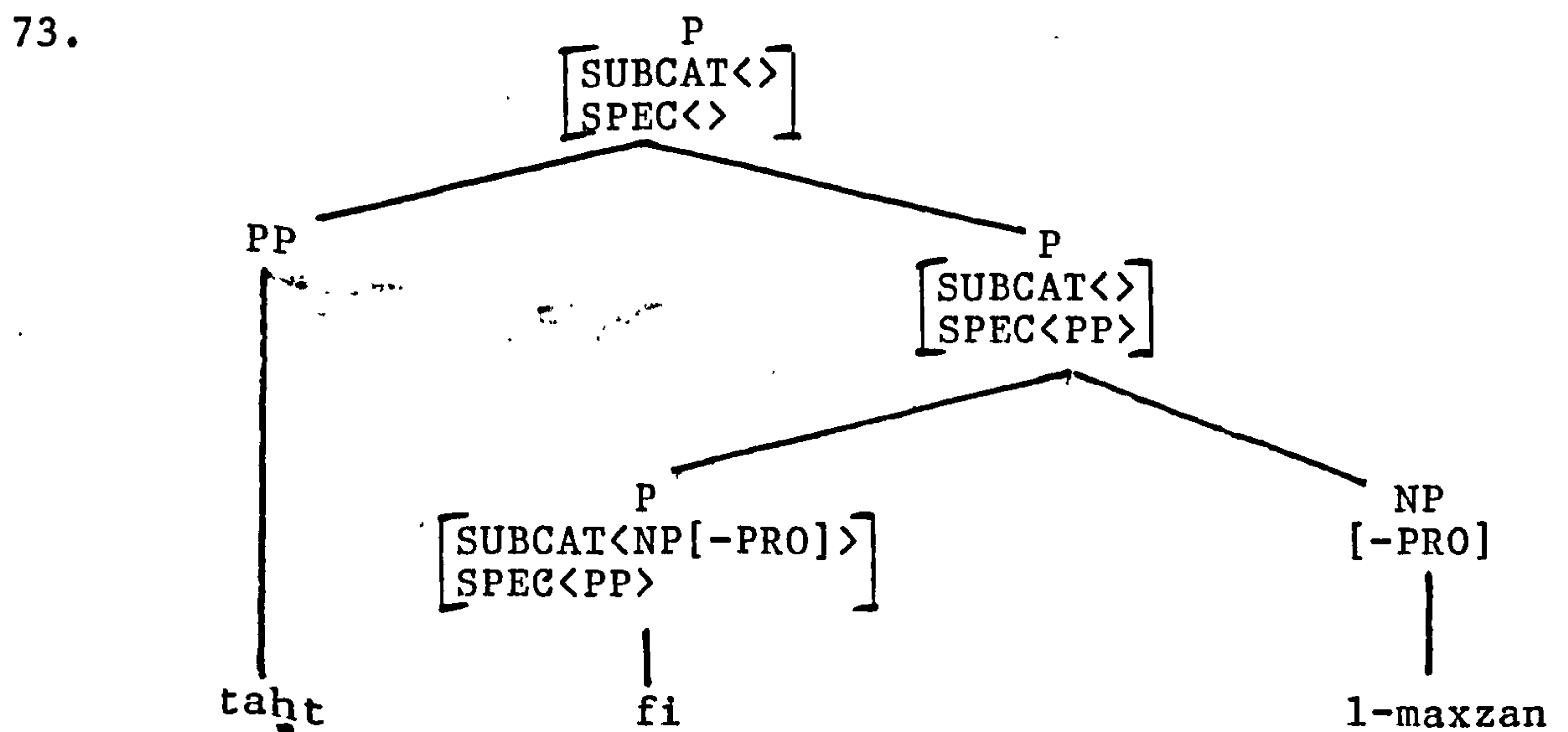
A third and final piece of evidence is that it is possible for foq 'over' to take a complement of its own. The following example demonstrates this:

71. ḥat kamal l- koutb [foq hunek fl- zaweh]  
 put-3SGM Kamal the books over there in the corner  
 'Kamal put the books over there in the corner'

Having argued that the bracketed phrases in (61) and (62) above function as specifiers of a following PP, we can suggest that prepositions such as fi 'in' in (62) will have the category in (72):

72. P[SUBCAT<NP[-PRO]>;SPEC<PP>]

The category in (72) will interact with both the specifier-head and the head-complement rule together with both universal principles to give trees like that in (73) below:



So far we have been discussing the internal structure of PP's and their analysis within the revised version of HPSG. We turn now to consider their distribution in Syrian.

### 3.6. The Distribution of Prepositional Phrases:

As discussed earlier, prepositional phrases in Syrian can appear as a complement of preceding constituents, as an adjunct, and finally as predicates. We will begin first by considering PP's as complements of other phrasal categories.

#### 3.6.1. Prepositional Phrases as Complements:

Prepositional phrases, as we noted earlier, can function as complements of verbs, nouns, adjectives, and prepositions. The following examples illustrate this:

74. raḥ neḥtifl maḥ samira fl- bet  
will celebrate-1PL with Samira in the house  
'We will celebrate with Samira in the house'

75. ma bədda təštiri ktoub mən l- dikkan  
not want-3SGF buy-3SGF books from the shop  
'She doesn't want to buy books from the shop'

(74) shows that PP's can be complements of verbs, while (75) indicates that PP's function as complements of nouns.

We can look next at examples such as (76) and (77):

76. Aḥmed kan zeḡlan mən Salwa  
Ahmed was-3SGM angry from Salwa  
'Ahmed was angry at Salwa'

77. t̤aliḡ                    Aḥmed mən wara 1- šibbak  
 appeared-3SGM Ahmed from behind the window  
 'Ahmed appeared from behind the window'

(76) shows that head can have PP complements, whereas (77) indicates that PP complements can appear with some prepositions.

The position of prepositional phrases as a complement, moreover, varies depending on several facts. A preposition+clitic combination, for example, can either precede or follow an object. Consider the following examples:

78. ḡam tštire mənno ṣ̌i?  
 are buy-2SGM from-3SGM anything  
 'Are you buying anything from him'?

79. ḡam tštire ṣ̌i mənno?  
 are buy-2SGM anything from-3SGM

(78) shows that the preposition and its clitic can precede the object. (79) shows that the object can precede the preposition and the clitic.

Having discussed PP's as complements, we will now consider whether PP's can function as adjuncts.



### 3.6.2. Adjunct Prepositional Phrases:

PP's may function as adjuncts to NP's, PP's, and VP's. In chapter two the differences between complements and adjuncts were outlined and thus, we will assume the conclusion down. We will then move on to consider whether adjuncts can occur before complements. Consider now the following examples in which the prepositional phrases function as adjuncts:

80. bədak        takoul    ši        qabl    l- riḥleh?  
want-2SGM eat    anything before the trip  
'Would you like to eat anything before the trip?'

81. naḍḍafu        l-    šawarḥ    mən    foq    la-    taḥt  
cleaned-3PL the streets from top to bottom  
'They cleaned the streets from top to bottom'

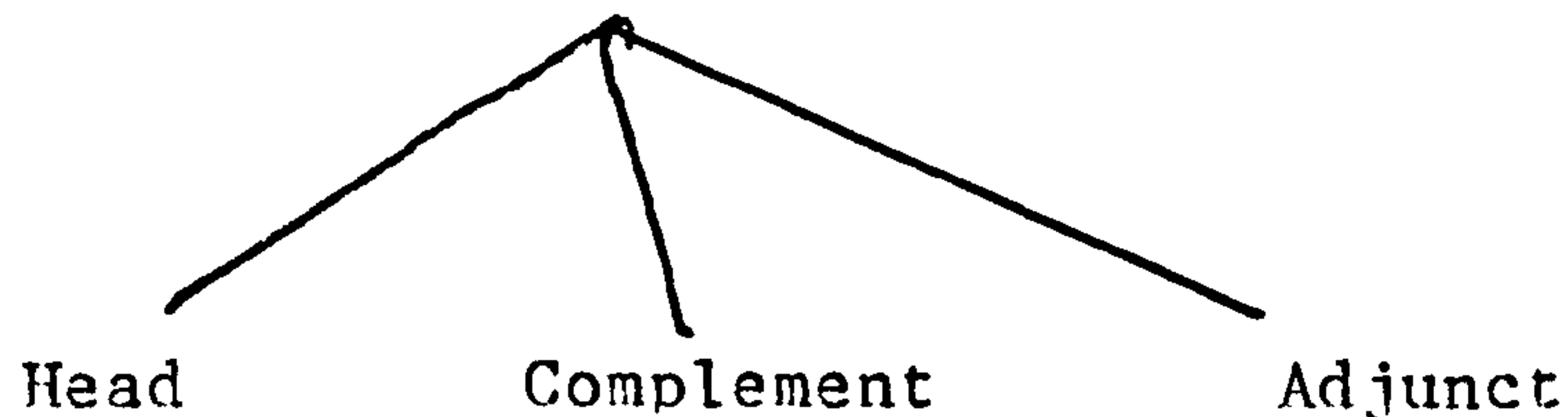
82. leš    ɣam    takoul        b    ɕ-ɕariq?  
why are eating-2SGM in street  
'Why are you eating in the street?'

We proceed now to consider whether adjuncts can precede complements. As discussed in the previous chapter, all types of complements except S' complements precede adjuncts. The following example illustrates this:

83. Salwa qalet        la    Aḥmed fl-        qiṭar    ɣnnu    Samira matet  
Salwa said-3SGF to Ahmed on the train that Samira died  
'Salwa said to Ahmed on the train that Samira died'

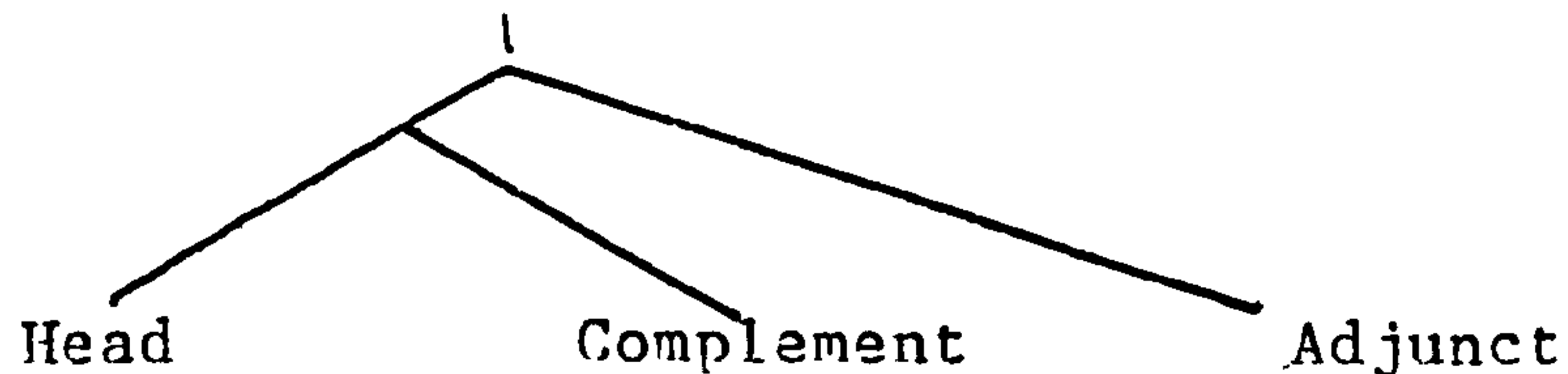
A question to ask here is how do we analyze adjuncts? There are two approaches to consider: The first approach, presented in Pollard and Sag (1988), assumes that adjuncts are the realization of an ADJUNCTS feature which indicates what kind of adjuncts heads can combine with. To put it differently, heads select their adjuncts<sup>1</sup>. By contrast, the second approach, developed in Pollard and Sag (forthcoming), argues that adjuncts are the realization not of an ADJUNCTS feature but of a MODIFIED (MOD) feature which enables an adjunct to select the head that it modifies. Within the first analysis, adjuncts can be sisters of complements and we can have structures of the following form:

84.



The second analysis, by contrast, proposes that adjuncts are not sisters of complements and we can have structures of the following form instead of that in (84) above:

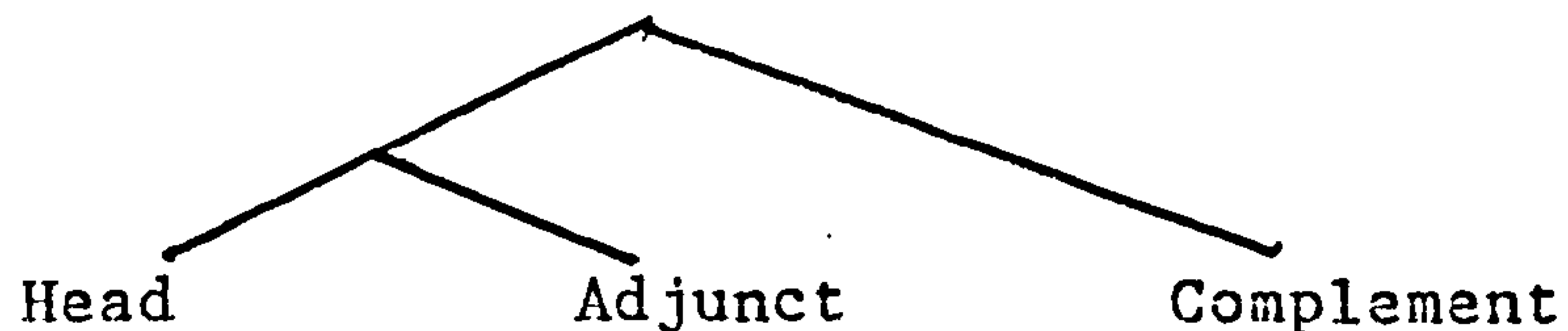
85.



We would like to note that examples of the form head-adjunct-complement such as that in (86a) are not a major problem for the MOD analysis because one could allow adjuncts to modify lexical heads giving structures of the following form:

86. a. Salwa qalet m-barḥa ʔannu Samir mat  
 Salwa said-3SGF yesterday that Samir died  
 'Salwa said yesterday that Samir died'

b.



It is examples of the form head-complement-adjunct-complement which argue against the MOD analysis. The following example illustrates:

87. Aḥmed qal la Salwa fl- qīṭar ʔannu Samira matet  
 Ahmed said-3SGM to Salwa on-the train that Samira died  
 'Ahmed told Salwa on the train that Samira died'

The example in (87) involves a PP adjunct before a clausal complement and after a PP complement.

Moreover, the appearance of some PP adjuncts before PP complements necessitates the structure in (84) above. The following examples are relevant:

88. a. sayyara la Kamal b- dawalib jidad  
 car for Kamal with wheels new  
 'a car for Kamal with new wheels'

b. sayyara b- dawalib jidad la Kamal  
 car with wheels new for Kamal

Finally, it is important to make it clear that examples with adjuncts before complements such as those given above are compatible with the ADJUNCTS analysis but not with the (MOD) analysis.

We turn now to look at prepositional phrases functioning as predicates.

### 3.6.3. Predicative Prepositional Phrases:

PP's can also function as predicates. The following examples illustrate this:

89. a. Salwa fl- madraseh

Salwa in the school

'Salwa is at school'

b. George by<sup>2</sup>tiqud Nawal quadra ζ1- ġiš

George believes-3SGM Nawal capable-3SGF on the cheating

'George believes Nawal capable of cheating'

90. ziad maζ Layla

Ziad with Layla

'Ziad is with Layla'

There is a distinction between PP's functioning as complements and adjuncts, on the one hand, and predicative PP's, on the other. That is, ordinary PP's in the standard



version of HPSG are of the category P[SUBCAT<>], whereas predicative PP's are analyzed in Pollard and Sag (1988:64-70) as P[+PRD;SUBCAT<NP>], where +PRD is a binary head feature that distinguishes predicative from non-predicative constructions. This assumption can simply be translated into the revised version of HPSG developed in Borsley (1987 and forthcoming (a)). Ordinary PP's will have the category in (91), while predicative PP's will have the category in (92), respectively:

91. P[-PRD;SUBCAT<>;SUBJ<>]

92. P[+PRD;SUBCAT<>;SUBJ<NP>]

Ordinary PP's will, then, be [SUBJ<>] and [-PRD], whereas predicative PP's will be [+PRD] and [SUBJ<NP>].

We will not suggest any sort of trees for predicative PP's until chapter six when we discuss Verbless Clauses (VC's).

### 3.7. Summary:

We have been concerned in this chapter with prepositional phrases in Syrian. In section one, we have considered a variety of Syrian prepositions and argued that they are heads. In section two, we have discussed the attachment of the definite article to preceding prepositions giving similar data from German and Italian. We have also dealt with the possible

complements that Prepositions subcategorize. In section four, we have looked at clitics and provided an analysis for clitics within PP's. We have, furthermore, distinguished between PP's functioning as complements and adjuncts, on the one hand, and predicative PP's on the other. As shown in section six, predicative PP's can be +PRD within HPSG and have the category P[+PRD;SUBCAT<>;SUBJ<NP>] in the revised version, so that they can easily be distinguished from non-predicative PP's whose categories are of the form P[-PRD;SUBCAT<>;SUBJ<>]. Finally, we can say that the revised version of HPSG has handled Syrian PP's discussed here satisfactorily.

#### NOTES:

1. There is some evidence for the ADJUNCTS analysis in chapter two.

## CHAPTER FOUR

### Adjectival Phrases

#### 4.0. Introduction:

In the previous chapter, we discussed the internal structure of Syrian PP's and argued that they can be handled satisfactory within the revised version of HPSG developed by Borsley (1987 and forthcoming (a)). In this chapter, we will study Syrian adjective phrases (AP's).

The organization of this chapter will be as follows: In section one, we will begin by discussing the morphology of adjectives and present Syrian data in full. In section two, we will discuss the internal structure of AP's, in particular the occurrence of adjectives taking a PP complement and S' complement or a PP complement followed by an S' complement, and accompanied with specifiers and degree complements. In section three, we will consider the distribution of adjective phrases showing that they can appear predicatively and attributively. In section four, we will summarize this chapter.

#### 4.1. The Morphology of Adjectives:

We will begin by discussing the morphology of adjectives first and then proceed to consider the syntax of AP's. Adjectives are inflected for number and gender, i.e., they can appear in the forms (masculine/singular, feminine/singular, and plural). These inflected adjectives can be distinguished either by internal changes in form or by adding affixes. The plural of the adjective qaṣir 'short', for example, is formed by changing it internally into qṣar 'short'(PL), whereas the plural of the adjective guṣan 'hungry' is formed by adding the suffix -in as in guṣanin 'hungry'(PL). The masculine singular is always formed without any affixation. The following data illustrates this:

1.	<u>Masculine</u>	<u>Feminine</u>	<u>Plural</u>	<u>Meaning</u>
	ḡani	ḡaniyyeh	aḡniya	rich
	mufid	mufideh	mufidin	useful
	ṣugaṣ	ṣugaṣa	ṣuḡṣan	brave
	saṣid	saṣideh	saṣidin	happy
	magnun	magnuneh	maganin	crazy

The data in (1) shows that most adjectives in Syrian are inflected with either -eh/-a or -in.

A further important point to note about adjectives before we proceed to discuss their internal structure is definiteness. Definiteness in Syrian is expressed by the article prefix l- and indefiniteness by the absence of this prefix. Relevant here are the following examples:



2. a. 1- bent 1- kbireh raḥet ξ1- madraseh  
 the girl the big went-3SGF to the school  
 'the young girl went to school'
- b. \*1- bent kbireh raḥet ξ1- madraseh  
 the girl big went-3SGF to the school
- c. \*bent 1- kbireh raḥet ξ1- madraseh  
 girl the big went-3SGF to the school
- d. 1- bent kanet kbireh  
 the girl was-3SGF big  
 'the girl was big'

As these examples show, there is a gender agreement between attributive adjectives and the noun they modify. The example in (2a) shows that a noun and an attributive adjective agree in definiteness. In other words, both are definite or both are indefinite. That is why (2b) and (2c) are ungrammatical. (2d) indicates that predicative AP's do not agree in definiteness with the noun they are associated with, despite the fact that they agree in number and gender with the head noun.

Most adjectives, moreover, have comparative forms which derive from the adjectival stem themselves. The following data is relevant here:

3.	<u>Adjective</u>	<u>Meaning</u>	<u>Comparative</u>	<u>Meaning</u>
	ṣaḏib	difficult	aṣḏab	more difficult
	waseḏ	broad	2wsaḏ	broader
	ḡani	rich	aḡna	richer
	xafif	light	axfaf	lighter
	muhim	important	aham	more important
	jdid	new	ajdad	newer

Furthermore, the comparative adjectives presented in (3) can be used attributively. The following examples illustrate this:

4. a. walad aqwa  
 boy stronger  
 'A stronger boy'
- b. \*walad l- aqwa  
 boy the stronger
5. a. rəjjal aḡna  
 man richer  
 'A richer man'
- b. \*rəjjal l- aḡna  
 man the richer

When these comparative adjectives are definite, they are understood as superlatives. The following examples demonstrate this point:

6. a. l- walad l- aqwa  
 the boy the stronger  
 'The strongest boy'
- b. \*l- walad aqwa  
 the boy stronger
7. a. l- rəjjal l- aḡna  
 the man the richer  
 'The richest man'
- b. \*l- rəjjal aḡna  
 the man richer

Having dealt with the morphology of adjectives, we proceed to consider their syntax.

#### 4.2. The Internal Structure of Adjective Phrases:

Adjectives head adjective phrases just as verbs head VP's, prepositions PP's and nouns NP's. They can be followed by various types of complements and they can occur with specifiers. We will begin by looking at complements.

##### 4.2.1. Complements:

Adjectives, as we noted earlier, can be accompanied by different types of complements such as PP-complements and S'-complements. We will begin by discussing PP-complements. The following examples illustrate this:

8. a. huweh kan            jayyed fl-        riyadiyat  
      he    was-3SGM good    in the mathematics  
      'He was good at mathematics'
- b. \*huweh kan fl-        riyadiyat        jayyed  
          he    was in the mathematics    good

These examples show that PP-complements follow the associated head adjectives. This is an instance of the generalization that complements follow heads in Syrian which we highlighted in the last two chapters.

There are, of course, different types of PP-complements to be considered. The adjective farḥaneh 'happy' in (9a), for example, takes a PP complement headed by the preposition la 'to':

9. a. Salwa kanet farḥaneh ll- safir  
 Salwa was-3SGF happy to the travel  
 'Salwa was happy to travel'.

b. \*Salwa kanet farḥaneh fi safir  
 Salwa was-3SGF happy in travel

The adjective zeḡlaneh 'angry' in (10a), on the other hand, takes a PP complement headed by the preposition mən 'from':

10. a. Salwa kanet ktir zeḡlaneh mən Aḥmed  
 Salwa was-3SGF very angry from Ahmed  
 'Salwa was very angry at Ahmed'

b. \*Salwa kanet ktir zeḡlaneh la Aḥmed  
 Salwa was-3SGF very angry to Ahmed

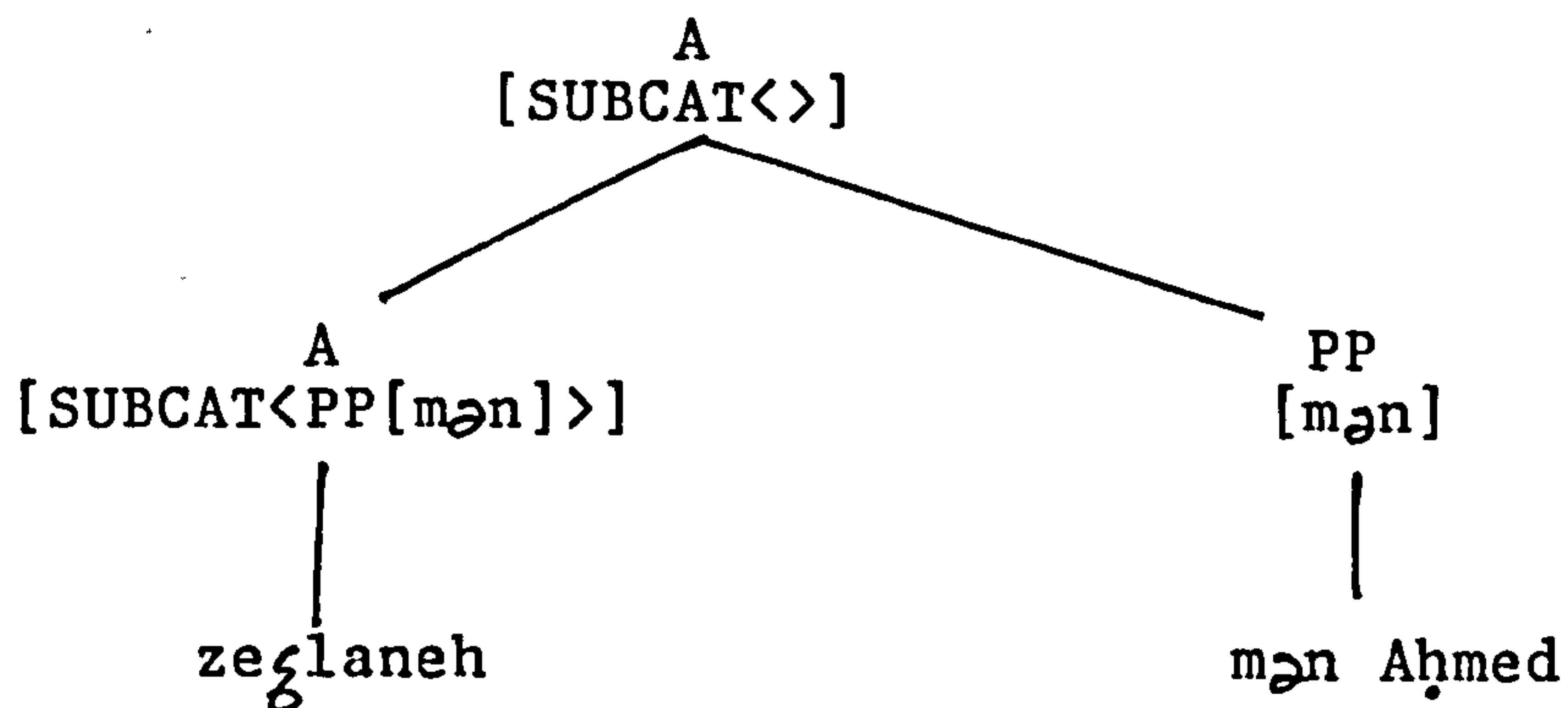
An adjective such as zeḡlaneh 'angry' (10a) will have the category in (11):

11. A[SUBCAT<PP[mən]>]

The category in (11) will interact with the head-complement rule together with the HFP and the Subcategorization Principle (discussed before in previous chapters) to give trees such as (12) below:



12.



Having given an analysis of AP's containing PP-complements, we proceed to provide an analysis of AP's containing S'-complement. The following examples are relevant here:

13. a. hyyeh mabsuṭa ʔnnu Aħmed raħ      ɣ1-      bet  
 she happy that Ahmed went-3SGM to the house  
 'She is happy that Ahmed went home'

b. \*ʔnnu Aħmed raħ      ɣ1-      bet      hyyeh mabsuṭa  
 that Ahmed went-3SGM to the house she happy

14. a. hənneh fərħanin ʔnnu gaišna antašir fl-      ħarb  
 they happy that army-3PL won in the war  
 'They are happy that our army won the war'

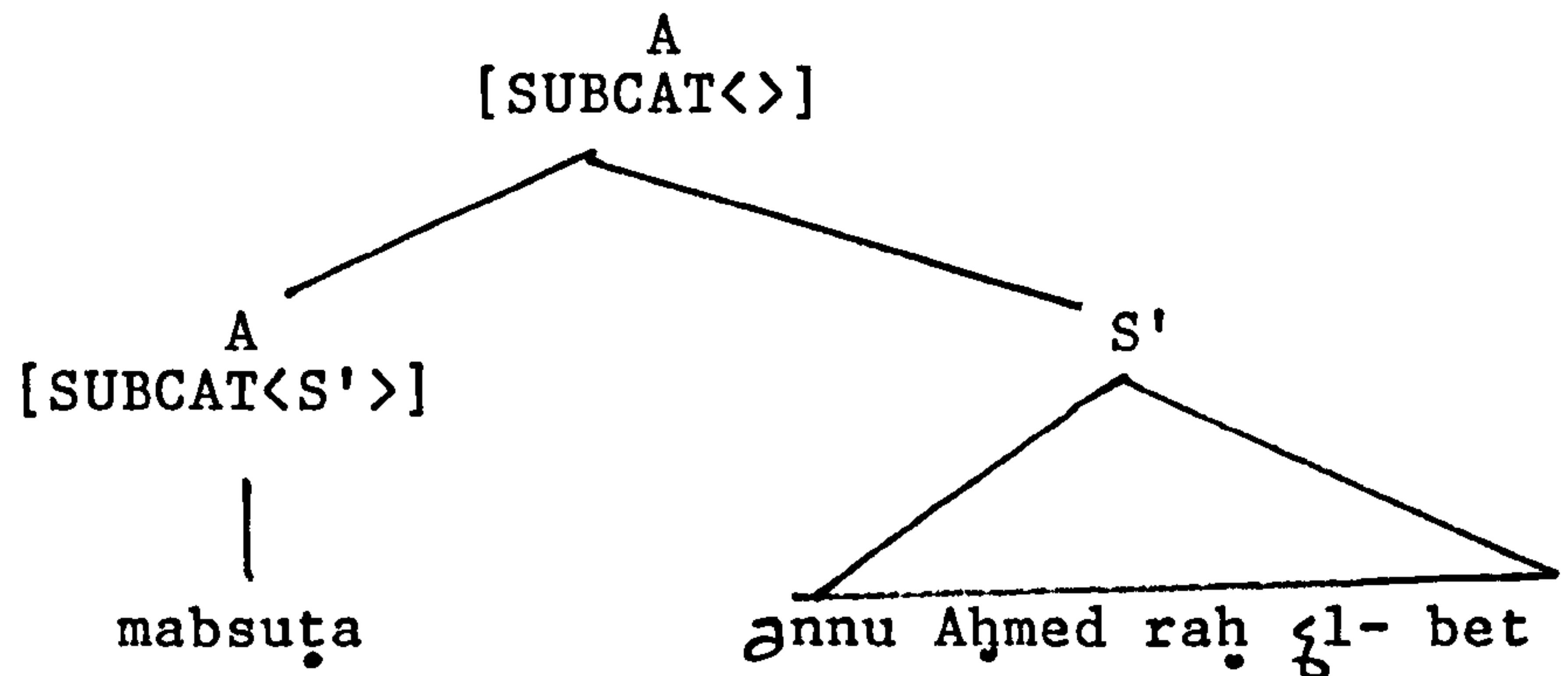
b. \*ʔnnu gaišna antašir fl-      ħarb hənneh fərħanin  
 that army-3PL won in the war they happy

An adjective such as mabsuṭa 'happy' in (13a) will have the category in (15):

15. A[SUBCAT<S'>]

This category will interact with the head-complement rule together with the HFP and the Subcategorization Principle to form trees such as the following:

16.



Finally, adjectives can take a PP complement followed by an S' complement. The following example is relevant here:

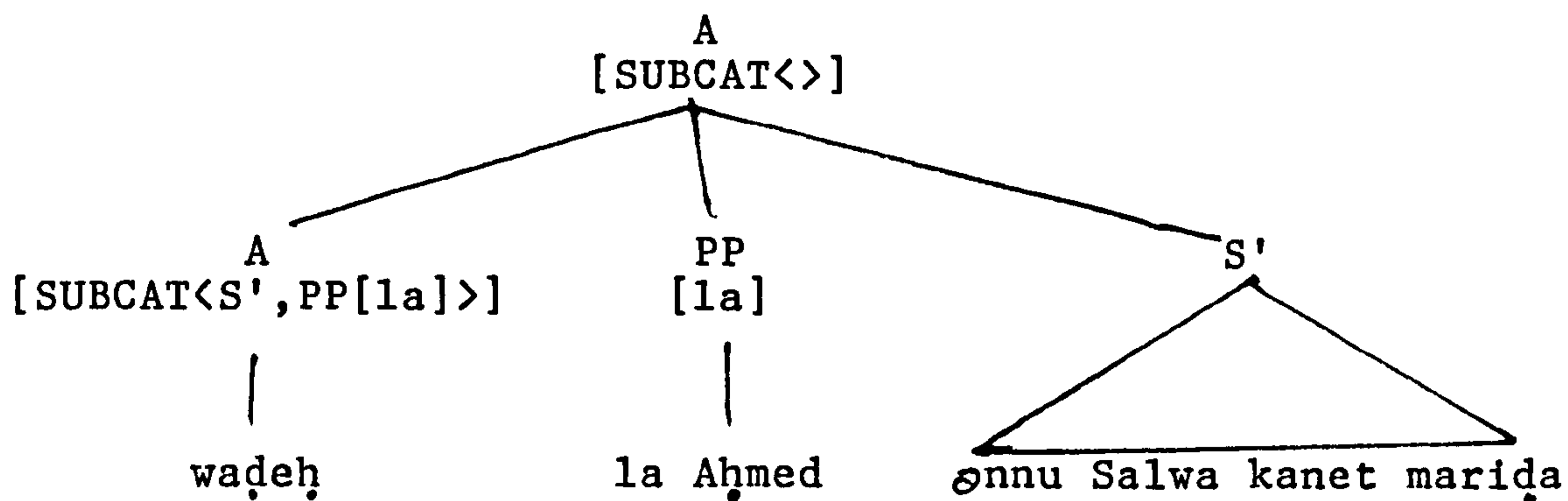
17. kan waḏeḥ la Ahmed annu Salwa kanet marida  
 was obvious to Ahmed that Salwa was ill  
 'It was obvious to Ahmed that Salwa was ill'

We can assign the category in (18) to the adjective waḏeḥ (17):

18. A[SUBCAT<S',PP[1a]>]

The category in (18) will interact with the head-complement rule together with the two universal principles to give trees such as the following:

19.



We will now examine the status and the distribution of degree words.

#### 4.2.2. Specifiers:

Adjectives often occur with preceding degree words such as ktir 'so', 'too', 'very', kamman 'more', 'too', 'again', kəffayeh 'enough', qalil 'less', 'little', talama 'as', etc. We can assign these items to the category Deg. Consider the following examples:

20. 1- bent kanet ktir ḥilweh

the girl was-3SGF very pretty

'The girl was very pretty'

21. 1-rəjjal kan kaman saḡid 1l- xabr

the man was too happy to the news

'The man was too happy about the news'

22. a. \*Samir kan kəffayeh ḥilo

Samir was-3SGM enough handsome

b. Samir kan            ḥilo            kəffayeh

Samir was-3SGM handsome enough

'Samir was handsome enough'

The examples in (20) and (21) show that adjectival specifiers in Syrian can precede the head adjective, whereas (22) shows that the specifier kəffayeh 'enough' is exceptional just like English because it only follows the head adjective.

Syrian adjectival specifiers can also follow the head adjective. The following examples illustrate this distribution:

23. 1- bent kanet            zeḡlaneh ktir mən Aḥmed

the girl was-3SGF angry            very from Ahmed

'The girl was angry at Ahmed'

24. Aḥmed kan            farḥan ktir 11-            xaber

Ahmed was-3SGM happy so            to the news

'Ahmed was so happy about the news'

25. Salwa kanet            sariḡa kəffayeh 11-            sibaq

Salwa was-3SGF quick enough            for the race

'Salwa was quick enough for the race'

What we have in (23) to (25) is head-specifier-complement order.

A question to ask here is whether items such as 'ktir', 'kamman', etc., are really specifiers? One piece of evidence we can posit in favour of analysing such items as specifiers in



Syrian is that they cannot co-occur. The following examples illustrate this:

26. \*Nawal kanet ktir kaman ḥilweh

Nawal was-3SGF very too pretty

27. \*Samir kan kaman baṣ kaffayyeh

Samir was too ugly enough

By contrast, only one specifier can occur with the head adjective. The following example illustrates this:

28. Aḥmed kan ktir ḥilo

Ahmed was-3SGM very handsome

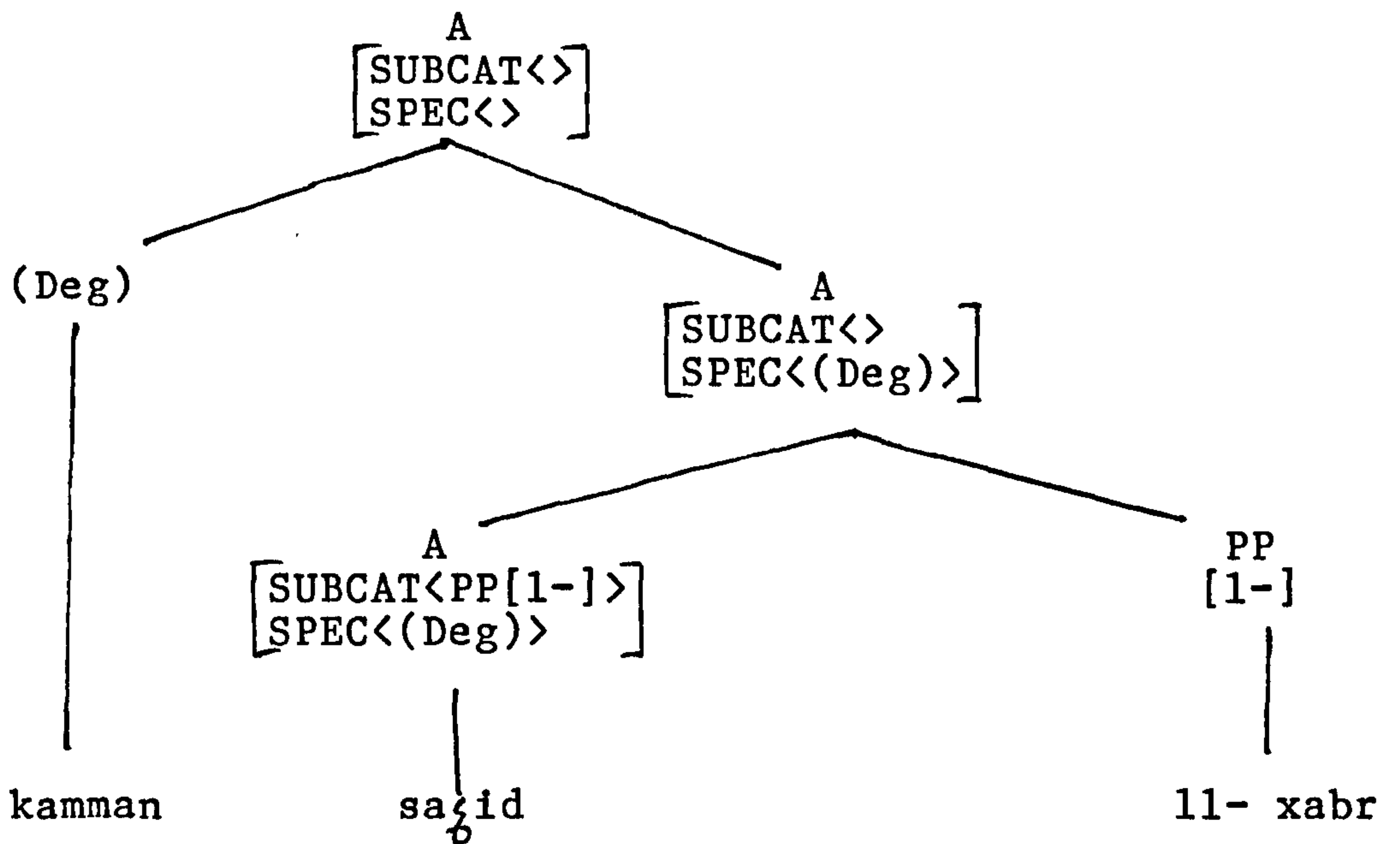
'Ahmed was very handsome'

Having suggested that such items are indeed adjectival specifiers, we can proceed to offer an analysis of specifier-head-complement AP's. It is necessary to modify the categories given in the last section for complements in order to account for an optional SPEC feature. We will thus assign the category in (29) for the AP's in (21):

29. A[SUBCAT<PP[1-]>;SPEC<(Deg)>]

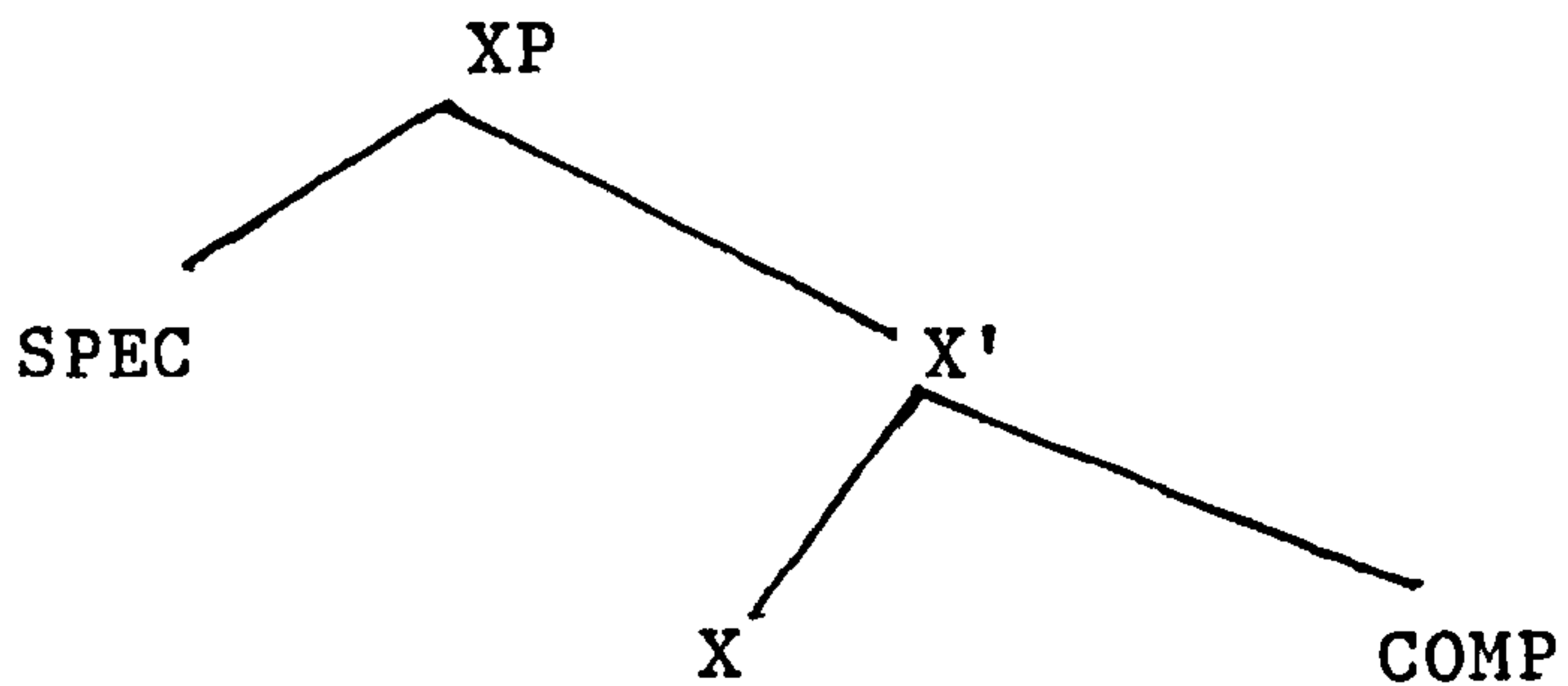
This category will interact with the specifier-head rule given in the first chapter together with the HFP and the Subcategorization Principle to give the following structure:

30.



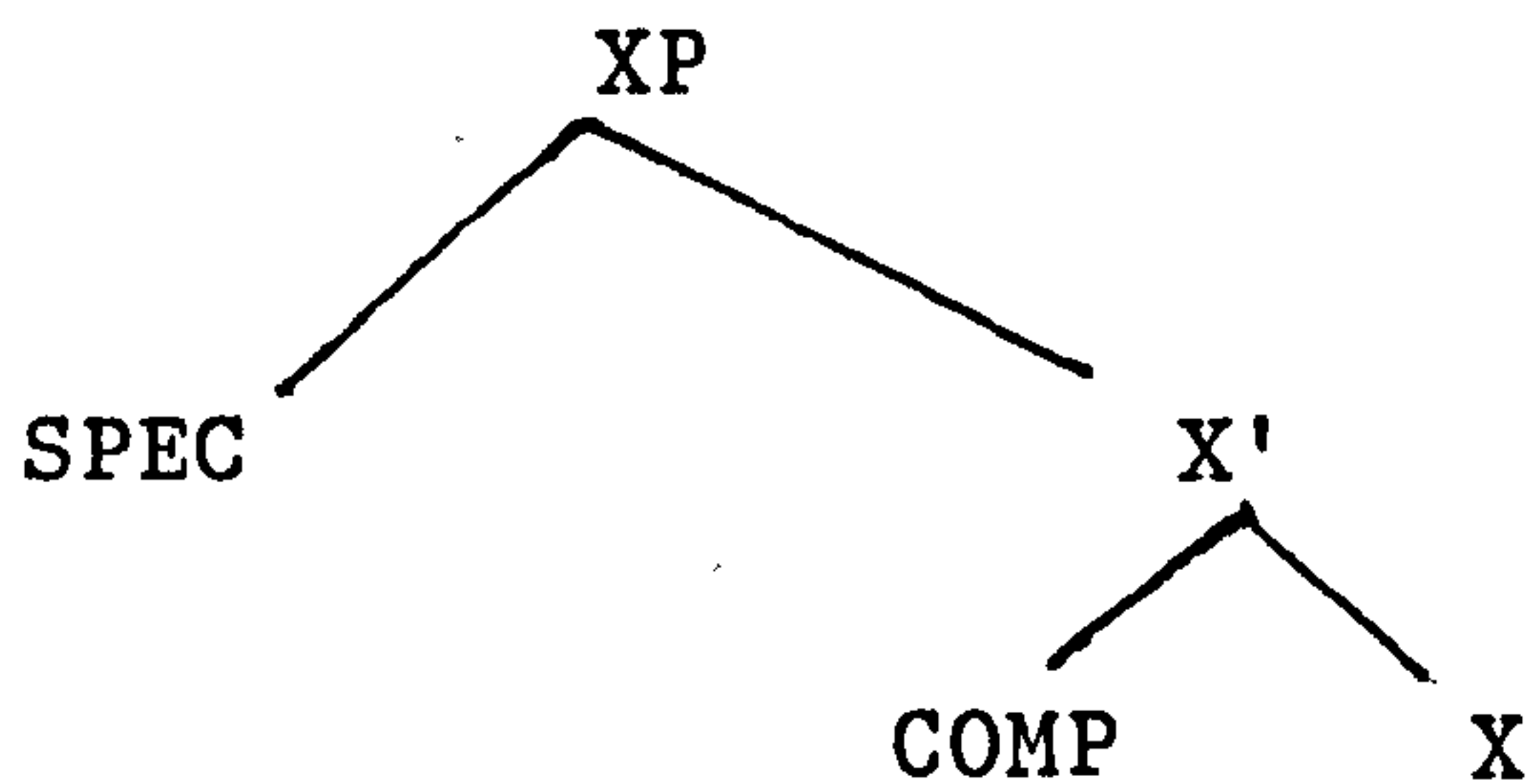
Another question to ask concerning specifiers is, how do we allow for the marked head-specifier-complement order rather than the unmarked specifier-head-complement order. In X-bar framework for English, phrases can be sketched as follows:

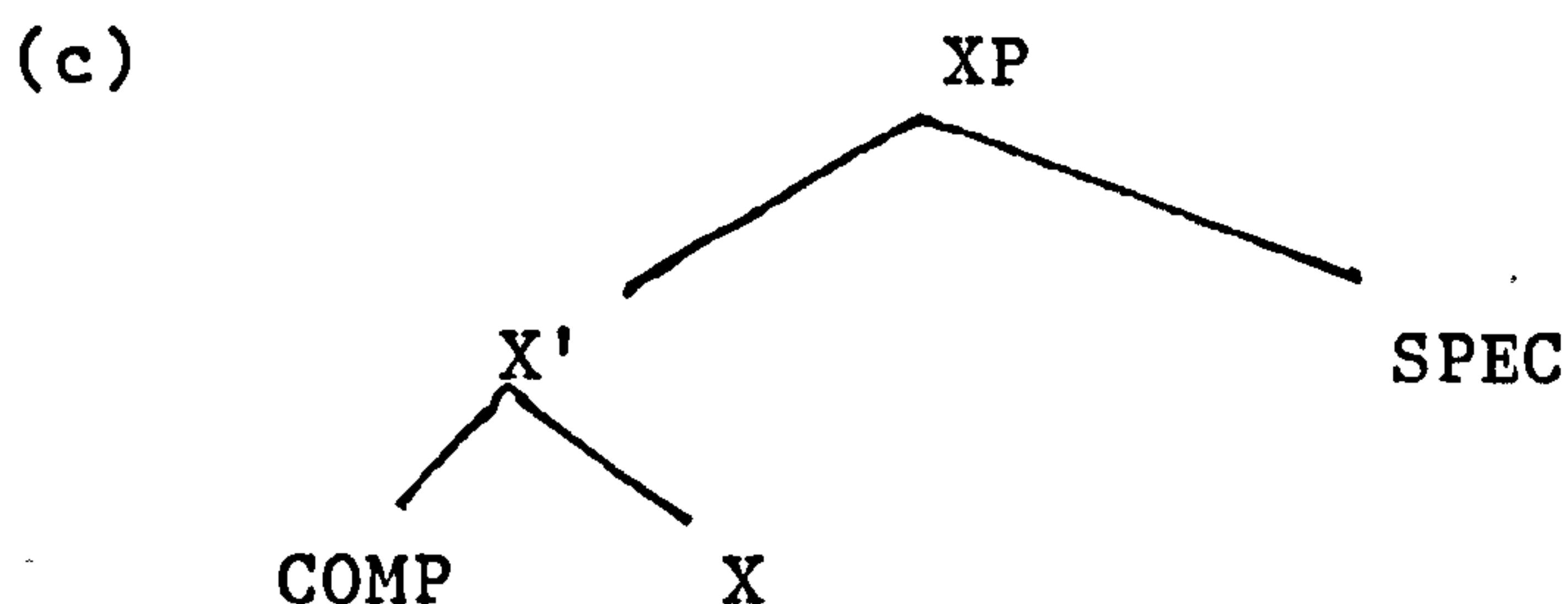
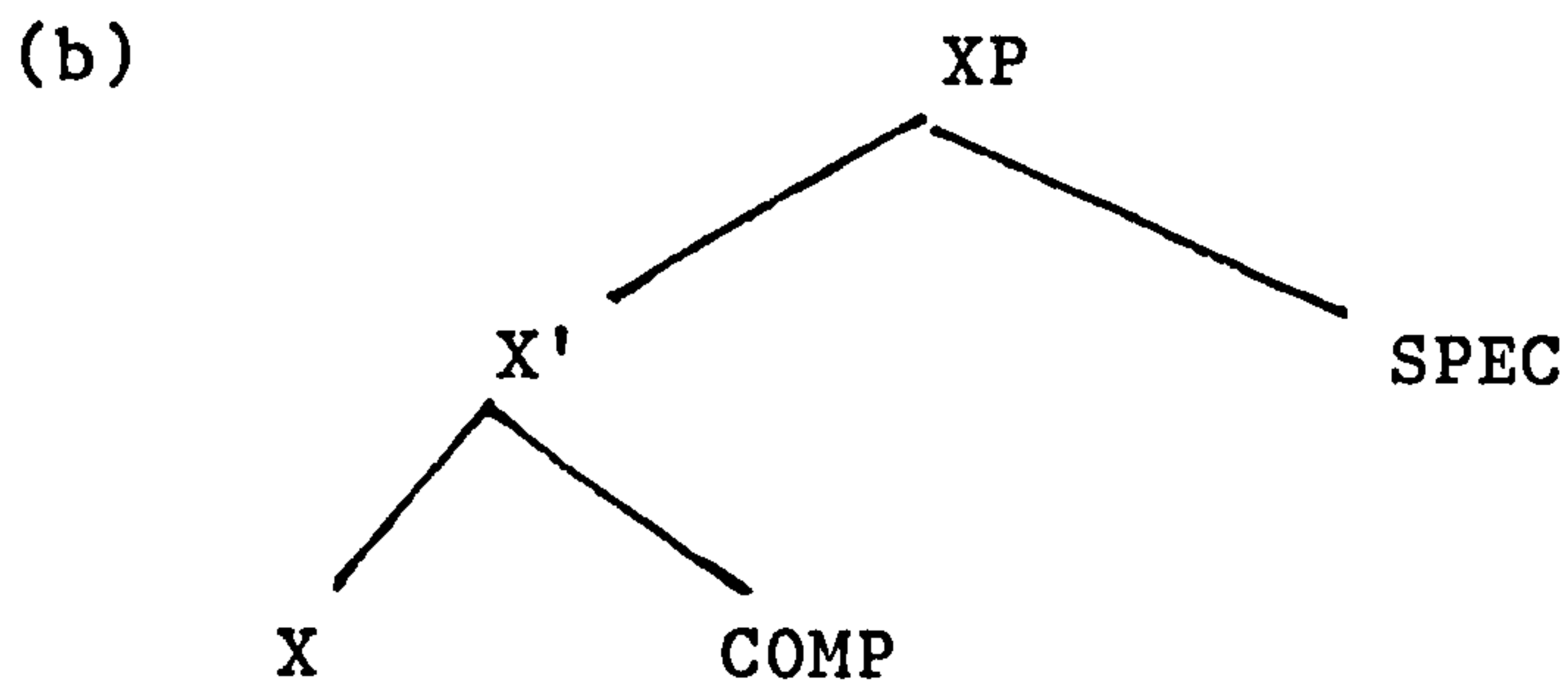
31.



However, it is possible within HPSG to account for the following (natural languages) structures by accepting different LP rules:

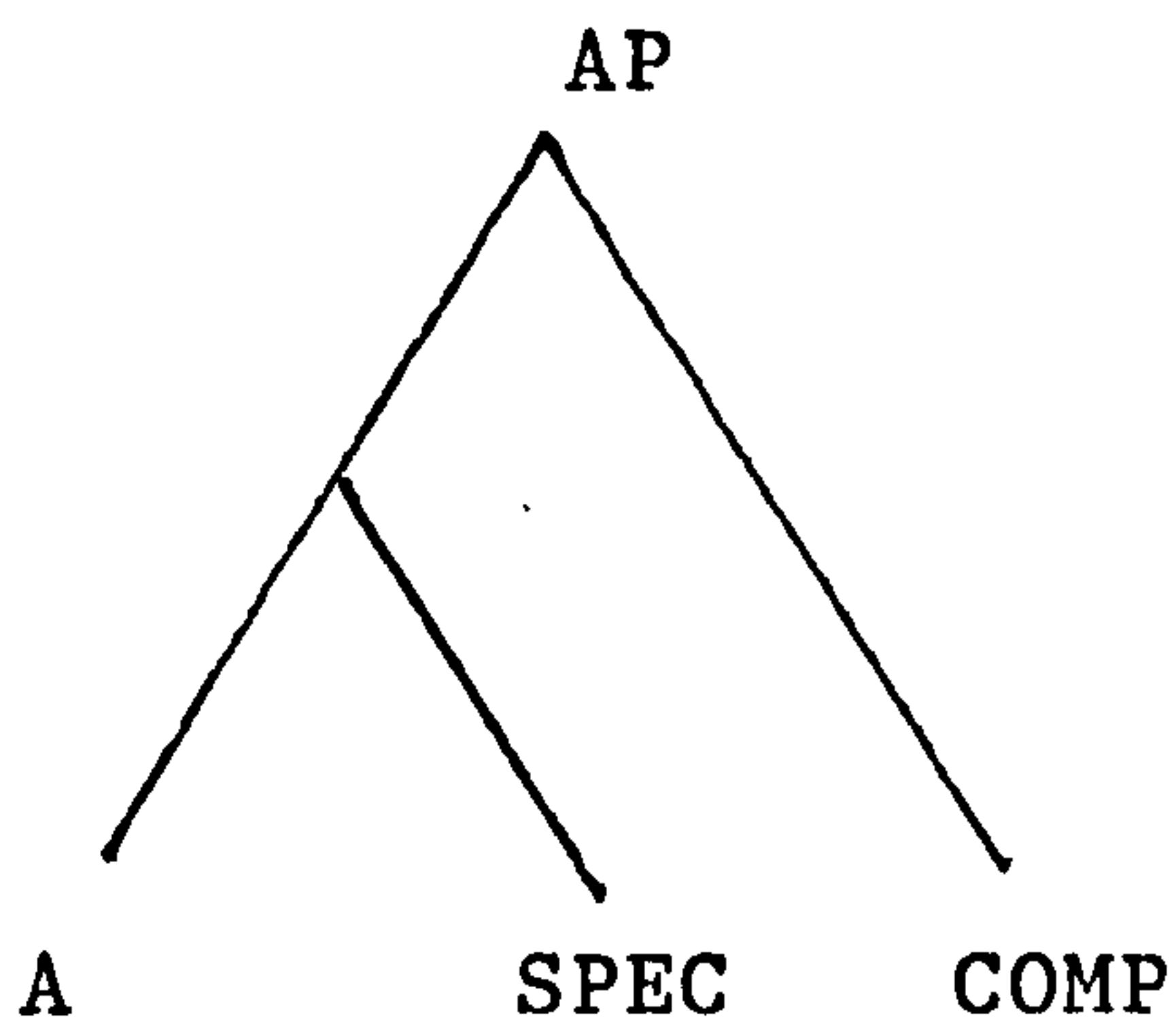
32. (a)



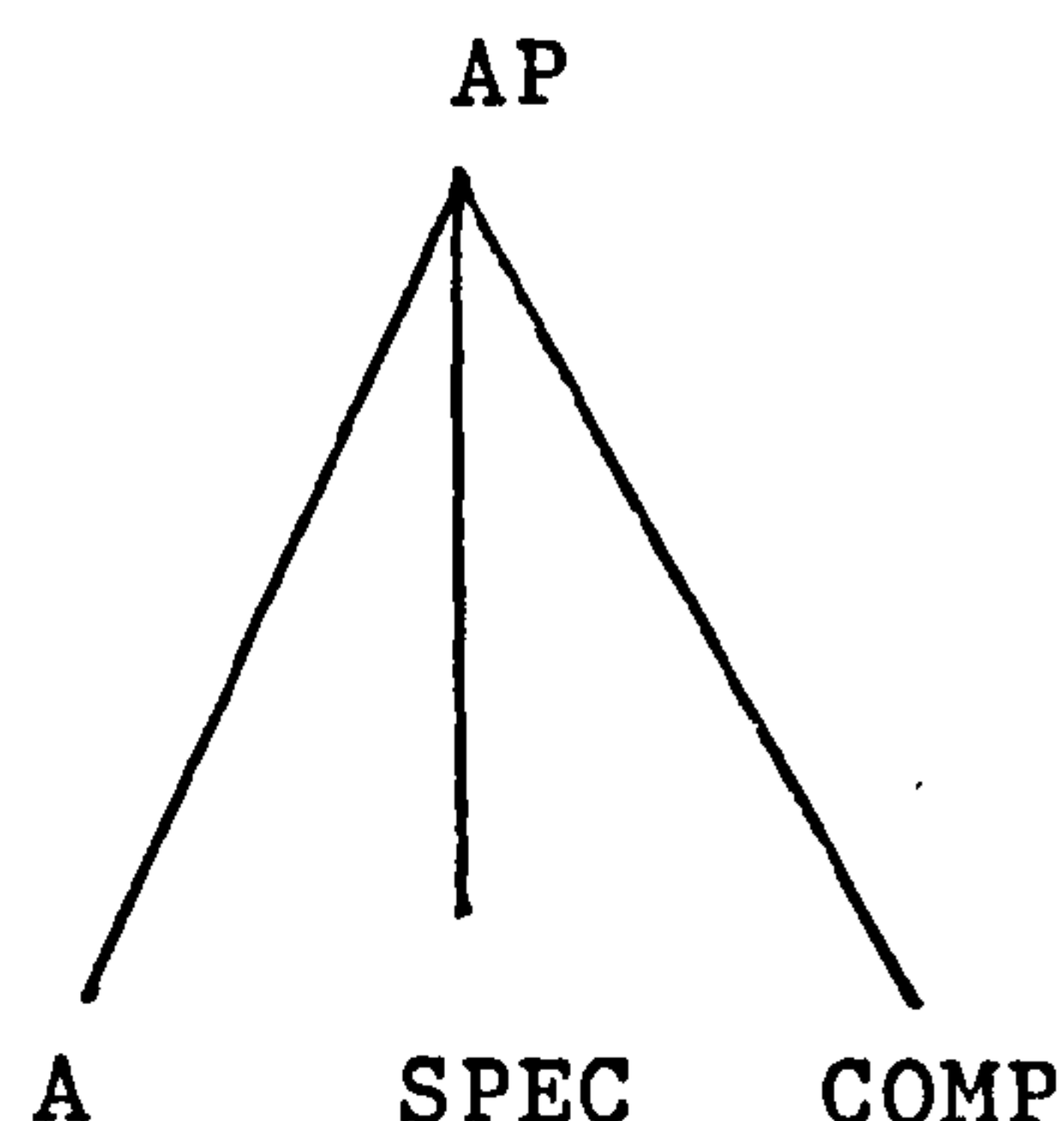


It is more problematic to account for head-specifier-complement order. We can however suggest two types of structures for Syrian head-specifier-complement order:

33. a.



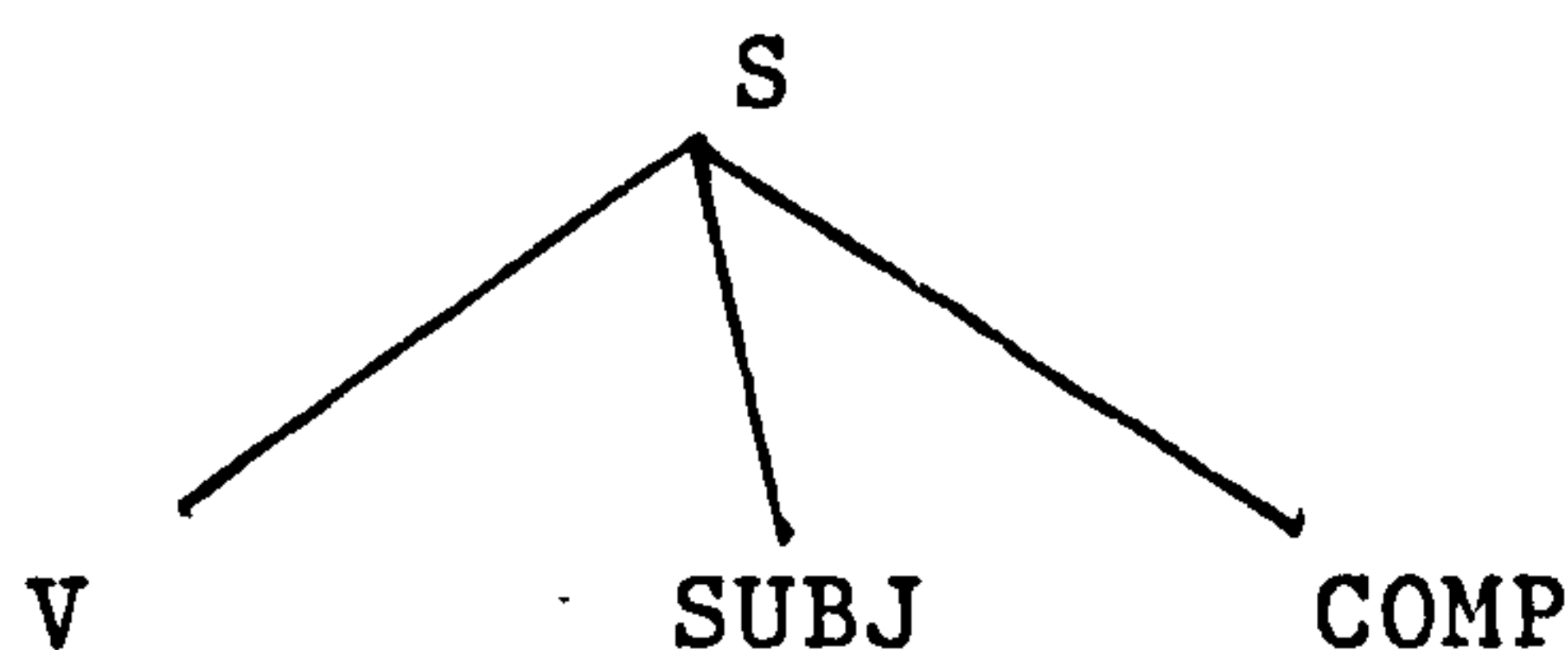
b.



(a) would require a modification to the specifier-head rule to allow it to combine a head with a specifier before it combines with a complement. That is, the removal of SUBCAT<> from the head. This structure will be rejected as we will see when we consider NP's in the next chapter. The structure in (b), by

contrast, would make post-adjective specifiers like subjects in verb initial clauses which have the structure below:

34.



There are two different analyses for the structure in (33b). We either need a head-specifier-complement rule or extra categories treating post-adjectival specifiers as extra complements. That is, a rule combining certain heads simultaneously with a specifier and a complement instead of just a head-specifier-complement rule. Note that the second approach involves the assumption that we have categories like  $A[\text{SUBCAT}\langle\text{PP}, \text{Deg}\rangle; \text{SPEC}\langle\rangle]$  as well as categories like  $A[\text{SUBCAT}\langle\text{PP}\rangle; \text{SPEC}\langle\text{Deg}\rangle]$ . We will return to this point in the following chapter when we discuss NP's.

We will now examine the specifier kəffayyeh 'enough'. As we have illustrated in the examples above, kəffayyeh behaves differently from all other specifiers in that it obligatorily follows the adjective it modifies. The following examples are relevant here:

35. a. Salwa kanet      ḥilweh k ffayeh

Salwa was-3SGF pretty enough

'Salwa was pretty enough'

b. \*Salwa kanet      kəffayeh ḥilweh

Salwa was-3SGF enough pretty



An adjective such as hilweh 'pretty' in (35a) will have the category in (36):

36. A[SUBCAT<>;SPEC<Deg>]

Finally, to complete the picture, we will introduce some further specifiers such as tamaman 'quite', bas 'just', taqriban 'almost' or 'nearly', yadoub 'scarcely', nadiran 'hardly', and others. Consider the following examples:

37. l- alwan mbineh mutšabha taqriban  
the colours look alike almost  
'The colours look almost alike'

38. kan mulim tamamen bl- wađiđ  
was informed-3SGM quite in the situation  
'He was well informed about the situation'

39. huweh kan tıđban bas  
he was tired just  
'He was just tired'

So far we have only given part of the analysis of degree words. We will try to complete the analysis in the next chapter when we discuss specifiers within NP's.

We turn now to look at some different data, namely degree complements.

#### 4.2.3. Degree Complements:

The term degree complement is derived from Jackendoff's (1977: chapter 8) term 'Degree Clause'. The reason for calling them 'Degree Complements' is that we sometimes have a phrase instead of a clause following the degree words. There are two cases to be distinguished here: the non-comparatives involving words such as ktir 'too', 'so', kaman 'too', qalil 'little', etc., and the comparatives which may involve either specifiers or some sort of morphology on the verb. The following examples illustrate this:

40. a. Riyad ktir xayef ənnu Salwa t-dal bl- bet  
Riyad so afraid that Salwa stay in the house  
'Riyad so afraid that Salwa might stay at home'
- b. l- ktab ktir şağib ɣl- Ahmed yfhamo  
the book too difficult on the Ahmed understand-3SGM  
'The book is too difficult for Ahmed to understand'
- c. hyyeh aqşar mən Samira  
she shorter than Samira  
'She is shorter than Samira'
- d. huweh kan aħla mən Samir  
he was-3SGM handsome than Samir  
'He was more handsome than Samir'

(40a,b) are examples of non-comparatives, while (40c,d) are simple cases of comparatives.

Degree complements can either occur with specific forms of adjectives such as comparatives, or with adjectives taking specific specifiers. They cannot occur with ordinary adjectives without specific specifiers. That is, we cannot leave out specifiers or the comparative morphology.

Comparative adjectives can be followed by a mən 'than' phrase. This mən-phrase, like the English than-phrase, can be left out as shown in (41b) and (42b):

41. a. sayyarton ajdad mən sayyarto  
car-3PL newer than car-3SGM  
'Their car is newer than his'
- b. sayyarton l- ajdad  
car-3PL the newest  
'Their car is the newest'
42. a. He is taller than her.  
b. He is the tallest.

Comparative adjectives can also be followed by a mən clause. Relevant here is the following example:

43. Ahmed kan adʒaf mən ma Salwa ʒtaqdit huweh kan  
Ahmed was-3SGM slimmer than not Salwa thought he was  
'Ahmed was slimmer than Salwa thought he was.'

It is rather clear that the above complements are possible since they are associated with specifiers. That is, if we delete the degree words above we will get ungrammatical sentences unless we also delete the phrases or the clauses which follow the AP. The following examples demonstrate the point:

44. a. huweh təɣban aktar mən Ziad  
 he tired more than Ziad  
 'He's more tired than Ziad'

b. \*huweh təɣban mən Ziad  
 he tired than Ziad

45. Aḥmed ktir zɣlan ənnu Nawal tsafir ɣl-šam  
 Ahmed very angry that Nawal travel to Damascus

'Ahmed is very angry that Nawal might travel to Damascus.'

The example in (45) is also possible without the specifier ktir. We would like to make it clear that removing comparative morphology also excludes the possibility of a mən complement.

The point is that there is a connection between the specifier and its complement in Syrian. The following examples illustrate the point:

46. Aḥmed ktir xayef ənnu/ɣl/\*mən/\*talamā Nawal trsab fl- faḥs  
 Ahmed so afraid that/for/from/as Nawal fail in the exam  
 'Ahmed is so afraid that Nawal might fail in the exam'

47. Salwa waɣyeh aktar/\*ənnu/\*talamā mən Samir  
 Salwa careful more that as from Samir  
 'Salwa is more careful than Samir'



48. huweh jiddan frhan ənnu/la/\*mən/\*tələma Ahmed ysafr la-ḥama  
 he too happy that/for/from/as Ahmed travel to Hama  
 'He is too happy that Ahmed might travel to Hama'

Having presented the data, we must now address an appropriate analysis for degree complements. The obvious suggestion about degree phrases and clauses in HPSG is to posit that they are extra complements occurring when an adjective is associated with a particular specifier. In other words, if ordinary adjectives have categories of the form in (49), adjectives that combine with a degree phrase or clause will have categories of the form in (50):

49. A[SUBCAT<...>;SPEC<>]

50. A[SUBCAT<S[ənnu],...>;SPEC<(Deg[jiddan])>]

A[SUBCAT<S[ənnu],...>;SPEC<(Deg[ktir])>]

A[SUBCAT<PP[mən],...>;SPEC<(Deg[aktar])>]

A[SUBCAT<PP[1-],...>;SPEC<(Deg[jiddan])>]

The brackets around the Deg feature show that the items are marked as optional. The categories in (50) can be derived from the category in (49) with the following lexical rule:

51. A[SUBCAT<...>;SPEC<>]====>

A[SUBCAT<α...>;SPEC<ωB >

where (α = S[ənnu] and ωB = Deg[jiddan]) or

(α = S[ənnu] and ωB = Deg[ktir]) or

(α = PP[mən] and ωB = Deg[aktar]) or

(α = PP[1a] and ωB = Deg[jiddan])

This is, of course, not a full analysis of degree complements. It is rather a complex analysis since it gives four extra categories for every adjective. Perhaps if a new feature is introduced, a simple analysis will result. This is a topic for future research.

We proceed now to discuss the distribution of AP's.

#### 4.3. The Distribution of Adjective Phrases:

Most adjective phrases can be used both predicatively and attributively. Adjective phrases are used predicatively where they form part or all of the predicate. The following examples illustrate this:

52. a. 1- rəjjal      ɣilo  
the man-3SGM handsome-3SGM  
'The man is handsome'
- b. 1- mara            ɣilweh  
the woman-3SGF pretty-3SGF  
'The woman is pretty'
- c. 1- awlad      ɣilwin  
the boys-3PL handsome-3PL  
'The boys are handsome'

By contrast, an attributive adjective is an adjective or adjective phrase which is part of a noun phrase. As noted

earlier, it agrees in definiteness with the phrase it modifies.  
The following examples are relevant here:

53. a. hanneh kano        awlad        saḡidin  
         they    were-3PL boys-3PL happy-3PL  
         'They were happy boys'
- b. hanneh kano        1-    awlad        1-    saḡidin  
         they    were-3PL the boys-3PL the happy-3PL  
         'They were the happy boys'

#### 4.3.1. Predicative Adjectives:

As we noted earlier, adjective phrases can function as predicates. Consider the following data:

54. a. 1-bent(3SGF) smineh(3SGF) ktir  
         the girl            fat            very  
         'the girl is very fat'
- b. 1- bet(3SGM) kbir(3SGM) ktir  
         the house        big    very  
         'the house is very big'
55. a. 1- madineh kant zḡireh ktir  
         the city        was    small    too  
         'the city was too small'

- b. 1- baḥir kan ḡamiq ktir  
 the sea was deep too  
 'the sea was too deep'

All these examples show that predicative adjectives do not agree in definiteness with the noun they modify, but they do agree with it in gender and number. It is the inflection on the nouns that indicates agreement with the predicative adjective.

A predicative adjective agrees with its subject if it is inflected for the above mentioned features, i.e., it is the subject that determines whether a predicative adjective is masculine, feminine, or plural. This is exemplified in the following examples:

56. a. 1- rəjjal(3SGM) ḥilo(3SGM)  
 the man handsome  
 'the man is handsome'
- b. \*1- rəjjal(3SGM) ḥilweh(3SGF)  
 the man handsome

(56a) is grammatical because it shows that a masculine singular predicate agrees with a masculine singular subject, whereas (56b) is ungrammatical since agreement is not met.

We proceed to consider further examples, where we have a feminine singular subject agreeing with a feminine predicate such as the following:



57. a. 1- mara(3SGF) ḥilweh(3SGF)

the woman pretty

'the woman is pretty'

b. \*1- mara(3SGF) ḥilo(3SGM)

the woman pretty

(57a) is well-formed because of gender and number agreement between the predicate and its subject, while (57b) is ungrammatical due to lack of agreement in gender and number between the predicate and the subject.

We can look next at plural agreement between the noun and the predicative adjective. Consider the following data:

58. a. 1- waladin(dual) ḥilwin(PL)

the boy-two handsome

'the two boys are handsome'

b. \*1- waladin(dual) ḥilo(3SGM)

the boy-two handsome

c. \*1-waladin(dual) ḥilweh(3SGF)

the boy-two pretty

59. a. hadol(PL) rixaṣ(PL)

these cheap

'these are cheap'

b. \*hadol(PL) rixiṣ(3SGM)

these cheap

c. \*hadol(PL) rixiṣa(3SGF)

these cheap

(58a) and (59a) are grammatical because they denote that a plural predicate can agree with a plural subject, whereas (58b,c) and (59b,c) are ungrammatical because the agreement is not met.

Finally, we will consider adjectives modifying a coordination of singular nouns, as given in (60) below:

60. a. 1- walad(3SGM) w 1- bent(3SGF) ḥilwin(3PL)  
the boy and the girl beautiful  
'the boy and the girl are beautiful'
- b. \*1- walad(3SGM) w 1- bent(3SGF) ḥilo(3SGM)  
the boy and the girl handsome
- c. \*1- walad(3SGM) w 1- bent(3SGF) ḥilweh(3SGF)  
the boy and the girl pretty

(60a) is well-formed because adjectives modifying a coordination of singular nouns are plural in agreement. (60b) and (60c), on the other hand, are ungrammatical since the adjective modifying the singular nouns is not plural.

Before introducing any categories and any sort of structures for predicative AP's, we will look first at gender agreement between the adjective and its subject. The following examples are relevant here:

61. a. Aḥmed(3SGM) kan(3SGM) magnun(3SGM)  
Ahmed was crazy  
'Ahmed was crazy'

b. Samira(3SGF) kanet(3SGF) zakyyeh(3SGF)

Samira was clever

'Samira was clever'

c. 1- banat(PL) kano(PL) zağlanin(PL)

the girls were angry

'The girls were angry'

As argued in the PP's chapter, we can suggest that predicative adjectives are different from ordinary adjectives. That is, ordinary AP's in standard version are of the category A[SUBCAT<>], whereas predicative AP's, following Pollard and Sag (1988), are considered to be A[+PRD,SUBCAT<NP>], where +PRD is a binary HEAD feature that distinguishes predicative from non-predicative constructions. This assumption can simply be translated into the revised version of HPSG developed in Borsley (1987 and forthcoming (a)), as given in (62) below:

62. A[+PRD;SUBCAT<>;SUBJ<NP[ $\alpha$ ]>]

Where  $\alpha$  is number and gender feature specifications. Ordinary AP's will be, then, [SUBJ<>] but not [+PRD], while predicative AP's will be [+PRD],[SUBJ<NP[ $\alpha$ ]>], but not [SUBJ<>].

The adjectives in (61a-c) will then have categories from (63) to (65):

63. A[SUBCAT<>;SUBJ<NP[3SGM]>]

64. A[SUBCAT<>;SUBJ<NP[3SGF]>]

65. A[SUBCAT<>;SUBJ<NP[3PL]>]

[SUBJ<NP[3SGM]>], [SUBJ<NP[3SGF]>], and [SUBJ<NP[PL]>] in (63) to (65) are necessary in Syrian because of the agreement between predicative adjectives and the associated subjects. Since AP's agree in gender with the associated subjects, then these AP's require a special subject of some sort.

Having given categories for predicative AP's, we will not provide any sort of structure for them until we discuss verbless clauses (chapter six).

We can look next at adjective phrases functioning as attributes.

#### 4.4.2. Attributive Adjectives:

As we noted earlier, attributive adjectives usually follow the word or the phrase they modify. Relevant here are the following examples:

66. a. rəjjal      kbir                      b. \*kbir rəjjal  
      man-3SGM old-3SGM                      old man  
      'an old man'

b. l- rəjjal      l- kbir                      b. \*l-kbir l- rəjjal  
      the man-3SGM the old-3SGM                      the old the man  
      'the old man'



They can also agree with the preceding category in number and gender. Consider the following examples:

67. a. mara(3SGF) ḥilweh(3SGF)  
woman pretty  
'a pretty woman'
- b. \*mara(3SGF) ḥilo(3SGM)  
woman pretty
68. a. l- mara(3SGF) l- ḥilweh(3SGF)  
the woman the pretty  
'the pretty woman'
- b. \*l- mara(3SGF) l- ḥilo(3SGM)  
the woman the pretty

The examples in (67a) and (68a) show that the noun agrees with the adjective in gender and they are therefore grammatical. (67b) and (68b) however are not marked with the relevant agreement inflections and the resulting sentences are therefore ungrammatical.

We turn now to look at plural agreement. Consider the following examples:

69. a. banat(3PL) mugtahidat(3PL)  
girls clever  
'clever girls'
- b. \*banat(3PL) mugtahideh(3SGF)  
girls clever

70. a. 1- banat(3PL) 1- mugtahidat(3PL)

the girls          the clever

'the clever girls'

b. \*1-banat(3PL) 1- mugtahideh(3SGF)

the girls          the clever

(69a) and (70a) indicate that the plural noun agrees with the plural adjective in number and they are therefore grammatical. By contrast, (69b) and (70b) are ungrammatical because the plural noun in both examples does not agree with the following adjective.

Attributive adjectives, as we mentioned earlier, also agree with the head noun in definiteness. They must be either both definite or indefinite. The following examples illustrate this:

71. a. walad zġir

boy      young

'a young boy'

b. 1- walad 1- zġir

the boy      the young

'the young boy'

c. \*walad 1- zġir

boy      the young

The adjective in (71a) agrees with the noun it modifies in indefiniteness, (71b) agrees in definiteness, whereas the adjective in (71c) does not agree in definiteness with its noun and the resulting sentence is therefore ill-formed.

Furthermore, adjectives modify a coordination of singular nouns are plural in agreement. The following examples are relevant here:

72. a. walad w- bent mušarradin  
 boy-3SGM and girl-3SGF homeless-3PL  
 'a homeless boy and girl'

b. \*walad w- bent mušarrad  
 boy-3SGM and girl-3SGF homeless-3SGM

Finally, when attributive adjectives are preceded by both the head noun and a possessive NP which differ from each other in gender, then the attributive adjective agrees with whichever noun it modifies. The following data demonstrate this:

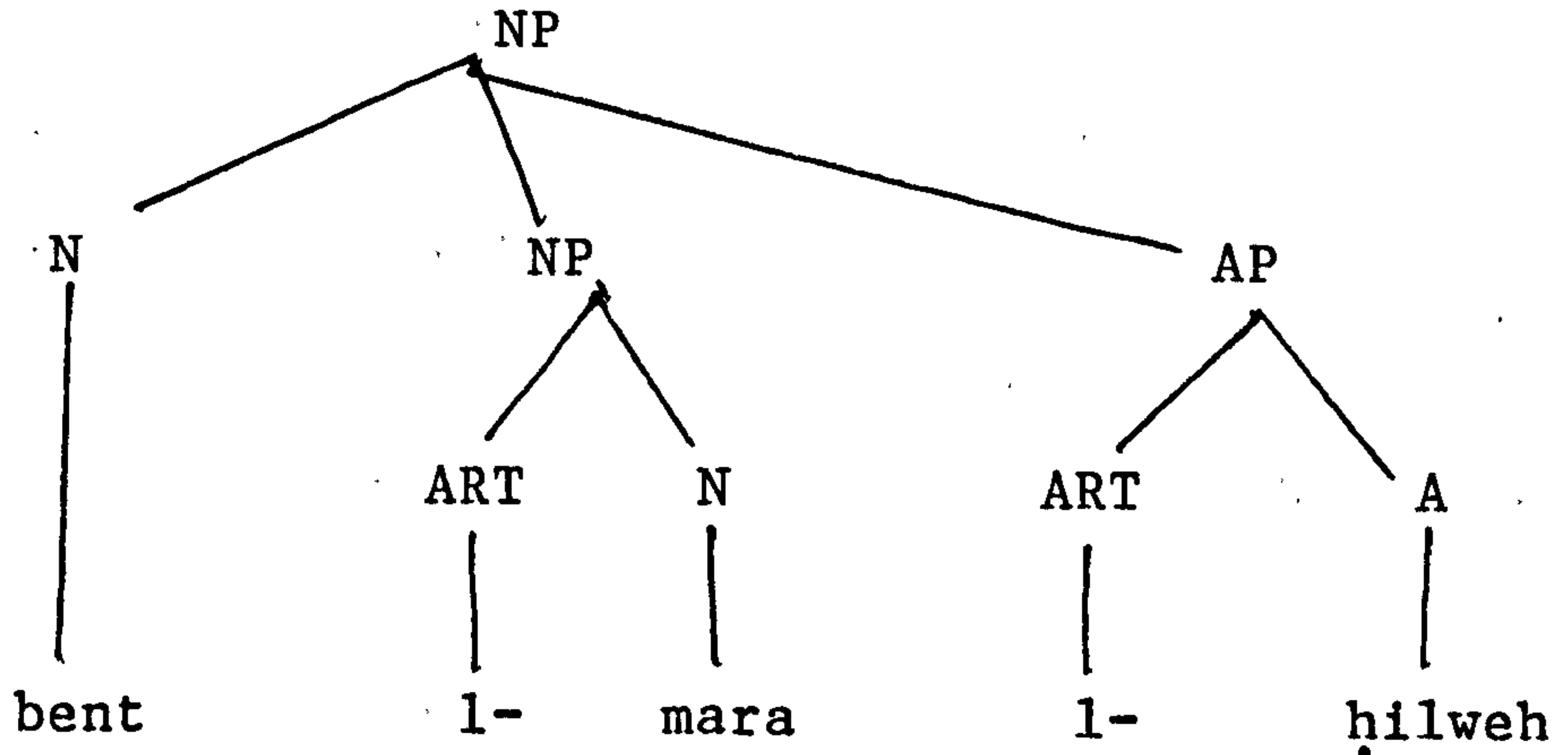
73. a. bent l- mara l- ḥilweh  
 daughter the woman the pretty  
 'the woman's pretty daughter'  
 'The pretty woman's daughter'

b. bent l- rəjjal l- zaki  
 daughter the man the clever  
 'the clever man's daughter'

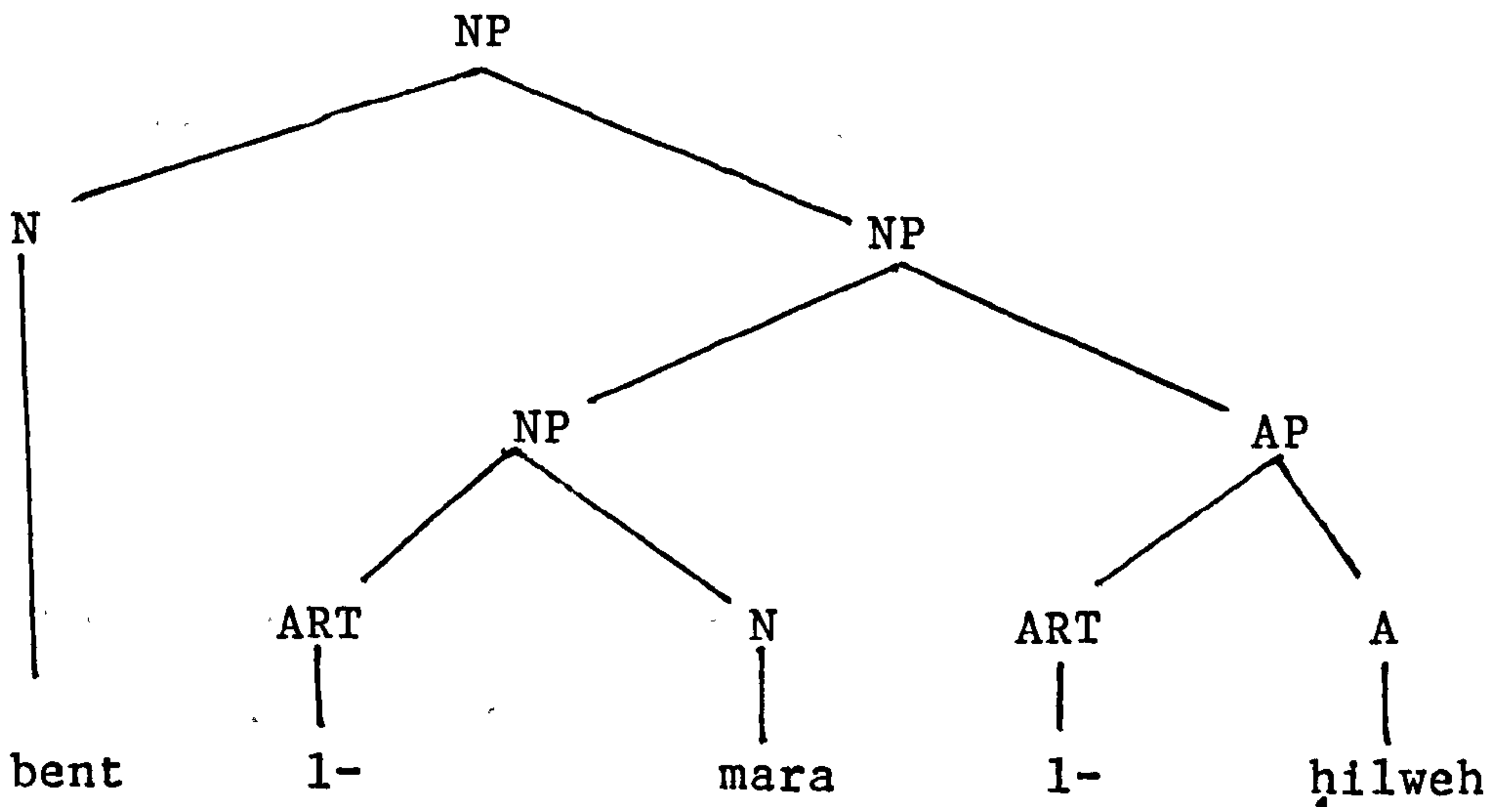
c. bent l- rəjjal l- zakyyeh  
 daughter the man the clever  
 'the man's clever daughter'

We can suggest two different structures for (73a), given as in (74a) and (74b), respectively:

74. a.



b.



We will be concerned below with the following questions: how are attributive AP's positioned with respect to other complements? What sort of analysis can we get for attributive adjectives? As we noted in (73) above, attributive AP's always follow the possessive NP.

By contrast, attributive AP's always precede any PP-complements. The following examples illustrate this:



75. a. tadmīr            1-    ḡadou    1-    muxif        11-    madīneh  
           destruction the enemy    the horrible to the city  
           'The enemy's horrible destruction of the city'
- b. \*tadmīr            1-    ḡadou' 11-    madīneh 1-    muxif  
           destruction    the enemy to the city        the horrible

We would like to stress here that examples like (75a) provide further support for the ADJUNCTS approach discussed in the VP's chapter.

We will postpone the analysis of attributive AP's until the next chapter when we discuss NP's.

#### 4.4. Summary:

To recapitulate what we have been saying in this chapter, we have discussed the morphology of adjectives and considered the agreement between an attributive adjective and the noun it modifies or is associated with as a predicate. We have also looked at the internal structure of AP's and noted that adjectives can be followed by a PP complement, an S' complement, and a PP complement followed by an S' complement. We have also noted that adjectives can occur with degree words which we called Deg as an abbreviation of non-head categories to form AP's. We have also argued that kəffayyeh 'enough', unlike other modifiers, obligatorily follows the adjective it modifies. We went on to show that Syrian adjectives can occur with degree complements and can have comparative forms which

are not inflected for gender. We have also suggested that adjectives can function both predicatively and attributively. In brief, we can suggest that the revised version of HPSG can adequately handle the data we have presented here and can thus provide an analysis of Syrian AP's.

## CHAPTER FIVE

### Noun Phrases

#### 5.0. Introduction:

In the previous chapter, we discussed Syrian AP's in some detail and argued that AP's can be analyzed and accounted for satisfactorily within the revised version of HPSG developed in Borsley (1987, and forthcoming (a)). In this chapter, we will look at NP's and provide an analysis within the revised framework.

This chapter is organized as follows: In the first section, we will look at nouns that take either PP's as their complements or an S-complement. In section two, we will consider what we might regard as 'subjects' of NP's. In section three, we will look at clitic constructions. In section four, we will discuss the definite article. In section five, we will consider demonstratives. In section six, we will look at attributive adjectives. Finally, in section seven, we will sum up the main facts discussed in this chapter and see how far Syrian NP's can provide some further evidence for the revised version of HPSG.

### 5.1. Ordinary Complements:

We will begin first by discussing nouns subcategorizing for PP-complements. Syrian nouns can take prepositional phrase complements involving particular prepositions. The following examples illustrate:

- |       |        |       |                     |    |         |       |        |
|-------|--------|-------|---------------------|----|---------|-------|--------|
| 1. a. | ḥadith | ḡan   | Souria              | b. | *ḥadith | la    | Souria |
|       | talk   | about | Syria               |    | talk    | to    | Syria  |
|       |        |       | 'a talk about Syria |    |         |       |        |
| 2. a. | riḥlet | la    | london              | b. | *riḥlet | ḡan   | london |
|       | trip   | to    | London              |    | trip    | about | London |
|       |        |       | 'a trip to London'  |    |         |       |        |

These examples show that specific prepositions are necessary.

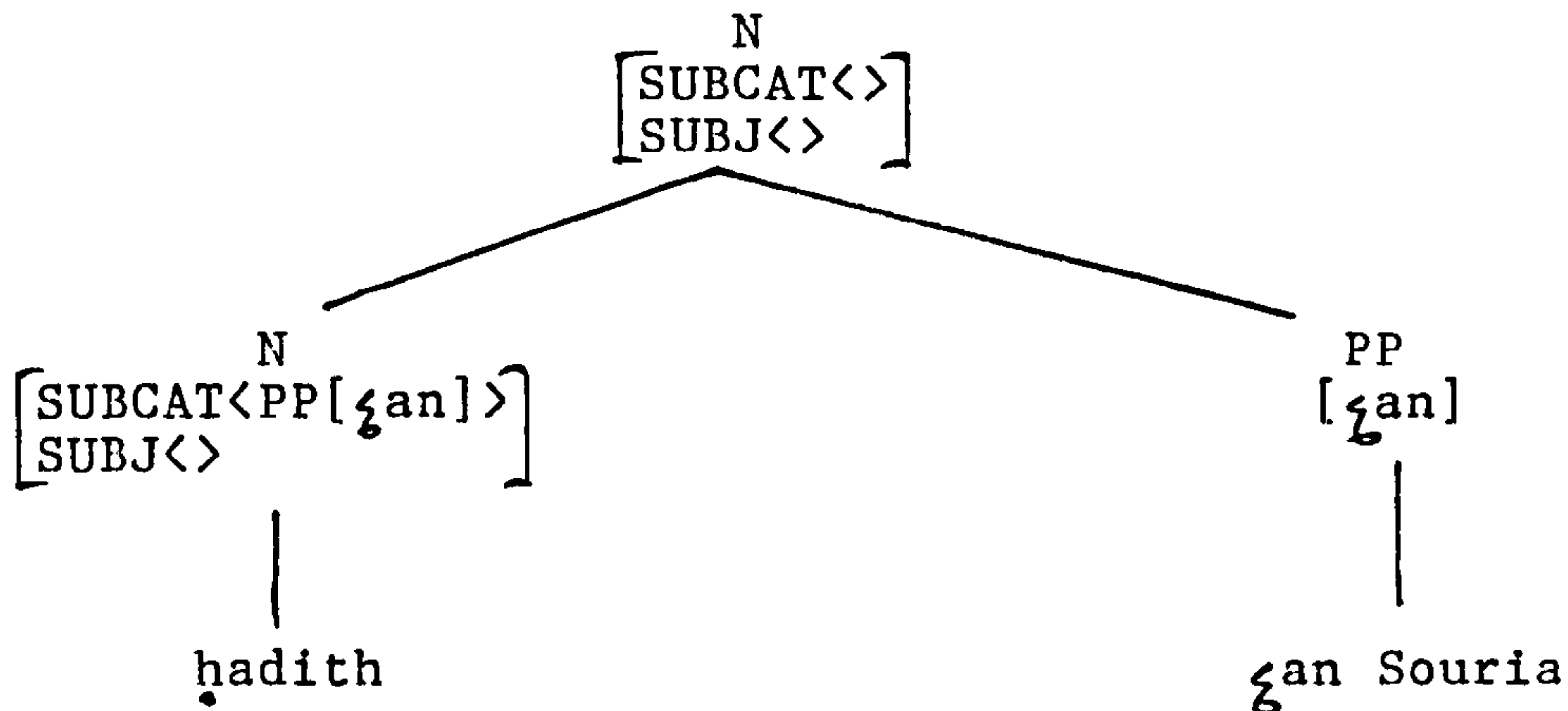
What we need here is appropriate categories. A noun like hadith 'talk' in (1a), for example, will have the following partial category:

3. N[SUBCAT<PP[ḡan]>;SUBJ<>]

We will slightly revise this category later in order to include the optional Dem. Given the category above together with the head-complement rule, the HFP and the Subcategorization Principle, we can have the following tree:



4.



A head noun can be followed not only by a single PP complement, but by two PP complements. The following examples demonstrate this:

5. ḥadith maζ Haytham ζan l- naḥu  
 talk with Haytham about the syntax  
 'a talk with Haytham about syntax'

6. safra maṇ ḥalep la dimašq  
 journey from Aleppo to Damascus  
 'a journey from Aleppo to Damascus'

An important point about the examples in (5) and (6) is that instead of having two categories for PP's, we can somehow mark the PP's as optional.

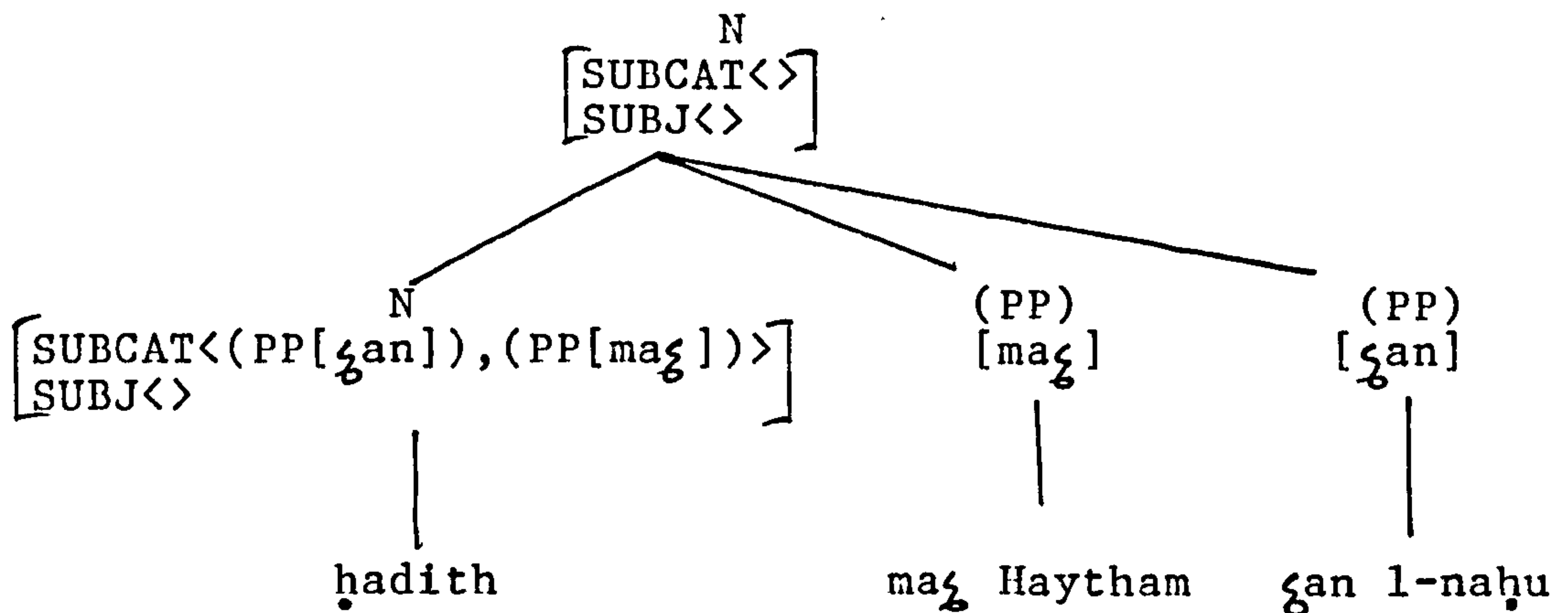
A noun such as ḥadith 'talk' in (5), then, will have the category in (7):

7. N[SUBCAT<(PP[ζan]),(PP[maζ])>;SUBJ<>]

As we noted in previous chapters, the brackets around SUBCAT list items indicate that the phrases are optional.

This category will allow the following structure:

8.



The structure in (8) is licensed by the head-complement rule and the two universal principles.

We turn now to look at S-complements. A noun can also subcategorize for an S-complement. Relevant here are the following examples where the NP's are in square brackets:

9. [qeṣṣet ʔnnu bet-o nsaraq] ṭḷet ṣaḥeḥa  
 story that house-3SGM robbed turned true

'The story that his house was robbed turned out to be true'

10. [fikret ʔnnu l- ḥarb mudammera] xalet l- nas yḡiṣu b-xouf  
 idea that the war destructive made the people live in fear

'The idea that war is destructive made people live in fear'

11. \*ṭḷet ṣaḥeḥa [qeṣṣet ʔnnu bet-o nsaraq]  
 turned true story that house-3SGM robbed

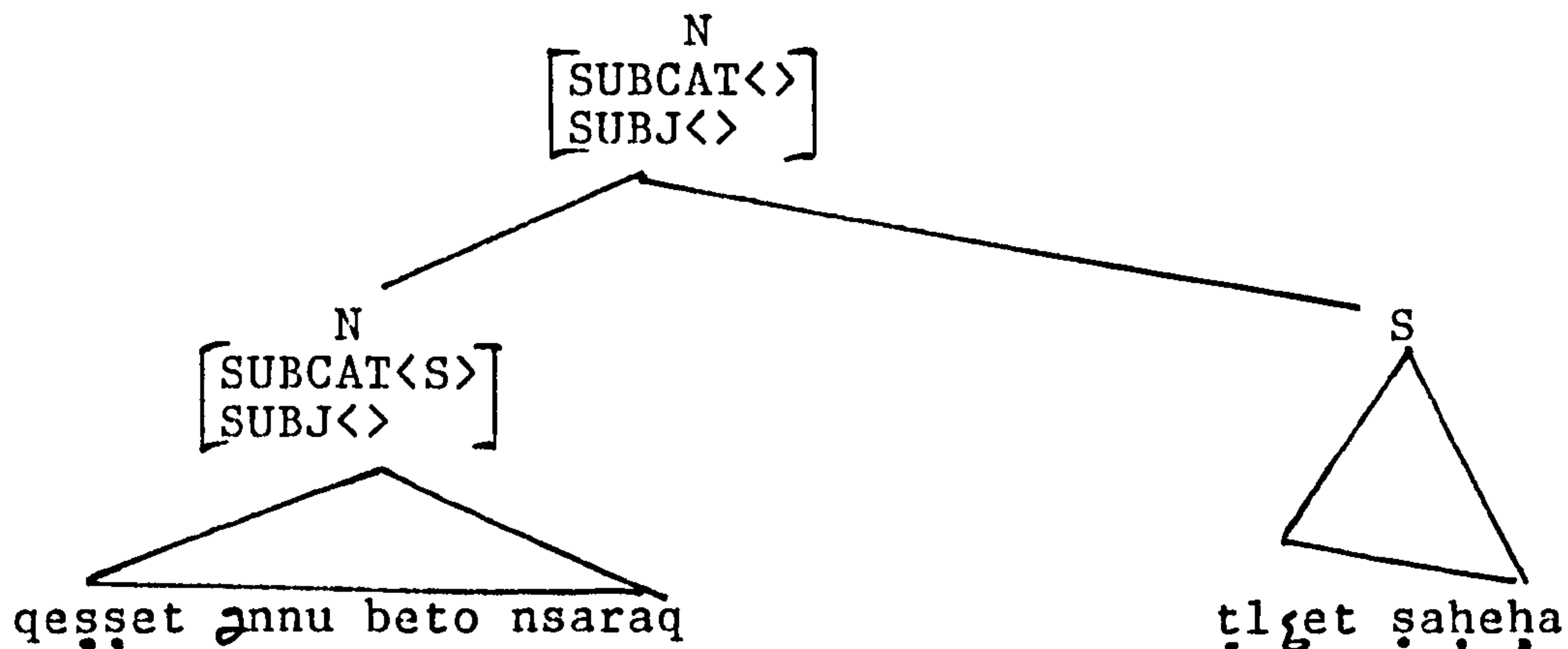
The example in (11) is ungrammatical because of the position of the whole NP.

The head noun in (9), then, will have the category in (12) below:

12. N[SUBCAT<S>;SUBJ<>]

The above category will interact with the head-complement rule together with the two universal principles to give the following tree:

13.



Having considered nouns that take PP and S-complements, we can proceed to discuss what might be called subjects.

### 5.2. 'Subjects':

Nouns in Syrian, unlike in English, can also have an immediately following NP. Such NP's might be regarded as subjects. The reason for calling them 'subjects' is that they seem to occupy a similar position in NP's to subjects in verb initial clauses and are interpreted in the same way as a subject when the noun is derived from a verb. The following examples illustrate the point:

14. a. dammar                      Ahmed l- madineh  
 destroyed-3SGM Ahmed the city  
 'Ahmed destroyed the city'





realized as a single item on the SUBJ list. Secondly, they can be realized as an extra item on the SUBCAT list. On the first analysis, a simple noun such as ktab in (16) will have the category in (19):

19. N[SUBCAT<PP[ζan]>;SUBJ<NP[-PRO]>]

We will be explaining the motivation for [-PRO] specification when we introduce clitics.

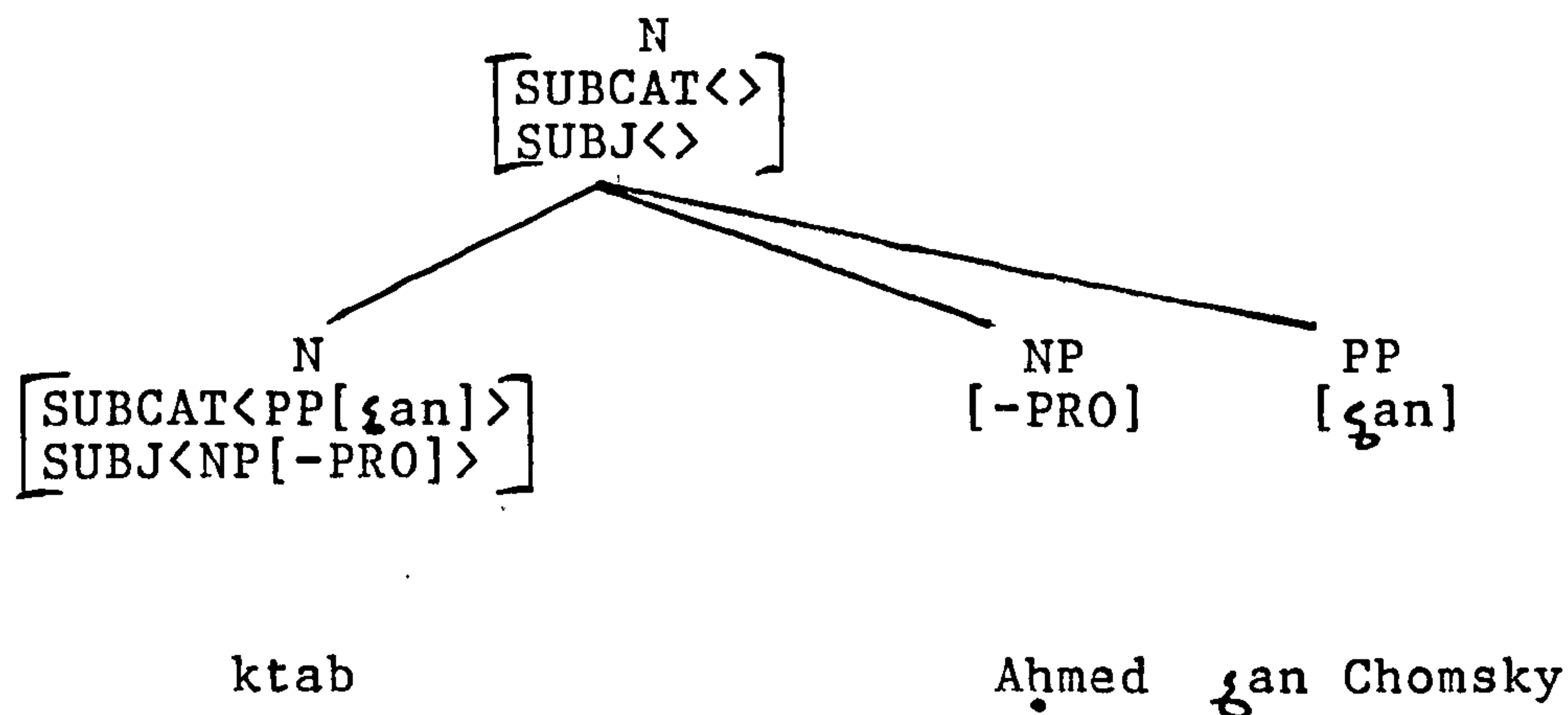
We need here a syntactic rule to utilize the above category which can be formulated as follows:

20. [SUBCAT<>;SUBJ<>]---->H[SUBCAT<...>;SUBJ<[]>],C\*

We can call this rule the head-subject-complement rule. Again H is a head, C is a complement, and [] is an arbitrary category.

The category in (19) will interact with the rule in (20) together with the two universal principles to give the following tree for the example in (16):

21.

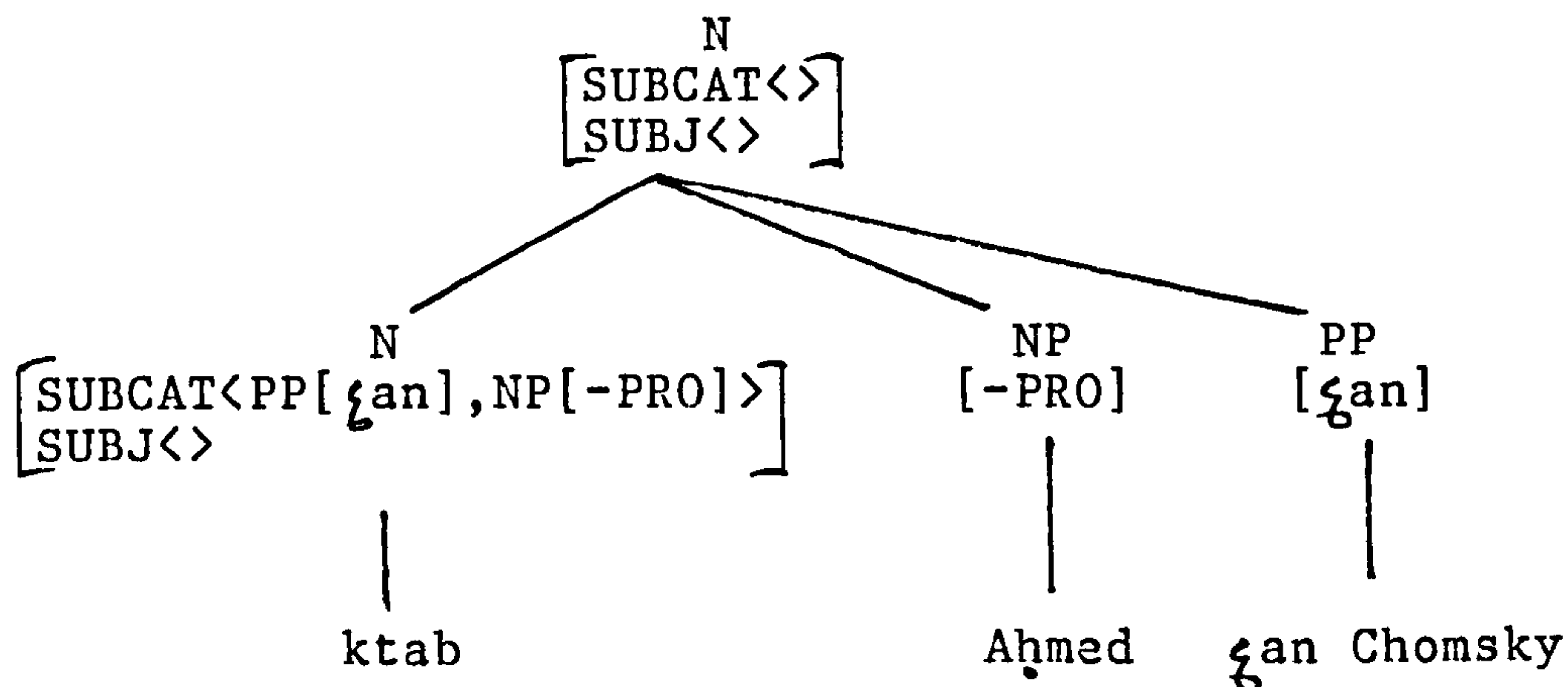


By contrast, if we assume the second analysis, we will have the category in (22):

22. N[SUBCAT<PP[ an],NP[-PRO]>;SUBJ<>]

This category will interact with the head-complement rule together with the HFP and the Subcategorization Principle to give trees such as that in (23) for the example in (16):

23.



We can assume here that the category in (22) above could be derived from the category in (3) with the following lexical rule:

24. N[SUBCAT<...>;SUBJ<>] =====>

N[SUBCAT<...,NP[-PRO]>;SUBJ<>]

This rule will be modified twice to include the specifier Dem and the attributive AP.

The second option, however, is more plausible than the first for a number of reasons which will be given later when we consider clitic constructions within NP's. Hence, we will adopt the second analysis in what follows.

We can proceed to look at further data such as the following:

25. a. ziyart Aḥmed la l- ʔqarib  
 visit Ahmed to the relatives  
 'Ahmed's visit to the relatives'
- b. \*l- ziyart Aḥmed la l- ʔqarib  
 the visit Ahmed to the relatives
26. a. riḥlet Salwa ll- šaṭiʔ  
 trip Salwa to the beach  
 'Salwa's trip to the beach'
- b. \*l- riḥlet Salwa ll- šaṭiʔ  
 the trip Salwa to the beach

The examples in (25b) and (26b) are ungrammatical because, as we will see later when we discuss the definite article, the head noun preceding the non-pronominal 'subject' should not be preceded by an article. The PP complements in the examples above should follow the NP's, otherwise we will get ungrammatical examples such as those below:

27. \*ziyart la l- ʔqarib Aḥmed  
 trip to the relatives Ahmed
28. \*riḥlet ll- šaṭiʔ Salwa  
 trip to the beach Salwa

Having looked at examples involving 'subjects', we will move on to discuss clitics.

### 5.3. Clitic Constructions:

As we noted in earlier discussion, clitics can be attached to nouns as well as to verbs and prepositions. 'Subjects' of NP's, as mentioned earlier, are preceded by the head noun and followed by a number of complements. The following example illustrates the point:

29. tadmīr            Aḥmed la l- madīneh  
destruction Ahmed of the city  
'Ahmed's destruction of the city'

In Syrian, we cannot simply replace a non-pronominal 'subject' of an NP by a pronoun. The following example illustrates this:

30. \*tadmīr            huweh la l- madīneh  
destruction he        of the city

Instead, we can have examples in which nouns host a clitic such as the following:

31. tadmīro                    (huweh) la l- madīneh  
destruction-3SGM he        of the city  
'his destruction of the city'

The clitic agrees in number, person and gender features with a following optional pronoun. In other words, as we did in the



previous two chapters, we will assume an empty pronoun in examples where there is no overt pronoun.

We are now in a position to consider how clitic constructions within NP's can be analyzed. Since we discussed clitics before within verbs and prepositions, we can emphasize that the situation is similar here by using the same clitic-head rule and an extended version of the lexical rule.

The noun in (31) will have the following category if we assume that 'subjects' are realizations of an extra item on the SUBCAT list:

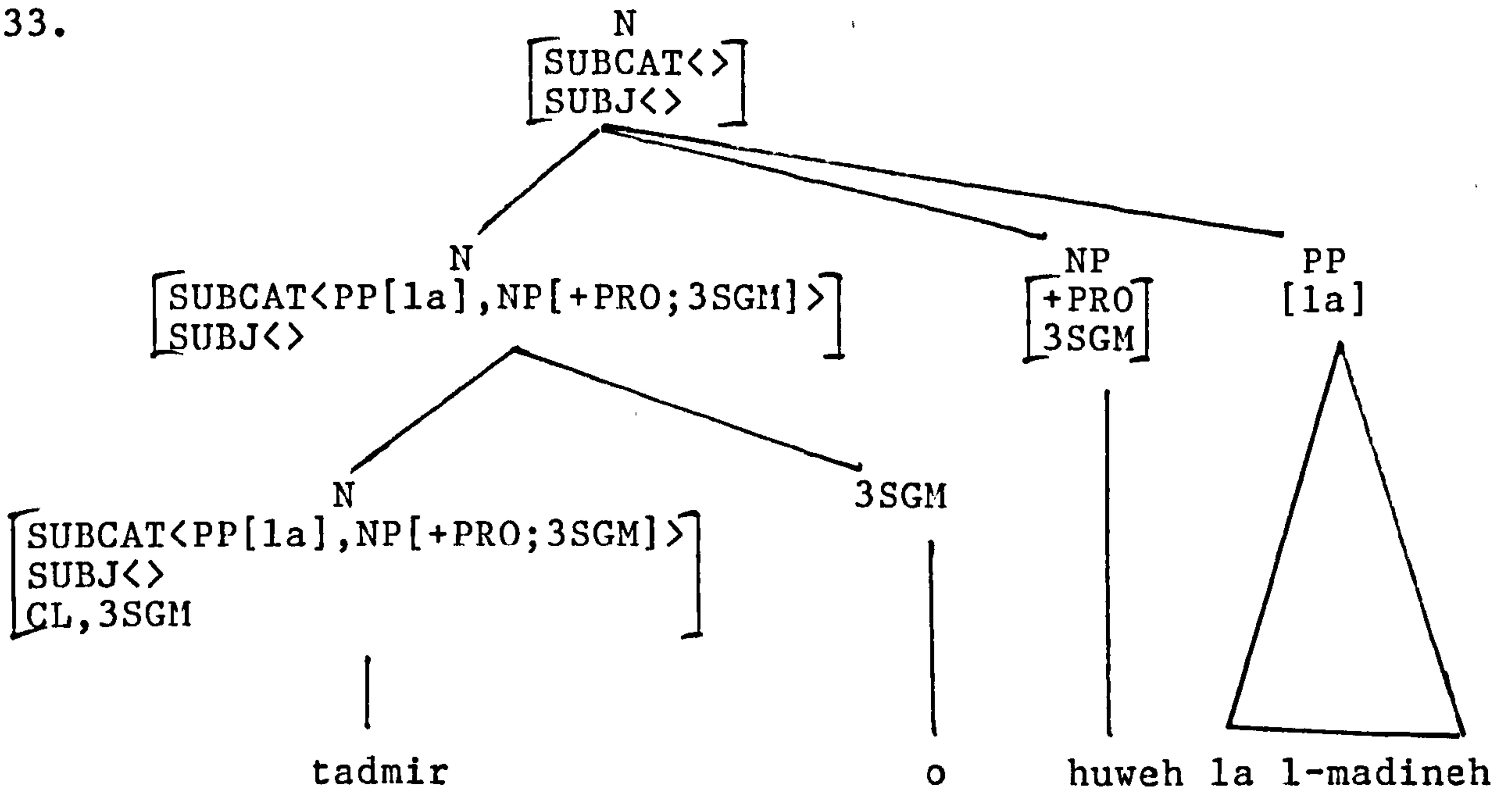
32. N[SUBCAT<PP[1a];NP[+PRO, $\alpha$ ];SUBJ<>;CL, $\alpha$ ]

Where  $\alpha$  refers to person, number and gender feature specifications.

We can assume, as we did in previous chapters, that this clitic feature will be utilized by what we called the clitic-head rule. That is, nouns (as well as verbs and prepositions) can have the clitic feature.

The category in (32) will interact with the clitic-head rule and the head-complement rule and the two universal principles to give the following structure for the example in (31):

33.



The top part of the tree structure above is licensed by the head-complement rule and the bottom part by the clitic-head rule.

We have suggested earlier that we will argue against the analysis that subjects are the reflection of a single item on the SUBJ list and in favour of the analysis that subjects are the realization of an extra item on the SUBCAT list for two reasons. Within the second analysis, clitics within NP's will agree with the category that appears as a final item on the SUBCAT list of the head noun. As a result, we will be able to derive the category in (32) from the category in (22) with the lexical rule in (34) below:

34. X[SUBCAT<..., NP[-PRO]>; SUBJ<>...] =====>  
 X[SUBCAT<..., NP[+PRO,  $\alpha$ ]; SUBJ<>; CL,  $\alpha$ ...]

Where X = N, V, or P.

We have extended the lexical rule given in previous chapters to include NP's. The dots stand for any other feature specifications which, as we will see when we discuss specifiers, will include SPEC. The point here is that we can have a single rule which derives verbs from verbs, prepositions from prepositions, and nouns from nouns. In other words, on this analysis, clitics within NP's are like clitics within VP's and PP's since all of them reflect the final item on the SUBCAT list.

The second fact is that the head noun within NP's is not preceded by what is regarded as a subject. This could only occur if nouns under this analysis had non-empty values for SUBJ, which they do not. That is, 'subjects' within NP's, unlike subjects within SVO clauses which occur as we will see when we discuss clauses before the head, always follow the head noun.

By contrast, if we had adopted the first analysis, where 'subjects' of NP's were a realization of the single item on the SUBJ list, we would have had the following category for tadmir 'destruction' in (29):

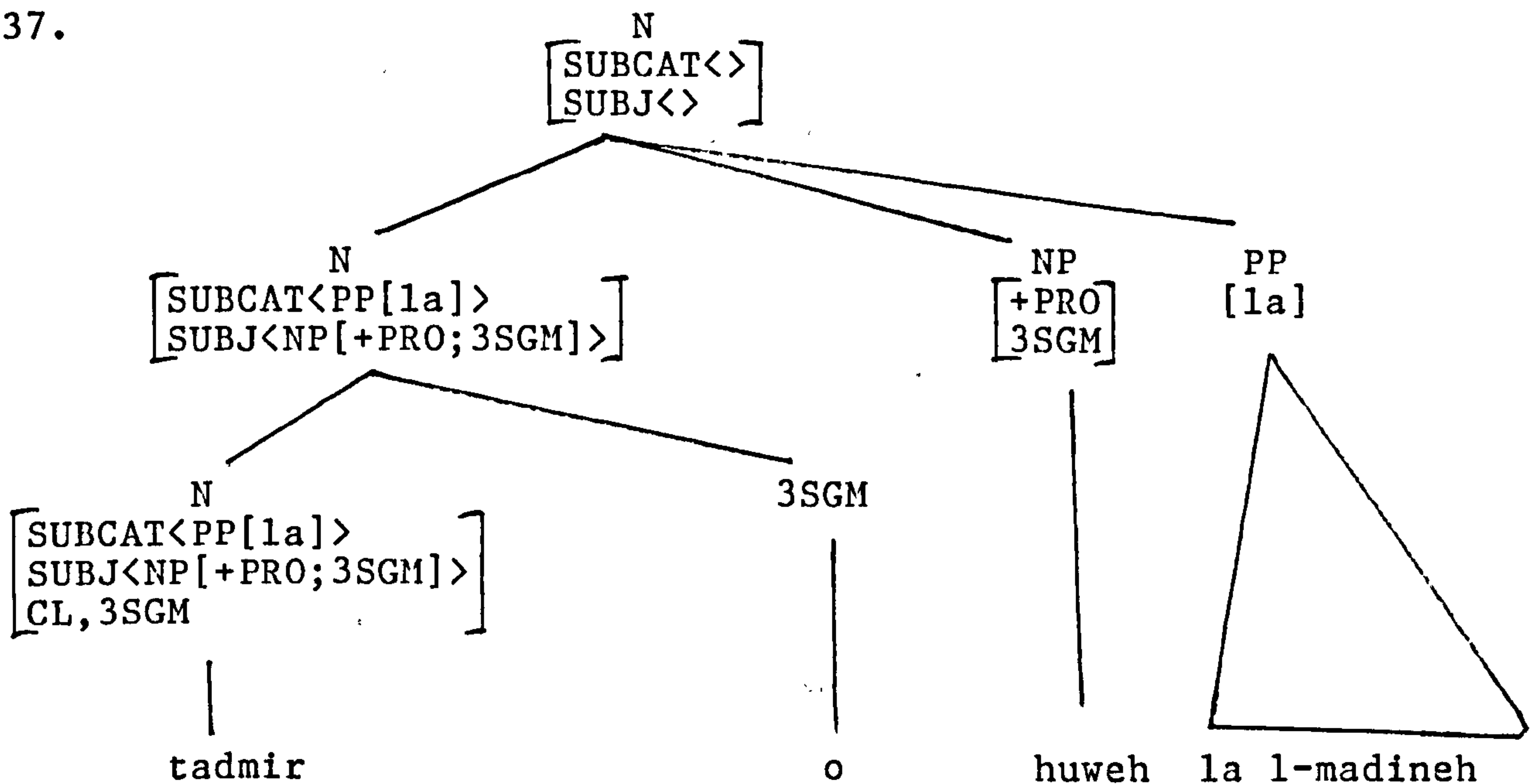
35. N[SUBCAT<PP[1a]>;SUBJ<NP[-PRO]>]

We would have had the category in (36) for the noun tadmir in (31) when it takes a clitic:

36. N[SUBCAT<PP[1a]>;SUBJ<NP[+PRO;  $\alpha$ ]\>;CL, $\alpha$ ]

Given the category in (36) together with the clitic-head rule and the head-complement rule we will have the following tree:

37.



Within this analysis, clitics within NP's would agree with the category that realizes the single item on the SUBJ list and not with the category that realizes the final item on the SUBCAT list of the head noun. Hence, it would not be possible to derive (36) from (35) with an extension of the lexical rule proposed earlier in (34). Rather, we would require a separate lexical rule such as that in (38) below which would enable us to derive additional categories from ordinary ones:

38. N[SUBCAT<...>;SUBJ<NP[-PRO]>...] =====>  
 N[SUBCAT<...>;SUBJ<NP[+PRO;  $\alpha$ ]>;CL,  $\alpha$ ...]



A further argument against this analysis comes from the absence of 'subject'-initial NP's, which is rather a problematic one. That is, in order to avoid such structures we need to stipulate that the head in the subject-predicate rule cannot be nominal. No such stipulation is necessary within the earlier analysis.

To recapitulate, we have argued in this section against the analysis that subjects are the reflection of a single item on the SUBJ list and in favour of the analysis that subjects are the realization of an extra item on the SUBCAT list.

Having argued for the second analysis and against the first analysis, we will proceed to look at the definite article.

#### 5.4. The Definite Article:

The definite article in SA is əl 'the', and it can be contracted into l-, as illustrated below:

39. a. əl    ʔalib  
      'the student'

b. l-    ʔalib  
      'the student'

40. a. əl-    ktab    ʒan    souria  
      the    book about Syria  
      'a book about Syria'

b. l- ktab gan souria

the book about Syria

'a book about Syria'

The definite article l-, unlike English the, is essentially a kind of clitic. It is part and parcel of the noun, i.e., it is not separated from the noun with which it is associated. The following examples illustrate this:

41. a. l- daktor l- zaki

the doctor the clever

'The clever doctor'

b. \*l- zaki daktor

the clever doctor

c. l- banat l- ttalteh

the girls the three

'the three girls'

d. \*l- ttlateh banat

the three girls

(41a) shows that a definite noun is followed by a definite adjective. (41b) is ungrammatical because the adjective should follow the noun and cannot separate the definite article from the noun. (41c) shows that the definite noun is postmodified by the numeral 'ttlateh'. Finally, (41d) is ungrammatical because the numeral should follow and cannot separate the definite article from the noun.

By contrast, the definite article in English functions as a premodifier of a head noun and can be separated from it by

other premodifiers. The following example illustrates this:

42. The most interesting view.

A second piece of evidence for the view that the Syrian article is a clitic comes from coordination facts. The following examples are relevant here:

43. l- wald w l- bənt  
the boy and the girl  
'The boy and girl'

44. \*l- wald w bənt  
the boy and girl

45. qualama w ktaba  
pen-3SGF and book-3SGF  
'her pen and her book'

46. a. \*qualama w ktab  
pen-3SGF and book  
b. \*qualam w ktaba  
pen and book-3SGF

In (43), both nouns are preceded by the article l-, and ungrammaticality results if only the first noun is preceded by an article, as shown by (44). Similarly, both nouns in (45) host a clitic, and ungrammaticality results if only one of the nouns host a clitic, as (46a) and (46b) show.

Given the arguments above, it seems plausible to analyze the definite article as a realization, like clitics, of the CL feature. It cannot be analyzed as the realization of the SPEC feature because, as we will see later in section 5.5, it can

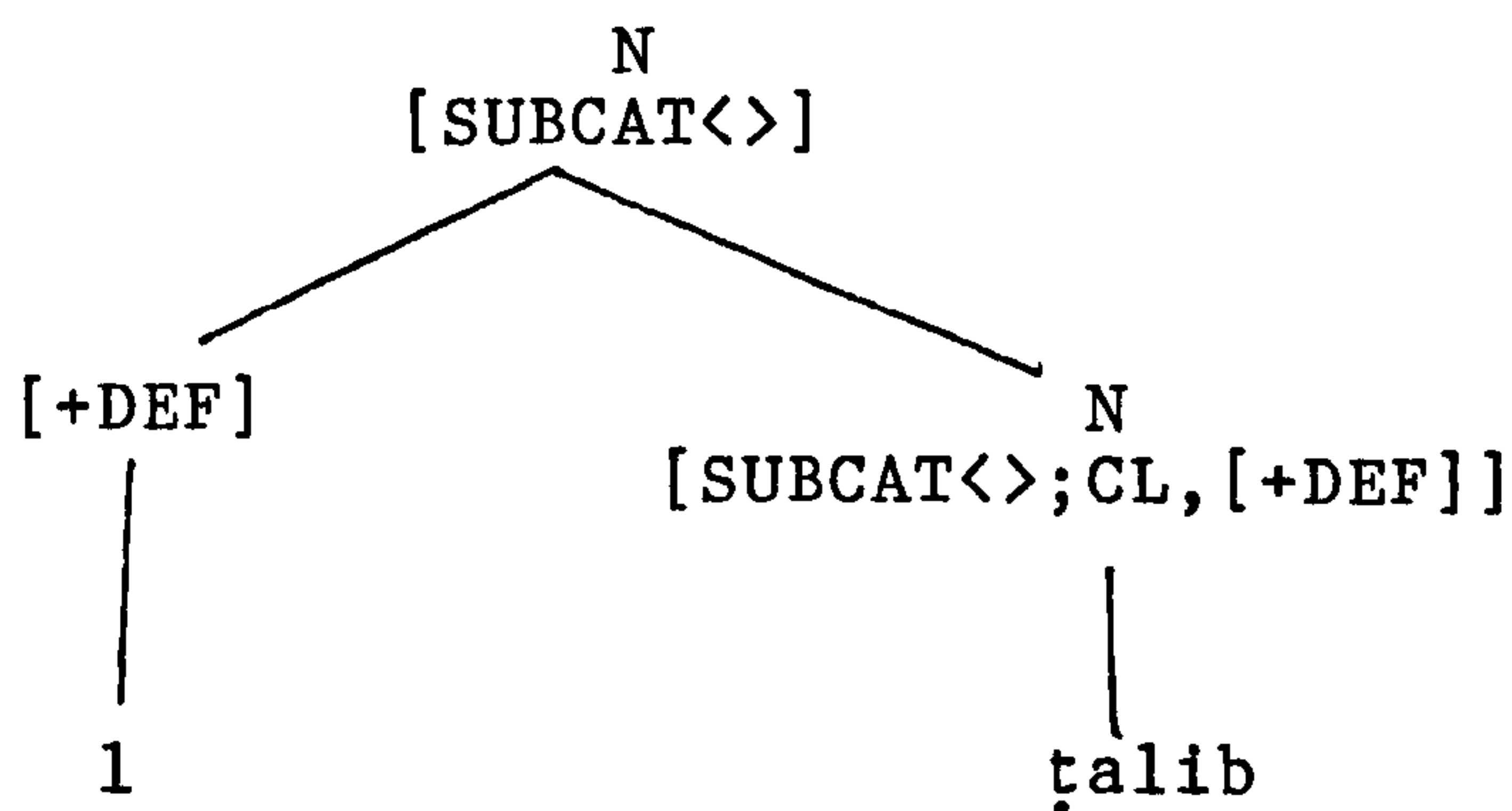
follow a demonstrative which can be the realization of the SPEC feature.

Assuming that the article is analyzed as a realization of a clitic feature, a simple common nouns such as l-ṭalib 'the student' in (39b) can have the following category:

47. N[CL,[+DEF]]

This category will give the following structure:

48.



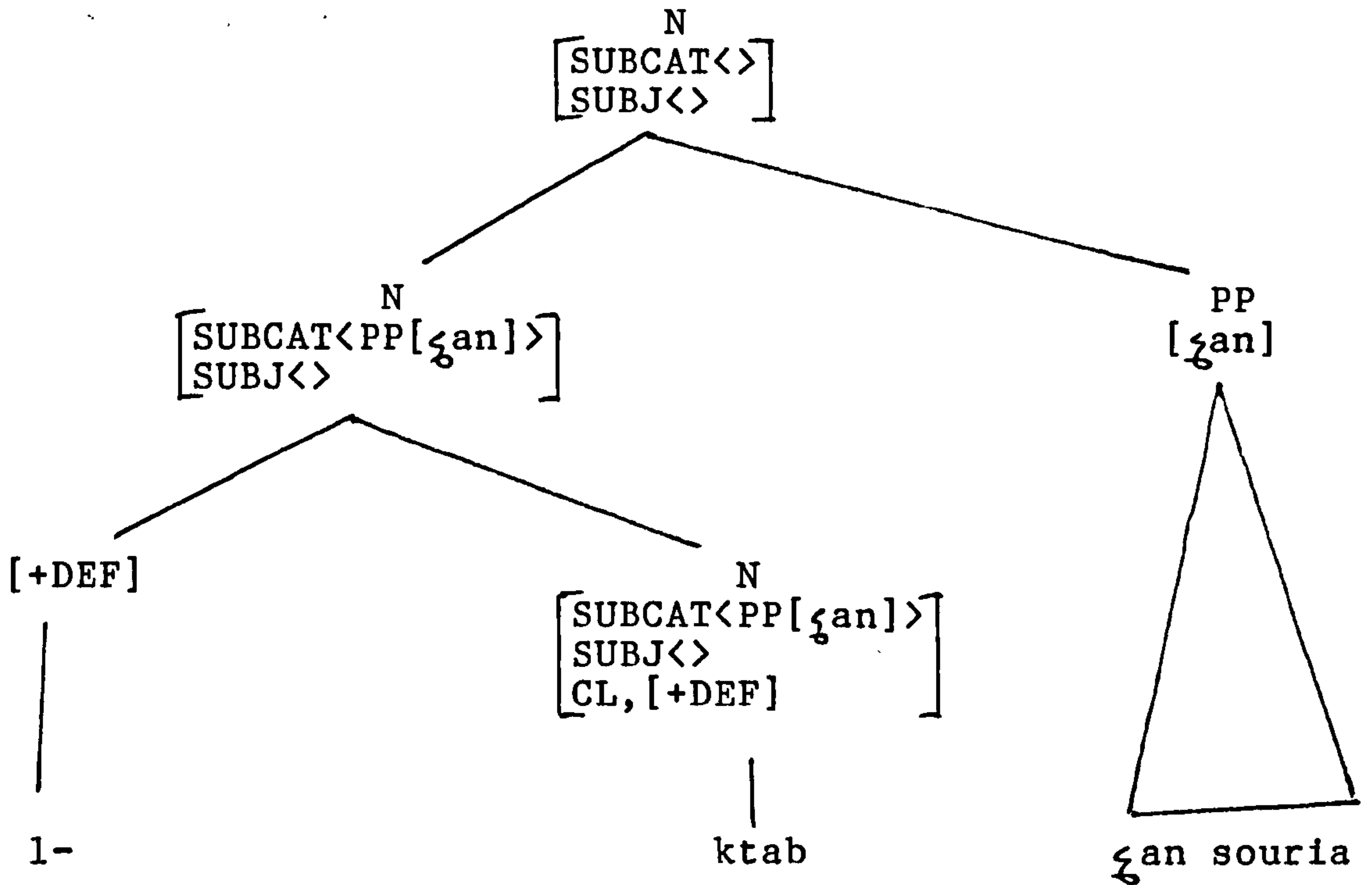
For a definite noun such as 'l-kṭab' in (40), we can propose the following preliminary category:

49. N[SUBCAT<PP[ṣan]>;SUBJ<>;CL,[+DEF]]

This category will be slightly revised later to allow an optional demonstrative specifier. This category will interact with the head-complement rule together with the HFP and the Subcategorization Principle, to give the following tree:



50.



We can suggest that the category in (49) could be derived from the category in (3) by the lexical rule in (51):

51. N[SUBCAT<...>;SUBJ<>] ==>

N[SUBCAT<...>;SUBJ<>;CL, [+DEF]]

We will modify this rule twice to include the specifier Dem and the attributive AP.

We want to stress here that an article never co-occurs with a 'subject'. One way to ensure this is to stipulate that the final item in the SUBCAT list of the input category in (51) cannot be NP.

Given the facts above, we can say that all the definite nouns considered earlier should be [CL, [+DEF]].

We proceed now to consider demonstratives.

### 5.5. Demonstratives:

Demonstrative pronouns in Syrian can be classified with respect to gender. The following data illustrate this:

52. a. Masculine: hada , hadak  
'this', 'that'
- b. Feminine: hadi , hadik  
'this', 'that'
- c. Plural: hadol , hadok , hadolik  
'these', 'those', 'those'

The demonstratives hadak , hadik , hadok , and hadolik usually refer to someone or something far away from the speaker and the person spoken to. Relevant here are the following examples:

53. a. hadik l-mara štarat bet  
that the woman bought-3SGF house  
'that woman bought a house'
- b. \*hadik mara štarat bet  
that woman bought-3SGF house
54. a. hadak l-širṭi maḡ Nawal  
that the police with Nawal  
'that policeman with Nawal'
- b. \*hadak širṭi maḡ Nawal  
that police with Nawal

Demonstratives such as hada , hadi , and hadol can also be contracted to ha-, and at the same time can be combined with the article l- to form hal- . The following examples illustrate the point:

55. hal            širṭi l- marid  
this-the police the sick  
'That sick policeman'

56. hal            rəjjal l- zaki  
this-the man        the clever  
'that clever man'

These examples show that demonstratives can combine with a definite noun. This is interesting since the demonstrative and the article do not form a constituent. Perhaps the process is like the contraction of English auxiliaries in He's a fool. It is also like the combination between prepositions and the definite article in Syrian.

Demonstratives, furthermore, can either follow or precede the noun. The following examples are relevant here:

57. a. l- sayyara hadik fi l- garag  
the car            that in the garage  
'That car in the garage'

b. hadik l- sayyara fi l- garag  
that the car        in the garage  
'That car in the garage'

c. \*l- sayyara fi l- garag hadik  
the car            in the garage that

58. a. l- ktab hadak ḡan Souria  
the book that about Syria  
'That book about Syria'

- b. hadak l- ktab ʒan Souria  
 that the book about Syria  
 'That book about Syria'

Here we have a noun that takes both a specifier and an article. Note that a complement follows the demonstrative when the demonstrative follows the noun.

It is also possible for a demonstrative to appear when the noun is followed either by a non-pronominal 'subject' or when it hosts a clitic. The following examples illustrate this:

59. hadi sayyaret Aḥmed Salwa ḥabbeta  
 this car Ahmed Salwa liked-3SGF-3SGF  
 'This car of Ahmed's Salwa liked it'
60. hada ktabi zaʒg Haytham  
 this book-1SG annoyed-3SGM Haytham  
 'This book of mine annoyed Haytham'

This data shows clearly that Syrian demonstratives cannot be treated like English ones.

Given the data above, we can proceed to provide an analysis for demonstratives. What we need for a noun such as l-ktab 'the book' in (57b) is the following category:

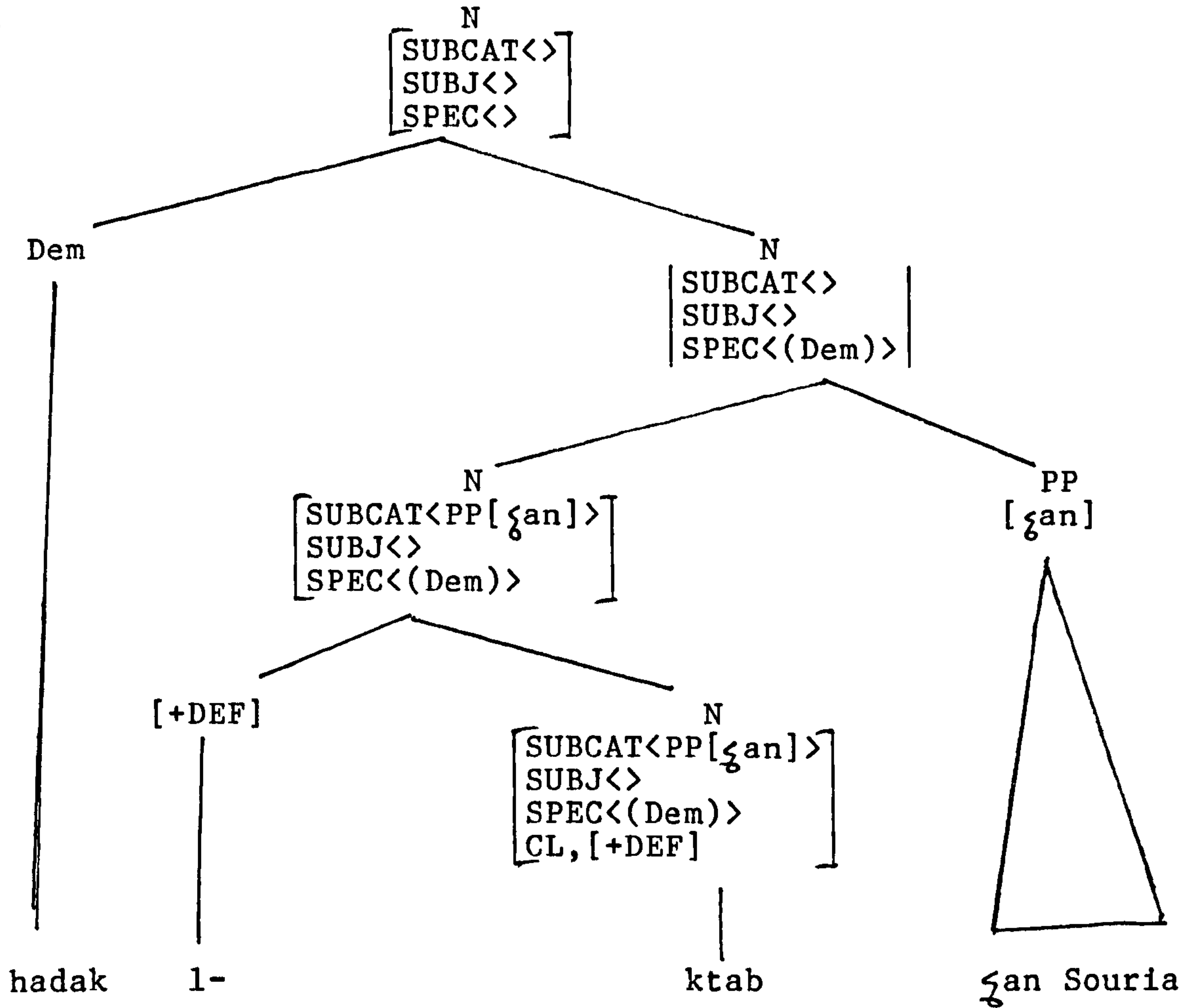
61. N[SUBCAT<PP[ʒan]>;SUBJ<>;CL,[+DEF];SPEC<(Dem)>]

The brackets around Dem in (61) indicate that the feature is marked as optional.

The category above will interact with the head-complement rule and the clitic-head rule together with the two universal principles to give the following tree:



62.



Given the analysis above, we can suggest that the categories that take a clitic or a 'subject' given earlier should include the optional [SPEC<(Dem)>]. In other words, we can have the following categories instead of those given earlier:

63. N[SUBCAT<..., NP[-PRO]>; SPEC<(Dem)>]

64. N[SUBCAT<..., NP[+PRO; α]>; CL, α; SPEC<(Dem)>]

65. N[SUBCAT<...>; CL, [+DEF]; SPEC<(Dem)>]

We need to revise the lexical rules mentioned earlier to include the SPEC feature. The lexical rule given in (24) will look like the following:

66. N[SUBCAT<...>;SUBJ<>] =====>  
 N[SUBCAT<...,NP[-PRO]>;SUBJ<>;SPEC<(Dem)>]

The lexical rule stated in (51) will be revised as follows:

67. N[SUBCAT<...>;SUBJ<>] =====>  
 N[SUBCAT<...>;SUBJ<>;CL,[+DEF];SPEC<(Dem)>]

Demonstratives, moreover, can either follow the head noun and the non-pronominal 'subject' or a noun combining with a clitic. This is exemplified in the following examples:

68. sayyaret Aḥmed hadi Salwa ḥabbeta (cf(59))  
 car Ahmed this Salwa liked-3SGF-3SGF  
 'This car of Ahmed's Salwa liked it'

69. ktabi hada zaḡg Haytham (cf(60))  
 book-1SG this annoyed-3SGM Haytham  
 'This book of mine annoyed Haytham'

By contrast, they cannot precede the 'subject'. The following ungrammatical example is relevant here:

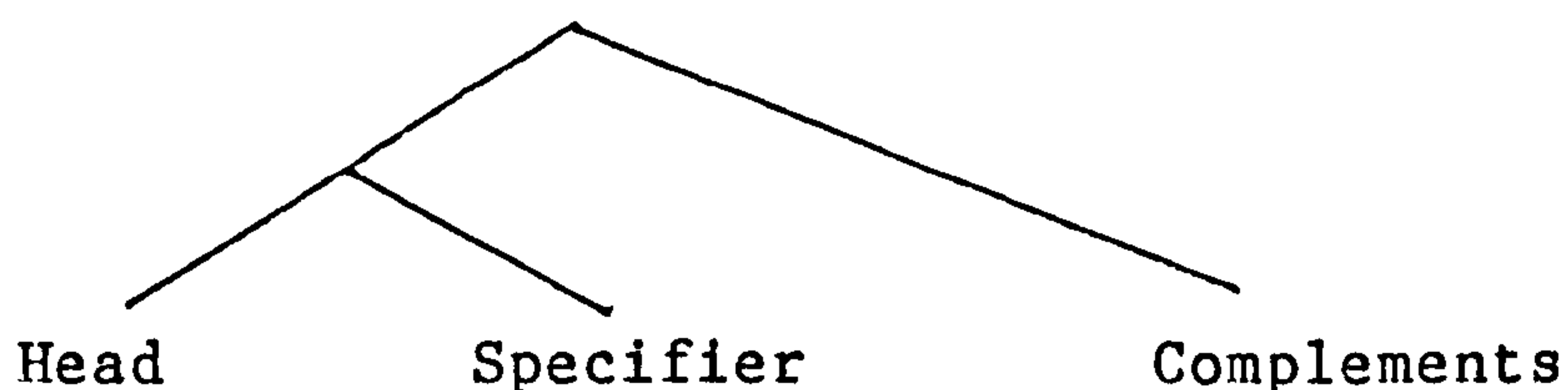
70. \*sayyaret hadi Aḥmed Salwa ḥabbeta  
 car this Ahmed Salwa liked-3SGF-3SGF

We cannot have this example either:

71. \*sayyaret Aḥmed Salwa ḥabbeta hadi  
 car Ahmed Salwa liked-3SGF this

In the AP chapter, we outlined three plausible analyses for phrases with specifiers following the head. We are now in a position to evaluate these analyses. Examples like (68) and (69) rule out one analysis where a head combines with a specifier before it combines with complements as in (72):

72.



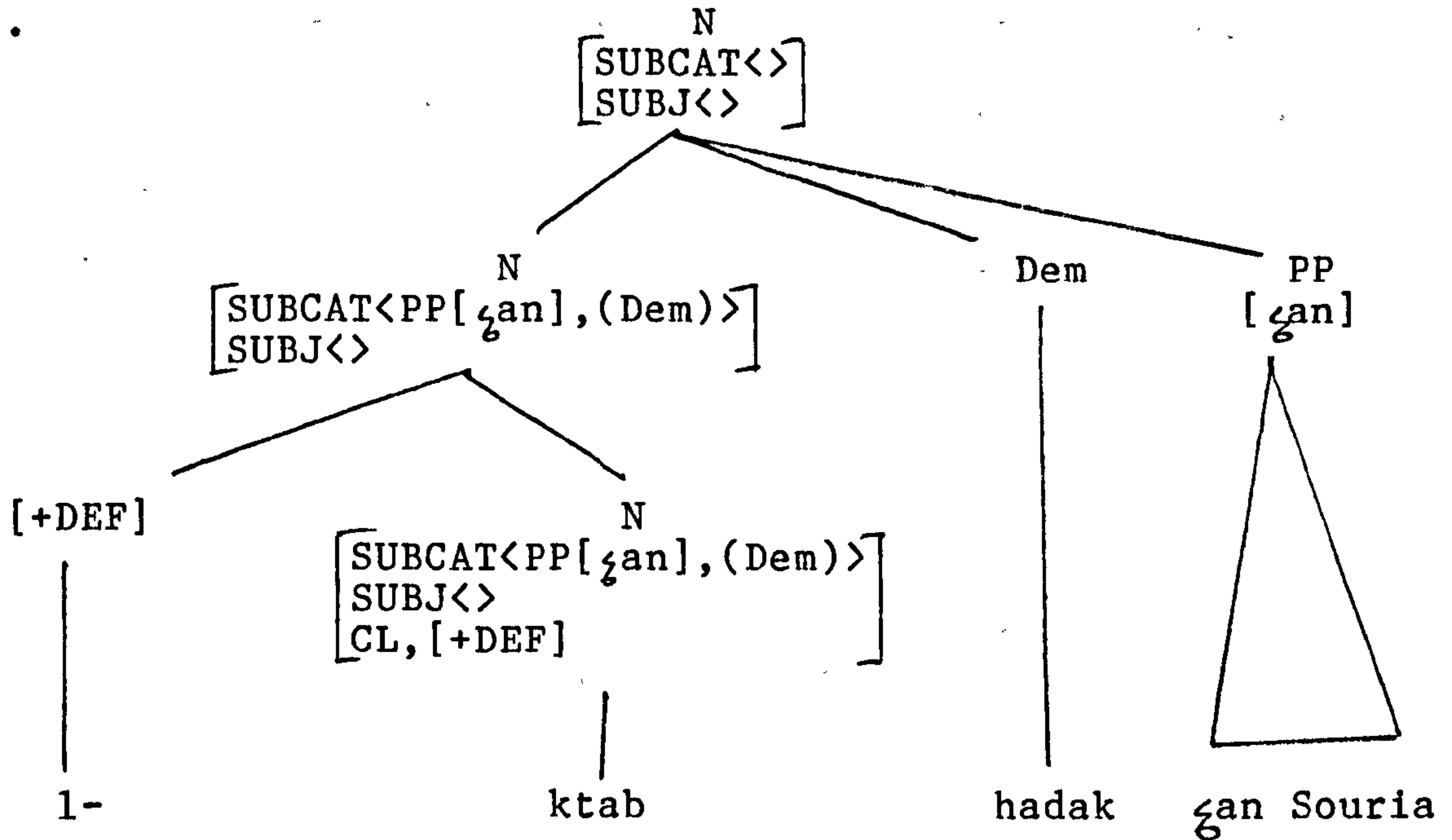
What these examples show is that a post-head specifier must be a sister of the head and complements and hence that (72) is not the right structure for examples with a post-head specifier.

Having rejected one of the three analyses, we are now left with just two analyses to consider. On the first of these analyses, specifiers realize an extra item on the SUBCAT list. On this analysis, we will have the category in (73) for the noun in (58a):

73. N[SUBCAT<PP[ζan],(Dem)>;SUBJ<>;CL,[+DEF]]

This category will interact with the head-complement rule together with the two universal principles to give the following tree for the example in (58a):

74.



On the second of the analyses, post-head specifiers realize the single item on the SPEC list. Given this assumption, we need a syntactic rule which allows the head to combine simultaneously with a specifier and complements. This approach, unlike the first approach, does not involve extra categories. On this analysis, we will have the same category that we had in (61) and the following syntactic rule:

75. [SUBCAT<>;SPEC<>]--->H[SUBCAT<...>;SPEC<[]>],C\*

We will call this rule the head-specifier-complement rule. It can be paraphrased as follows:

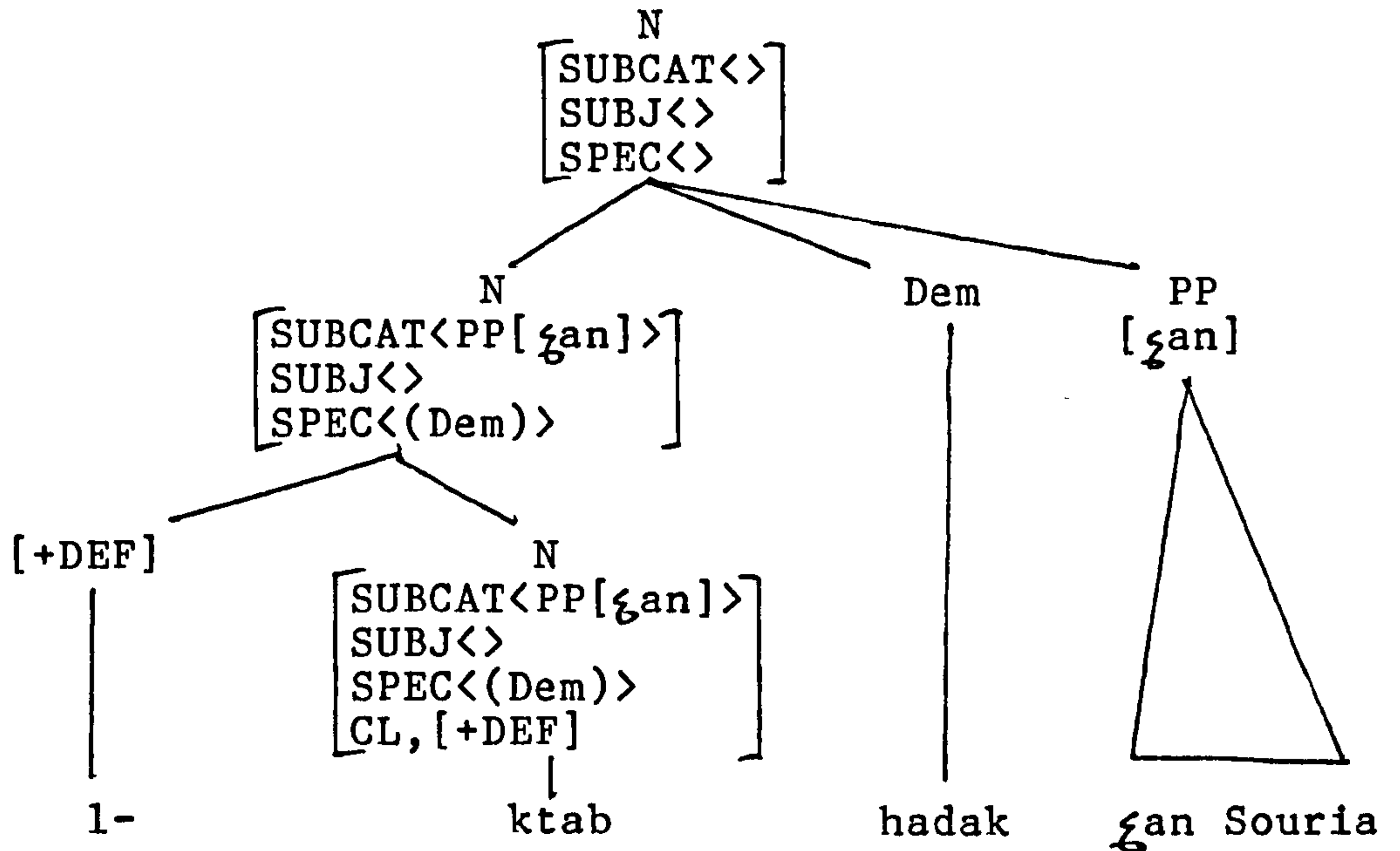
76. A category with the feature specifications SUBCAT<> and SPEC<> can immediately dominate a head with the feature specifications SUBCAT<...> and SPEC<[]> and any number of non-heads.



The category in (61) repeated below in (77) will interact with the rule in (75) together with the clitic rule and the two universal principles to give the structure in (78):

77. N[SUBCAT<PP[ξan]>;SUBJ<>;CL,[+DEF];SPEC<(Dem)>]

78.

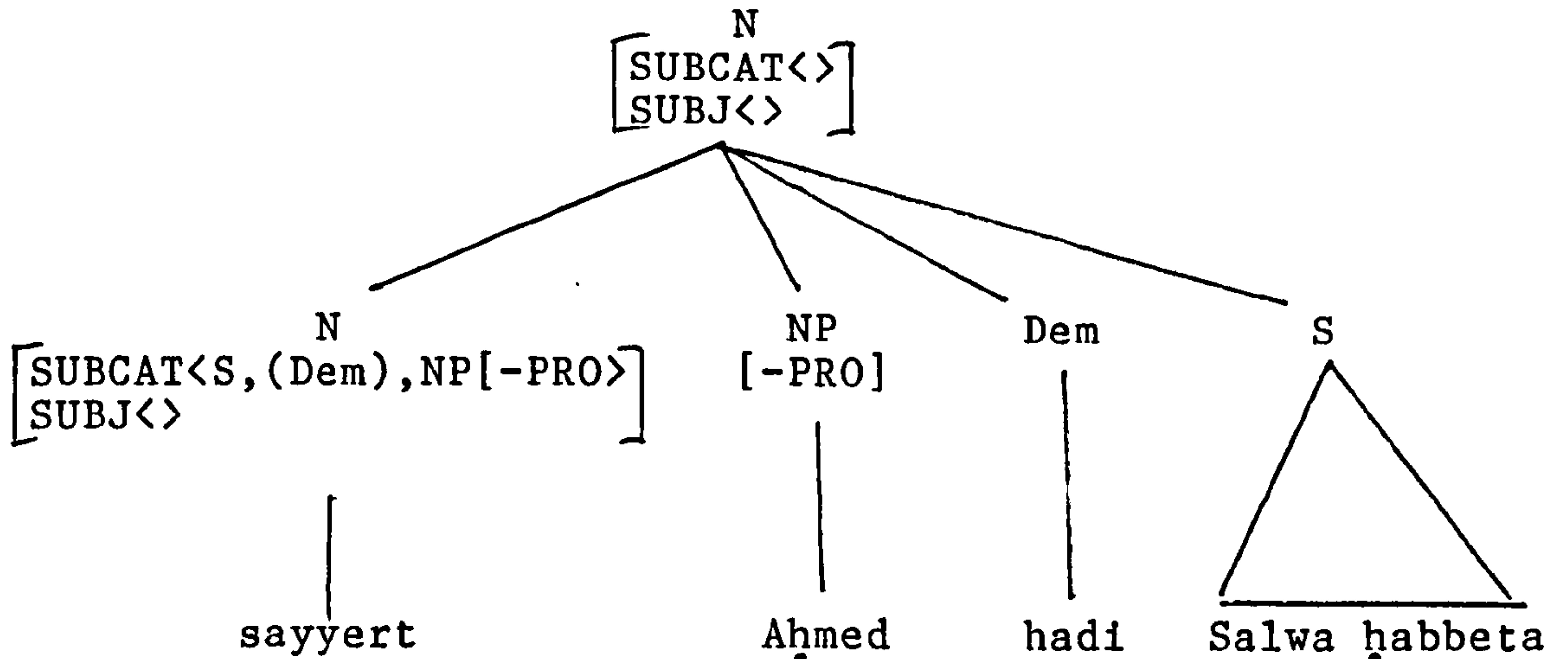


Looking now at (68), we can assign the category in (79) to the noun (68) if we assume the first analysis:

79. N[SUBCAT<S,(Dem),NP[-PRO]>;SUBJ<>]

This category will interact with the rules and principles to give the following tree for the example in (68):

80.



On this analysis, the LP rule given in the VP chapter and repeated below in (81) will ensure the right linear order:

81. LP2:

COMPLEMENT << COMPLEMENT

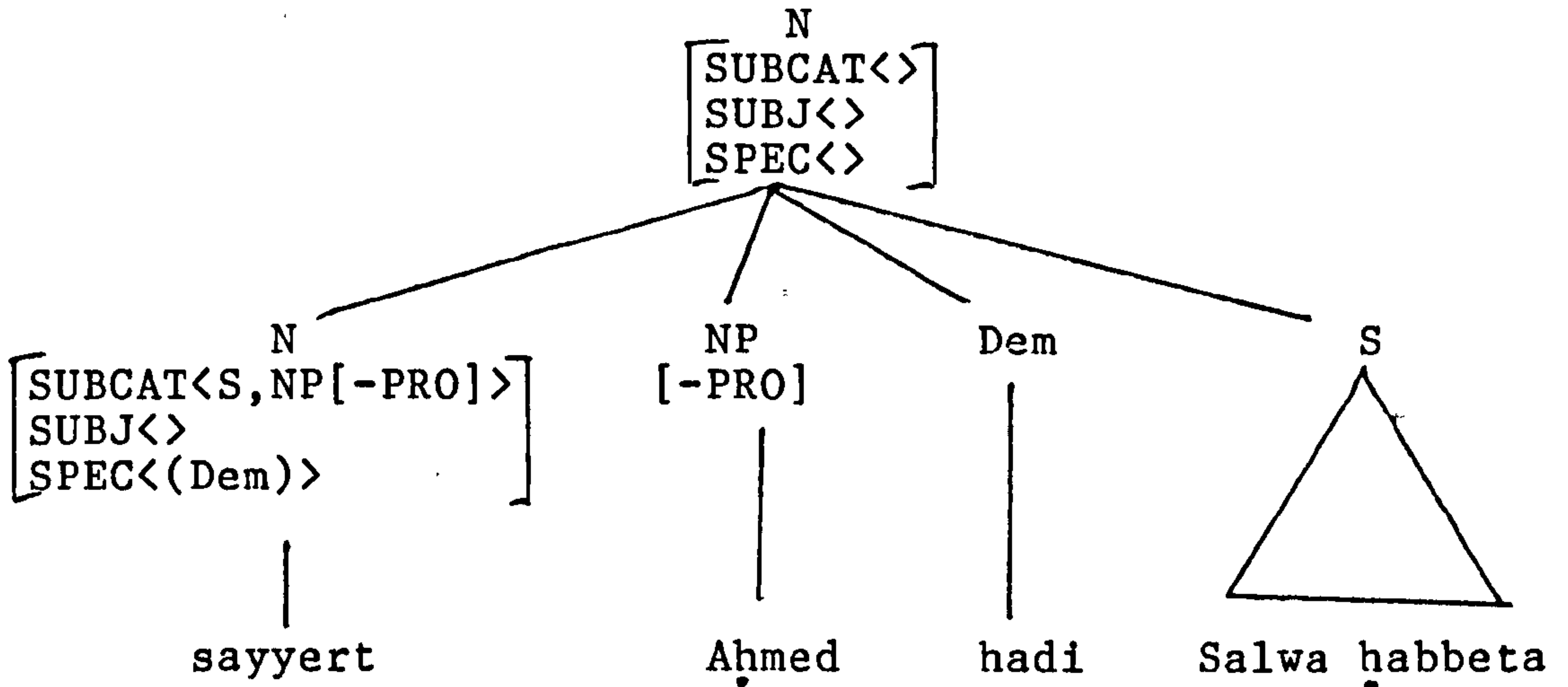
This rule says that any complement daughter must precede any of its more oblique sister constituents.

On the second analysis, the noun in (68) will have the following category:

82. N[SUBCAT<S, NP[-PRO]>; SUBJ<>; SPEC<(Dem)>]

This category will interact with the rules and principles to give the following structure:

83.



Within this analysis, however, it is not clear how the LP rule in (81) above will give us the right linear order. Therefore, it looks as if we have a reason for preferring the first analysis.

We turn now to look at attributive adjectives.

### 5.6. Attributive Adjectives:

In the previous chapter, we noted that attributive adjectives always follow the word or the phrase they modify. This is illustrated in the following examples:

- |     |    |                |            |    |                  |               |
|-----|----|----------------|------------|----|------------------|---------------|
| 84. | a. | wald(3SGM)     | zaki(3SGM) | b. | mara(3SGF)       | zakiyeh(3SGF) |
|     |    | boy            | clever     |    | woman            | clever        |
|     |    | 'A clever boy' |            |    | 'A clever woman' |               |

- |    |                |             |    |               |             |
|----|----------------|-------------|----|---------------|-------------|
| c. | banat(3PL)     | ʔzkiya(3PL) | d. | awlad(3PL)    | ʔzkiya(3PL) |
|    | girls          | clever      |    | boys          | clever      |
|    | 'clever girls' |             |    | 'clever boys' |             |

(84) shows that the adjective agrees with its modifying noun in number and gender.

Attributive adjectives also agree with a preceding category in definiteness. Consider the following examples:

- |     |    |                 |           |    |                  |           |
|-----|----|-----------------|-----------|----|------------------|-----------|
| 85. | a. | l- wald         | l- zġir   | b. | l- bant          | l- zġireh |
|     |    | the boy         | the young |    | the girl         | the young |
|     |    | 'The young boy' |           |    | 'The young girl' |           |
|     | c. | *wald           | l- zġir   | d. | *bant            | l- zġireh |
|     |    | boy             | the young |    | girl             | the young |

The adjective in (85a-b) agrees with its noun in definiteness, whereas (85c-d) are ungrammatical because the agreement in definiteness between the adjective and the noun it modifies is not met. We can conclude that a definite AP can only modify a definite nominal and an indefinite AP can only follow an indefinite nominal.

A question which arises at this stage is, how are attributive AP's positioned with respect to complements? To answer such a question, we have to consider complex examples such as the following:

- |     |    |                                      |       |          |       |       |        |
|-----|----|--------------------------------------|-------|----------|-------|-------|--------|
| 86. | a. | ktab                                 | Ahmed | l-       | jayed | ʔan   | Souria |
|     |    | book                                 | Ahmed | the good | about | Syria |        |
|     |    | 'Ahmed's wonderful book about Syria' |       |          |       |       |        |



b. \*ktab Aḥmed ḡan Souria l- jayyed  
 book Ahmed about Syria the good

87. a. ḥadith Salwa l- muhim maḡ Ziad  
 talk Salwa the important with Ziad  
 'Salwa's important talk with Ziad'
- b. \*ḥadith Salwa maḡ Ziad l- muhim  
 talk Salwa with Ziad the important

These examples show that PP-complements in Syrian always follow AP's.

We can look next at clausal complements. Consider the following examples:

88. a. l- ṭaqrir l- axir ənnu Aḥmed mat m-barḥa  
 the report the recent that Ahmed died yesterday  
 'The recent report that Ahmed died yesterday'
- b. \*l- ṭaqrir ənnu Aḥmed mat m-barḥa l- axir  
 the report that Ahmed died yesterday the recent

The examples above indicate that attributive AP's are followed and not preceded by a sentential constituent.

Finally, we will consider relative clauses. The following examples are relevant here:

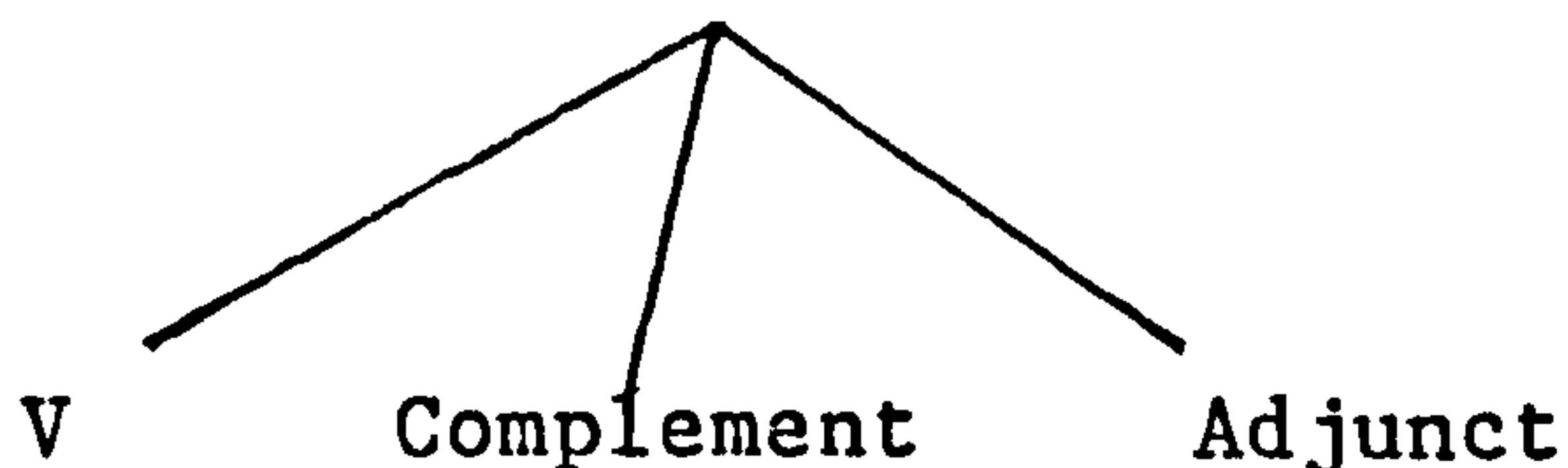
89. a. l- rəjjal l- zaki əlli ḥab Salwa  
 the man the clever that loved-3SGM Salwa  
 'The clever man that loved Salwa'
- b. \*l- rəjjal əlli ḥab Salwa l- zaki  
 the man that loved-3SGM Salwa the clever

The ungrammatical example in (89b) shows that attributive adjectives precede but do not follow relative clauses.

We are now in a position to propose an analysis for attributive adjectives. A question to ask here is: How do we allow for noun-'subject'-adjunct-complement structures?

We will assume following Pollard and Sag (1988) that adjuncts, which include attributive adjectives, are the realization of an ADJUNCTS feature which indicates what kind of adjuncts heads can combine with. It is important to make it clear that examples with adjectives before complements are compatible with the ADJUNCTS analysis but not with the recent MOD analysis given in previous chapters. Hence, the ADJUNCTS analysis assumes that the following structure is possible with verbal complements and adjuncts<sup>1</sup>:

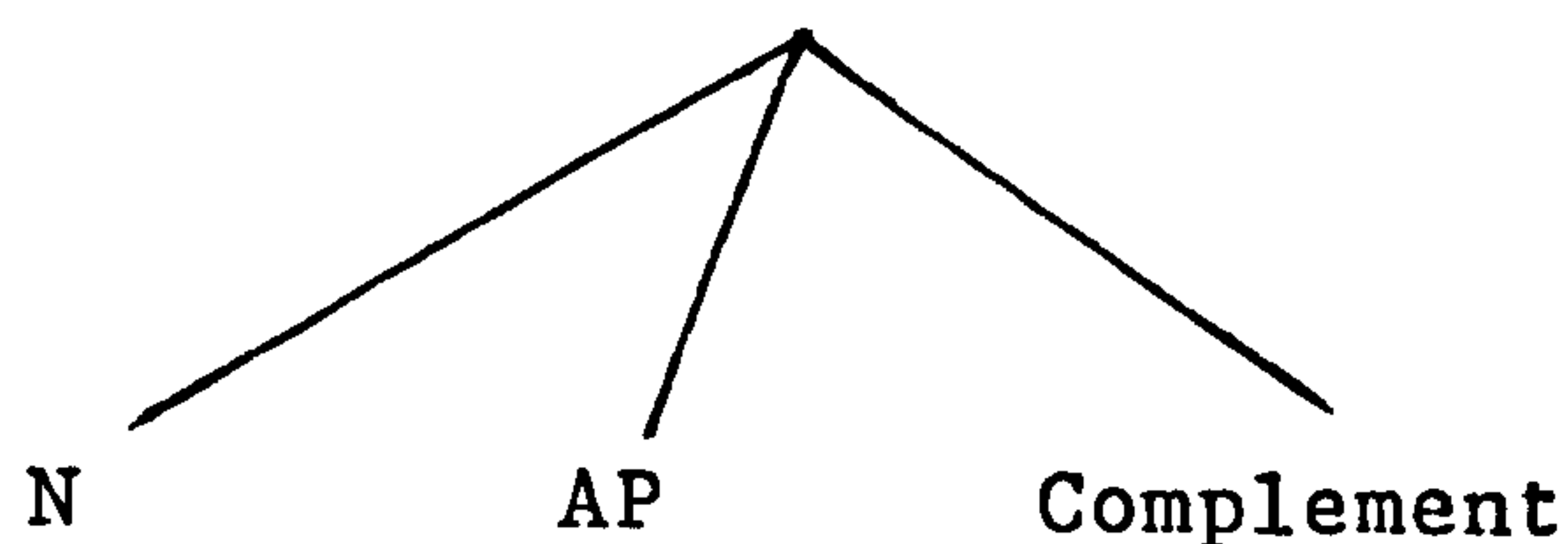
90.



The point is that Pollard and Sag (1988) assume that adjuncts may be sisters of a head. The order is not important here.

If we extend this view of adjuncts to include attributive AP's, we will have structures such as that in (88)<sup>2</sup>:

91.



Again the order is not important here.

If we assume that adjuncts are sisters of complements, we can allow for an adjunct phrase to occur between two complements. The question to ask here is: When do we have definite adjectives and when do we have indefinite adjectives? They are definite when they are preceded by definite nouns, otherwise they are indefinite. Hence, an AP within an adjunct will either be a definite or an indefinite, as given in its simplified form in (92) below:

92. a. Adjuncts  $\sqrt{\text{AP}[+DEF]}$   
b. Adjuncts  $\sqrt{\text{AP}[-DEF]}$

When the adjective is definite, the AP will have the feature in (92) if (a) the noun is CL,[+DEF], or (b) if the noun requires a 'subject'. The following examples are relevant here:

93. 1- wald 1- tawil  
the boy the tall  
'The tall boy'

94. a. *ibən Ahmed l- ɬawil*  
 son Ahmed the tall  
 'Ahmed's tall son'

b. \**ibən Ahmed ɬawil*  
 son Ahmed tall

95. a. *ibəno (huweh) l- ɬawil*  
 son-3SGM he the tall  
 'His tall son'

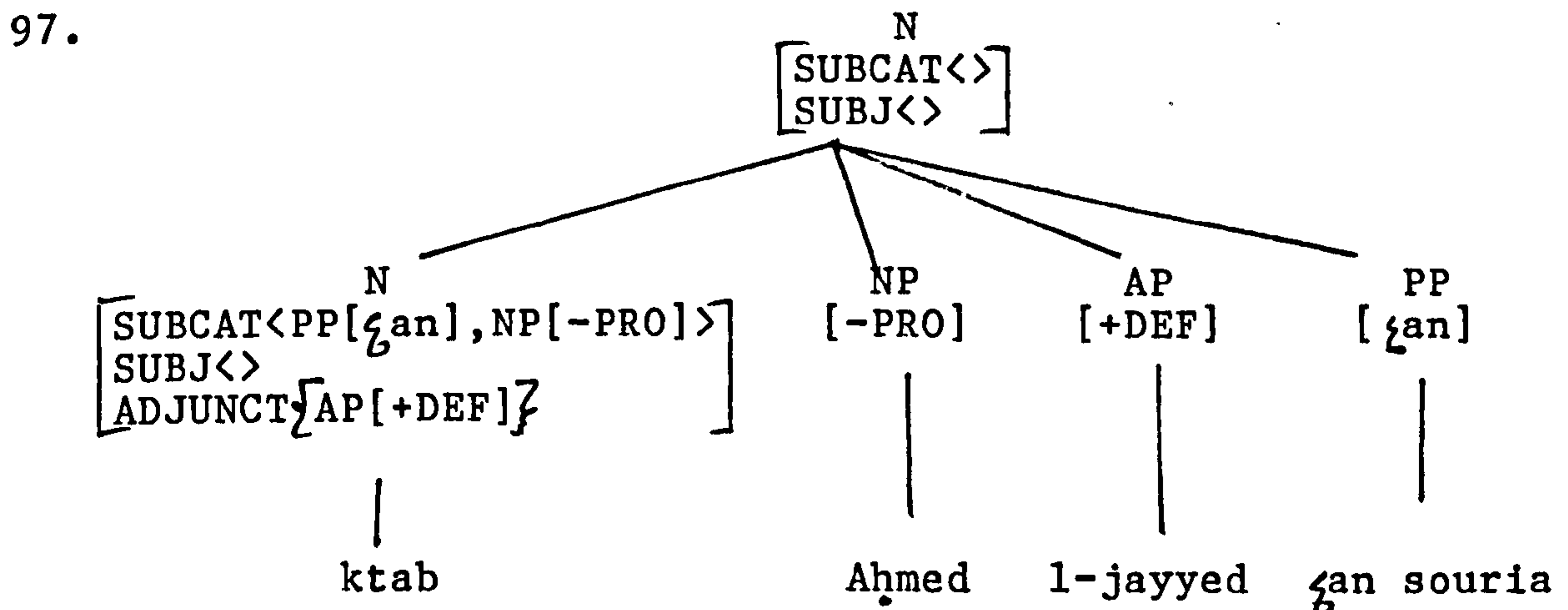
b. \**ibəno (huweh) ɬawil*  
 son-3SGM he tall

In all these three situations we have definite AP's, and these are the three cases where we can get a demonstrative as well.

We can assign now for the head noun ktab 'book' in (86a) the following category<sup>3</sup>:

96. 
$$\left[ \begin{array}{l} \text{N} \\ \text{SUBCAT} \langle \text{PP}[\zeta\text{an}], \text{NP}[-\text{PRO}] \rangle \\ \text{SUBJ} \langle \rangle \\ \text{ADJUNCTS } \{ \text{AP}[+\text{DEF}] \} \end{array} \right]$$

As a result, we will have the following structure:





The adjuncts  $\{AP[+DEF]\}$  should be introduced by the lexical rules given earlier for nouns with 'subjects' and nouns with articles. But before we do that we will modify the simple noun category given in (3) as follows:

98.

$$\left[ \begin{array}{l} \text{SUBCAT} \langle \overset{N}{PP}[\zeta an] \rangle \\ \text{SUBJ} \langle \rangle \\ \text{ADJUNCTS} \{ \dots AP[-DEF] \dots \} \end{array} \right]$$

We need to modify the lexical rules for nouns with 'subjects' and nouns for articles to include the attributive AP's as follows:

99.

$$\left[ \begin{array}{l} \text{SUBCAT} \langle \overset{N}{\dots} \rangle \\ \text{SUBJ} \langle \rangle \\ \text{ADJUNCTS} \{ AP[-DEF] \} \end{array} \right] \implies \left[ \begin{array}{l} \text{SUBCAT} \langle \overset{N}{\dots}, NP[-PRO] \rangle \\ \text{SUBJ} \langle \rangle \\ \text{ADJUNCTS} \{ AP[+DEF] \} \end{array} \right]$$

100.

$$\left[ \begin{array}{l} \text{SUBCAT} \langle \overset{N}{\dots} \rangle \\ \text{SUBJ} \langle \rangle \\ \text{ADJUNCTS} \{ AP[-DEF] \} \end{array} \right] \implies \left[ \begin{array}{l} \text{SUBCAT} \langle \overset{N}{\dots} \rangle \\ \text{SUBJ} \langle \rangle \\ \text{ADJUNCTS} \{ AP [+DEF] \} \\ \text{CL}, [+DEF] \end{array} \right]$$

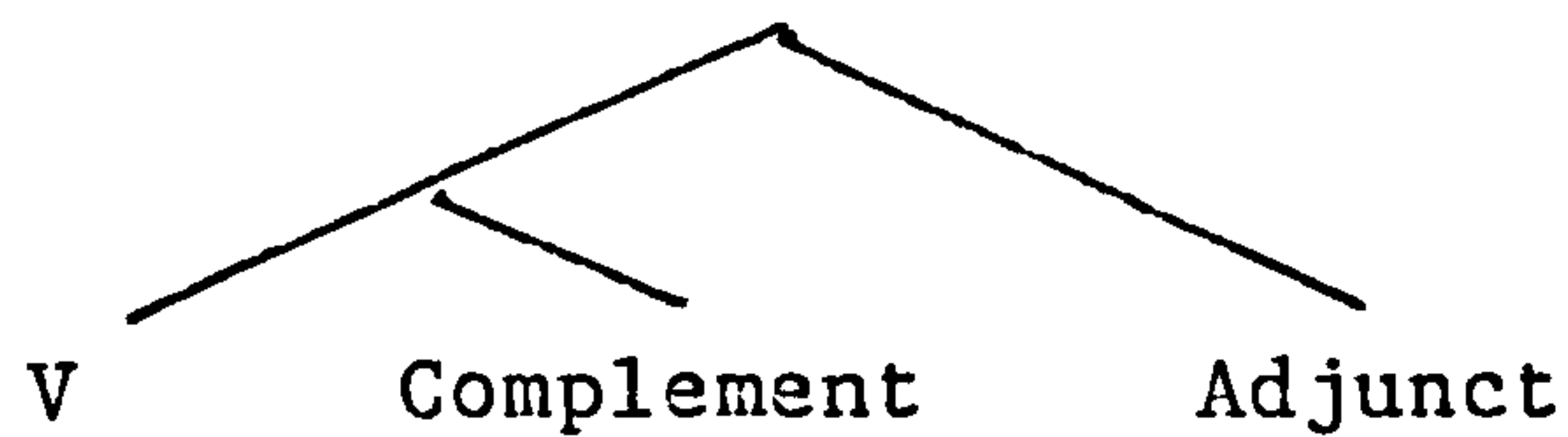
Another property of NP's is relative clauses, which we will not discuss until chapter seven when we introduce 'Unbounded Dependency Constructions'.

### 5.7. Summary:

To conclude, we have been discussing in this chapter the internal structure of noun phrases in Syrian and developing an analysis within the revised version of HPSG. We first dealt with the different types of complements that a head noun can take. In section two, we argued that what might be regarded as 'subjects' are in fact extra complements. In section three, we discussed different types of possession and highlighted the important role clitics play in Syrian. In section four, we argued that the Syrian article, unlike the English article, is a kind of clitic. In other words, it can be analyzed as a realization, like clitics, of the CL feature. In section five, we looked at demonstratives and extended the analysis to include them. Finally, in section six, we discussed attributive adjectives and argued that the ADJUNCTS analysis proposed by Pollard and Sag (1988) provides a satisfactory account for Syrian attributive adjectives.

NOTES:

1. Pollard and Sag (1988) assume the following structure:



2. They also assume this structure as well:



3. We are ignoring the agreement for number and gender. We are also ignoring other possibility of adjuncts.

## CHAPTER SIX

### CLAUSES

#### 6.0. Introduction:

In the preceding chapter, our main concern was the internal structure of NP's. In this chapter, we will look at the structure of clauses. That is, we will consider ordinary clauses and verbless clauses. We will argue as we did with phrasal constructions that the revised version of HPSG advanced in Borsley (1986, 1987 and forthcoming(a)) can provide an analysis of Syrian clauses.

As we noted earlier, there is more than one possible word order in clausal structures in Syrian, which is also possible for Standard Arabic. The word order in Syrian can either be Subject-Verb-Object (SVO), which is the unmarked or most common word order, or an alternative word order Verb-Subject-Object (VSO) which is also used very frequently.

The organization of this chapter is as follows: In section one, we will introduce some data on SVO constructions and consider subject selection. We will give some categories and trees. In section two, we will look at the VSO structures and introduce two different analyses which might be applied to VSO constructions. In section two, subsection one, we will provide an analysis of VSO constructions. In section three, we will look at what is known as small clause sequences in English. In



section four, we will consider Syrian verbless clauses (hereafter VC's) where we will show that they are similar to ordinary clauses. In section five, we will look at VC's involving pronominal subjects where we will analyze them as two separate constituents. We will be returning to ordinary clauses at the end of the chapter. Finally, in section six, we will sum up the chapter.

### 6.1. SVO Constructions:

Syrian clauses, as we noted at the outset, have more than one possible word order. The following examples are relevant here:

1. a. Maha ḡarabt Fayez.  
       Maha hit-3SGF Fayez  
       'Maha hit Fayez.'
- b. \*Maha ḡarabt huweh.  
       Maha hit-3SGF he
2.    Aḡmed safar                   ḡala- dimašq.  
       Ahmed travelled-3SGM to       Damascus  
       'Ahmed travelled to Damascus.'

(1a) is grammatical because the object of the preceding verb is a non-pronominal NP, while (1b) is ungrammatical because whenever the object is a pronoun, as we noted in the previous chapters, the verb preceding it should host a clitic. In other words, a pronominal object always agrees with a preceding clitic in number, person and gender feature specifications. The

example in (2) contains a verb followed by a PP.

We proceed to consider subject-selection in SVO clauses. As far as SVO clauses are concerned, it is important to concentrate on subject position by giving appropriate values for the SUBJ feature. Consider the following examples:

3. Ahmed           rah           ξ1- madraseh.

Ahmed(3SGM) went-3SGM to school

'Ahmed went to school.'

4. Salwa           rahet          ξ1- madraseh.

Salwa(3SGF) went-3SGF to school

'Salwa went to school.'

5. a. 1- awlad       rahu          ξ1- madraseh.

the boys(3PL) went-3PL to school

'The boys went to school.'

b. 1- banat       rahu          ξ1- madraseh.

the girls(3PL) went-3PL to school

'The girls went to school.'

As the glosses above indicate, there is agreement between the verbs and the preceding subjects. This, of course, will be handled by the SUBJ feature. In other words, the SUBJ feature will take care of the subject-verb agreement. The verbs in the above examples will have these SUBJ features:

6. a. [SUBJ<NP[3SGM]>]

b. [SUBJ<NP[3SGF]>]

c. [SUBJ<NP[3PL]>]

We have so far looked at third person singular and plural agreement. We will move on to introduce now first and second person singular and plural agreement. The following examples illustrate this:

7.    ʔana   reḥt        ʒ1- madraseh  
      I-1SG went-1SG to school  
      'I went to school.'
8.    nəḥneh reḥna     ʒ1-madraseh  
      we-1PL went-1PL to school  
      'We went to school.'
9.    ʔnteh     reḥt        ʒ1-madraseh  
      you-2SGM went-2SGM to school  
      'You went to school.'
10. ʔnti        reḥti        ʒ1-madraseh  
      you-2SGF went-2SGF to school  
      'You went to school.'
11. ʔntu        reḥtu        ʒ1-madraseh  
      you-2PL went-2PL to school  
      'You went to school.'

We can assign the following SUBJ features for the examples in (7) to (11):

12. a. [SUBJ<NP[1SG]>]
- b. [SUBJ<NP[1PL]>]
- c. [SUBJ<NP[2SGM]>]
- d. [SUBJ<NP[2SGF]>]
- e. [SUBJ<NP[2PL]>]

Having looked at ordinary subject-verb agreement, we turn to look at Syrian counterparts of English examples with 'Dummy Subjects'. Consider the following examples:

13. maṭṭaret m-barḥa.  
rained yesterday

'It rained yesterday.'

14. yabdu ʔannu Aḥmed biḥeb Salwa.  
seems that Ahmed loves-3SGM Salwa

'It seems that Ahmed loves Salwa.'

15. faḍit bl- leil.  
flooded in the night

'It flooded at night.'

There are two points to make here: (a) that a subject with semantic content is impossible and (b) that unlike English examples with overt dummy subjects, there is no possibility of overt dummies in Syrian. The ungrammatical examples in (16) illustrate the first point and the ungrammatical examples in (17) illustrate the second point:

16. a. \*Aḥmed mṭṭaret m-barḥa  
Ahmed rained yesterday

b. \*l- rejjal yabdu ʔannu Aḥmed biḥeb Salwa  
the man seems that Ahmed loves-3SGM Salwa

17. a. \*huweh/hyyeh mṭṭaret m-barḥa  
he/ she rained yesterday

b. \*huweh/hyyeh yabdu ʔannu Aḥmed biḥeb Salwa  
he/ she seems that Ahmed loves-3SGM Salwa



There are two possible analyses to consider: One where the examples have an obligatory null subject and one where they have no subject at all. Within the first analysis, we will have the category in (18) and within the second analysis, we will have the category in (19):

18. [SUBJ<NP[NFORM,DUMMY]>]

19. [SUBJ<>]

We would like to make it clear that NP[NFORM,DUMMY] will be phonologically null.

We can now provide analyses for some SVO clauses. Two of the rules that are needed here are the head-complement rule given in previous chapters and the subject-predicate rule given below:

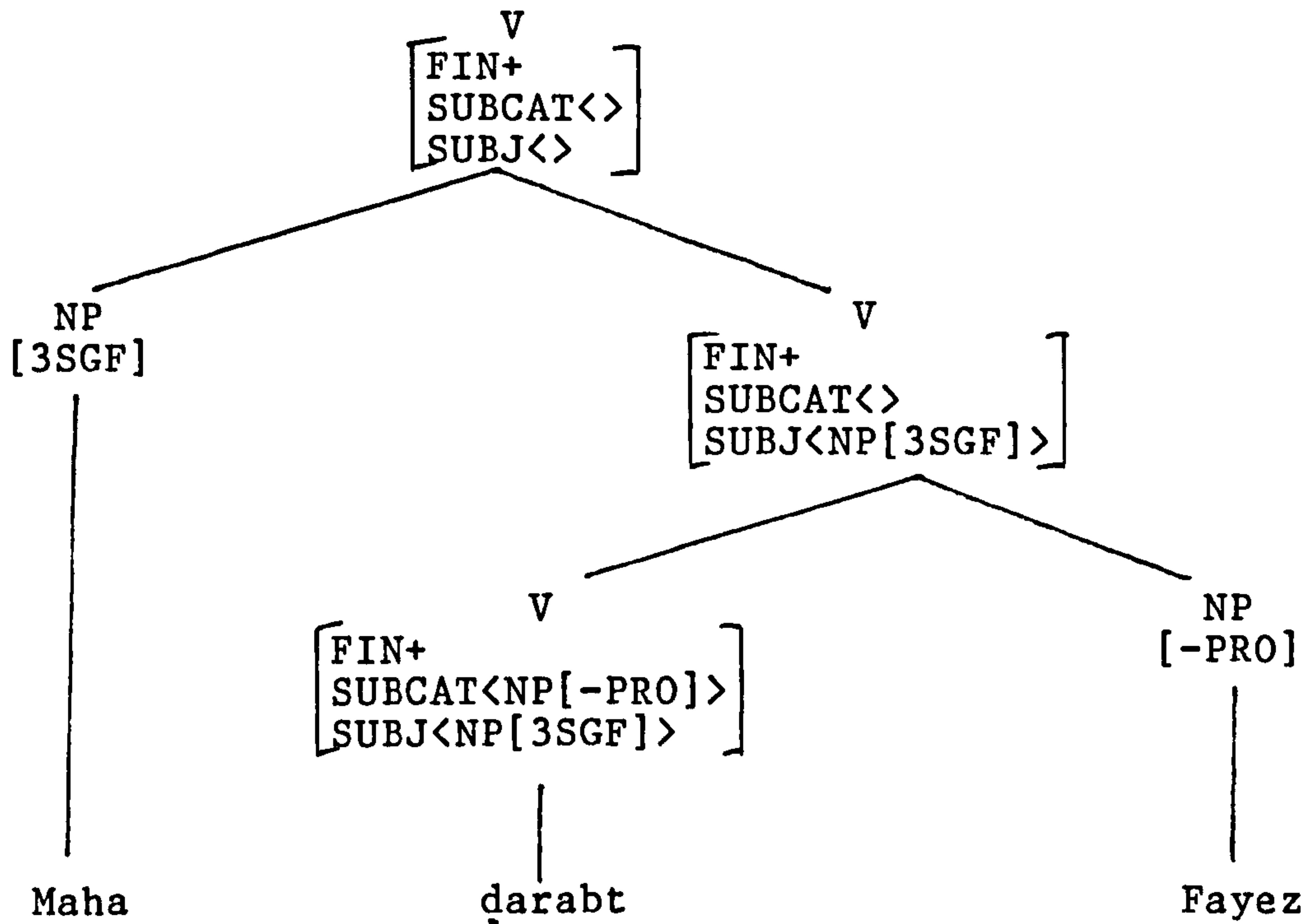
20. [SUBJ<>]-----> H[LEX-;SUBCAT<>;SUBJ<[]>],C

Now we are in a position to give categories and trees for the earlier examples. The verb darb 'hit' in (1a), for example, will have the following category:

21. V[FIN+;SUBCAT<NP[-PRO]>;SUBJ<NP[3SGF]>]<sup>1</sup>.

Given the category in (21) together with the rule in (20), the head-complement rule and the two universal principles we will allow trees such as that in (22) below:

22.



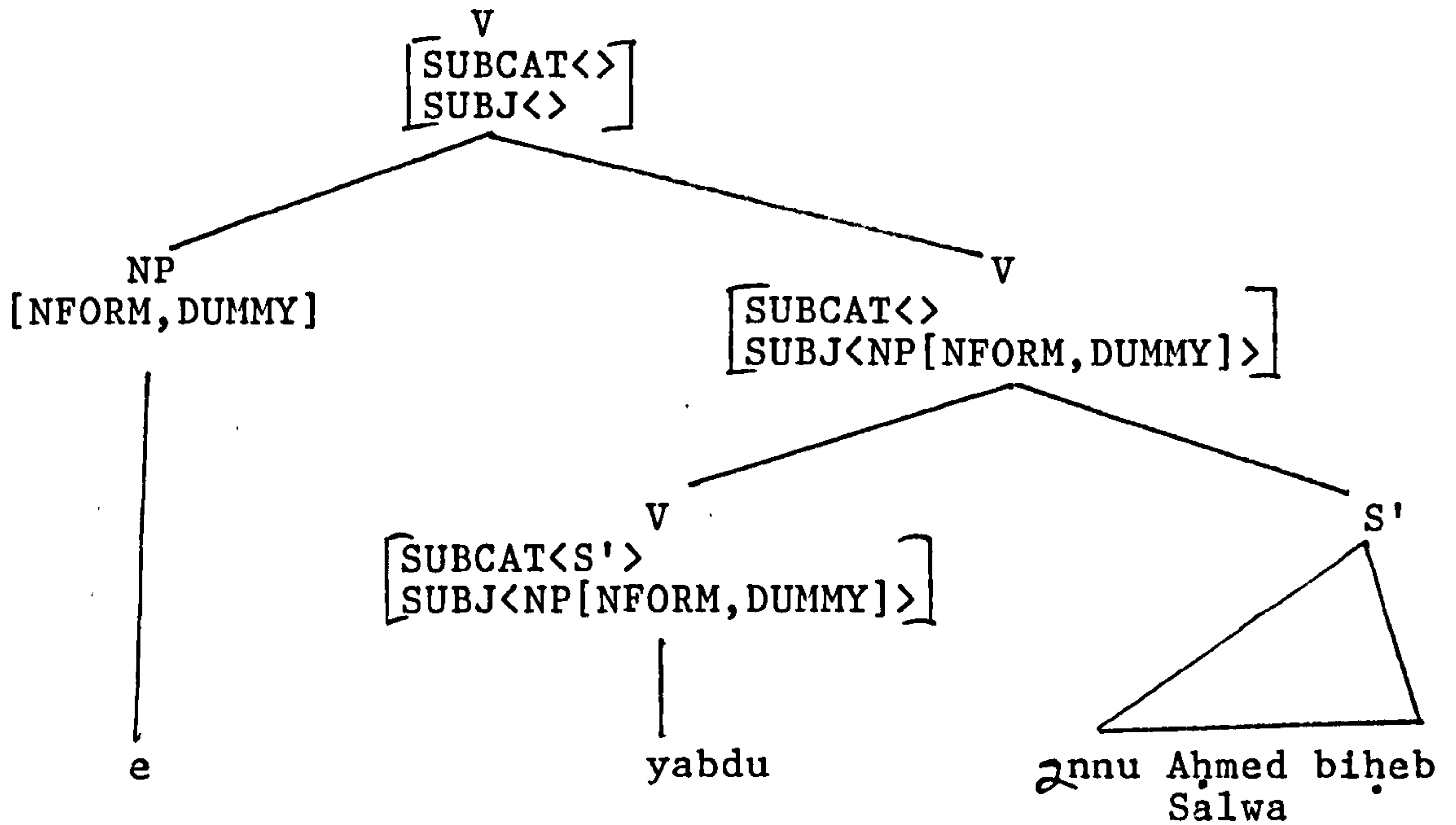
It is clear from this structure that the subject-verb agreement is handled by the SUBJ feature.

The verb yabdu in (14) will have the following category if we assume that Syrian counterparts of English dummy subject sentences involve a null subject:

23. V[SUBCAT<S'>;SUBJ<NP[NFORM,DUMMY]>]

The category in (23) will interact with the rules and the principles to give the following structure:

24.

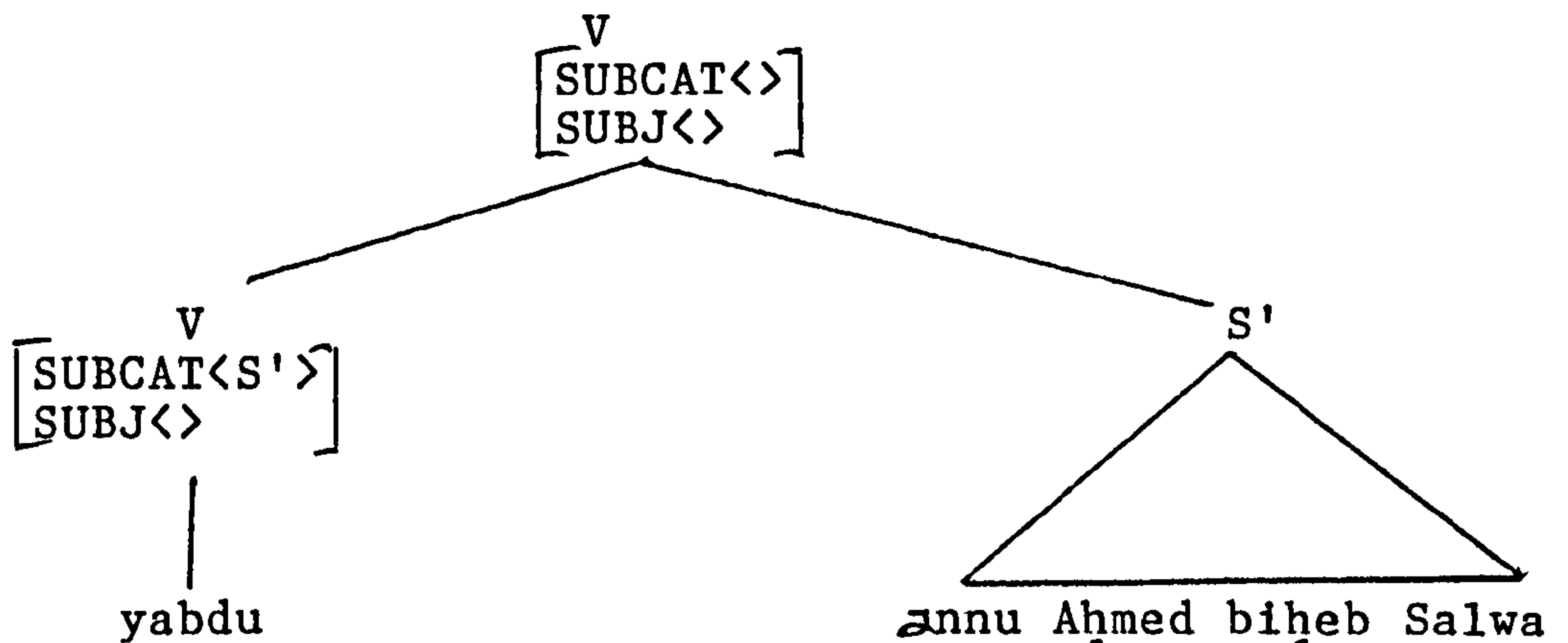


If we assume that examples such as those in (13) to (15) involve no subject at all, the following category is required:

25. V [SUBCAT<S'>>; SUBJ<>>]

This category will interact with the rules and the principles to give the following structure:

26.



We will not try to decide which analysis is the right one for Syrian counterparts of dummy subject sentences. We will leave the question unresolved.

For the sake of completeness, we will introduce some examples, categories and trees for sentences containing a verbal clitic. Relevant here are the following examples:

27. a. Maha ḥabeto (huweh)

Maha loved-3SGF-3SGM he

'Maha loved him'

b. Maha ḍarabto la-Fayez

Maha hit-3SGF-3SGM to Fayez

'Maha hit Fayez.' (It was Fayez that Maha hit)

(27a) involves a simple clitic with a following optional pronoun, whereas (27b) is a typical example of prepositional clitic doubling.

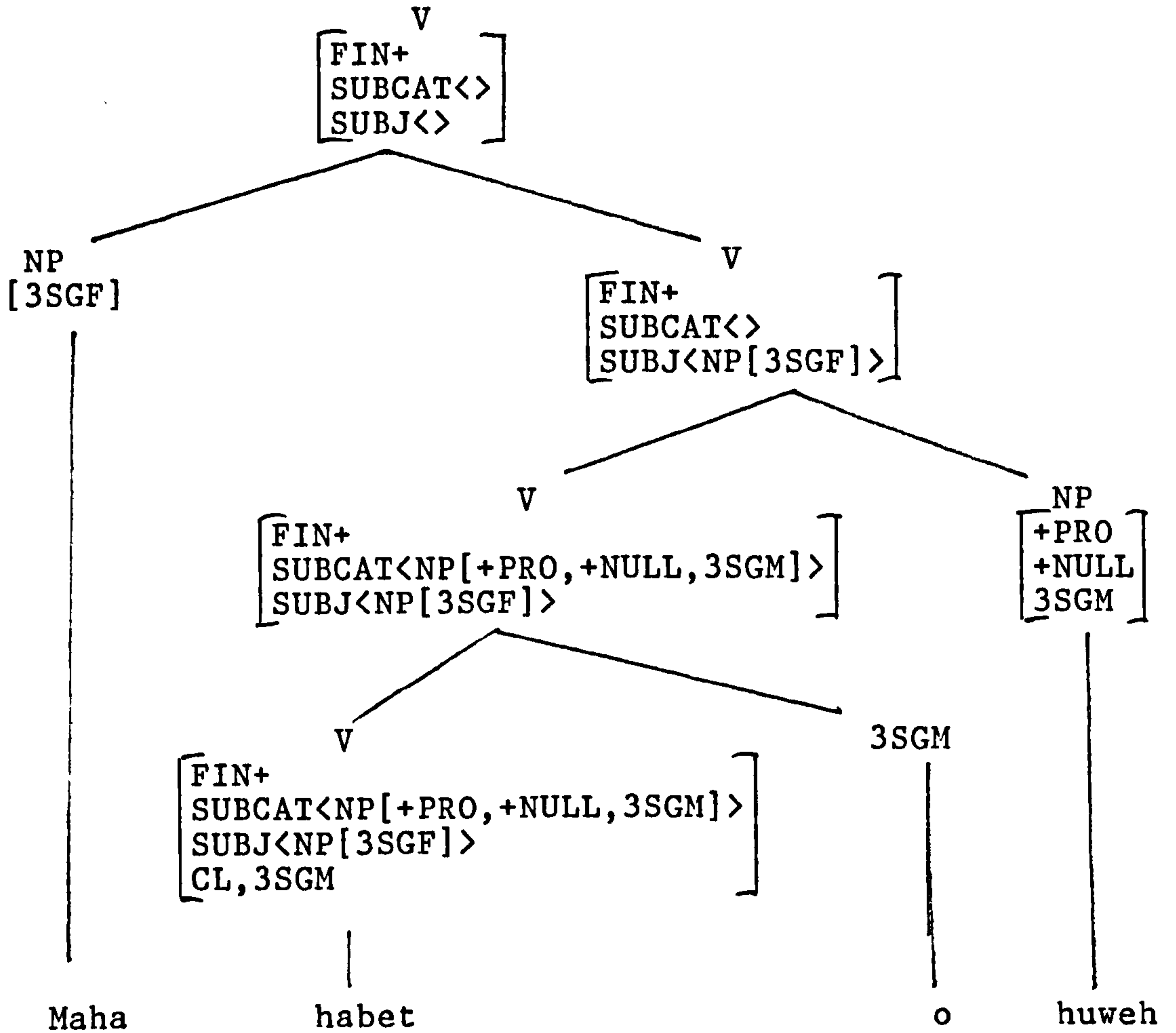
The verb in (27a) will have the following category:

28. V[FIN+;SUBCAT<NP[+PRO,+NULL, <math>\alpha</math>]>;SUBJ<NP[3SGF]>;CL,<math>\alpha</math>]

This category will interact with the clitic rule given in previous chapters, the head-complement rule and the subject-predicate rule together with the two universal principles to give the following tree for the verb taking clitic in (27a):



29.

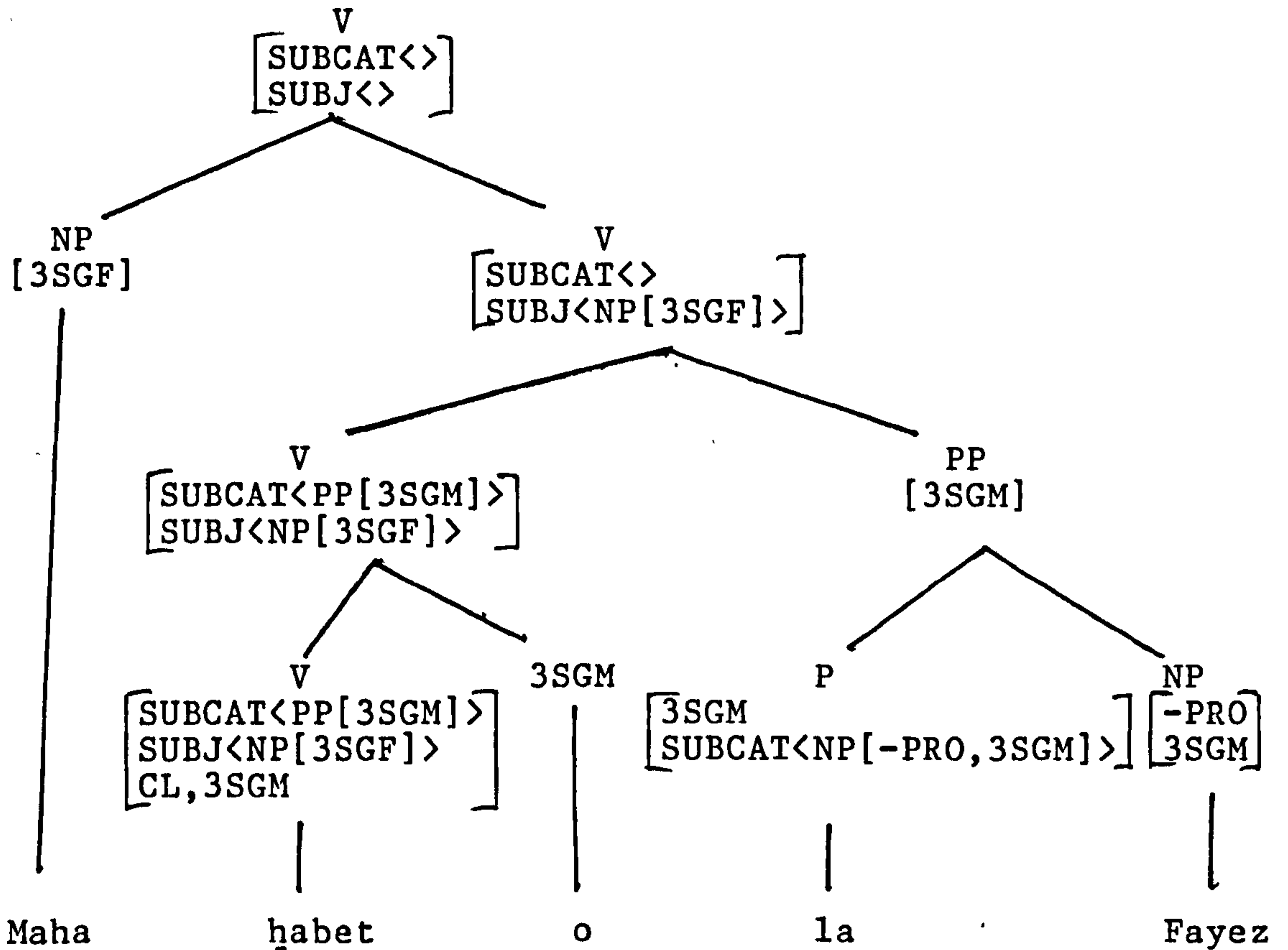


We turn now to give some categories for prepositional clitic doubling. As demonstrated in earlier chapters, in order to analyze structures such as V+CL+1a+NP[-PRO], we need to posit the following category for the verb in (27b):

30. V[CL,  $\infty$ ; SUBCAT<PP[ $\infty$ ]; SUBJ<NP[3SGF]>]

This category will interact with the rules and principles to give the following structure:

31.



So far we have discussed SVO structures. We turn now to consider VSO constructions which are more problematic than SVO structures.

### 6.2. Verb-initial clauses:

As we noted earlier, Syrian has an alternative word order which is VSO. That is, Syrian has verb-initial clauses. The following examples illustrate:

32. darb            Nadir Salwa  
 hit-3SGM Nadir Salwa  
 'Nadir hit Salwa.'

33. raḥ            Adnan la ḥaleb  
 went-3SGM Adnan to Aleppo  
 'Adnan went to Aleppo'

34. waḍḡ        Aḥmed l- ktab ḡal      ṭawleh  
 put-3SGM Ahmed the book on-the table  
 'Ahmed put the book on the table'

These examples are similar to those SVO structures except that the subject follows the verb. (32) is a typical example of a verb-initial clause where the verb ḡarb 'hit' has two sisters the NP subject Nadir and the NP object Salwa. (33) is another example of VSO structure where the head verb raḥ 'went' has two sisters, a subject and a PP complement. Finally, (34) is a VSO example where the head verb waḍḡ 'put' has three sisters, a subject, an object and a PP complement.

We turn now to consider examples involving clitics. As in subject-initial clauses, we cannot simply replace a non-pronominal object in a verb-initial clause by a pronoun. The following example is relevant here:

35. \*ḡaf        Niḍal hyyeh  
 saw-3SGM Nidal she

Instead of (35), (36) is required:

36. ḡafa        Niḍal (hyyeh).  
 saw-3SGM-3SGF Nidal she  
 'Nidal saw her.'

Here, we have a clitic following the verb and the pronoun is optional.

We turn next to give examples involving prepositional clitic doubling. Consider the following example:

37.  $\dot{y}$ afa                      George la- Siham  
saw-3SGM-3SGF George to Siham  
'George saw Siham.'

This is just like SVO prepositional clitic doubling examples apart from the location of the subject.

We proceed now to provide an analysis for VSO constructions.

#### 6.2.1. The Analysis:

As before we will start by looking at some relevant categories. There are two possible analyses to be considered: First, the subject is a realization of the single item on the SUBJ list. Second, it is a realization of an extra item on the SUBCAT list. This is also true of N+'subject' NP's as discussed in Borsley's (forthcoming (a)) recent paper and in my chapter on NP's. We will refer to the first analysis as the SUBJ analysis and we will call the second the SUBCAT analysis.

We can assign now the following category for the head verb darb 'hit' in (32) if we assume the SUBJ analysis:

38. V[FIN+;SUBCAT<NP[-PRO]>;SUBJ<NP[3SGM]>]

This is the same category we had for SVO clauses. The category in (38) implies that a VSO clause will be a product of the

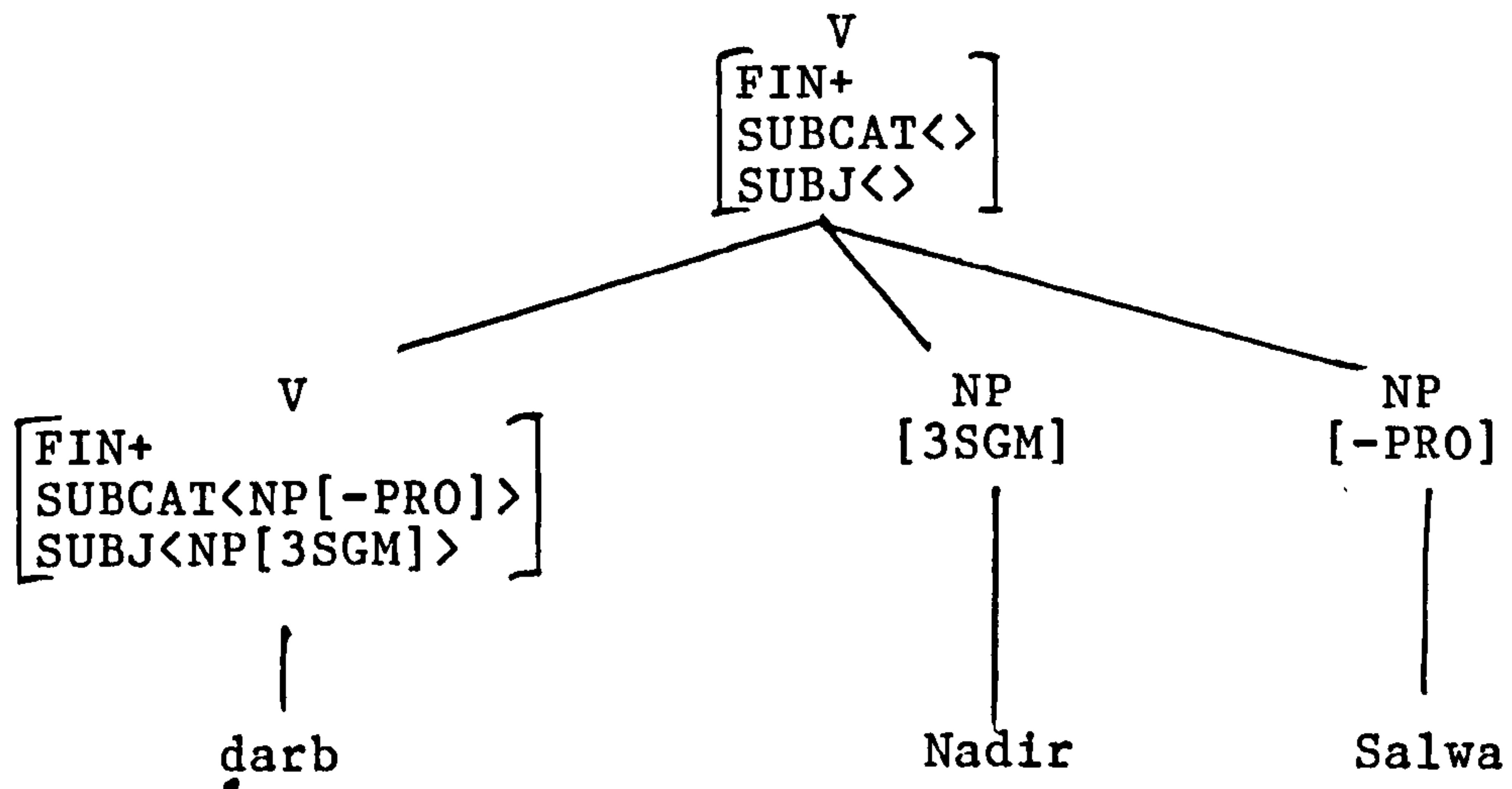


head-subject-complement rule which is formulated as follows:

39. [SUBCAT<>;SUBJ<>]---> H[SUBCAT<...>;SUBJ<[]>],C\*

This rule is an analogue within the revised version of HPSG of a rule proposed by Pollard (1985) and Pollard and Sag (1988) for English auxiliary-initial sentences. This is a rule combining a head simultaneously both with the subject and with the complements that it requires. The rule in (39) will interact with the category in (38) together with the two universal principles to allow trees such as that in (40) for the sentence in (32):

40.

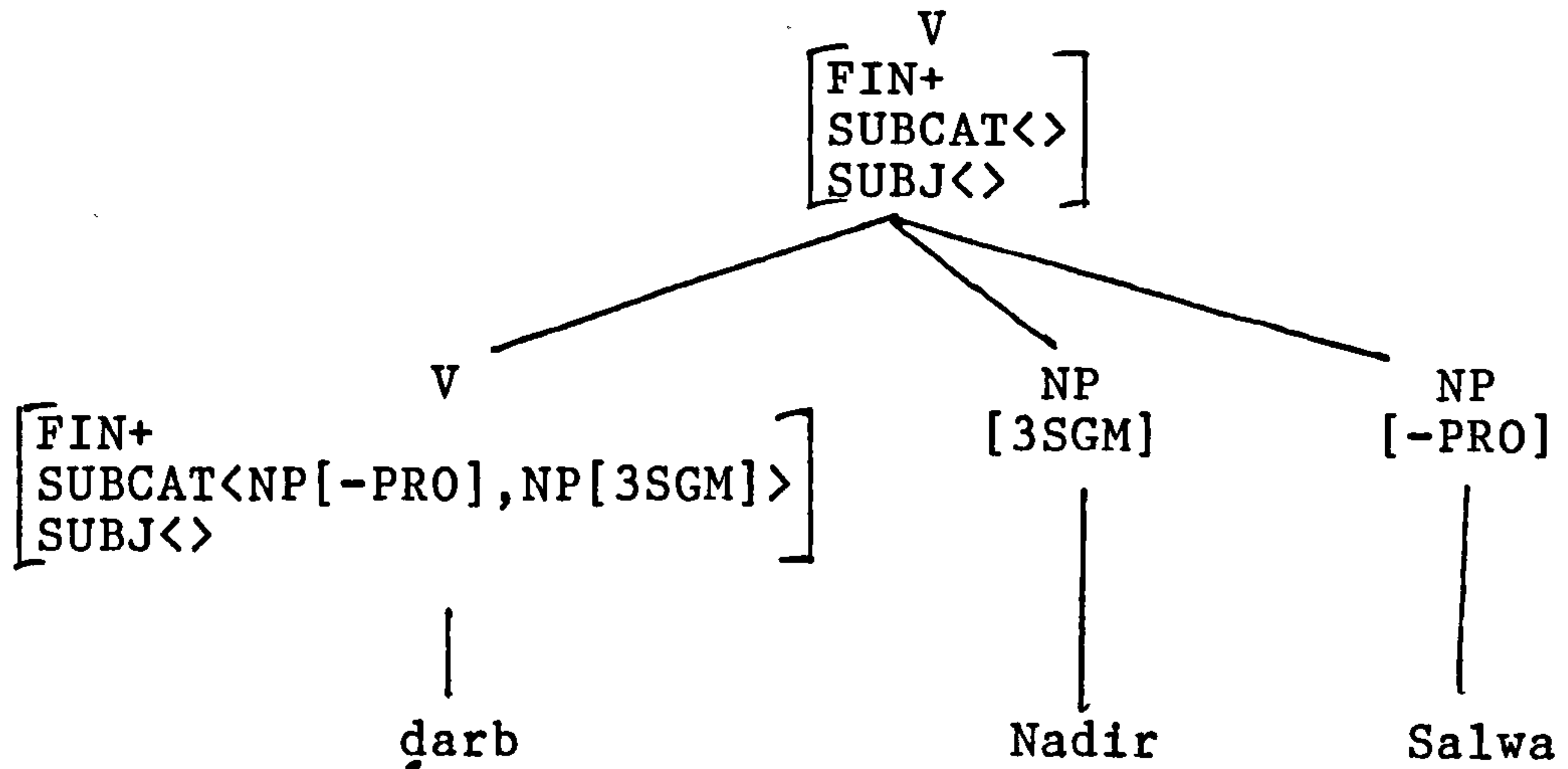


If we assume, on the other hand, that post-head subjects are a reflection not of the single item on the SUBJ list but of an additional item on the SUBCAT list, then we will need an additional category such as that in (41) below:

41. V[FIN+;SUBCAT<NP[-PRO],NP[3SGM]>;SUBJ<>]

This category will interact with the head-complement rule together with the HFP and the Subcategorization Principle to give the following structure:

42.



The head-subject-complement rule is no longer needed for such structures. But we would need a lexical rule such as that in (43) below to derive the additional categories from ordinary ones:

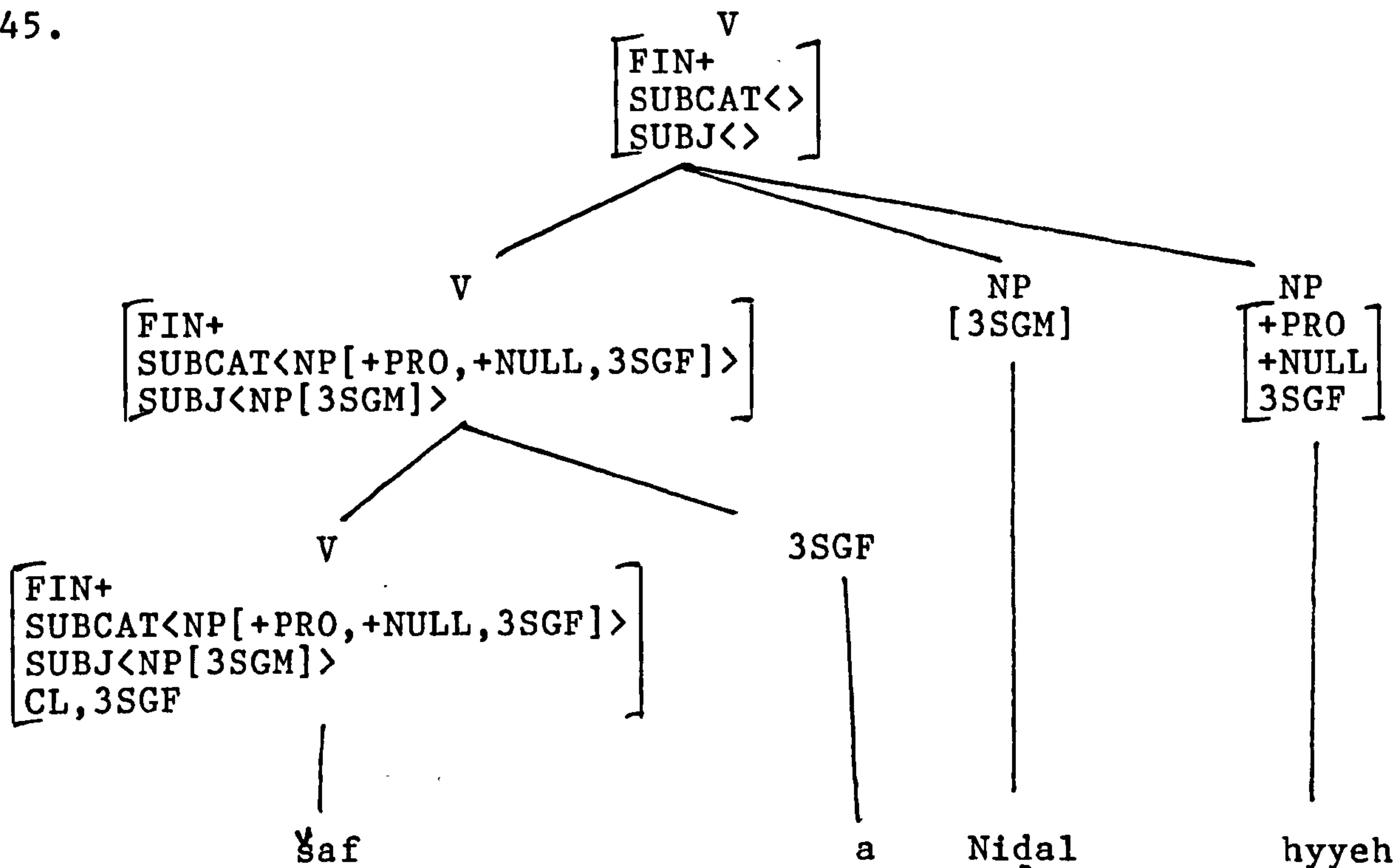
43.  $V[FIN+; SUBCAT<NP[-PRO]>; SUBJ<[3SGM]>] =====>$   
 $V[FIN+; SUBCAT<NP[-PRO], NP[3SGM]>; SUBJ<>]$

We turn now to the analysis of clitics within VSO clauses. If subjects of clauses, as we mentioned earlier, are analyzed as a realization of the single item on the SUBJ list, then clitics will always be associated with the final item on the SUBCAT list. Given this assumption, a verb that combines with a following clitic such as that in (36) will have the following category:

44.  $V[FIN+; SUBCAT<NP[+PRO, +NULL, \alpha]>; SUBJ<NP[3SGM]>; CL, \alpha]$

This is, of course, the category that we had for SVO clauses containing clitics. As before, this category will interact with the clitic-head rule together with both universal principles and syntactic rules introduced earlier to give the following structure:

45.



By contrast, if we assume that post-head subjects are a realization of an extra item on the SUBCAT list, we would have the category in (46) for examples involving clitics instead of that in (44)<sup>2</sup>:

46. V[FIN+; SUBCAT<NP[+PRO,+NULL,  $\alpha$ ], NP[3SGM]>; SUBJ<>; CL,  $\alpha$ ]

Given the category above together with the clitic-head rule, we will allow the following structure:





as that in (46) would not agree with the category that realizes the final item on the SUBCAT list of the head verb. Hence, clitics here cannot be treated like elsewhere, i.e., like those in VP's, PP's and NP's because, as mentioned earlier, clitics are not associated with the final item on the SUBCAT list. As a result, we cannot derive the category in (46) from (41) with the general lexical rule. Therefore, we would need a separate lexical rule such as that in (48) below which allows the additional category to be derived from the ordinary one:

48. V[FIN+;SUBCAT<NP[-PRO],NP[3SGM]>;SUBJ<>] =====>

V[FIN+;SUBCAT<NP[+PRO,+NULL,~~κ~~],NP[3SGM]>;SUBJ<>;CL,~~κ~~]

To put it differently, the SUBCAT analysis requires two rules: a lexical rule to derive extra 'ordinary' categories and a lexical rule to derive extra categories taking clitics. The SUBJ analysis, on the other hand, requires just an extra syntactic rule, i.e., the head-subject-complement rule.

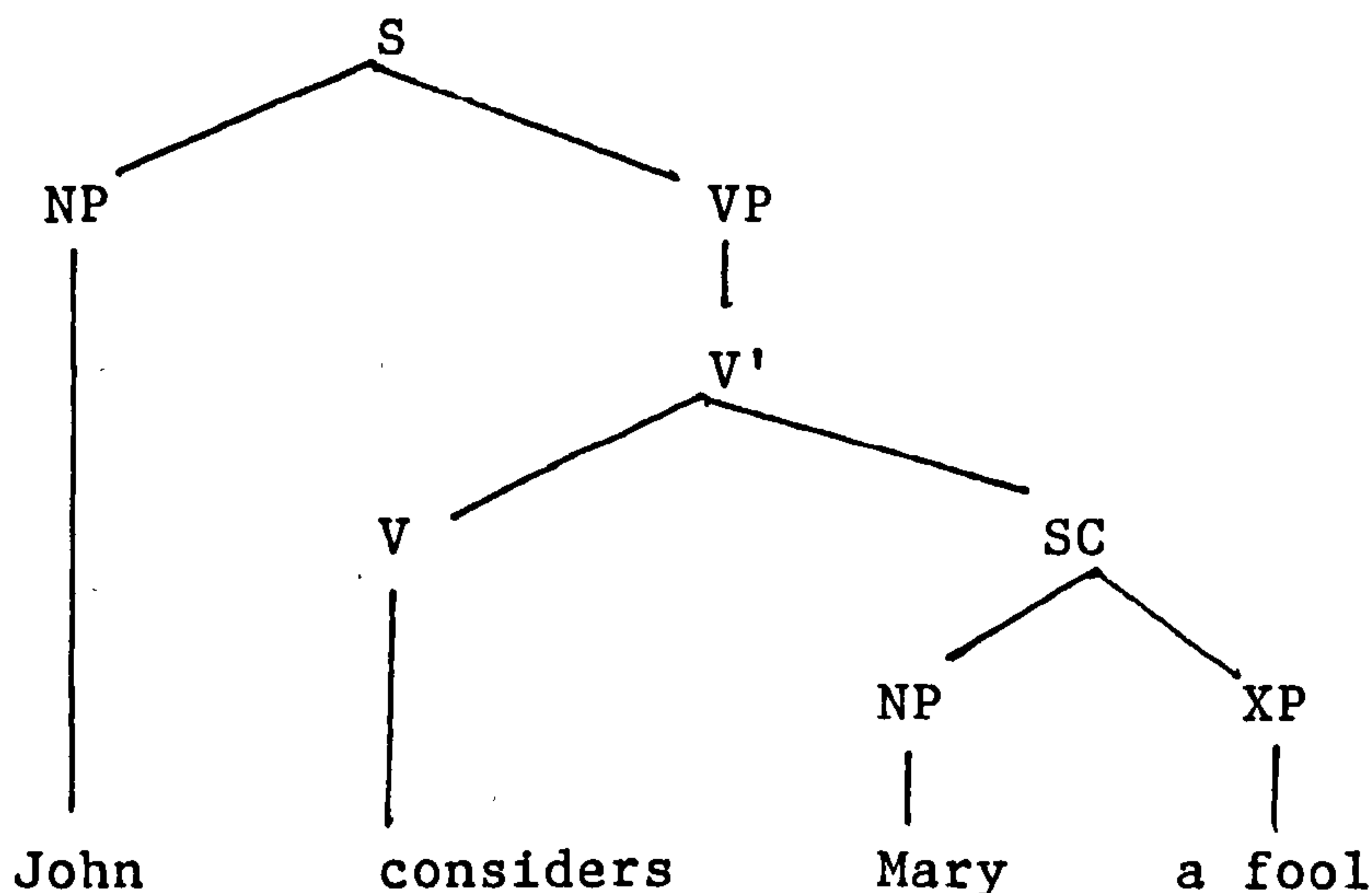
### 6.3. Small Clause Sequences in English:

Before discussing Syrian VC's, it is helpful to look in brief at English examples involving verbless clauses (small clauses). What we actually mean by 'small clause sequences' is strings of words that are analyzed as small clauses within most versions of GB. We will look first at standard examples such as the following:

49. John considers [Mary a fool].

The example above shows that post-verbal strings are small clauses for GB. Given GB assumptions, the example in (49) will have the following structure:

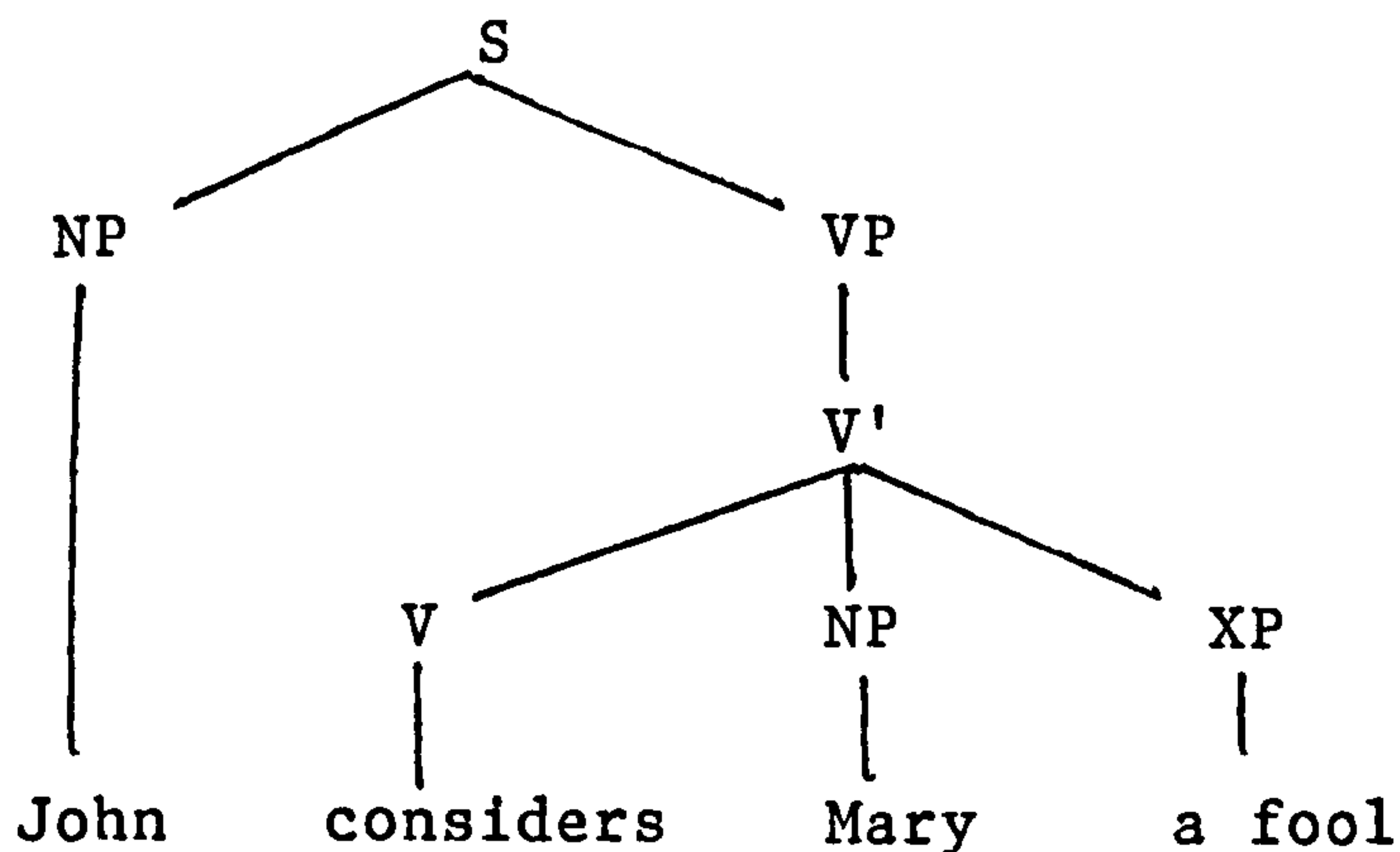
50.



We are ignoring the fact that in GB the S's are IP's, and XP = NP, AP, or PP

PSG and especially HPSG that we are concerned with, unlike GB, considers examples like (49) as involving not a single clause but two separate complements. To put it differently, verbs like consider take two separate constituents which are sisters of that verb. Given HPSG assumptions, the example in (49) will have the following structure:

51.



Where XP = NP, AP, or PP

One reason for suggesting that the example above involves two separate constituents rather than having a single clause complement comes from passive facts. The following passive example is relevant here:

52. Mary is considered a fool

Within the revised version of HPSG, the active example in (49) will have the category in (53) whereas the passive example will have the category in (54):

53. V[SUBCAT<NP, NP>; SUBJ<NP>]

54. V[PAS; SUBCAT<NP>; SUBJ<NP>]

What we need here is to derive the category in (54) from that in (53) with the lexical rule in (55):

55. V[SUBCAT<...NP<sub>1</sub>>; SUBJ<NP<sub>2</sub>>]=====>

V[PAS; SUBCAT<...>; SUBJ<NP<sub>1</sub>>]

By contrast, if we assume that the example in (49) involves a single clausal complement, we will have the following category:

56. V[SUBCAT<S>; SUBJ<NP>]

We cannot derive (56) from (53) with the lexical rule in (55) above.

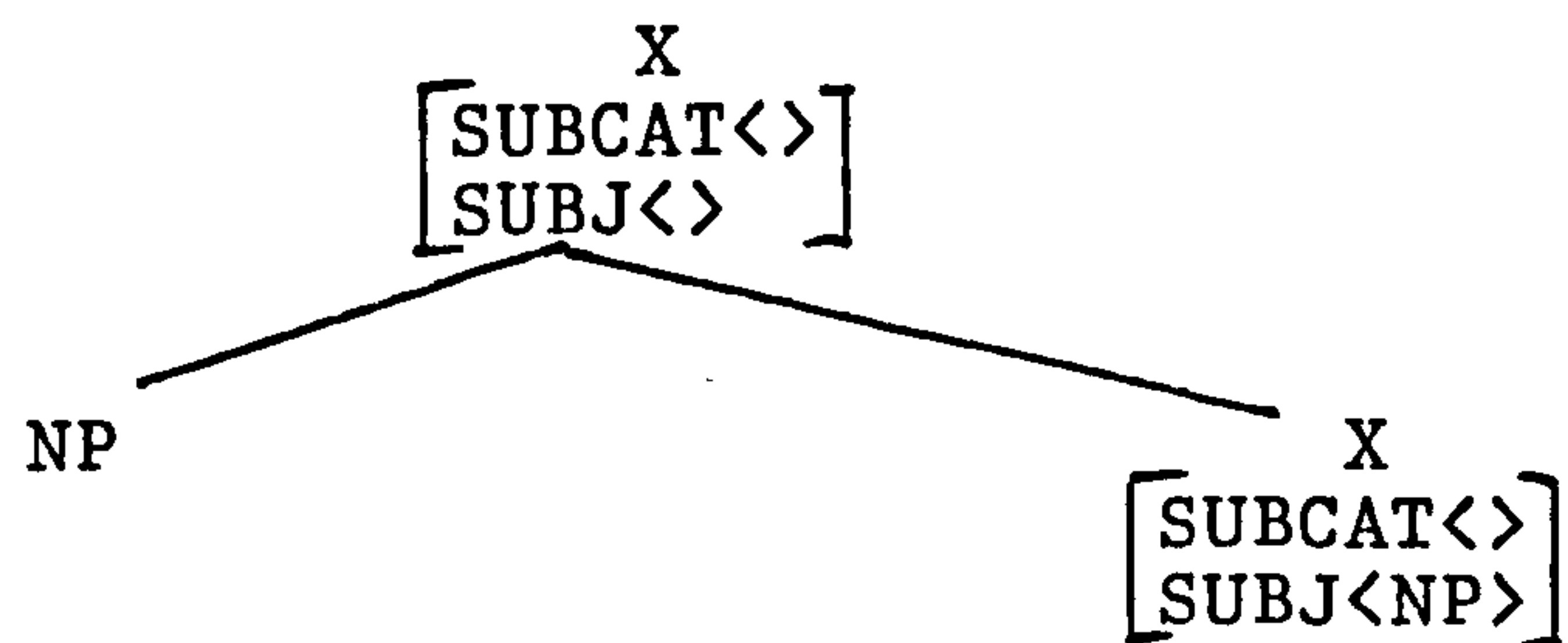
We can conclude that the example in (49) contains two separate constituents and not small clause because it has a related passive sentence.

We proceed now to look at examples which are analyzed as small clauses within HPSG. The following example is relevant here:

57. With [John leaving tomorrow], things sure will be dull. This kind of English example that Pollard and Sag (1988:54) analyzed as small clauses can be translated into the revised version of HPSG developed in Borsley (forthcoming (b)).

Hence, we can analyze these strings as subject-predicate constructions, whose predicates are NP's, AP's, and PP's. That is, NP's, AP's and PP's which are SUBJ<NP>. Within this assumption, they will have structures of the following form:

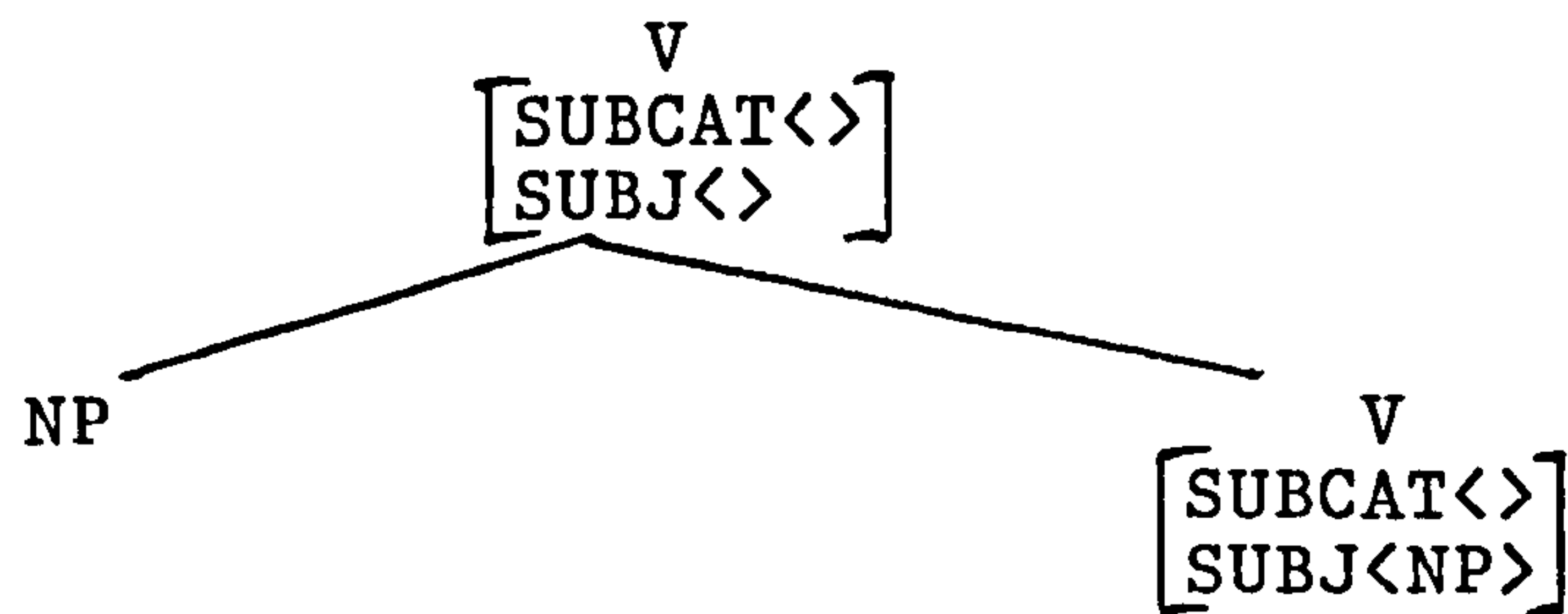
58.



where X is a variable standing for N, A, or P.

Given this structure, SC's will be similar to ordinary subject-initial clauses which involve the following structure:

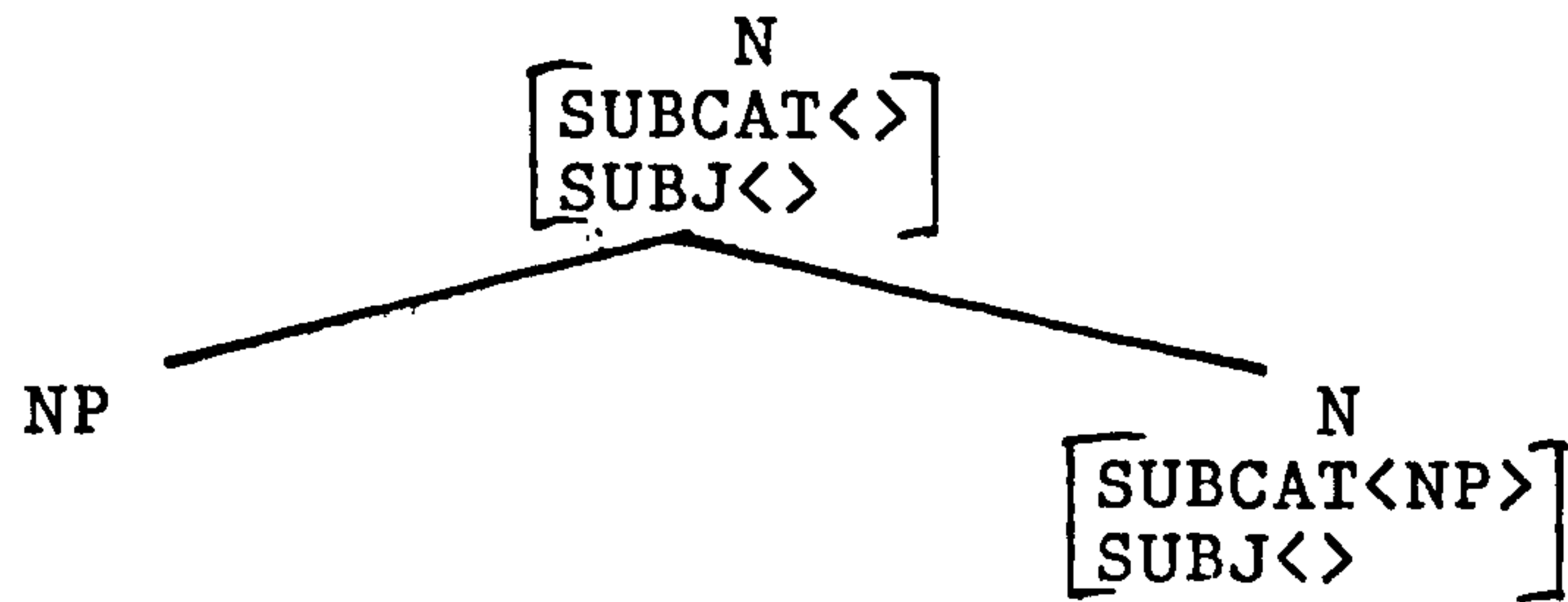
59.



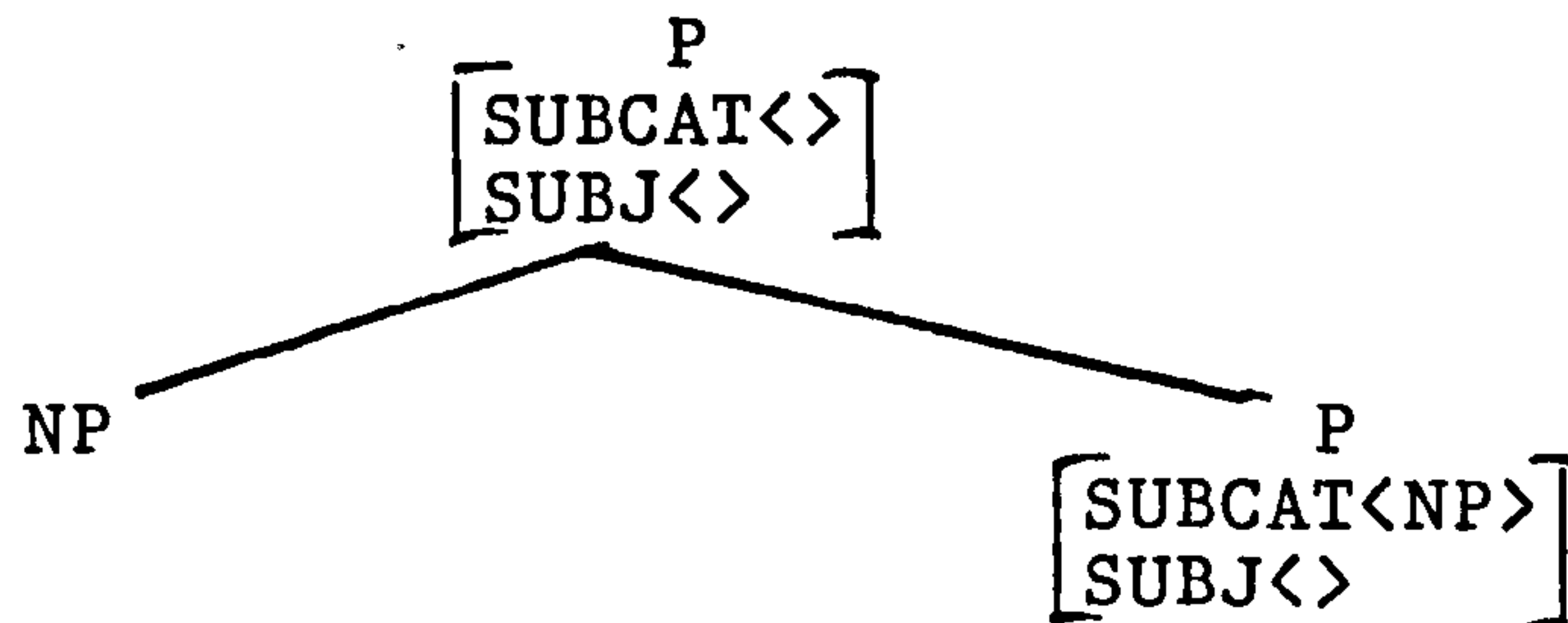
There are some problems here. The first problem is that small clauses will have three different categories: N[SUBCAT<>;SUBJ<>], A[SUBCAT<>;SUBJ<>], and P[SUBCAT<>;SUBJ<>]. The second problem is that small clauses involving NP and PP predicates will not be distinguished from ordinary NP's and PP's, which are N[SUBCAT<>;SUBJ<>] and P[SUBCAT<>;SUBJ<>]:



60.



61.



One response to these problems is to assume following Pollard and Sag (1988:64-70) that predicative NP's, AP's and PP's are +PRD (predicative), where +PRD is a binary head feature that distinguishes predicative from non-predicative constructions. Given this assumption, small clauses will have the following categories:

62. N[+PRD;SUBCAT<>;SUBJ<>]

A[+PRD;SUBCAT<>;SUBJ<>]

P[+PRD;SUBCAT<>;SUBJ<>]

Ordinary clauses, on the other hand, will have categories such as that in (63) below:

63. V[SUBCAT<>;SUBJ<>]

Ordinary NP's and PP's will have the categories in (64), whereas predicative NP's, AP's and PP's will have the categories in (65):

64. N[SUBCAT<>;SUBJ<>]

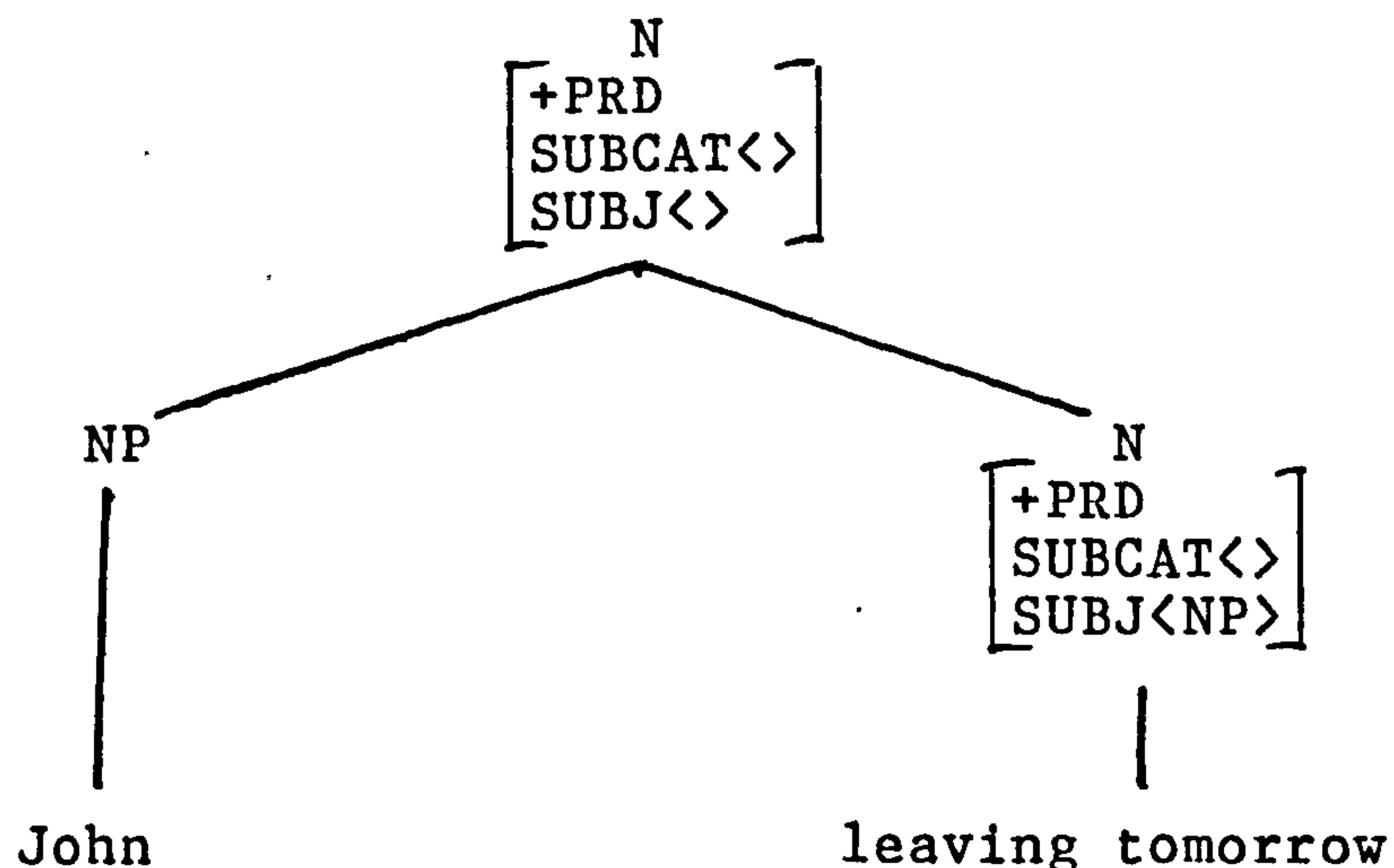
P[SUBCAT<>;SUBJ<>]

65. N[+PRD; SUBCAT<>; SUBJ<NP>]  
 A[+PRD; SUBCAT<>; SUBJ<NP>]  
 P[+PRD; SUBCAT<>; SUBJ<NP>]

Although we still have three different categories for small clauses, they are distinguished from other categories by being [SUBJ<>] and [+PRD]. Predicative phrases here are [+PRD] and ordinary phrases and clauses are [SUBJ<>] but not [+PRD]. Thus, it is easy now to provide for contexts in which all kinds of small clauses can appear but not ordinary clauses.

The categories in (65) above will interact with the subject-predicate rule together with the HFP and the Subcategorization Principle to give the following tree for the strings in (57):

66.



The other categories in (65) will have similar trees.

So far we have been discussing small clauses in English. We proceed to look at Syrian verbless clauses.

#### 6.4. Syrian VC's as Ordinary Clauses:

We will look here at VC's which behave like ordinary clauses.

##### 6.4.1. Some Data of Syrian Verbless Clauses:

To start with, we can present some VC's involving predicative NP's, AP's and PP's, as given below:

67. Kamal ḡabqari

Kamal genius

'Kamal is a genius'

68. Salwa ṭalbeh

Salwa student

'Salwa is a student'

(67) and (68) are typical examples of predicative NP with a non-pronominal subject.

We can look next at VC's involving predicative AP's such as those in (69) and (70):

69. Salwa ḡilweh

Salwa pretty

'Salwa is pretty'

70. Aḡmed zaki

Ahmed clever

'Ahmed is clever'

What we have in (69) and (70) are examples of predicative AP's with a non-pronominal subject.

We proceed now to look at VC's involving predicative PP's. The following examples are relevant here:

71. Aḥmed b l- bet  
Ahmed in the house  
'Ahmed is in the house'

72. Samira fi l- souq  
Samira in the market  
'Samir is in the market'

(71) and (72) are typical examples of predicative PP's with non-pronominal subjects.

We turn now to consider VC's occurring as complements of different sorts of categories. Consider the following examples:

73. a. bəḡtəber Kamal ʒabqari  
consider-1SG Kamal genius  
'I consider Kamal a genius'

b. bəḡtəber ʔannu Kamal ʒabqari  
consider-1SG that Kamal genius  
'I consider that Kamal is a genius'

The examples in (73) show that VC's can occur as complements of verbs with optional complementizer when the subject of the following predicate is a non-pronominal.

We can look next at VC's as complements of nouns such as those below:

74. a. fəkrət ʔannu Aḥmed ḥarami təlʒet mazbuṭa  
idea that Ahmed thief appeared-3SG right  
'The idea that Ahmed is a thief turned out to be true'

b. \*fəkrət Aḥmed ḥarami təlʒet mazbuṭa  
idea Ahmed thief appeared-3SG right

The complementizer is obligatory in (74a) as shown in (74b)



which contains no complementizer.

We turn now to consider VC's as complements of adjectives. Relevant here is the following example:

75. ʔana mətʔakked (ənnu) Salwa zakyeh  
I certain that Salwa clever  
'I am certain that Salwa is clever'

The complementizer is optional here.

Having presented VC's occurring as complements of different types of categories, we turn to look at VC's introduced by a Wh-phrase in main interrogative clauses. Consider the following examples:

76. meen (əlli) Ahmed saʔid mənna?  
who that Ahmed happy from-3SGF  
'Who is it that Ahmed is happy about her?'

The complementizer is always optional with examples such as (76). N.B. The predicate can be an NP or a PP.

The question is: Why do VC's behave like ordinary clauses here? This is because they appear in all the positions ordinary clauses do. Both can occur as complements of verbs, nouns, and adjectives as illustrated in (73) through (75).

Both can also be introduced by the same complementizer. The following examples illustrate this:

77. a. Salwa btəʔtiqud ənnu Ahmed kan ʔabqari  
Salwa believes that Ahmed was genius  
'Salwa believes that Ahmed was a genius'

b. Salwa bt<sub>2</sub>tiqud annu Ahmed ḡabqari  
 Salwa believes that Ahmed genius  
 'Salwa believes that Ahmed is a genius'

78. a. Samir ma m<sub>2</sub>takked iyda Hayam raḡet ḡ1 bet  
 Samir not sure whether Hayam went-3SGF to the house  
 'Samir is not sure whether Hayam went home'

b. Samir ma m<sub>2</sub>takked iyda Hayam fi l- bet  
 Samir not sure whether Hayam in the house  
 'Samir is not sure whether Hayam is in the house'

Finally, both ordinary and VC's can be preceded by a wh-phrase. The following examples are relevant here:

79. a. meen (ḡalli) Salwa kanet mabsuṡa m<sub>2</sub>anno?  
 who that Salwa was happy from-3SGM  
 'Who was it that Salwa was happy about him?'

b. meen (ḡalli) Salwa mabsuṡa m<sub>2</sub>anno?  
 who that Salwa happy from-3SGM  
 'Who is it that Salwa is happy about him?'

The examples in (79) show that the complementizer is optional.

It is clear from what we have considered so far that verbless clauses have the same distribution as ordinary clauses.

Having demonstrated that VC's behave like ordinary clauses, we can ask the following question, what sort of analysis can capture this fact?

#### 6.4.2. The Clause Analysis:

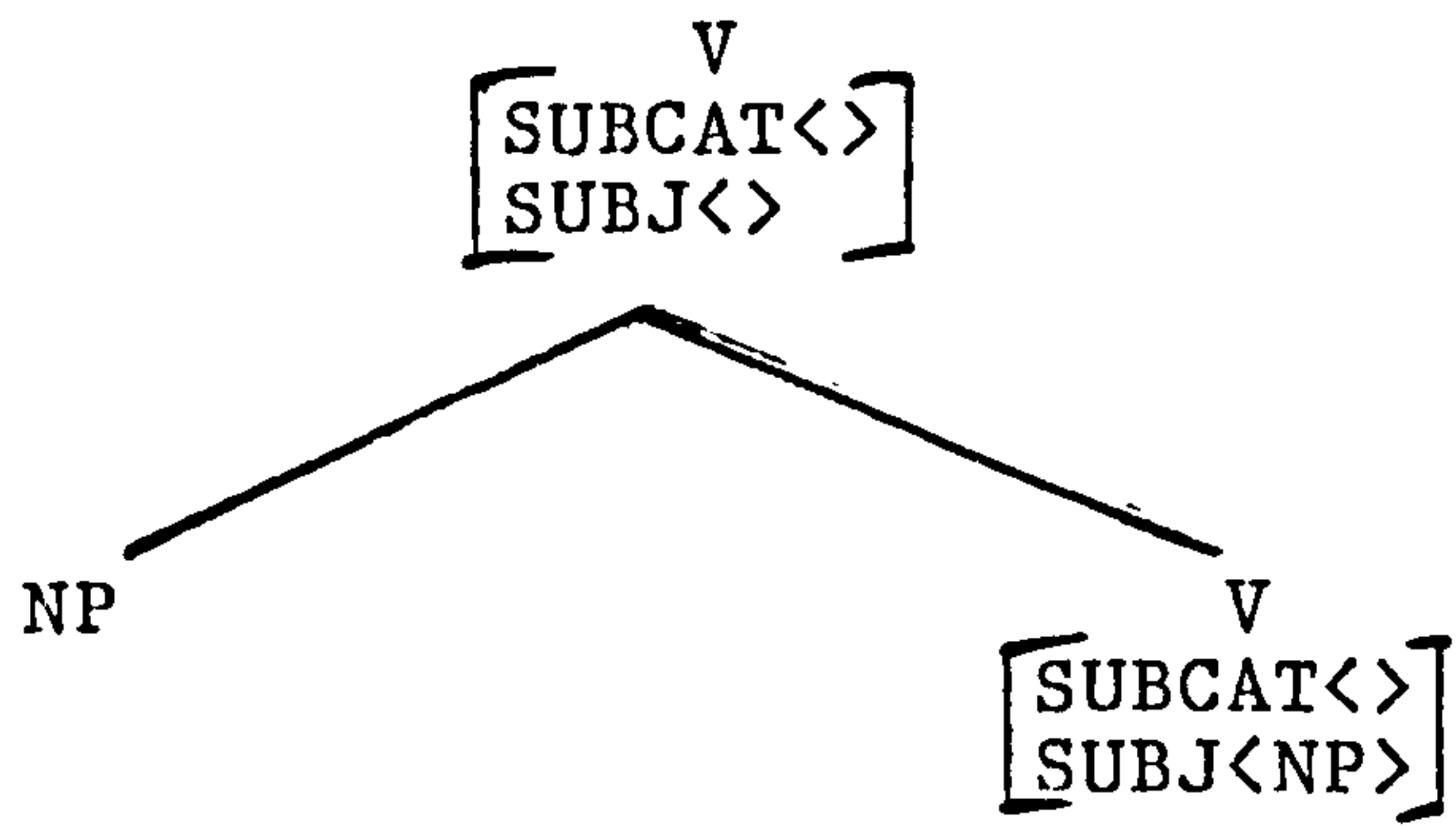
The idea is that VC's must have more or less the same category. Hence they must have more or less the same kind of head. Hence VC's must be headed by an empty verb. That is, there is no overt present tense in all the examples we have looked at. This is because the verb kan 'to be' has a phonological null present tense.

A further piece of evidence that VC's contain an empty V comes from the fact that a verb can be inserted within the verbless clauses. The following examples are relevant here:

80. a. Kamal kan ḡabqari  
Kamal was genius  
'Kamal was a genius'
- b. Salwa kanet ḡilweh  
Salwa was pretty  
'Salwa was pretty'
- c. Aḡmed kan b l- bet  
Ahmed was in the house  
'Ahmed was in the house'

In the examples above, the verb is in the past. In other words, VC's fill a gap in a paradigm. There are clauses with various forms of be but no clauses with present form of be. Instead we have verbless clauses. Since VC's have essentially the same distribution as ordinary clauses, they should be analyzed in essentially the same way. That is, they are very much like ordinary subject-initial clauses, which involve a structure such as the following:

81.



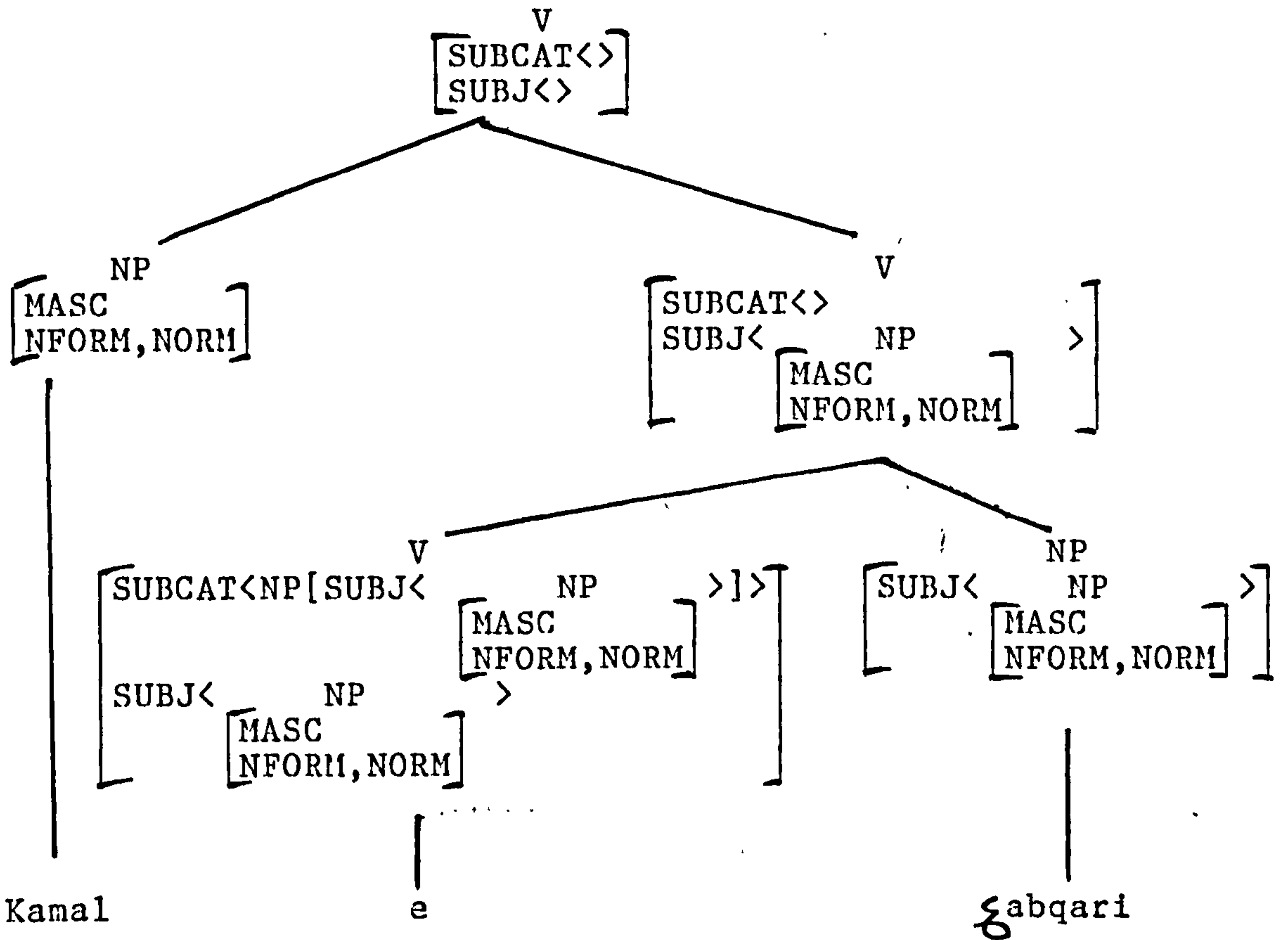
We want to ensure here that whatever category is required as a subject by the predicate complement is also required as a subject by the VP. To put it differently, the verb inherits, and, by the head-complement rule, the VP also inherits a special value as a subject from its complement. This means that the category in (82) below will ensure that the mother takes as a subject whatever the sister requires as a subject:

82. V[SUBCAT<XP[SUBJ<Y>]>;SUBJ<Y>]

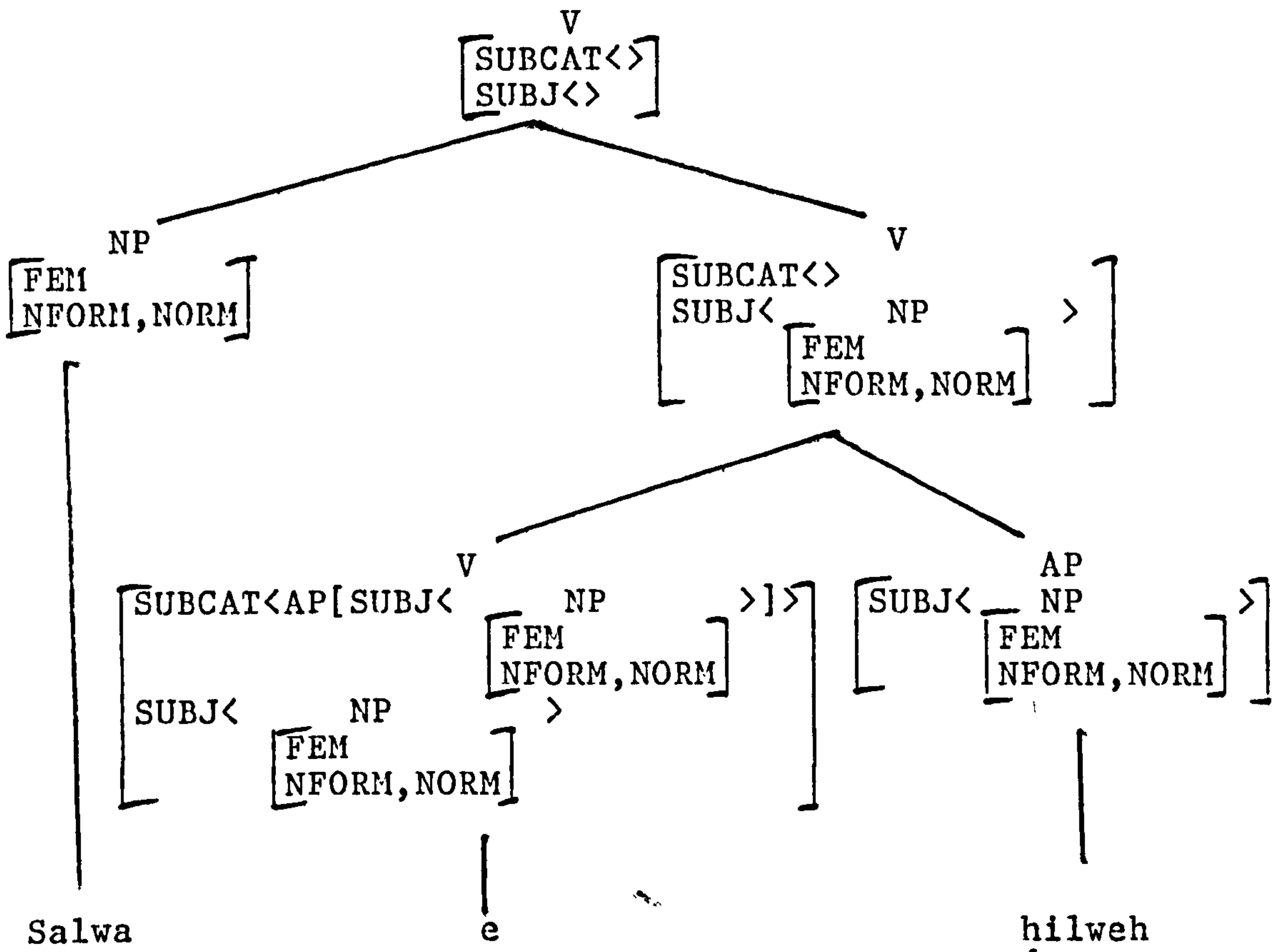
Where XP = NP, AP, or PP<sup>3</sup>, and the variable Y in the present case will be instantiated as NP[NFORM,NORM]. The idea is that the SUBJ feature within the value of SUBCAT has a variable as its value and the main SUBJ feature has the same variable as its value. This is ensured by the Subcategorization Principle. As a result, we will have the following structures for the empty verbs in (67), (69), and (71):



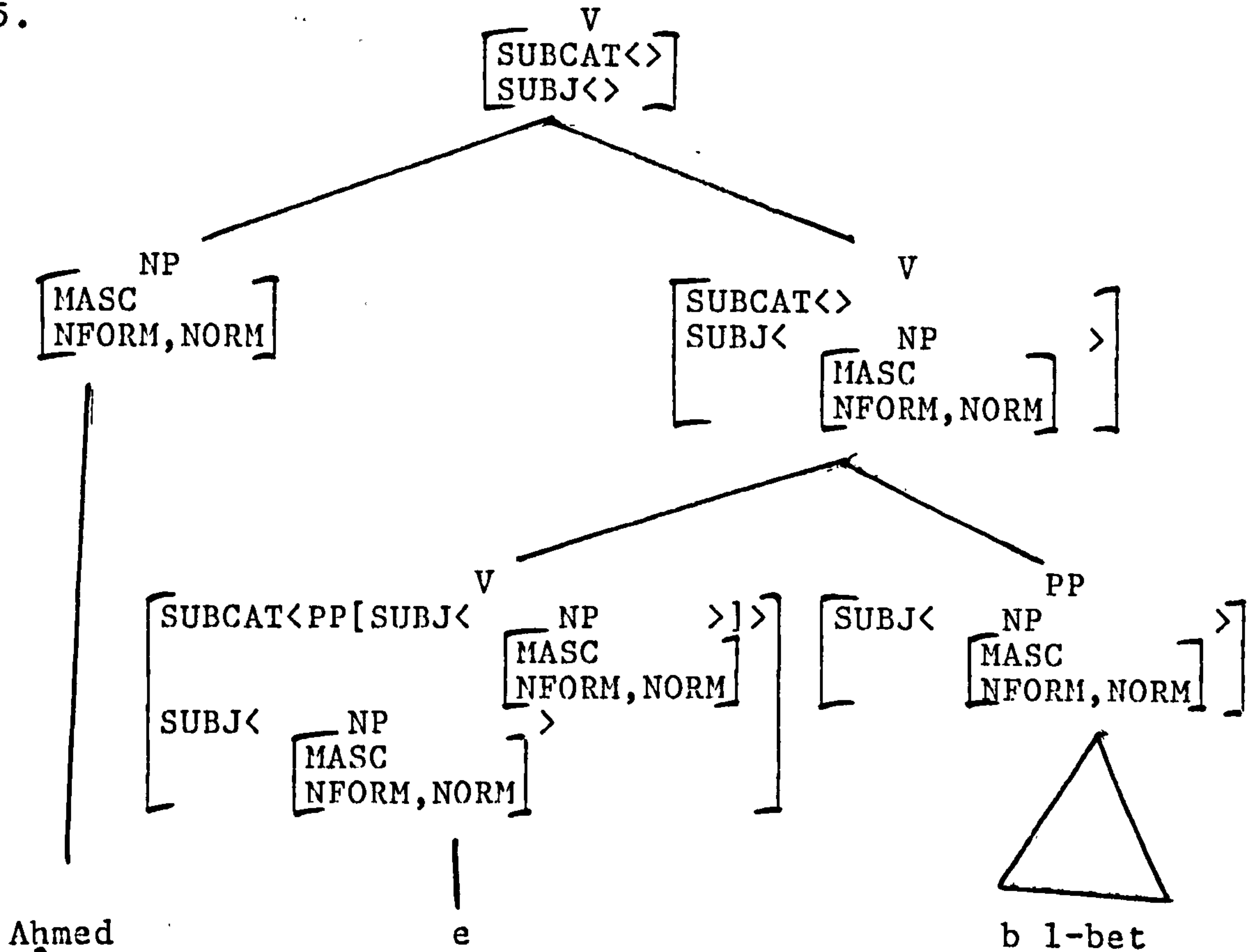
83.



84.



85.



All the structures above are licensed by the subject-predicate rule and the head-complement rule.

Predicative PP's discussed in chapter three will appear in a tree structure such as that in (85), predicative AP's studied in chapter four will appear in trees like that in (84), and finally, predicative NP's will appear in a tree structure such as that in (83).

Having considered the clause analysis, we can proceed to look at further data.

## 6.5. Some Apparent VC's:

Having established that VC's are generally clauses with an empty verb as their head, we will proceed to argue below that they are sometimes not clauses at all but two separate constituents. We would like to make it clear that what happens when we introduce a pronominal subject depends on whether or not we have got a complementizer.

### 6.5.1. Some Further Data:

We have considered in the first section, VC's involving predicative NP's, AP's, and PP's appearing in subject-predicate constructions. In this section, we will look at pronominal subjects. We will consider predicative NP's first. As we mentioned before when we considered phrases in chapters two to five, we cannot simply replace a non-pronominal NP subject by a pronoun unless we have either a clitic attached to the main verb or a complementizer. If we do we get ungrammatical examples such as that in (86) below:

86. \*Salwa bt<sub>2</sub>ḡt<sub>2</sub>ber huweh ḡabqari  
Salwa considers-3SGF he genius

Instead, we can have examples such as those below:

87. a. Salwa bt<sub>2</sub>ḡt<sub>2</sub>ber-u (huweh) ḡabqari  
Salwa considers-3SGF-3SGM he genius  
'Salwa considers him a genius.'

- b. Salwa btəɣtəber      ənnu huwweh ɣabqari  
 Salwa consider-3SGF that he      genius  
 'Salwa considers him a genius'

(87a) is an example of a simple clitic doubling whereas (87b) involves a complementizer.

It is also not possible to get examples such as the following:

88. \*Salwa btəɣtəber-u      ənnu ɣabqari  
 Salwa considers-3SGF-3SGM that genius

This is because we can have either a clitic with no complementizer as in (87a), or a complementizer with no clitic, as in (87b). To put it differently, we can have one or the other but not both.

We can look next at the following example:

89. Salwa btəɣtəber-u      la Aħmed ɣabqari  
 Salwa considers-3SGF-3SGM to Ahmed genius  
 'Salwa considers Ahmed a genius'

(89) is an example of prepositional clitic doubling.

We proceed to consider AP's. The following examples are relevant here:

90. a. \*Samira btəɣtəber      huweh zaki  
 Samira considers-3SGF he clever  
 b. Samira btəɣtəberu      (huweh) zaki  
 Samira considers-3SGF-3SGM he clever  
 'Samira considers him clever'



c. Samira btəɣtəberu                      la Ahmed zaki  
 Samira considers-3SGF-3SGM to Ahmed clever  
 'Samira considers Ahmed clever'

d. \*Samira btəɣtəberu                      ənnu zaki  
 Samira considers-3SGF-3SGM that clever

91. Samira btəɣtəber                      ənnu huweh zaki  
 Samira considers-3SGF that he              clever  
 'Samira considers him clever'

As we noted earlier with predicative NP's, (90a) is ungrammatical because we cannot replace a non-pronominal NP by a pronoun without attaching a clitic to the preceding verb as in (90b) and (90c). Finally, (90d) is ungrammatical because we can have either a clitic as demonstrated in (90b) or a complementizer as in (91), but not both. The complementizer in (91) is obligatory which has to do with the following pronominal subject, otherwise we will get ungrammatical examples such as that in (90a).

We can look next at predicative PP's. The following examples are relevant here:

92. a. \*Nadya btəɣtəber                      hənneh qadrin ɣl-ɣiʃ  
 Nadya considers-3SGF they              capable of cheating

b. Nadya btəɣtəberon                      (hənneh) qadrin ɣl- ɣiʃ  
 Nadya considers-3SGF-3PL they              capable of cheating  
 'Nadya considers them capable of cheating'

c. Nadya btəɣtəberon            la l- banat qadrin  
 Nadya considers-3SGF-3PL to the girls capable  
 ɣl ɣiʃ  
 of cheating

d. \*Nadya btəɣtəberon            ənnu qadrin            ɣl- ɣiʃ  
 Nadya considers-3SGF-3PL that capable of cheating

93. Nadya btəɣtəber            ənnu hənneh qadrin ɣl-ɣiʃ  
 Nadya considers-3SGF that they capable of cheating  
 'Nadya considers them capable of cheating'

We have to stress here once again, as we did earlier with both NP's and AP's, that we cannot simply replace a non-pronominal NP by a pronoun unless we attach a clitic to the preceding verb. Secondly, we can get either a complementizer as in (93) or a clitic as illustrated in (92b), but not both that is why (92d) is ungrammatical. The complementizer is obligatory in the examples above, otherwise we get ungrammatical examples such as that in (92a).

There are a number of other verbs that behave like the verb 'consider'. Among them are 'btəɣtiqud', 'bətzin', and 'txyyalt'. The following examples illustrate:

94. a. Salwa htəɣtiqud-u            (huweh) ɣabqari  
 Salwa believes-3SGF-3SGM he genius  
 b. Salwa htəɣtiqud            ənnu huweh ɣabqari  
 Salwa believes-3SGF that he genius  
 'Salwa believes that he is a genius'

- c. \*Salwa btəɣtiqud huweh ɣabqari  
Salwa believes-3SGF he genius
- d. \*Salwa btəɣtiqud-u ənnu huweh ɣabqari  
Salwa believes-3SGF-3SGM that he genius
95. a. Salwa bətzin-u (huweh) ɣabqari  
Salwa thinks-3SGF-3SGM he genius  
'Salwa thinks he is a genius'
- b. Salwa bətzin ənnu huweh ɣabqari  
Salwa thinks-3SGF that he genius  
'Salwa thinks that he is a genius'
- c. \*Salwa bətzin huweh ɣabqari  
Salwa thinks-3SGF he genius
- d. \*Salwa bətzin-u ənnu huweh ɣabqari  
Salwa thinks-3SGF-3SGM that he genius
96. a. Salwa txyyalt-u (huweh) ɣabqari  
Salwa imagined-3SGF-3SGM he genius  
'Salwa imagined him a genius'
- b. Salwa txyyalt ənnu huweh ɣabqari  
Salwa imagined-3SGF that he genius  
'Salwa imagined that he is a genius'
- c. \*Salwa txyyalt huweh ɣabqari  
Salwa imagined-3SGF he genius
- d. \*Salwa txyyalt-u ənnu huweh ɣabqari  
Salwa imagined-3SGF-3SGM that he genius

Given the data above, we are in a position to provide an analysis for the apparent VC's.

### 6.5.2. Motivation for two Constituent Analysis:

We would like to suggest that in what looks like a bare verbless clausal complement of a verb, the apparent subject is the object of the matrix verb. We are concerned here with examples such as that in (73a) and (87a). In other words, where there is no complementizer, we should analyze examples such as those above as two separate constituents. We are actually forced to assume this position for two reasons: First, it enables us to account for clitics like those in (87a). Second, it rules out structures such as the following: \*V Pronoun (V) XP.

Given the facts above, we can assign the category in (98) to the main verb in (73a) repeated here in (97):

97. *baɣtəber*      *Kamal ɣabqari*  
 consider-1SG Kamal genius  
 'I consider Kamal a genius'

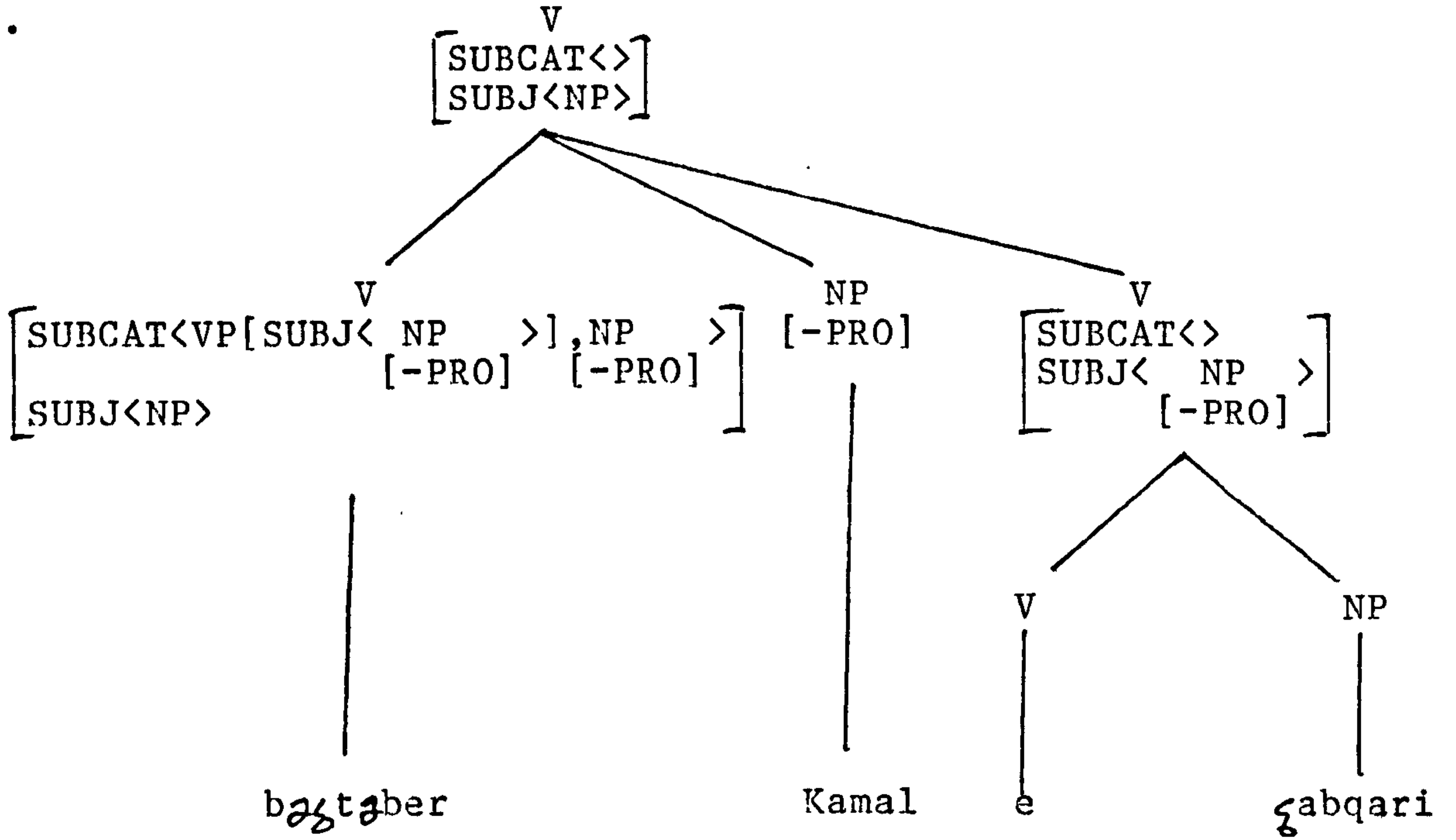
98.  $V[\text{SUBCAT}\langle \text{VP}[\text{SUBJ}\langle \text{NP}[\alpha] \rangle], \text{NP}[-\text{PRO}; \alpha] \rangle; \text{SUBJ}\langle \text{NP} \rangle]$

Where  $\alpha$  refers to person, number and gender feature specifications.

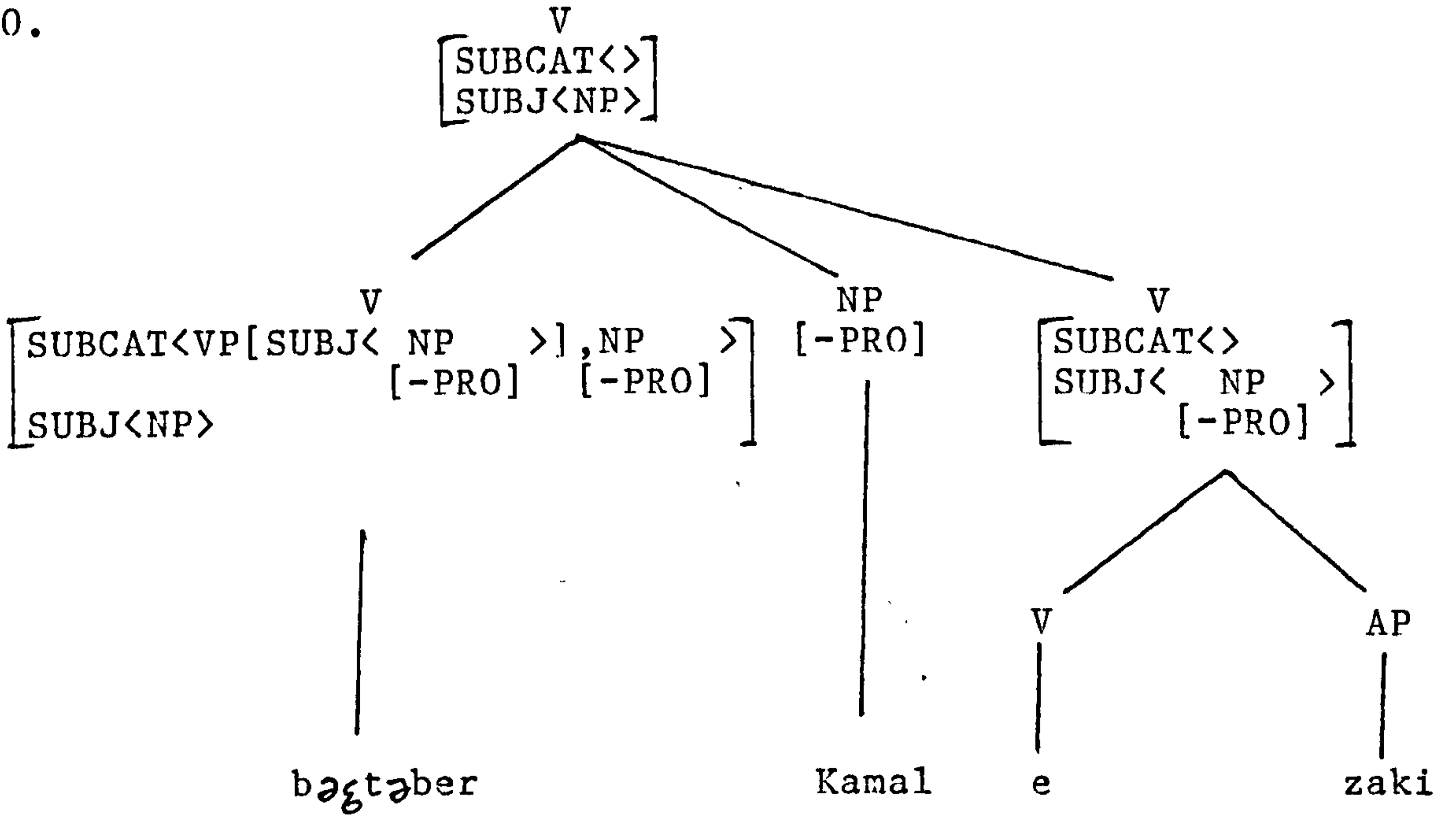
The category above will interact with the head-complement rule together with the two universal principles to give the following structures, where VP contains an NP, AP or PP:



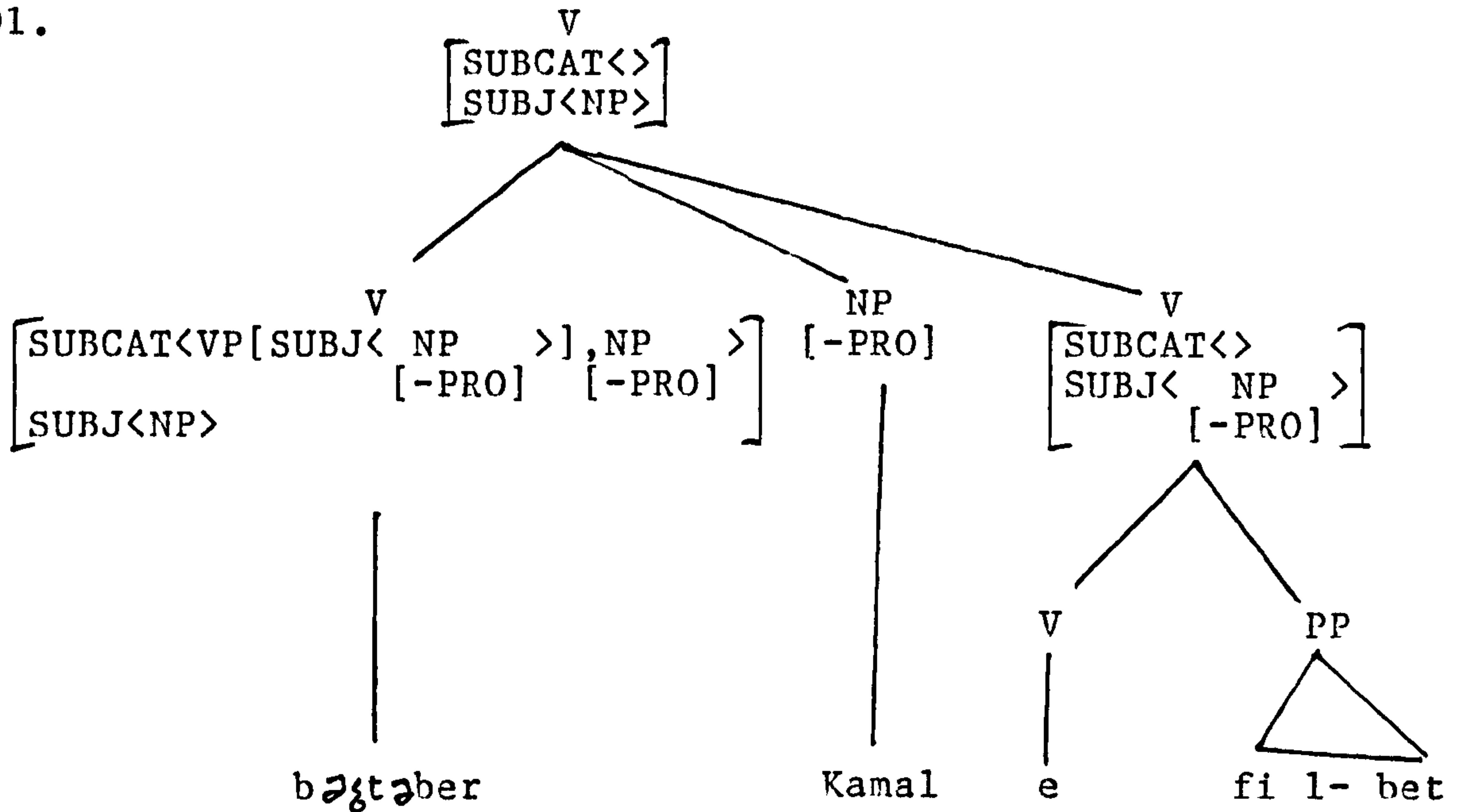
99.



100.



101.



We turn now to analyze examples such as that in (87a) above repeated below in (102):

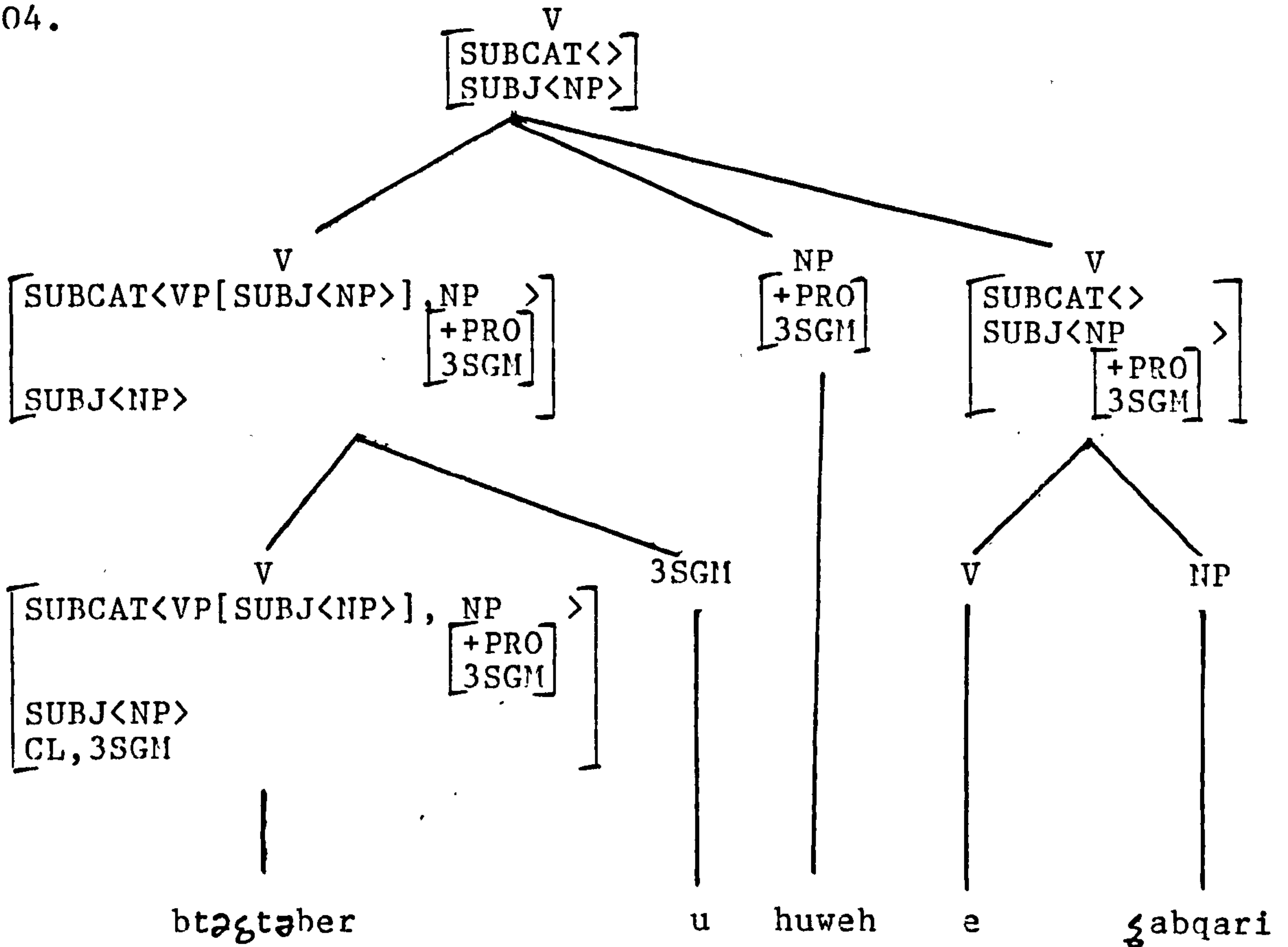
102. Salwa btəḡtəber-u (huweh) ḡabqari  
 Salwa considers-3SGF-3SGM he genius  
 'Salwa considers him a genius'

We can assign the following category to the main verb that takes a clitic:

103. 
$$\left[ \begin{array}{l} \text{SUBCAT} \langle \text{VP} [\text{SUBJ} \langle \text{NP} [\alpha] \rangle], \text{NP} [\text{+PRO}; \alpha] \rangle \\ \text{SUBJ} \langle \text{NP} \rangle \\ \text{CL}, \alpha \end{array} \right]$$

Where  $\alpha$  refers to person, number, and gender feature specifications. The result will be structures such as that in (104):

104.



We can assume now that categories such as those in (103) are derived from categories like that in (98) with the standard lexical rule given in previous chapters and repeated here in (105) below:

105.  $X[\text{SUBCAT}\langle\dots, \text{NP}[-\text{PRO}; \infty]\rangle; \text{SUBJ}\langle\text{NP}\rangle] \implies$   
 $X[\text{SUBCAT}\langle\dots, \text{NP}[+\text{PRO}, \infty]\rangle; \text{SUBJ}\langle\text{NP}\rangle; \text{CL}, \infty]$

An important point to mention here is that coordination seems to provide an argument against our analysis. In other words, why does coordination suggest that we have a constituent after the verbs? To show that coordination poses no problem for our analysis, we need to consider the following example:

106. Aḥmed baḡtəber [Salwa zakyyeh] w [Nadir ġabi]  
 Ahmed considers-3SGM Salwa clever and Nadir stupid  
 'Ahmed considers[Salwa clever] and [Nadir stupid]'

It seems from the bracketed strings in (106) that they are VC's and not two separate constituents. But this is really not the whole story, and the situation with coordination is rather complex. This is because what are generally regarded as non-constituents can also be coordinated. The following example is relevant here:

107. Aḥmed ḡaṭa Salwa kətab m-barḡa w Nadir qalim  
 Ahmed gave-3SGM Salwa book yesterday and Nadir pen  
 'Ahmed gave Salwa a book yesterday and Nadir a pen'

An important point that we should note is that there are verbs such as 'qal', 'ḡayyaṭit', 'ḡirft', 'laḡez', and 'ḡtajet' that do not host any sort of clitic. The following examples illustrate:

108. Aḥmed qal (ənnu) huweh muḡami  
 Ahmed said-3SGM that he lawyer  
 'Ahmed said he is a lawyer'

109. Salwa ḡayyaṭit (ənnu) hənneh ḡarabu Aḥmed  
 Salwa shouted-3SGF that they hit-3PL Ahmed  
 'Salwa shouted that they hit Ahmed'



110. Nawal ġirft (ənnu) hənneh fi l- bet  
Nawal knew-3SGF that they in the house  
'Nawal knew that they are in the house'

111. Kamal laħez (ənnu) hyyeh bišġa  
Kamal realized-3SGM that she ugly  
'Kamal realized that she is ugly'

112. anna ħtajet (ənnu) huweh yaxd l- jaħizeh  
I complained-1SG that he takes the prize  
'I complained that he should take the prize'

The complementizer is optional in (108) to (112). The fact that verbs such as 'qal' do not host a clitic when there is no complementizer suggests that what looks like a subject is always a subject, unlike what looks like a subject with the 'consider' class.

We can conclude that verbs like qal are different from verbs like bišġat because they take either an S or an S', whereas verbs like bišġat 'consider', as we demonstrated earlier, take an S' or two separate complements.

Having looked at pronominal subjects, we want to make it clear that it is not just some apparent VC's which need to be analyzed as two constituents but some apparent ordinary clauses. In what looks like a bare ordinary clausal complement of a verb, the apparent subject behaves like the object of the main verb that hosts a clitic. Hence, this should also be

analyzed as two separate complements. As we noted earlier, it is possible to insert the past tense of the verb kan 'to be' to examples such as that in (102). Consider the following example:

113. Salwa btə<sub>3</sub>təber-u (huweh) kan ʒabqari  
 Salwa consider-3SGF-3SGM he was genius  
 'Salwa considered him to have been a genius'

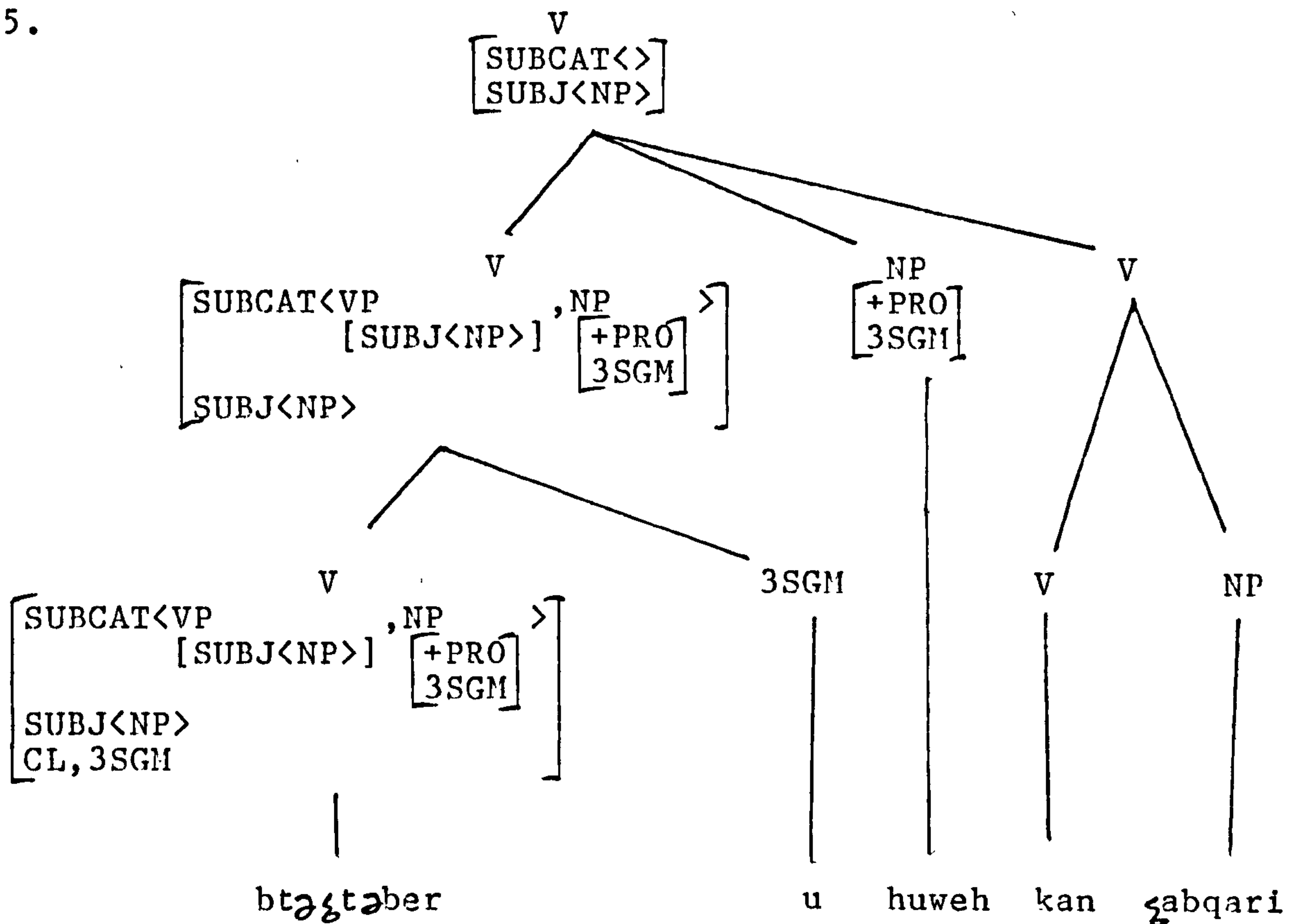
The point is that we have just the same complementizer and clitic facts with what look like ordinary clauses as with what look like verbless clauses.

We can assign the following category to the main verb taking clitic in (113):

114. 
$$\left[ \begin{array}{l} \text{SUBCAT} \langle \text{XP} \text{ } \overset{\text{V}}{\text{SUBJ} \langle \text{NP} [\alpha] \rangle} \text{ } \overset{\text{NP}}{[+\text{PRO}; \alpha]} \rangle \\ \text{SUBJ} \langle \text{NP} \rangle \\ \text{CL}, \alpha \end{array} \right]$$

Where XP = NP, AP or PP, and  $\alpha$  refers to agreement feature. The result will be the structure in (115) for the main verb in (113):

115.



6.6. Summary:

To conclude this chapter, in the first section, we have looked at SVO clauses and considered subject-selection. In section two, we have proposed two plausible analyses for VSO clauses: The SUBJ analysis involves no additional categories but an additional syntactic rule. Whereas, the SUBCAT analysis involves additional categories and two additional lexical rules. We ended arguing in favour of the SUBJ analysis giving some arguments. We have also shown that the existing analysis of clitics extends to VSO clauses if we adopt the SUBJ analysis. In section three, we looked at English verbless clauses. We considered first examples which are analyzed as

small clauses within GB. We then argued that within HPSG such examples involve two separate complements and not a single complement. We also considered examples which are regarded as involving SC's within HPSG and argued that they should be [+PRD] so that they can be distinguished from non-predicative structures. In section four, we presented some Syrian data that involve no clitics and argued that VC's are similar to ordinary clauses. In section five, we introduced further data involving pronominal subjects and suggested that they should be analyzed as involving two constituents. We also analyzed bare ordinary clauses, i.e., ordinary clauses that contain no complementizer as involving two separate complements. Finally, we can say that ordinary clauses and verbless clauses in Syrian can be accommodated satisfactorily within the revised version of HPSG.



NOTES:

1. Though there is no real need to identify any Syrian clauses as [FIN+], since it looks as though Syrian seems to have no non-finite verb-forms.
2. Borsley (forthcoming (a)) argues for a SUBCAT analysis of Welsh VSO clauses.
3. X ≠ V

## CHAPTER SEVEN

### Unbounded Dependency Constructions

#### 7.0. Introduction:

The aim of this chapter is to analyze 'Unbounded Dependency Constructions' (UDC's, hereafter) in Syrian. We will show how English UDC's (a major concern within PSG over the last ten years) can be handled within HPSG. More precisely, we will be concerned with Pollard and Sag's (forthcoming) analysis of unbounded dependencies and how this analysis might be extended to Syrian.

But before we go any further, we will define the term unbounded dependency. Unbounded dependency is a term introduced in GPSG during the last decade (specifically since Gazdar 1981b) to refer to a class of constructions standardly analyzed by transformational grammarians as involving Wh-movement (c.f. Chomsky 1977b). For English, such constructions include 'Topicalization', 'Relative Clauses', 'Clefts', and 'WH-Constructions'. The term is adopted because it does not imply movement. Consider the following examples:

1. a. Who did you talk to -?
- b. \*Did you talk to?
- c. \*Who did you talk to him?

If we look at these examples, we notice that each one of them contains a gap. (1a) involves a gap (i.e., there is a missing element which is the object of the preposition to). We usually have a complement instead of the gap, whereas (1b) shows that a gap is normally impossible. Finally, (1c) shows that a gap is not just possible but necessary if the wh-phrase is present (i.e. preposition cannot take a complement).

We turn next to look at the following examples:

2. a. John, Mary hates.
- b. John, Bill thinks Mary hates.
- c. John, Sue thinks Bill knows Mary hates.

The gap in (2a) is an argument of the main clause, while it is an argument of an embedded complement clause in (2b), and an argument of a doubly embedded complement clause in (2c). Thus the examples in (2) show that the dependency is in fact unbounded because it arbitrary extends across a variety of clause boundaries.

The organization of this chapter is as follows. We will begin by introducing the Syrian data. In section two, we will introduce Pollard and Sag's (forthcoming) analysis of UDC's. More precisely, we will define the three parts of the UDC's. More specifically, in subsection one, we will introduce the analysis of the bottom part of the dependency. In subsection two, we will discuss the middle part of the dependency. Finally, in subsection three, we will look at the top part of

the tree. In section three, we will develop an HPSG analysis of Syrian UDC's. Finally, section four contains some concluding remarks.

### 7.1. Syrian Arabic Data:

In this section, we will look at some Syrian data involving Unbounded Dependency Constructions and spell out some of their implications for grammatical analysis. We will be mainly concerned with WH-Questions and Relative Clauses, but we will also briefly consider Topicalization Constructions.

#### i) WH-Questions:

Firstly, we will present wh-questions containing gaps within the main clause, we will then proceed to look at wh-questions involving gaps in subordinate clauses. Consider the following examples:

3. a. min kəssir l- šibbak?  
who broke the window  
'Who broke the window?'

b. min ɖarab l- kura?  
who hit the ball  
'Who hit the ball?'



The examples in (3) involve a gap in subject position in a main clause. Next, we will look at the following examples:

4. a. šu šaf kamal?  
what saw-3SGM Kamal  
'What did Kamal see?'
- b. šu kamal šaf?  
what Kamal saw-3SGM  
'What did Kamal see?'

5. a. min šeft?  
who saw-2SGM  
'Who did you see?'
- b. min šeft-on?  
who saw-2SGM-3PL  
'Who did you see?'

If we look at the examples in (4), we notice that the gap is in the object position of a finite verb in both VSO and SVO structures. Looking now at those in (5), we see that the clitic in (5b) is optional.

We turn now to present prepositional object gaps. Consider the following examples:

6. a. min li<sup>2</sup>bt maš-o mbarḥa?  
who played-2SGM with-3SGM yesterday  
'Who did you play with yesterday?'
- b. min ḥakit maš-a mbarḥa?  
who talked-2SGM with-3SGF yesterday  
'Who did you talk with yesterday?'

The gap in (6) is a main clause prepositional object. The clitic is obligatory in the examples above, as the following ungrammatical examples illustrate:

7. a. \*min li<sub>2</sub>bt mağ mbarḥa?  
who played-2SGM with yesterday
- b. \*min ḥakit mağ mbarḥa?  
who talked-2SGM with yesterday

We will look next at positions where the gap is a main clause possessor. Consider the following examples:

8. a. min šeft ʔxt-o?  
who saw-2SGM sister-3SGM  
'Whose sister did you see?'
- b. min ḍarabt ʔxuw-a?  
who hit-2SGM brother-3SGF  
'Whose brother did you hit?'

(8a,b) involve obligatory clitics; such examples with no clitics are ungrammatical. Relevant here are the following examples:

9. a. \*min šeft ʔxt?  
who saw-2SGM sister
- b. \*min ḍarabt ʔx?  
who hit-2SGM brother

(9a-b) are ungrammatical because a clitic must be attached to the NP's ʔxt 'sister' and ʔx 'brother'. It is also possible to

have examples where xt 'sister' and x 'brother' occur in initial position. The following examples illustrate this:

10. a. 2xt min šeft?  
sister who saw-2SGM  
'Whose sister did you see?'
- b. 2xu min ɖarabt?  
brother who hit-2SGM  
'Whose brother did you hit?'

The examples in (10) involve no clitics.

We will consider next examples involving main clause PP and AP gaps, as given in (11) and (12) below:

11. a. maṣ min Aḥmed raḥ?  
with whom Ahmed went-3SGM  
'With whom did Ahmed go?'
- b. ṣala min ṣtamid Aḥmed?  
on whom depended Ahmed  
'On whom did Ahmed depend?'
12. a. šqad ṣali hal bet kan?  
how high this-the house was  
'How high was this house?'
- b. šqad zaki hal waled kan?  
how clever this-the boy was  
'How clever was this boy?'

As indicated above, the wh-phrase can be other categories. In Syrian, as in most languages, the wh-phrase can also be a PP or an AP. The gap in (11) is a main clause PP, and in (12) it is a main clause AP. The prepositions in (11) are not associated with clitics, because wh-phrases count as non-pronominal NP's. It is also possible for either the whole wh-phrase to occur in initial clause position as in (11) or the wh-NP only leaving behind a clitic as in (6).

We will next consider examples with a complementizer after the wh-phrase. Syrian, like Icelandic and Norwegian, but unlike English, allows an overt complementizer to occur after the wh-phrase. The following examples are relevant here:

13. a. min alli kəssir l- šibbak?  
 who that broke the window  
 'Who broke the window?'  
 b. min alli qarab l- kura?  
 who that hit the ball  
 'Who hit the ball?'

These are identical to those in (3), but with the addition of the complementizer alli.

We turn now to look at object gaps with alli. Consider the following examples:

14. a. šu alli šaf Kamal?  
 what that saw-3SGM Kamal  
 'What did Kamal see?'



b. šu əlli Kamal šaf?

what that Kamal saw-3SGM

'what did Kamal see'?

15. a. min əlli liḡəbt maḡ-o mbarḡa?

who that played-2SGM with-3SGM yesterday

'Who did you play with yesterday?'

b. \*min əlli liḡəbt maḡ mbarḡa?

who that played-2SGM with yesterday

16. a. min əlli ḡakit maḡ-a mbarḡa?

who that talked-2SGM with-3SGF yesterday

'Who did you talk with yesterday?'

b. \*min lli ḡakit maḡ mbarḡa?

who that talked-2SGM with yesterday

These examples are identical to those in (4) and (6), but with the addition of lli 'that'. It seems that the complementizer is optional when co-occurring with an object of a finite verb and with prepositional object gaps. As noted earlier, clitics are optional with object gaps of a finite verb but obligatory with prepositional object gaps just as they are with examples containing no complementizer.

We proceed next to look at the following examples:

17. a. maḡ min lli Ahmed raḡ

with whom that Ahmed went-3SGM

'with whom did Ahmed go'?

b. \*šqad ḡali lli hal bet kan?

how high that this-the house was

It seems that the complementizer is possible with wh-PP's and impossible with wh-AP's.

We turn now to consider wh-questions containing gaps in subordinate clauses. More precisely, we will look at constructions where the wh-element is in the main clause and the gap is in the subordinate clause. The following examples illustrate this:

18. min Riyad qal            šaf Salwa?

who Riyad said-3SGM saw Salwa

'who Riyad said saw Salwa?'

19. 2ai        sayyara Salwa qalit        Kamal štaraha?

which car        Salwa said-3SGF Kamal bought-3SGF

'which car Salwa said Kamal bought?'

20. 2ai        madineh Samira sa2lt        Nabil šaš        fiya?

which city        Samira asked-3SGF Nabil lived in-3SGF

'which city Samira asked Nabil lived in?'

The gap in (18) is the subject of a subordinate clause, it is the object of a subordinate clause in (19), and it is the prepositional object of a subordinate clause in (20). The clitic in (19) is optional as shown in (21). Whereas the absence of the clitic in (20) makes the clause ungrammatical as indicated in (22). In other words, the clitic in (20), like main clauses, is obligatory:

21. 2ai        sayyara Salwa qalit        Kamal štara?

which car        Salwa qalit-3SGF Kamal bought

'which car Salwa said Kamal bought?'

22. \*ʔai madineh Samira saʔlt Nabil ʕaʕ fi?  
 which city Samira asked-3SGF Nabil lived in

Next we will consider examples involving possessive NP's, PP's, and AP's such as the following:

23. min Muhammed baʕtəqd ɥabu ʔxtə?  
 who Muhammed thinks-3SGM loved-3PL sister-3SGM  
 'whose sister muhammed thinks they loved?'
24. min Nawal qalit Fayez ɥaka maʕon?  
 who Nawal said-3SGF Fayez spoke with-3PL  
 'who Nawal said Fayez spoke with?'
25. ʕqad zakyyeh George baʕtəqd hal bent kanet?  
 how clever George thinks-3SGM this-the girl was-3SGF  
 'how clever George thinks this girl was?'

The gap in (23) is possessive in a subordinate clause, it is PP in a subordinate clause in (24), and in (25) it is AP in a subordinate clause. Furthermore, the clitics in (23) and (24), like main clauses, are obligatory because examples with no clitics such as the following are ungrammatical examples:

26. \*min Muhammed baʕtəqd ɥabu ʔxt?  
 who Muhammed thinks-3SGM loved-3PL sister
27. \*min Nawal qalit Fayez ɥaka maʕ?  
 who Nawal said-3SGF Fayez talked to

We can summarize the data outlined above as follows:



28. a) When an unbounded dependency terminates in a subject position in either main or subordinate clauses, a gap appears with no associated clitic.
- b) When an unbounded dependency terminates in an object position in either main or subordinate clauses, a gap appears with an optional associated clitic.
- c) When an unbounded dependency terminates in a prepositional object position in main and subordinate clauses, a gap appears with an obligatory associated clitic.
- d) When an unbounded dependency terminates in possessive position both in main and subordinate clauses, a gap appears with an obligatory associated clitic.
- e) The complementizer alli 'that' is optional with wh-questions and does not affect the nature of the gap.

(ii) Relative Clauses:

We will look first at examples with a gap in the main clause. Consider the following examples:

29. hada huweh l- rəjjal ʔalli šaf Salwa.  
 this he the man that saw-3SGM Salwa  
 'This is the man that saw Salwa.'

30. l- ɣarami ʔalli kamašt-o harab mən l-seign  
 the thief that caught-2SGM-3SGM escaped from the prison  
 'The thief that you caught escaped from prison.'



31. 1- mara əlli safart maξ-a ḥabit Aḥmed  
 the woman that travelled-2SGM with-3SGF loved-3SGF Ahmed  
 'The woman that you travelled with loved Ahmed.'

In (29) the gap is a main clause subject, in (30) it is a main clause object, and in (31) it is prepositional object of a main clause. The complementizer əlli, unlike in wh-questions, is always obligatory in such constructions. The following ungrammatical examples illustrate this:

32. \*hada huweh 1- rəjjal šaf Salwa.  
 this he the man saw-3SGM Salwa.

33. \*1- ḥarami kamašt-o harab mən 1- seign  
 the thief caught-2SGM-3SGM escaped from the prison

34. \*1- mara safart mağa ḥabit Ahmed  
 the woman travelled-2SGM with-3SGF loved-3SGF Aḥmed

Moreover, the clitic in (30) and (31) is obligatory, otherwise we will get ungrammatical examples such as those given below:

35. \*1- ḥarami əlli kamašt harab mən 1- seigen.  
 the thief that caught-2SGM escaped from the prison.

36. \*1- mara əlli safart maξ ḥabit Ahmed.  
 the woman that travelled-2SGM with loved-3SGF Aḥmed.

We need to stress once again that in examples such as (30) and (31) a clitic must be obligatorily attached to the main verb.

We turn now to look at subject, object, and prepositional object gaps in subordinate clauses. Consider the following examples:

37. 1- ḥarami əlli Salwa qalit qatil Aḥmed harab  
 the thief that Salwa said-3SGF killed-3SGM Ahmed ran  
 'The thief that Salwa said killed Ahmed ran away.'
38. 1- waled əlli Samira qalit dərabt-o raḥ 1- bet  
 the boy that Samira said hit-2SGM-3SGM went to house  
 'The boy that Samira said you hit went home.'
39. 1- bent əlli Riyad qal raḥ maḡ-a matet m-barḥa  
 the girl that Riyad said went with-3SGF died yesterday  
 'The girl that Riyad said he went with died yesterday.'

The gap in (37) is a subordinate clause subject, it is object of a subordinate clause in (38), and it is prepositional object in a subordinate clause in (39). Again, as we noted in main clause relative clauses, the clitics in (38) and (39) are obligatory. This is shown by the following ungrammatical examples:

40. \*1- waled əlli Samira qalit dərabt raḥ 1- bet  
 the boy that Samira said hit-2SGM went to house
41. \*1- bent əlli Riyad qal raḥ maḡ matet m-barḥa  
 the girl that Riyad said went with died yesterday

We proceed now to consider possessive gaps. The following examples illustrate this:

42. l- ḥarami ʔlli ɖarabt ʔxto mat l- youm  
 the thief that hit-2SGM sister-3SGM died the day  
 'The thief whose sister you hit died today'.

43. l-ḥarami ʔlli Aḥmed qal ɖarabt ʔxto mat l-youm  
 the thief that Ahmed said hit sister-3SGM died the day  
 'The thief that Ahmed said whose sister you hit died today'

The gap in (42) is a main clause possessor, and it is a subordinate clause possessor in (43). The clitics attached to the possessive NP's in (42) and (43) are obligatory. The following ungrammatical examples show this:

44. \*l- ḥarami ʔlli ɖarabt ʔxt mat l- youm.  
 the thief that hit-2SGM sister died the day.

45. \*l- ḥarami ʔlli Aḥmed qal ɖarabt ʔxt mat l- youm  
 the thief that Ahmed said hit-2SGM sister died the day

We turn now to look at further data such as topicalization constructions.

(iii) Topicalization:

Syrian, like many natural languages, has a topicalization process. Consider the following examples:

46. Haytham, Salwa ʃafet-o.  
 Haytham, Salwa saw-3SGM  
 'Haytham, Salwa saw.'

47. Aḥmed, Nawal btəḡtəqd Samira bitḥebo.  
 Ahmed, Nawal thinks-3SGF Samira loves-3SGM  
 'Ahmed, Nawal thinks Samira loves.'

In (46) the gap is in object position of the main clause and in (47) it is in object position of an embedded complement clause. The clitic is obligatory in the examples above. The following ungrammatical examples are relevant here:

48. \*Haytham, Salwa šafet.  
 Haytham, Salwa saw.
49. \*Aḥmed, Nawal btəḡtəqd Samira bitḥeb.  
 Ahmed, Nawal thinks-3SGF Samira loves.

It is clear from the examples above that topicalization sentences are similar to those of relative clause constructions in that the clitics are obligatory with object gaps.

We proceed now to consider prepositional object gaps in topicalization sentences. The following examples illustrate:

50. Aḥmed, Samira namet maḡ-o.  
 Ahmed, Samira slept-3SGF with-3SGM  
 'Ahmed, Samira slept with.'
51. Aḥmed, Nawal btəḡtəqd Samira namet maḡ-o.  
 Ahmed, Nawal thinks Samira slept-3SGF with-3SGM  
 'Ahmed, Nawal thinks Smira slept with.'

The gap in (50) is a main clause prepositional object, and in (51) it is prepositional object in a subordinate clause.



The clitic in both examples is obligatory as is clear from the ungrammaticality of the following examples which contain no clitic:

52. \*Aḥmed, Samira namet mag.

Ahmed, Samira slept-3SGF with.

53. \*Aḥmed, Nawal btəḡtəqd Samira namet mag.

Ahmed, Nawal thinks Samira slept-3SGF with.

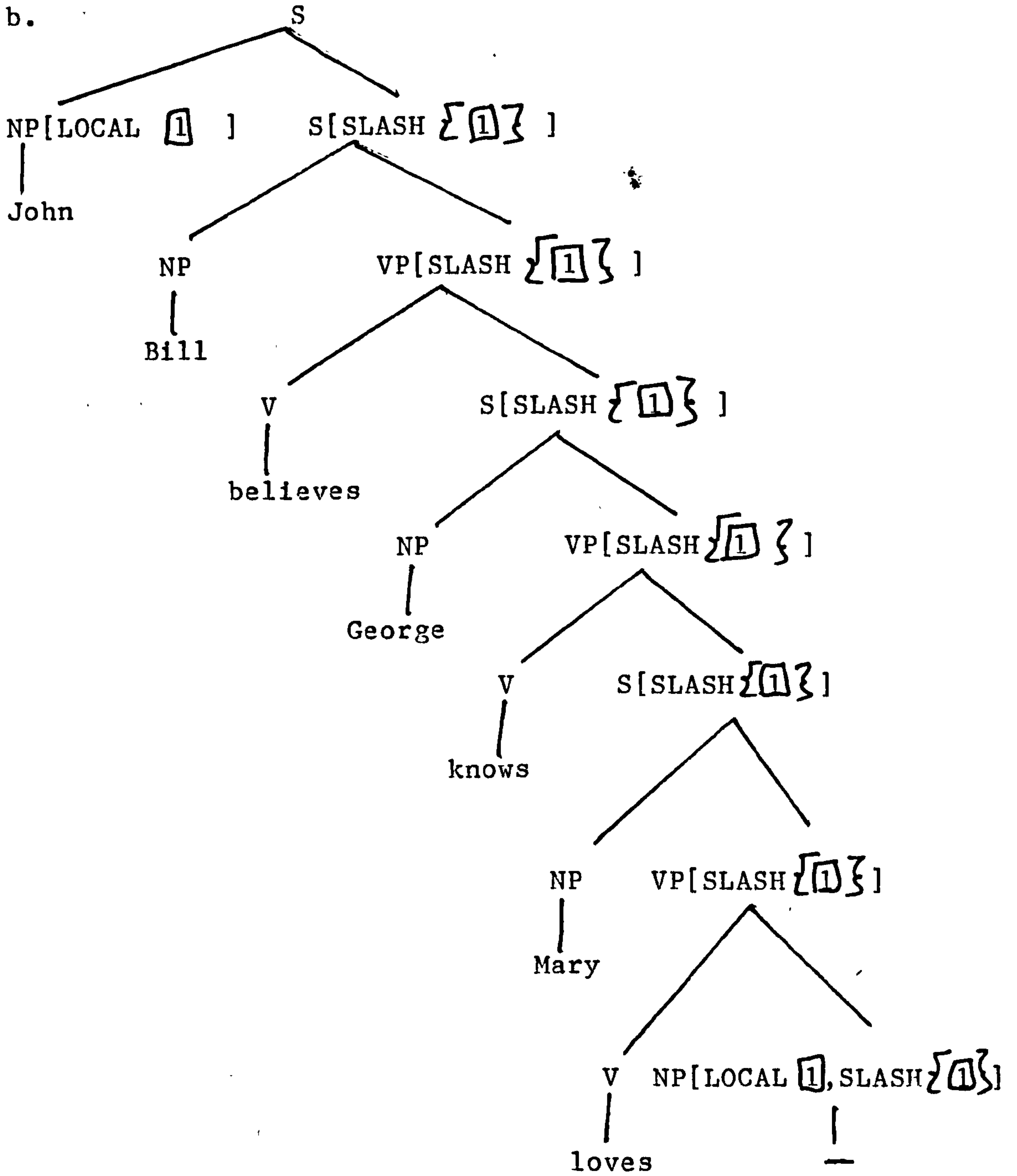
Having presented Syrian UDC's, we turn below to introduce Pollard and Sag's (forthcoming) approach to unbounded dependencies.

## 7.2. HPSG Approach to UDC's:

There are three kinds of binding dependencies which are associated with three binding features SLASH, QUE, and REL to consider. The SLASH feature is one of a number of nonlocal features where it shares information between the gap and its filler. The QUE feature passes information about interrogative elements to the interrogative construction, and the REL feature propagates information about relative pronouns to the relative clause in which it is unified with the antecedent noun. What we are concerned with is the SLASH feature. The other nonlocal features, i.e., QUE, and REL are not important here. More precisely, information about such dependencies in HPSG, following Pollard and Sag (forthcoming), is the 'NONLOCAL'<sup>1</sup> attribute in feature structures of type syntactic-category.

Nonlocal feature specifications are features that pass from daughters to mothers up the tree until they become bound. In the earlier analysis of Pollard (1985a), the SLASH feature takes as its value a list of signs, while in Pollard and Sag's (forthcoming) analysis, the SLASH feature takes as its value a set of local feature structures. We will adopt the set value in what follows. These constructions involve three different parts, the top, the middle, and the bottom. The bottom part of the tree introduces the dependency, the middle passes information from daughter to mother up the tree, and the top part of the dependency eliminates or binds the dependency. This tripartite division is taken from Gazdar et al. (1985,137). To illustrate this, it is helpful to give the example in (54a) and the structure in (54b) before we proceed to talk about the tree parts:

54. a. John Bill believes George knows Mary loves.



7.2.1. The Bottom of the Dependency:

We will focus our attention now on the bottom part of the dependency which is the most interesting part because there are

three different analyses<sup>2-3</sup>. We will only be concerned below with one analysis, i.e., the trace analysis.

#### 7.2.1.1. The Trace Analysis:

Pollard and Sag (forthcoming) suggest that UDC's contain a special type of empty category, known as a trace. It is worth mentioning here that Pollard and Sag in their recent analysis are moving towards GPSG and GB in assuming that there are empty categories in unbounded dependencies. They are also moving away from CG (Steedman (1985b)). Consider the following examples:

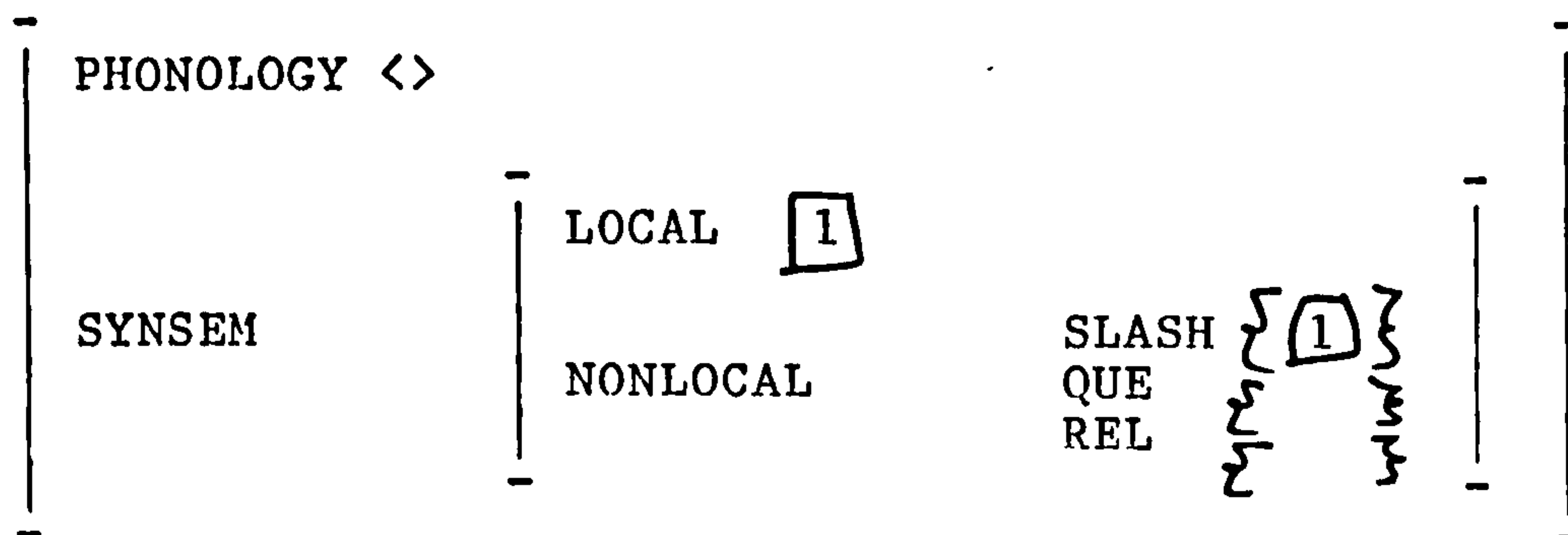
55. a. Mary 1, John killed t 1. (Topicalization)  
b. They wonder who 1 Bill hates t 1. (WH- Question)
56. This is the woman 1 Bill saw t 1. (Relative Clause)

Where t refers to a trace. The constructions in (55) are known as 'Filler-Gap' sentences in HPSG and other similar frameworks because there is an overt constituent in a non-argument position (i.e., there is either a topic or a wh- phrase known to be filling the gap). By contrast, in (56) there is no overt filler in the non-argument position.

We suggest, following Pollard and Sag (forthcoming), the following version of the trace:



57.



The version in (57) above says that a trace has no phonology, and has a nonempty value for the SLASH nonlocal feature. What is important here is that the value of the LOCAL feature appears within the value of SLASH. This is referred to in (57) by the two occurrences of the numerals in the boxes. We should note that we are using different notation here from those we have used in previous chapters. More precisely, The trace can have the following simplified version:

58. [1 [SLASH {1} ]

We have introduced so far the trace sign as a lexical item occurring in the lexicon. We can now consider the trace as a complement of a head. In this situation, the trace will get whatever local features are stated for that complement by the head. These local features, of course, will appear in the SLASH set of the trace. If we take an example such as (59) below, we notice that the trace has the local feature structure forced by the verb loves on its direct object position. This local feature structure can also be shown in the SLASH set of the



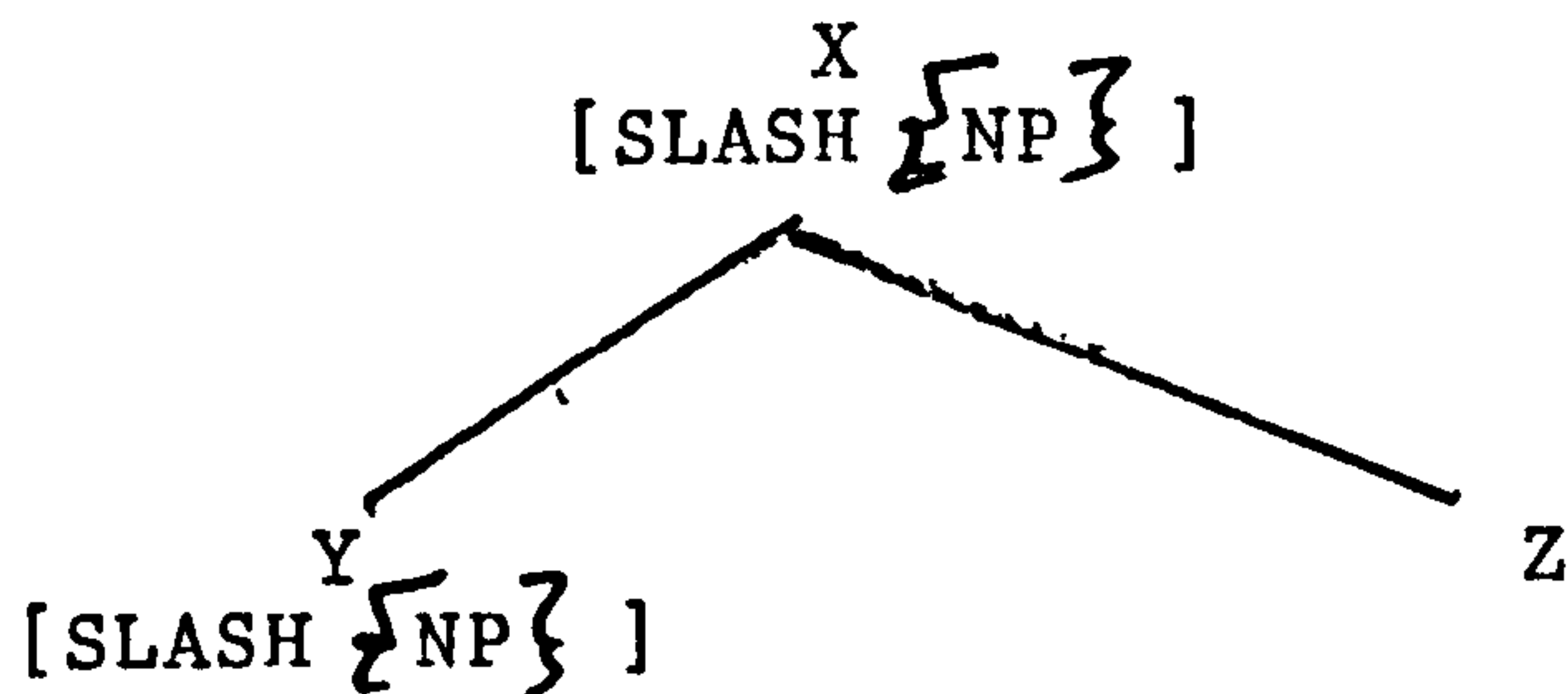
62. Nonlocal Feature Principle

The value of each nonlocal feature on a phrasal sign is the union of the values on the daughters.

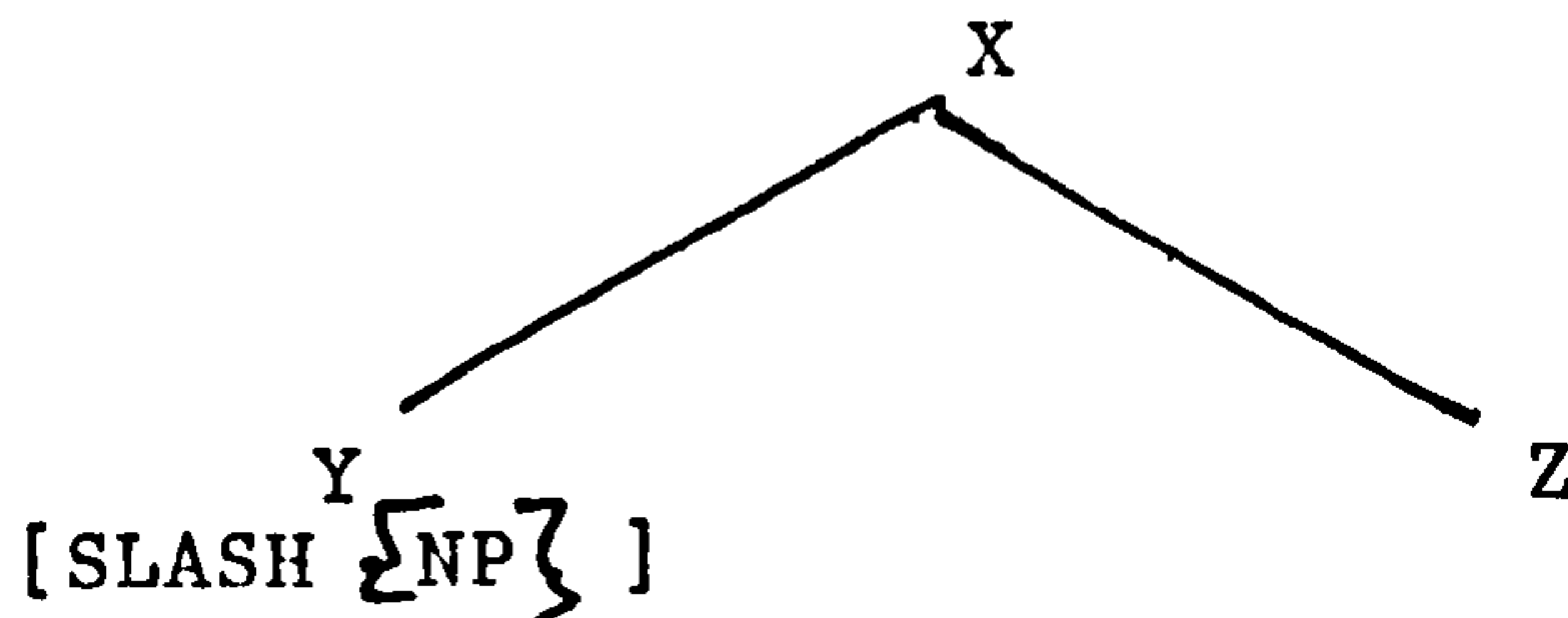
[Pollard and Sag (forthcoming)]

This is related to the 'FOOT Feature Principle' in GPSG. The purpose behind the definition in (62) is that we can allow structures such as (63) below, but not those in (64) and (65):

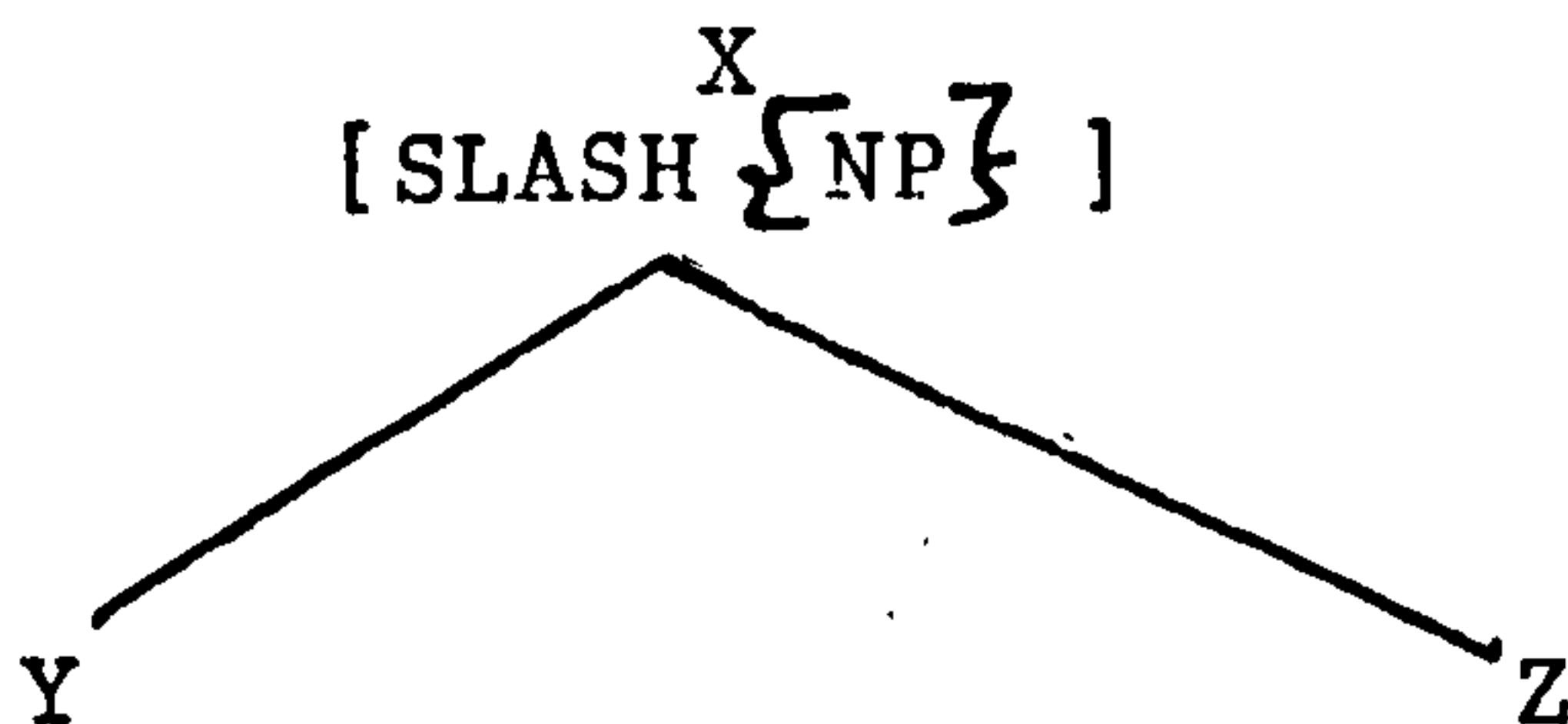
63.



64. \*



65. \*



The structure in (63) conforms to the Nonlocal Feature Principle because the mother node and one of its daughters shares the same NP gap. (64) is ruled out because a daughter is identified as containing an empty NP but the mother is not

identified as containing an empty NP. This, of course, is acceptable at the top of the dependency. The principle in (62) thus needs modifying to allow such structures at the top of the dependency. However, we will not discuss the necessary modification. Finally, (65) is unacceptable because the mother is identified as dominating a gap but neither daughter is identified as dominating a gap.

Having looked at the middle part of the dependency, we turn now to introduce the top part of the dependency.

### 7.2.3. The Top of the Dependency:

As noted earlier, the basic Nonlocal Feature Principle needs to be modified to accommodate the top of the dependency. Within this part, the SLASH value on the trace is bound by association with the local features of the filler, as in the case of the NP John in (59) above. This part of the dependency is licensed by a rule which can be called the 'Filler-Head Rule'. This rule has the effect of forming a phrase from a finite sentence which has both an unbound trace and a filler whose local features have identical values to those of the trace. This rule can be formulated as follows:

66. [SLASH{...}] --->

H[MAJ V; SUBJ<>; SPEC<>; SUBCAT<>; SLASH{...  $\boxed{1}$  ...}1,  $\boxed{1}$

This rule will ensure that the trace and the filler are identical in their local feature structures.



Having introduced an analysis of English UDC's, we turn now to propose an analysis of Syrian UDC's.

7.3. An Analysis of Syrian UDC's:

We have given examples of Syrian UDC's and shown that they involve a wide range of gaps. The situation with Syrian UDC's, unlike English UDC's, is rather more complex because of the fact that the gaps sometimes allow and sometimes require an associated clitic. It is useful to summarize the facts above before we offer an analysis. Relevant here is the following table where optional/obligatory refer to clitics:

67.

TRACE POSITION	WH-QUE	RCs	TOPIC
OBJECT OF V	OPTIONAL	OBLIGATORY	OBLIGATORY
OBJECT OF P	OBLIGATORY	OBLIGATORY	OBLIGATORY
POSSESSOR	OBLIGATORY	OBLIGATORY	OBLIGATORY

The clitic is optional in object gaps of a finite verb and obligatory in other positions. That is, in every case, except one, the trace behaves like a pronoun.

The central assumption of an analysis is that Syrian UDC's involve two types of traces, pronominal and non-pronominal. A pronominal trace appears in all positions except those excluding pronouns. While non-pronominal traces appear in all positions except those restricted to pronouns. Hence, pronominal traces cannot appear in the following positions: object of a verb, or preposition without a clitic, or 'subject' of a noun without a clitic. This entails that there are, unlike English UDC's, two sorts of unbounded dependencies, [-PRO] and [+PRO]. That is, one type will involve categories of the form in (68), and the other categories of the form in (69):

68. X[SLASH NP[-PRO] ]

69. X[SLASH NP[+PRO] ]

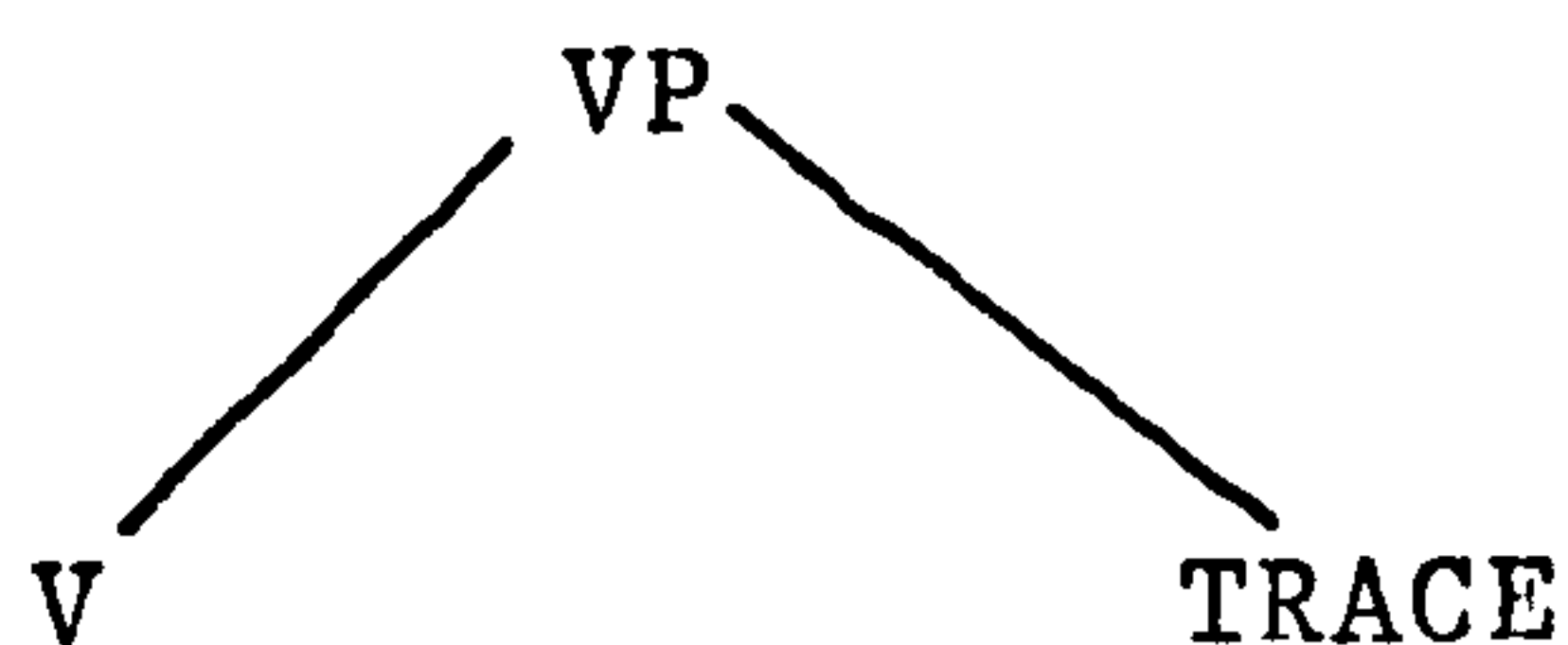
(68) refers to examples with non-pronominal traces, whereas (69) involves pronominal traces in which the SLASH feature takes as its value a set of local feature structures.

Before we proceed to examine Syrian UDC's, let us address the following questions: (i) Why is a clitic obligatory in all four constructions when the dependency terminates in prepositional object position or noun 'subject' position? (ii) Why is a clitic obligatory when the dependency terminates in verbal object position in relative clauses or topicalization sentences, but optional when it terminates in object position? In brief, we might argue that (i) the clitic is obligatory in all four given constructions because there is some constraint on non-pronominal traces, i.e., we have an additional restriction where the non-pronominal trace should be pronominal

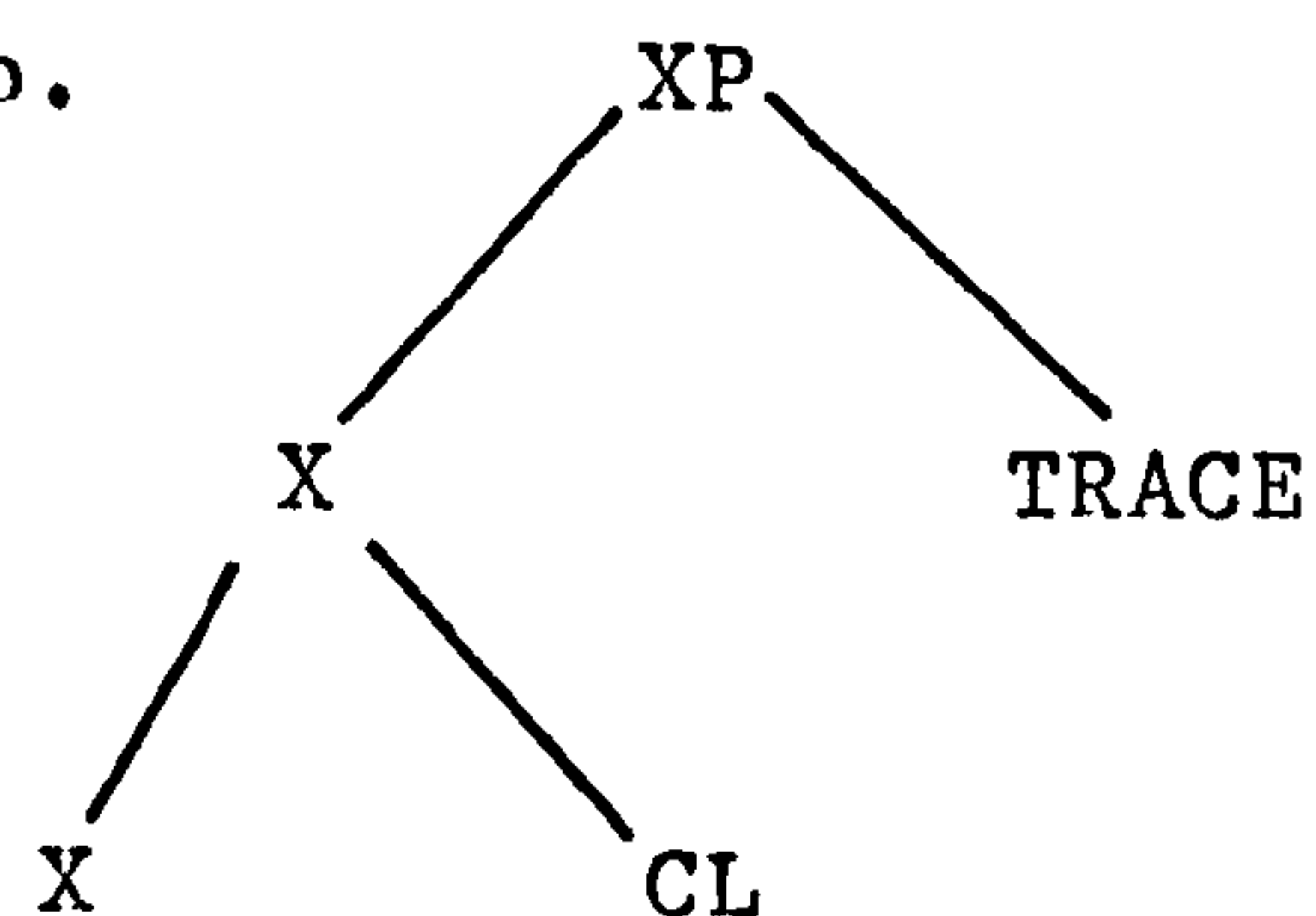
and sister of a verbal head. That is, certain traces should have certain sisters. By contrast, the clitic is obligatory when the dependency terminates in verbal object position in relative clauses and topicalization sentences and optional in object position because of the possibility of having both pronominal and non-pronominal traces in wh-question. That is, a [-PRO] trace must have a verbal sister. Therefore only [+PRO] is possible in relative clauses and topicalization sentences, thus ruling out the following possibilities: V+t, P+t, N+t.

We can suggest that wh-questions will have structures such as those in (70-a,b), whereas relative clauses and topicalization sentences will only have the structure in (70b). These structures are simplified versions of forthcoming structures:

70. a.



b.



Where X = V, N, or P.

Given the above proposals, we need the filler-head rule given in (66) and the right constraint on non-pronominal traces to provide an analysis for the following positions:

71. a. a subject gap  
 b. an object gap with no associated clitic  
 c. an object gap with an associated clitic  
 d. a prepositional object gap with an associated clitic  
 e. a possessor gap with an associated clitic

(71b) is relevant only to wh-questions, the other four are possible with wh-questions, relative clauses and topicalization constructions.

We need lexical entries for pronominal and non-pronominal traces and a constraint on non-pronominal traces to handle the bottom of the dependencies. For (3) repeated in (72) we will have the category in (73):

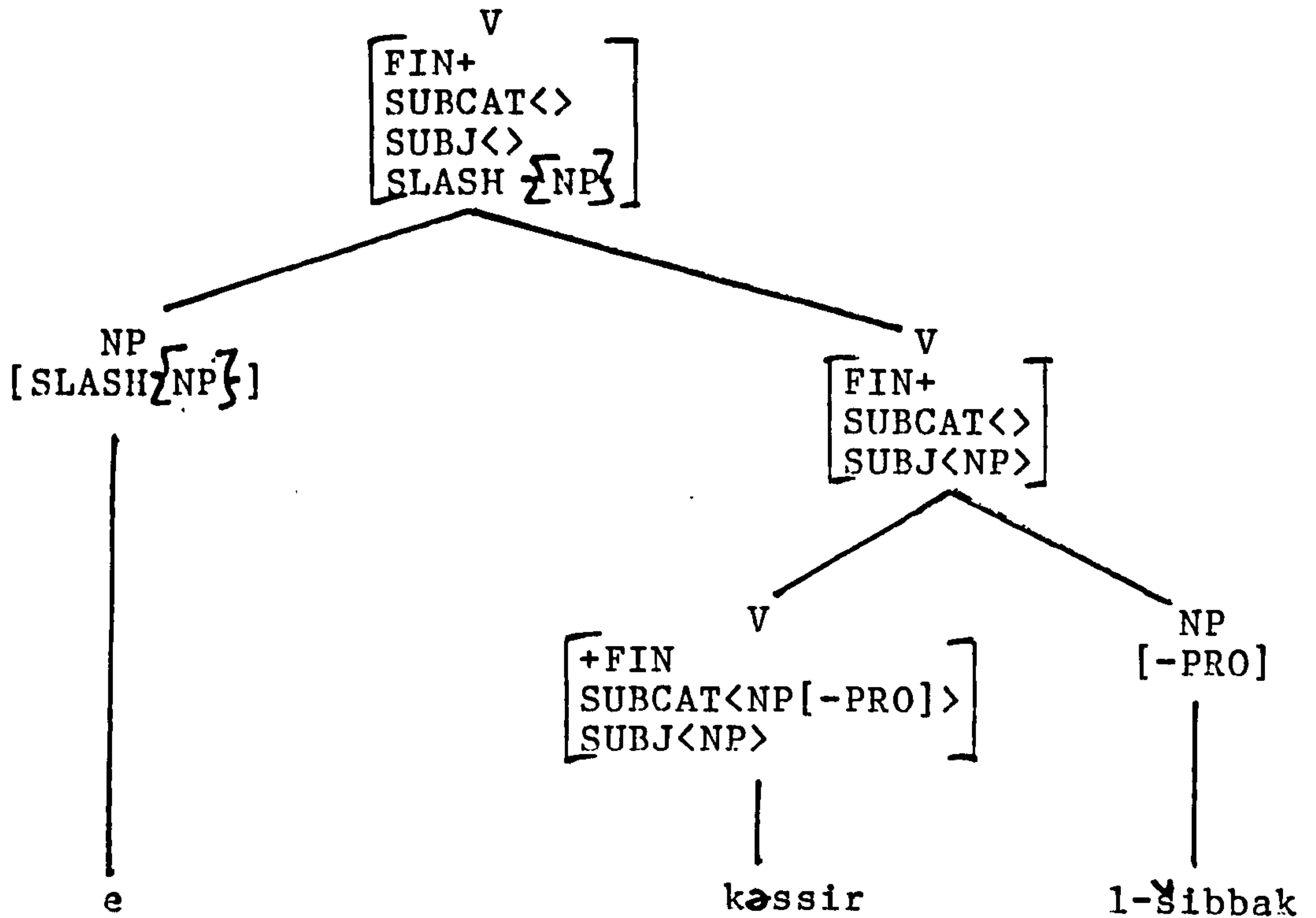
72. min kəssir l- šibbak?  
 who broke the window  
 'Who broke the window?'

73. V[FIN+;SUBCAT<NP[-PRO]>;SUBJ<NP>]

This category can combine with an overt NP object and a trace subject to give the following tree:



74.



The structure in (74) contains a trace subject, which can either be pronominal or non-pronominal. The point is that the value of SUBJ in (73) above can be specified as either [+PRO] or [-PRO].

If we look now at (5), we can have the category in (77) for the verb šeft 'saw' (5a) repeated here in (75), and for šefto 'saw' (5b) repeated here in (76) we can have the category in (78):

75. min šeft?

who saw-2SGM

'Who did you see?'

76. min šefton?

who saw-2SGM-3PL

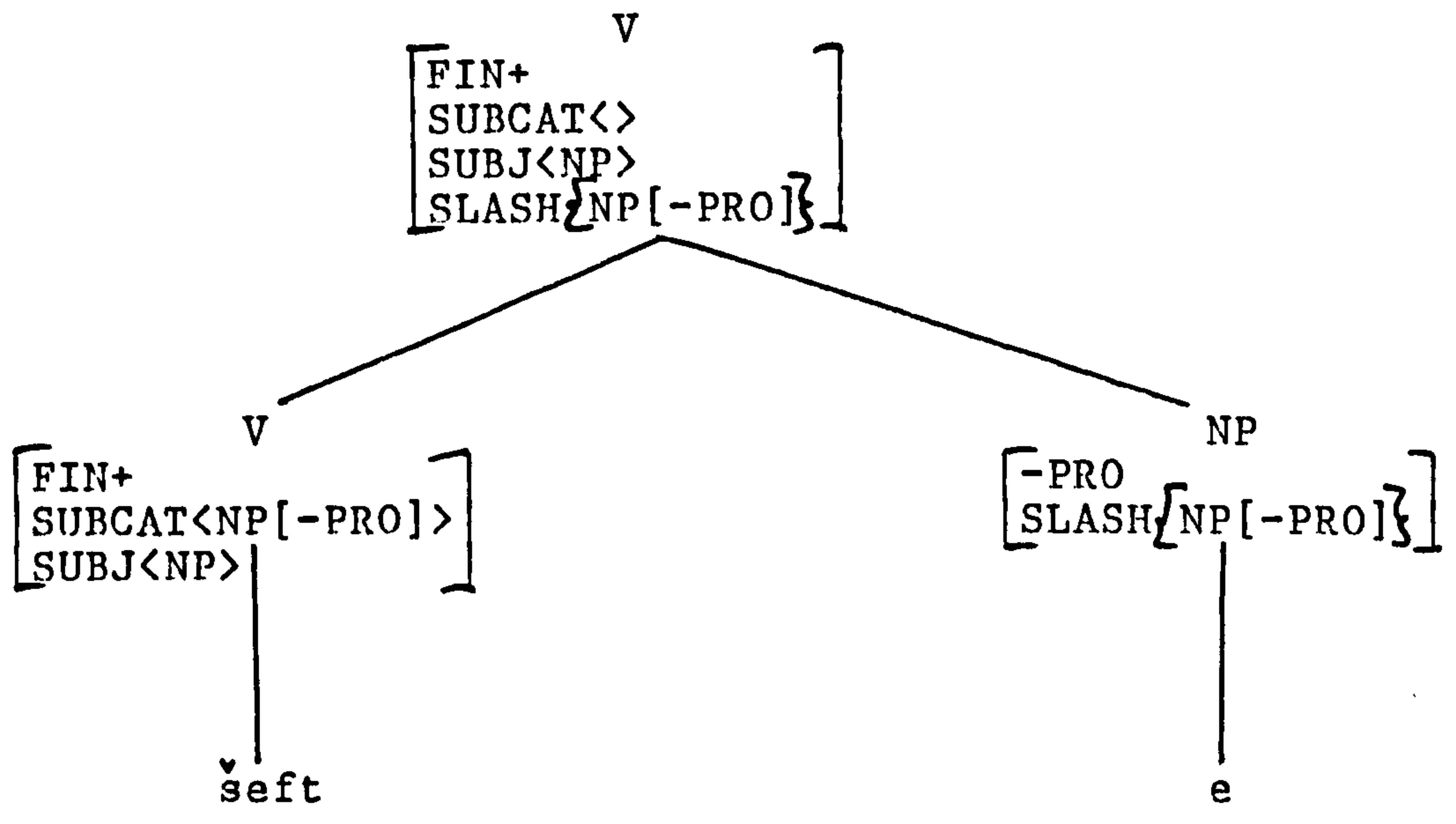
'Who did you see?'

77. V[FIN+;SUBCAT<NP[-PRO]>]

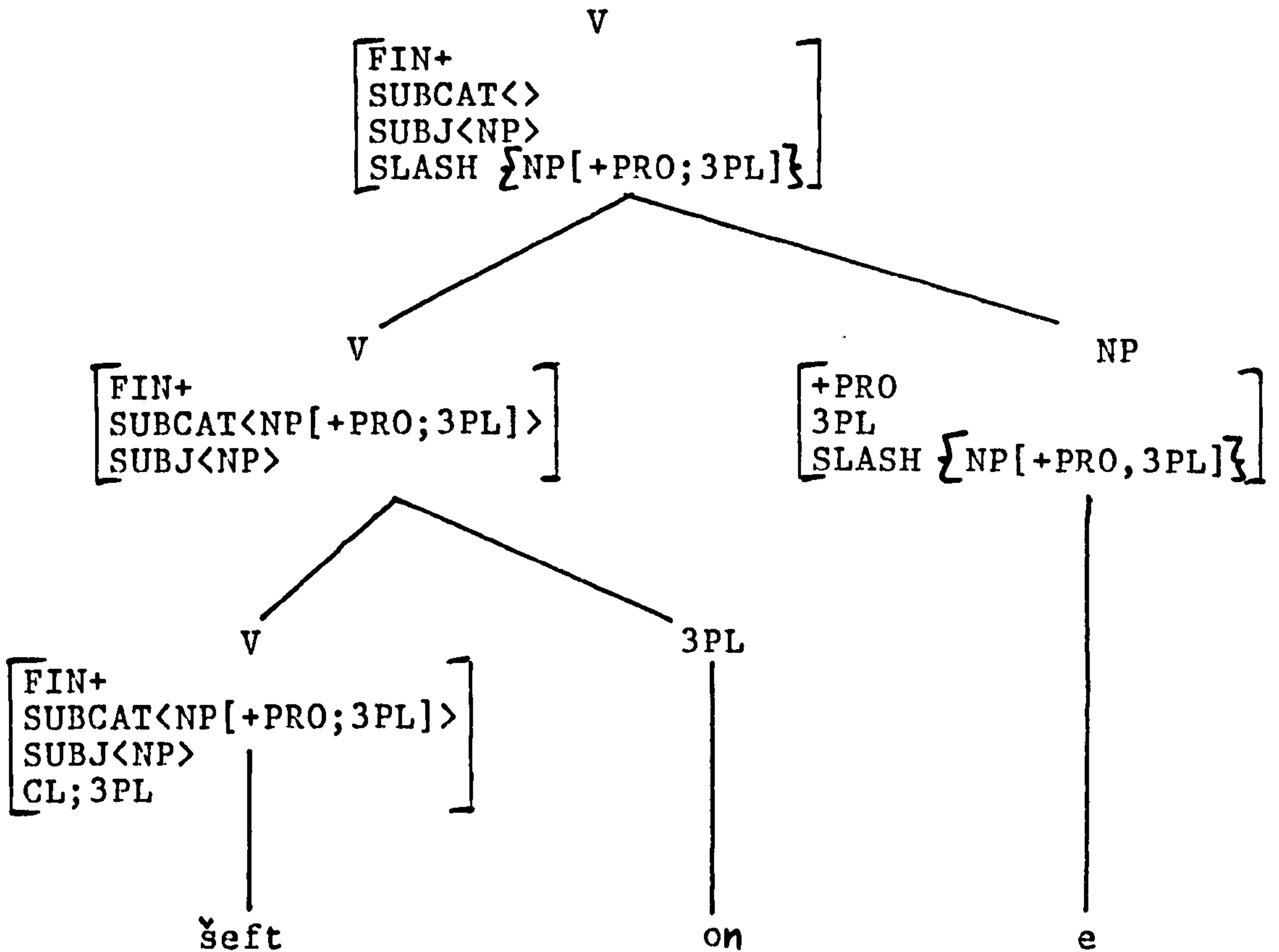
78. V[FIN+;SUBCAT<NP[+PRO; < >];CL,< >]

The category in (77) will combine with a non-pronominal trace to give the structure in (79). Whereas the category in (78) will first combine with a clitic and then with a pronominal trace to give the tree in (80):

79.



80.



In both structures, the SLASH on the VP node will be inherited from the trace. It is important to note here that the structure in (80) incorporates the information that the NP in the SLASH set requires a clitic and an agreeing complement. Given the nature of the trace category the NP in the SLASH set will also agree with the clitic. In brief, a trace complement will agree with both the clitic and the NP in the SLASH set.

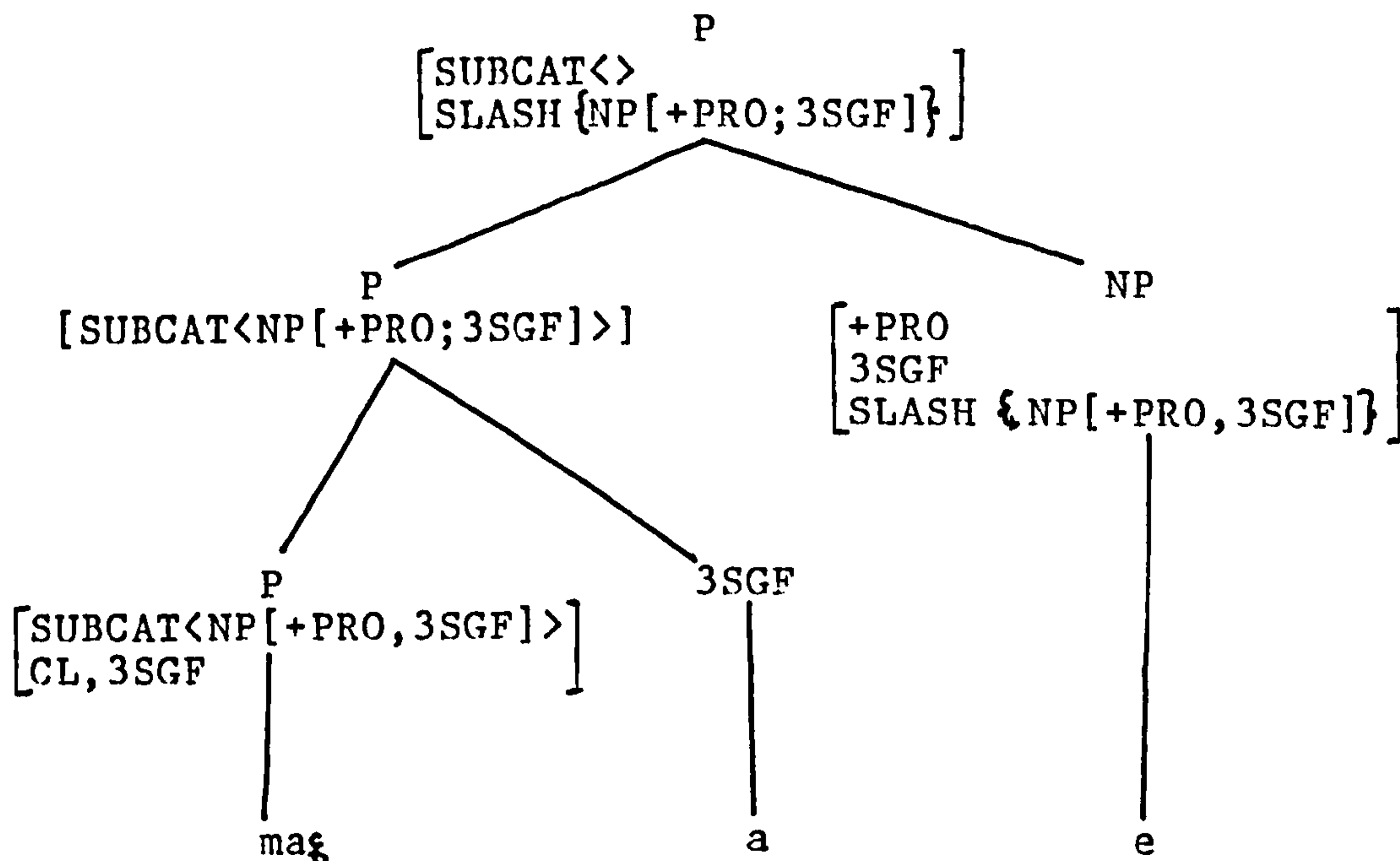
The traces in both structures have the same distribution (i.e. they are in object position of a verb), but they are different types, i.e., the trace in (79) is non-pronominal but the trace in (80) is.

Turning now to (6), we can assign the category in (81) for ma&a 'with' (6b):

81. P[SUBCAT<NP[+PRO;  $\alpha$ ]>;CL,  $\alpha$ ]

This category first combines with an overt clitic and then with a pronominal NP trace to give the following structure:

82.



The trace in the structure above is a prepositional object.

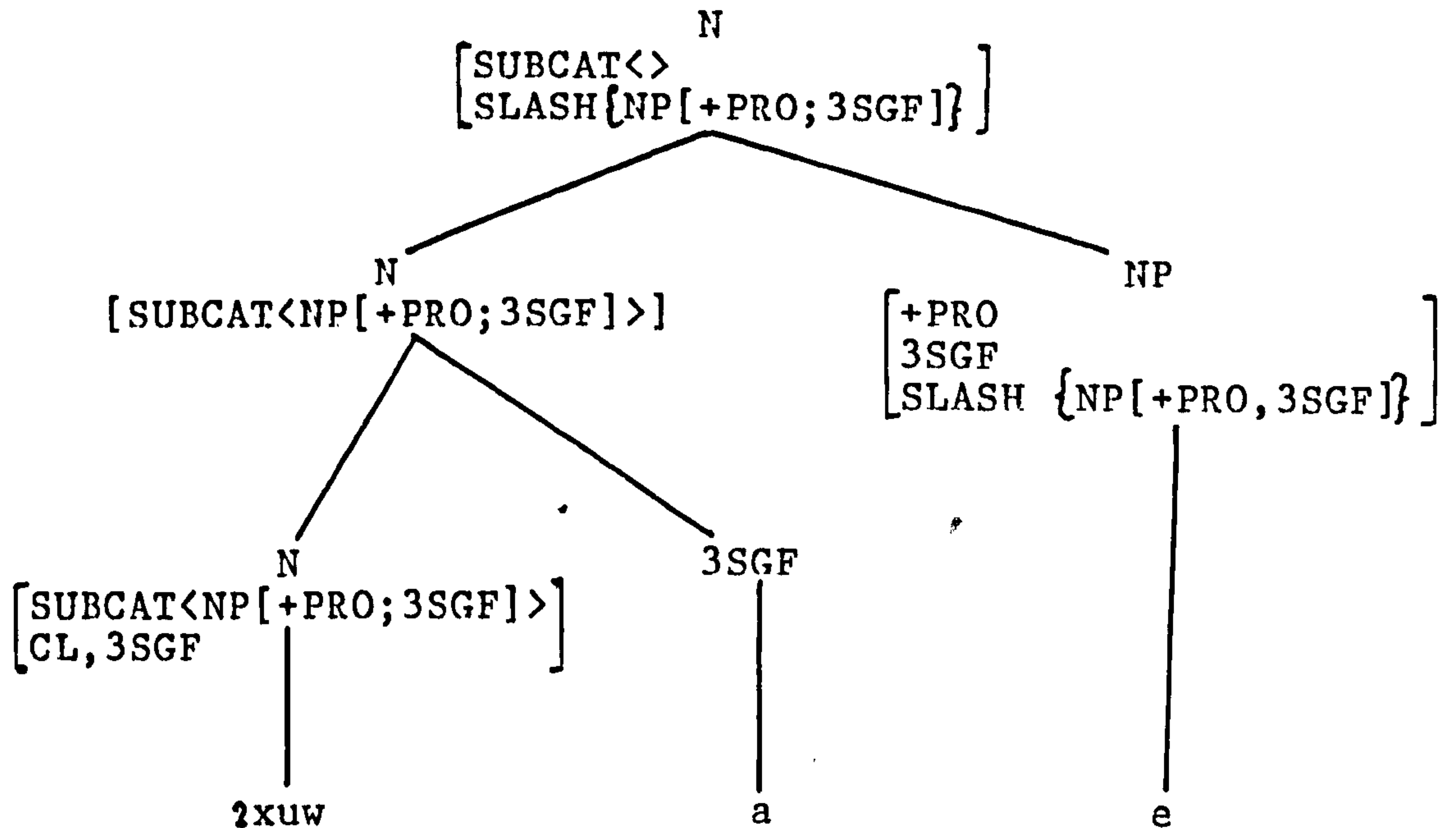
We proceed now to look at possessor position. For (8b), what we need for 2xuwa 'sister' is the category in (83) below:

83. N[SUBCAT<NP[+PRO;  $\alpha$ ]>;CL,  $\alpha$ ]

This combines with a clitic and then with a pronominal trace to give the following tree:



84.



We have now presented an HPSG analysis of the bottom of the dependency of Syrian UDC's with traces appearing in main and subordinate clauses.

We turn now to look at the top of the dependency. Here, the picture is much more complicated because, as we noted earlier, only [+PRO] dependencies occur in relative clauses and topicalization sentences. The complication arises from the fact that the filler need not have the same value for [PRO] as the category in the SLASH set. We will try to explain the complexity as follows. As we noted earlier, Syrian has two different types of traces, pronominal and non-pronominal, and involves two sorts of UDC's, [-PRO] or [+PRO].

One way of handling the facts about the top of the dependency is to impose some restrictions on the filler-head rule given in (66) as follows:

85. [SLASH { ... } ] --->

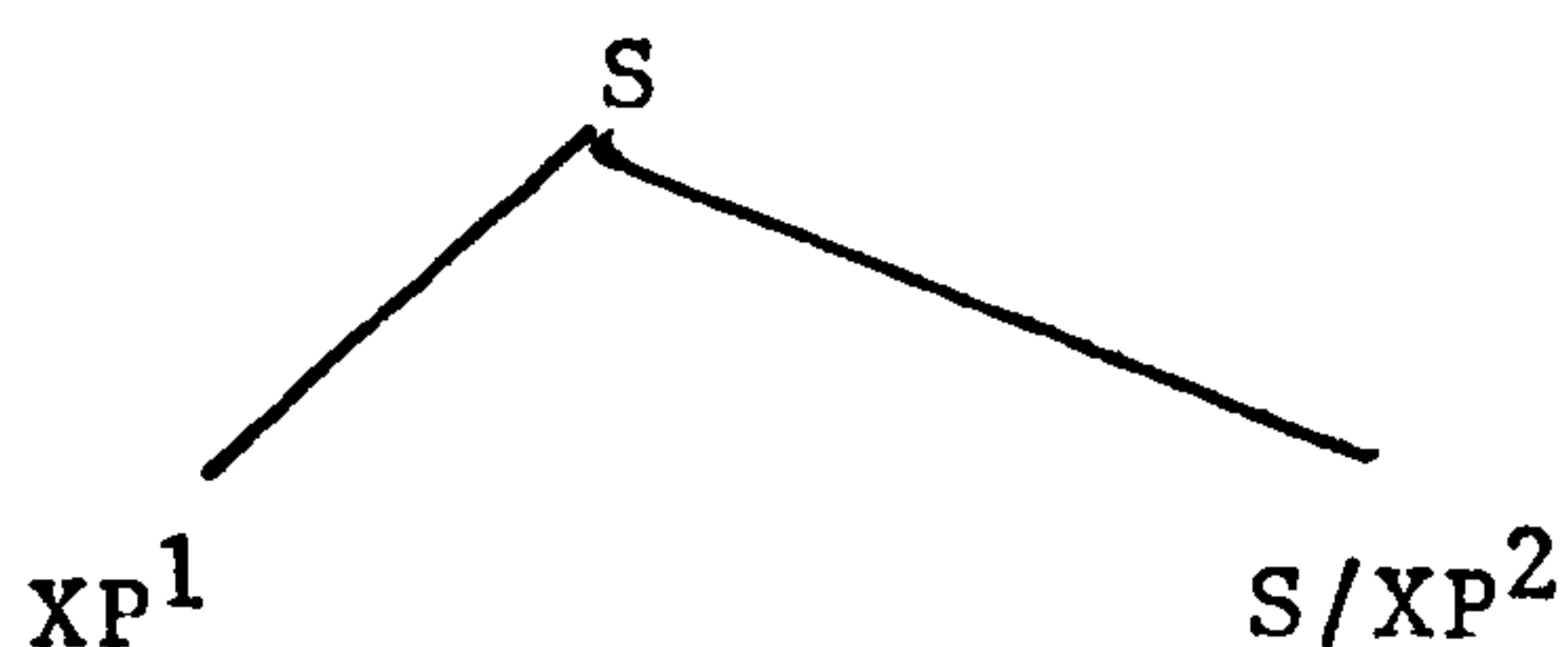
H[MAJ,V;SUBJ<>;SPEC<>;SUBCAT<>;SLASH{...XP<sup>1</sup>...}], XP<sup>2</sup>

If XP<sup>1</sup> = NP[+WH], then XP<sup>2</sup> = NP[+PRO], or NP[-PRO], and if XP<sup>1</sup> = NP[-WH], then XP<sup>2</sup> = NP[+PRO]

Otherwise XP<sup>1</sup> = XP<sup>2</sup>.

There is nothing in this rule which ensures that both XP's are identical. All we can assume here is that they are identical as far as number and gender are concerned. Hence, we can suggest that the top of the dependency would look like the following:

86.



We are not going to assume an analysis for the top of the dependency of relative clauses for two reasons. The first reason is that there is, unlike wh-questions and topicalization constructions, no overt filler that refers to the gap. The second reason is that HPSG has not provided a full analysis of relative clauses. All we can say here is that S/NP and the NP are always [+PRO].

To summarize what we have been suggesting so far:

(i) There are two types of traces which obey different conditions: Pronominal and Non-Pronominal. The former co-occurs with clitics in all positions where pronouns co-occur with clitics. (ii) These two types of trace are possible in wh-

questions. The non-pronominal trace, then, must be sister of a verbal head, i.e., a subject or an object. (iii) Only pronominal traces are possible in relative clauses and topicalization sentences.

For completeness, it is natural to ask to what extent these two different types of SLASH categories will be affected by 'Island Constraints'. That is, do island constraints work in the same way with pronominal and non-pronominal traces? Island constraints were introduced in syntactic theory by Chomsky (1964) and were discussed in detail in Ross (1967). We will look only at wh-island constraint by giving the following English examples:

87. a. Did you ask what John gave to Mary.

b. \*who did you ask what John gave to?

(88b) is ungrammatical because a wh-dependency, following Borsley (1991: chapter 13), cannot cross the boundary of a subordinate wh-question.

We proceed now to look at Syrian data. Consider the following examples:

88. a. \*meen sa2lt [meen šaf ]

who asked-2SGM who saw-3SGM

'\*Who did you ask [who saw]'

b. \*meen sa2lta [meen šafa ]

who asked-2SGM-3SGF who saw-3SGM-3SGF

89. \*meen sa2lta [meen ḥaka maḡa ]

who asked-2SGM-3SGF who taked-3SGM to-3SGF



It seems that all these ungrammatical examples involve wh-islands. Hence, we cannot have these sentences in Syrian both with or without clitics, and consequently the two different SLASH categories, that is, S[SLASH{NP[+PRO]}] and S[SLASH{NP[-PRO]}] do not behave differently concerning wh-island constraint.

#### 7.4. Summary:

To conclude this chapter, we introduced unbounded dependency constructions in English and Syrian. In section one, we presented some basic properties of Syrian UDC's. In section two, we looked at HPSG approach to UDC's where the SLASH feature was introduced. This SLASH feature which is the central concern of this chapter, unlike the case with GPSG, is governed by the nonlocal feature principle. We also discussed how UDC's could be handled with HPSG. In section three, we suggested a possible analysis of Syrian UDC's in which we considered two different types of traces, namely, pronominal and non-pronominal and we concluded that Syrian has two sorts of unbounded dependencies, i.e., [-PRO] and [+PRO]. Finally, it seems that the analysis that we have introduced in this chapter have been adequately accounted for in a grammatical framework such as HPSG which involve no NP movement or wh-movement.



NOTES:

1. In their earlier analysis, Pollard and Sag (1988) used the term 'BINDING'.
2. Pollard and Sag (1988) argued that there are no empty categories in structures such as wh-questions, relative clauses or topicalization constructions. They proposed that they can handle English UDC's by extending the subcategorization principle.
3. There is in fact a third approach. The lexical approach advocated in Borsley (forthcoming) for Welsh unbounded dependency.
4. In Pollard and Sag's (1988) analysis, the middle part of the dependency is handled by the 'Binding Inheritance Principle' which is replaced, as we noted in the text, by 'Nonlocal Feature Principle'.

## CHAPTER EIGHT

### Concluding Remarks

#### 8.0. Introduction:

In this chapter, we will try to give an overall picture of the theory that we have considered. To be more precise, we will be summarizing the conclusions we have reached applying the HPSG approach to Syrian. In section two, we will list all the syntactic rules, principles and lexical rules that we have used in this work. Topics for future research will be looked at in section three.

#### 8.1. Conclusions:

In the first chapter, we examined the theoretical framework and noted that TPSG misses a number of generalizations and argued that MPSG is preferable to TPSG by virtue of its capturing these generalizations. We looked briefly at GPSG and highlighted some weaknesses and proposed that these weaknesses disappear if we adopt HPSG. We also introduced some ideas borrowed from CG by HPSG. Finally, we considered the two versions of HPSG: The standard approach developed by Pollard and Sag and others, and the revised approach advanced by Borsley. We have argued in favour of the revised approach on a number of grounds.

In chapter two, we examined VP's and argued that subject-initial clauses are ordinary SVO sentences and that the head verb together with its complements form a VP constituent. We looked at verbs taking a variety of complements and considered the differences between complements and adjuncts. We also distinguished between clitics and inflections and provided an analysis of clitics within VP's. Finally, we argued in favour of the ADJUNCTS analysis in connection with adverbials.

In chapter three, we looked at PP's and considered a variety of Syrian prepositions and argued that they are heads. We considered the attachment of the definite article to preceding prepositions. We also looked at different complements that prepositions take. We also provided an analysis of PP's and an analysis for clitics within PP's. Finally, we distinguished between PP's functioning as complements, adjuncts and predicates.

In chapter four, we examined AP's and looked at the morphology of adjectives. We considered adjectives taking a PP complements, an S' complement, and a PP complement followed by an S' complement. We also looked at adjectives either taking degree words or degree complements and introduced a lexical rule in connection with degree complements. Finally, we discussed the distribution of adjectives and noted that they appear predicatively and attributively.



In chapter five, we examined NP's and looked at different types of complements that a head noun takes. We argued that what might be regarded as 'subjects' are in fact extra complements. More precisely, we proposed two analyses: Firstly, subjects are realized as a single item on the SUBJ list. Secondly, they are realized as an extra item on the SUBCAT list. We argued in favour of the SUBCAT analysis because clitics within NP's agree with the category that appears as a final item on the SUBCAT list of the head noun. More precisely, on this analysis, clitics within NP's are like clitics within VP's and PP's since all of them reflect the final item on the SUBCAT list. The second argument that we have proposed has to do with the fact that the head noun within NP's, unlike subjects within ordinary clauses, is not preceded by what is regarded as a subject. We considered different types of possessions. We went on to argue that the Syrian definite article is analyzed as a realization, like clitics, of the CL feature. We looked at demonstratives and extended the analysis to include them. Finally, we discussed attributive adjectives and argued in favour of the ADJUNCTS analysis.

In chapter six, we examined ordinary and verbless clauses. We looked at SVO clauses and provided categories for various kinds of subject-selection. We also discussed VSO clauses and considered two plausible analyses, namely, the SUBJ analysis and the SUBCAT analysis. We argued for the SUBJ analysis on a number of grounds. We also noted that the existing analysis of



clitics extends to VSO clauses if we adopt the SUBJ analysis. We went on to look at English verbless clauses (small clauses) and noted that English SC's must involve two separate complements if we assume HPSG approach. We also presented some Syrian VC's and proposed that they should be analyzed as ordinary clauses. Finally, we introduced further data involving pronominal subjects and argued that in what looks like a bare verbless clause complement of a verb, the apparent subject behaves like the object of the verb. More precisely, where is no complementizer, we have analyzed verbless clauses containing pronominal subjects as two constituents. Moreover, what looks like a bare ordinary clause complement of a verb, the apparent subject behaves like the object of the verb. Hence, ordinary clauses which contain no complementizer should also be analyzed as two separate complements.

In chapter seven, we presented some basic properties of Syrian UDC's. We looked at HPSG approach to UDC's where we introduced the SLASH feature. More precisely, we considered Pollard and Sag's (forthcoming) analysis of unbounded dependencies. Finally, we proposed an analysis of Syrian UDC's in which we considered two different types of traces, namely, pronominal and non-pronominal.

In chapter eight, we summarized the conclusions that we have reached applying the HPSG approach. We listed all the

rules and principles that we have introduced in this work. Finally, we examined topics for future research.

## 8.2. Rules and Principles:

In this section, we will present the full range of rules and principles that we have adopted in this work. We will begin by listing the following ID rules:

1. a. [SUBJ<>] -----> H[LEX-;SUBCAT<>;SUBJ<[]>],C
- b. [SUBCAT<>] ----> H[LEX+;SUBCAT<...>],C\*
- c. [SPEC<>] -----> H[LEX-;SUBCAT<>;SPEC<[]>],C

(1a) is the subject-predicate rule, (1b) is the head-complement rule and (1c) is the specifier-head rule.

We can look next at the following syntactic rule:

2. [ $\sim$ CL] ----> H[CL, $\alpha$ ], $\alpha$

(2) is the clitic-head rule.

We proceed to list the following syntactic rules:

3. [SUBCAT<>;SUBJ<>] ----> H[SUBCAT<...>;SUBJ<[]>],C\*

(3) is the head-subject-complement rule.

4. [SLASH{...}] --->

H[MAJ V;SUBJ<>;SPEC<>;SUBCAT<>;SLASH{... XP<sup>1</sup>...}], XP<sup>2</sup>

If XP<sup>1</sup> = NP[+WH], then XP<sup>2</sup> = NP[+PRO], or NP[-PRO], and if XP<sup>1</sup> = NP[-WH], then XP<sup>2</sup> = NP[+PRO], otherwise XP<sup>1</sup> = XP<sup>2</sup>

(4) is the Filler-Head rule.

We proceed to list the following LP rules:

5. NP < XP

Where (X ≠ N)

6. COMPLEMENT[MAJ-V] << LEX-

7. X < []

Where X = V, P, A, or N

8. [CL, <] < <

(5) states that an NP precedes XP which is its sister, whereas the LP in (6) says that NP, PP, and AP complements are ordered before more oblique sister phrases, whether they are complements or adjuncts. The LP constraint in (7) posits that heads are phrase initial. Finally, the LP in (8) states that clitics in Syrian should always follow the head verb.

We can list next the following universal principles:

9. a. The value of HEAD in a mother is identical to the value of HEAD in its head unless some rule says otherwise
- b. A category that is (a) on the SUBCAT list of a head and not on the SUBCAT list of its mother or (b) on the SUBJ list of a head and not on the SUBJ list of its mother or (c) on the SPEC list of a head and not on the SPEC list of its mother must be matched by a sister of the head

As we noted in chapter one, (9a) is the HFP which is a 'Default' principle because rules take precedence over the HFP. (9b) is the Subcategorization Principle.

We proceed to list the following principle:

10. The value of each nonlocal feature on a phrasal sign is the union of the values on the daughters
- (10) is the Nonlocal Feature Principle.

Finally, we will move on to list the lexical rules that we have introduced in this work, as given below:

11. a.  $X[\text{FIN}+; \text{SUBCAT}\langle \dots, \text{NP}[-\text{PRO}] \rangle \dots] \implies$   
 $X[\text{FIN}+; \text{SUBCAT}\langle \dots, \text{NP}[+\text{PRO}, +\text{NULL}, \alpha] \rangle; \text{CL}, \alpha \dots]$
- b.  $V[\text{SUBCAT}\langle \dots, \text{NP}[+\text{PRO}, +\text{NULL}, \alpha] \rangle; \text{CL}, \alpha] \implies$   
 $V[\text{SUBCAT}\langle \dots, \text{PP}[\alpha] \rangle; \text{CL}, \alpha]$

Where X = V, P, or N



(11a) is the lexical rule that derives verbs, prepositions, and nouns that host clitics from verbs, prepositions, and nouns that take no clitics, whereas (11b) is the lexical rule for prepositional clitic doubling which has the following structure: V+CL+LA+NP[-PRO].

we will list next the following lexical rules:

12. a. N[SUBCAT<...>;SUBJ<>] ==>  
N[SUBCAT<...,NP[-PRO]>;SUBJ<>]
- b. N[SUBCAT<...>;SUBJ<>] ==>  
N[SUBCAT<...>;SUBJ<>;CL,[+DEF]]

(12a) is the lexical rule for 'subjects' if we adopt the SUBCAT analysis. As noted in chapter five, we argued for the SUBCAT analysis and we modified the lexical rule in (12a) twice to include the specifier Dem and the attributive AP. (12b) is the lexical rule that derives definite nouns from indefinite nouns. We modified this rule twice as well to include the specifier Dem and the attributive AP.

Finally, we will list the following lexical rule:

13. V[SUBCAT<...NP<sub>1</sub>>;SUBJ<NP<sub>2</sub>>] ==>  
V[PAS;SUBCAT<...>;SUBJ<NP<sub>1</sub>>]

(13) is the lexical rule for passives.

### 8.3. Topics for future research:

In this work, we have tried to propose an analysis for aspects of Syrian phrases and clauses within HPSG. In chapter three, we proposed an analysis of adjuncts PP's and decided to leave it open although there is an evidence in favour of the ADJUNCTS analysis proposed by Pollard and Sag (1988). In chapter four, we proposed a complex analysis of degree complements and noted that it is not an entirely satisfactory analysis. Therefore, we decided to leave this question for further research as well. Finally, it may be, perhaps, that other topics not discussed in this work are equally important and can be accommodated within HPSG. What we have in mind are topics like 'Control', 'Passives' and 'Coordination Structures'.

In Syrian, control sentences are of two types: One type involves a subject, a control verb, and a verbal complement with no overt subject. The other type involves a subject, a form of be, a control adjective, and a verbal complement with an empty subject. The first type is illustrated by (14) and the second type by (15):

14. Salwa xaṭṭaṭet tšuf Samir  
 Salwa arranged-3SGF see-3SGF Samir  
 'Salwa arranged to see Samir'

15. Nawal kanet mṭḥamseh tšuf axuwa  
 Nawal was-3SGF anxious see-3SGF brother-3SGF  
 'Nawal was anxious to see her brother'

We turn to look at Syrian passive. In Syrian the passive of simple verbs is generally formed by the prefixation of n-. The following examples are relevant here:

16.	<u>Active</u>	<u>Passive</u>
	akal 'to eat'	nakal 'to be eaten'
	ḥabas 'to imprison'	nḥabas 'to be imprisoned'
	waḡad 'to promise'	nwaḡad 'to be promised'

Given this formation, passives are of two types in Syrian: (i) Ordinary passives, and (ii) Impersonal passives.

In ordinary passives, the subject of a verb in the passive is compatible with the object of the active verb. Relevant here are the following examples:

17. a. Kamal ḡarab Salwa  
 Kamal beat-3SGM Salwa  
 'Kamal beat Salwa'

b. Salwa ndarbet

Salwa beaten-3SGF

'Salwa was beaten'

(17a) is an active sentence and (17b) is the passive counterpart.

In the case of impersonal passive, a transitive verb with its subject suppressed or an intransitive verb, is passivised on the grounds that it has a prepositional complement. The following examples illustrate:

18. a. ma ḥada šarab b ha l- kaseh

not body drink-3SGM in this the glass

'Nobody has drunk from this glass'

b. ma ṅšarab b ha l- kaseh

not drink-3SGM in this the glass

'This glass has not been drunk from'

Finally, we can look at coordination. Conjunctions such as W 'and', baš 'but', aw 'or', etc., can coordinate two or more sentences in Syrian. The following examples illustrate:

19. Aḥmed raḥ ʕl souq W štara fawakeh

Ahmed went-3SGM to market and bought-3SGM fruits

'Ahmed went to the market and bought fruits'



20. Samir ʒamel            jehdou, bəs fišel  
Samir tried-3SGM hard      but failed

'Samir tried hard, but he failed'

21. Nadir raḥ            ʒl madrased, aw bəzen      raḥ  
Nadir went-3SGM to school      or think-1SG went-3SGM  
ʒl mistašfa  
to hospital

'Nadir went to school, but I think he went to the  
hospital'

#### 8.4. Summary:

In this chapter, we tried to summarize the ideas discussed in this work and to list all the rules and principles that we have introduced. In section three, we commented on aspects for future research.

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