Noun Phrases

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Hwang, Soonjin(1995). **Noun Phrases.** *Linguistics vol. 3.* In traditional grammar, noun phrases are sometimes analysed as NP and sometimes as DP. The purpose of this paper is to examine which of the two is appropriate to explain various linguistic phenomena. In GB theory, it seems reasonable that noun phrases have DP-structure. In the bare theory, however, it seems that both are possible structures.

1. Introduction

There are two hypotheses about the structure of noun phrases, the DP-hypothesis and the NP-hypothesis. In traditional GB theory, the DP-hypothesis is more favorable to explain many linguistic phenomena. In the bare theory, it is not clear which is more appropriate, the structure made by projection of N or the structure by projection of D. I will begin by considering the explanatory adequacy of the DP-hypothesis in GB-theory.

2. Noun Phrases in GB theory

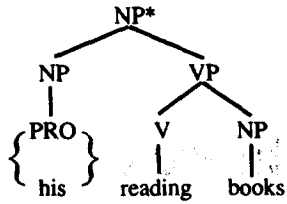
2.1. Gerundive Nominals

In the structure of NP, gerundive nominals present one of the most serious problems with regard to X-bar theory, as we can see in the structure of noun phrases in (1):

(1) a. I like [$_{NP}$ PRO reading books]
b. I like [$_{NP}$ his reading books].

The hierarchical structure of gerundives in (1) is (2):

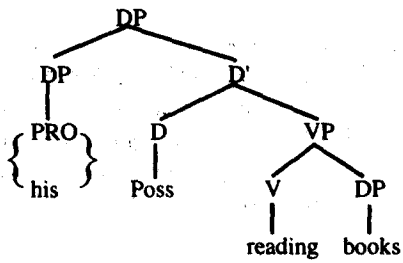
(2)



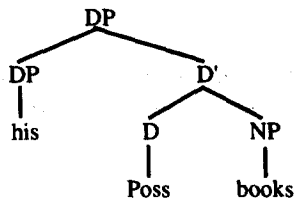
In (2), the head of NP* cannot be V, *reading*. PRO or *his* cannot be the head of NP*, either, since, in a non-gerundive NP, the genitive subject *his* can only be posited in the specifier position. In a non-gerundive NP, as in *his book*, the head of NP* is N, *book*. But in (2), VP projects to NP* and the gerundives in (1) violate the X-bar system.

Analysing noun phrases as DP, however, overcomes this problem. Since the head of DP is not N but D, D can take VP as its complement, in the same way that it takes NP as its complement in a non-gerundive nominal. The structures for noun phrases in (1) and *his book* would be represented as in (3) and (4), respectively, in the structure of DP.

(3)



(4)



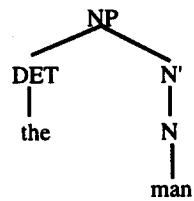
Both of the structures in (3) and (4) conform to X-bar theory. In (3), the head of DP is D and it selects VP as its complement, which, in turn, has V as its head. There is no violation of the X-bar system. The same explanation can be given to the structure of (4). The head of DP is D and, in turn, D selects NP

as its complement, which has N as its head. Of course, there is no violation of the X-bar system.

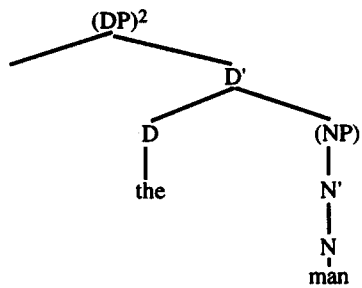
2.2. Head-Initial or -Final Parameter

It is the widely accepted opinion that English is a head-initial language. Analysing noun phrases as DP which assumes D as the head of a noun phrase explains the prenominal position of determiners, in head-initial language, by saying that nominals obey the head-initial parameter like the other phrases.[1] In head-initial languages like English, the structures of the expression, *the man*, in the analysis of NP and in the analysis of DP are (5) and (6), respectively.

(5)



(6)

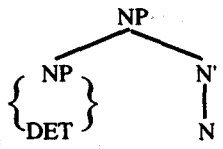


In (5), we should prescribe that the head of NP, N, is always preceded by the determiners or the genitive NP. In (6), however, N' (or NP) is the complement of D, the head of DP. So, the prenominal position of determiners need not be prescribed since they should always precede N' (or NP) in the DP-analysis.

2.3. Genitive Specifiers and Determiners

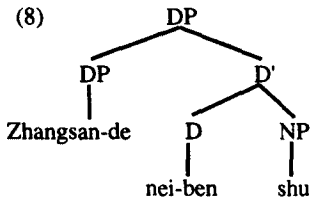
In the structure of NP, both genitive specifiers and determiners are generated in the same position as in (7) and thus should have the complementary distribution:

(7)



The structure (7) is suitable for most of the English noun phrases in which the determiner does not immediately follow the genitive specifier. But, as indicated in Bowers(1987), in Chinese (and in Korean), a prenominal genitive specifier can appear with an overt determiner. For example, the phrase *Zhangsan-de nei-ben shu* 'Zhangsan's that-classifier book', which cannot be drawn in the structure of NP, is perfectly grammatical. The structure of DP successfully represents this structure since it has separate positions for genitive specifiers and determiners. *Zhangsan-de nei-ben shu* can have the structure in (8), if we take the structure of DP.

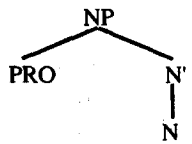
(8)



2.4. PRO as a Subject of a Noun Phrase

The structure of NP does not allow a PRO subject. The position where a PRO subject of NP can appear is that of the genitive NP or the determiners:

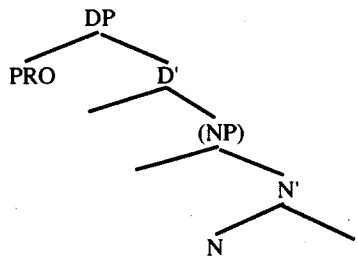
(9)



In (9), NP is the projection of N, and PRO which is dominated by this NP is governed by a lexical category, N. Thus, an important theorem of the GB theory, the PRO theorem that PRO must be ungoverned is violated.

In contrast with the structure of NP, the DP can, in principle, have a PRO in its specifier position. Consider the structure in (10):

(10)



In (10), since NP dominates N but does not dominate the specifier position of DP, PRO is not governed by a lexical category, N.[3] So, if there is evidence for the existence of PRO in the noun phrase, it will also support the structure of DP, giving a fatal disadvantage to the structure of NP. Consider the following example:

(11) [Criticism of oneself] is necessary in moderation.

In (11), *oneself* is not bound in its MGC (the minimal governing category), *criticism of oneself is necessary in moderation*, and is predicted as ungrammatical, contrary to the fact. If *criticism of oneself* has a PRO subject, *oneself* can be bound by the PRO subject and thus the sentence in (11) will be correctly predicted as well-formed, which satisfies the principle A of the Binding theory.

A situation which also requires a PRO subject can be seen in (12):

(12)
a.They$_i$ heard [stories about each other$_i$]
b.They$_i$ heard [stories about them$_i$]
c.They$_i$ told [stories about each other$_i$]
d.*They$_i$ told [stories about them$_i$]
(Chomsky (1986a, 166-167))

In (12a,c), *each other* is bound by *they* in its MGC. In (12d), *them* is bound by *they* and the sentence is correctly predicted as ungrammatical, violating the principle B of the Binding theory. In (12b), however, *them*, which should be free according to the Binding theory, is bound by *they* in its MGC but the sentence is well-formed. If we assume a PRO subject in (12b,d), the grammaticalities can be correctly predicted, since the MGC for *them* is

stories about them, in these cases. The structures of (12b) and (12d) with PRO subjects would be as in (13) and (14):

(13) They$_i$ heard [PRO$_j$ stories about them$_i$]
(14)*They$_i$ told [PRO$_i$ stories about them$_i$]

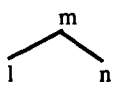
In (13), *them* is free in its MGC, *PRO stories about them* and the sentence is grammatical. But *them* in (14) is bound by *PRO* in its MGC, *PRO stories about them* and the sentence is ruled out by the principle B of the Binding theory.

Thus there are cases where a noun phrase requires a PRO subject and this requirement for a PRO subject is another reason for taking the structure of DP, rejecting the structure of NP in GB theory.

3. Noun Phrases in the Bare Theory

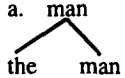
The bare theory abandons the structure of the standard X-bar theory. It adopts binary branching and the categorial feature of either 'l' or 'n' can be projected in the structure of (15):

(15)

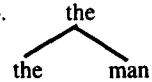


Thus, *the man* can have either the structure in (16a) or that in (16b):

(16) a.



b.



As we can see in (16), the bare theory does not determine whether the target or the substituted category (adjoined category in the adjunction structure) projects.[4] In (16), *the man* is not the structure made by Move-α. So we have to determine which is more appropriate, the structure in (16a) or that in (16b).[5]

As we have considered in 2.2, the order between two constituents is determined by the head-initial parameter in the DP-hypothesis in GB theory. In the bare theory, it can be determined by LCA which the bare theory adopts.[6] In the structure (15), neither 'l' nor 'n' asymmetrically c-commands the other and no ordering is assigned to 'l', 'n'.

Chomsky(1994) suggests the possibility that, in the structure (15), if 'n'

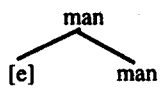
raises, LCA eliminates the offending trace and there is no problem relating to the ordering of 'l', 'n'. He further suggests that if n=DP, then its head D be a clitic, either demonstrative or pronominal. Then D attaches at a higher point and the problem of ordering can be resolved.

English determiners such as *this*, *that* are, however, not cliticized. These 'strong' determiners can be analysed to have a branching structure, with the initial consonant representing D, as Chomsky(1994) proposes. Thus we have the structure in (17).

(17) a. 

b. 

If we are to explain the fact that *the* precedes *man*, *man* should have a branching structure as in (18):

(18) 

Returning to the structures in (16), since *man* cannot move leaving *the* and vice versa, the status of *the* or *man*, whether it is X^{max}, X^{min}, or X', cannot be made clear by Uniformity Condition (19):

(19) A chain is uniform with regard to phrase structure status.
(Chomsky (1994, (14)))

If *the* is X^{max}, the structure in (16a) is more appropriate and if *man* is X^{max}, the structure in (16b) is more appropriate. But neither *the* nor *man* need to be a maximal projection.

So, either (16a) or (16b) is possible in the bare theory.

4. Conclusion

In GB theory, the DP-hypothesis is appropriate to explain various linguistic phenomena. In the bare theory, however, it is not clear which is the appropriate structure, (16a) or (16b) and both can be possible. And the fact that determiners precede nominal head in languages like English doesn't seem to be related to the problem of determining between the structures in (16).

Notes

1. This advantage of the DP-hypothesis has been mentioned in Fukui(1986).
2. In Fukui's(1986) projection, lexical category projects to X' and even the functional category does not project to X" when there is no Kase to be discharged to the specifier position of that X". Kase grids are F-features and Case. F-features include nominative Case, genitive Case, and +WH.
3. In this paper, I take the PRO theorem of Fukui(1986), defined as follows:

the PRO theorem
PRO is not lexically governed. (Fukui (1986, 128))

Though PRO is governed by the functional category, D, PRO in (10) does not violate the PRO theorem.
4. For the structure made by Move-α, it must be always the target that projects, which conforms to principles of the bare theory.
5. The structure in (16a) corresponds to the NP-analysis and that in (16b), the DP-analysis in GB theory
6. Chomsky(1994) adopts LCA in the bare theory. LCA states that asymmetic c-command imposes a linear ordering of terminal elements.

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