REMARKS ON NOUN PHRASES IN ENGLISH*

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In this paper, we deal with some facts concerning the movement out of and within noun phrases in English. For a proper analysis, subject (SPEC) positions of NP are divided into two kinds: A-position and A'-position. The NP with A-subject, which is nexal in its nature, is a barrier if the NP is not L-marked, whereas the NP with A'-subject as well as the NP with non-specific determiner, i. e., non-nexal NPs are an inherent barrier, for they cannot be L-marked. The original version of the Minimality Condition proposed in Chomsky (1986) is modified in a substantive way to accomodate the facts of nominals in English. With the proposals described above, along with the assumption that the noun is not a proper governor, as many linguists including Kayne claim, it is possible to explain some facts about movement in NPs in a consistent way with the help of the Empty Category Principle (ECP).

0. Introduction

This paper attempts to explain some controversial data concerning movement out of and within noun phrases (NPs) in English in terms of the Empty Category Principle (ECP), based on the set of principles proposed in Chomsky (1981) and particularly in his *Barriers* theory (1986). By focusing attention on the issue of the subject of NP (or SPEC of NP more precisely), we can investigate some of the basic facts relating to the structure of NPs and their bearing on the theory of government, barrier, Minimality Condition, Specificity Condition, and other theories concerning NPs.

In section 1, it is argued that SPEC position of NP should be divided into two kinds–A-position and A'-position–so that they may be interpreted as playing syntactically different roles in grammar.

Section 2 is devoted to a revision of the original version of Minimality Condition (Chomsky (1986)) in a substantive way. Some facts relating to Specificity Condition shed light on different treatments of different subjects of NPs.

It will be shown, in section 3, that the proposals of section 2 are also helpful in accounting for NPs with raising predicates as well as NPs with a Neutral subject, as Roswadowska (1986) calls them.

1. Subject of NP

Chomsky (1986, 46) says that the subject of an NP must be regarded as falling in the category of adjunct, not arguments, with regard to the ECP. Pursuing the intuition of the Projection Principle, which says that arguments are necessary at S-Structure but adjuncts are not, we might assimilate "Subject of NP" to adjuncts, in that these elements are not in the domain of the Projection Principle and can in fact be missed.[1]

(1) a. the destruction
  b. the city's destruction (by the enemy)
  c. the fear of John
  d. Bill's fear of John

In this regard, the subject position of NP may be regarded as A'-position just like adjunct positions. Pustejovsky (1984) sheds light on the point. He distinguishes NPs that are clauselike in thematic structure from NPs that are not. The former are called nexal NP as shown in (2a) and the latter non-nexal NP as in (2b) : [2]

(2) a. Kripke's proof of the theorem
    Bill's comments on the book
    Mary's performance of the opera
    the enemy's destruction of the enemy

  b. Bill's loaf of bread
    John's bottles of wine
    Bill's play about city life

In fact, whenever the head with its complements acts predicatively with respect to the genitive NP, this is considered as a nexus.

Nexal NPs must be viewed as thematically propositional in their nature. They are arguments which are thematically saturated. Therefore they are considered as an argument together with a clause, CP. Under the barrier

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[1] Subjects of clauses are crucially different : by the Extended Projection Principle, they must be present at S-Structure. Hence, they must be subject to the ECP at S-Structure.

[2] The idea originates from Jespersen (1924). He distinguishes two types of phrase concatenation : junction and nexus. In a junction a secondary element (or adjunct) is joined to a primary word as a label or distinguishing mark. Adjunct and primary together form one denomination. Nexus, on the other hand, is a relation obtaining between a primary and a secondary phrase. The secondary term adds something new to what has already been named.

  (i) a. the dog barks furiously.
    b. the furiously barking dog

In (ib), the modifier *barking* is in adjunction with the primary element *dog*, forming a composite for a single name. In (ia), however, the secondary (together with the tertiary *furiously*) is predicated of the primary, forming a complete sentential meaning. This relation is termed nexus.

theory proposed in Chomsky (1986), argument NPs are not barriers if they are L-marked.[3] In nexal NP, the genitive NP is linked to the thematic structure of the head, it is considered an A-position with respect to the rest of the N'. If the genitive NP is not associated with an element in the thematic structure of the nominal, then it will be considered as having an A'-position. That means that non-nexal NPs lack an external argument so that they may be considered as a predicate. Again according to Chomsky (1986), predicate XPs (=maximal projections) form inherent barriers both for government and for movement. In our examples in (2), nominals in (2a) are argument NPs, whereas those in (2b) are predicate NPs.

2. Extraction from NP

2.1 Minimality Condition

With this distinction of NPs in mind, let's start with simple examples of extraction (or *Wh*-Movement) from NP:

(3) a. Which city$_i$ did Bill hear [your destruction of t$_i$]?
   b. the opera$_i$ that I heard [your performance of t$_i$]

Examples (3a) and (3b) are grammatical if *your* is interpreted as agent of the action. That is, if the NP is interpreted as nexal, grammatical sentence results. According to Chomsky's (1986) barrier theory, the S-Structure of (3a) would be drawn as in (4):

(4)

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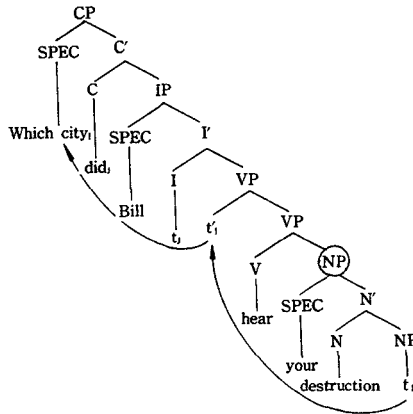
[3] Chomsky (1986) defines *L-marking* as follows:

(i) α L-marks β iff
   a. α is a lexical head.
   b. β agrees with the head of a maximal projection that is θ-governed by α.

Generally speaking, verbs and nouns L-mark their complements.

Here circled NP is not a barrier since it is L-marked by a lexical head *hear*, but N' is a barrier due to Minimality Condition.[4] Therefore t_i' in adjoined VP position cannot antecedent-govern t_i in complement position of NP. Actually, the head *destruction* lexically proper governs t_i and the sentence proves to be grammatically correct. With the examples below, however, such an analysis meets with difficulty.

(5) a. *Which city$_i$ did Bill hear [your destruction of t_i]?
        (where *your* = "your account of ...")
    b. *the opera$_i$ that I heard [your performance of t_i]
        (where *your* = "your account of ...")

As we can see, if *your* is interpreted not in terms of agent, but in terms of a role that is certainly not inherent to the head of NP,[5] the sentences prove to be ungrammatical. Under the proposed analysis of (3a), (5a) would have exactly the same S-Structure as (4), and the analysis predicts that (5a) would be grammatical.

The crucial point of the divergence of (5a) depends upon the role of Minimality Condition. Before revising the original version, one of the assumptions of this paper must be further clarified. As Kayne (1984) claims, we assume that proper government by a lexical head is not possible for nouns, or that lexical government is to be altogether eliminated in favor of antecedent government, suggested as a possibility by Chomsky (1986). It is claimed that ECP can capture some data on extraction from within nominals if traces, independently of the requirement of having a local antecedent, are required to be associated with a head. In this regard, the Minimality Condition was proposed. But as is shown in the examples in (5), it tells us nothing as to the grammaticality of examples in (5). Rather, its effect combined with the lexical government of nouns is too strong to correctly predict the grammatical status of examples concerning extraction from NP. It is necessary therefore to revise the Minimality Condition as in (6):

(6) Minimality Condition (revised)
    α does not govern β in $[...\alpha...[_{\gamma'}...\gamma...\beta...]...]$ where γ is a head nearest to β, only if

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[4] Original version of Minimality Condition suggested in Chomsky (1986) is as follows:
(i) Minimality Condition
    α does not govern β in $[...\alpha...[_{\gamma'}...\gamma...\beta...]...]$ where γ is a head nearest to β, only if
    a. γ has features.
    b. γ is not I(=INFL).

[5] Following Williams (1982), all nouns are assumed to have associated with them, a referential θ-role, R (or R-relation), predicating the existence of that noun. For example, the nominal form for *arrive, arrival*, has not only the Theme θ-role inherited from the verb, but also the R θ-role, determining that χ is an arrival-i.e., $\lambda\chi$: arrival(χ).

(i) γ has features

(ii) γ is not I

(iii) β is not properly connected to γ by a θ-role

What (6) says is that if a head, γ, assigns a proper θ-role to β, Minimality Condition does not hold, that is, γ' is not a barrier for government between α and β.

Bearing in mind this revision and the fact that nouns are not lexical governors, let's turn to the examples in (3) and (5). In (5a) NP is non-nexal so that it is a predicate and an inherent barrier. N' is not a barrier, for head *destruction* assigns a proper θ-role to its trace t_i. As is assumed, there is no lexical government since nouns are not lexical governors. The antecedent in adjoined VP position cannot govern t_i because it is barred by NP, a barrier. On the other hand, (3a) is a nexal NP and an argument. Since it is L-marked, it is not a barrier. N' also is not a barrier because t_i is assigned a proper θ-role from head, *destruction*.

2.2   Some Facts about Specificity Condition

Compare the following examples :

(7) a. What$_i$ did Mary eat [a loaf of t_i]?

    b. What$_i$ did John read [a book about t_i]?

    c. What$_i$ did Mary drink [a bottle of t_i]?

    d. What$_i$ is John reading [a play about t_i]?

(8) a. *What$_i$ did John eat [Bill's loaf of t_i]?

    b. *What$_i$ did Mary drink [John's bottle of t_i]?

    c. *What$_i$ is John reading [Bill's play about t_i]?

In the examples given above, we cannot find any violation of Subjacency-since complement NPs are L-marked under the proposals of Chomsky (1986). He attributes ungrammaticality of examples in (8) to the Specificity Condition which says that a variable may not be free in a specific NP. But examples in (9) below show that the Specificity Condition is not a cure-all, for it says nothing about their grammaticality.

(9) a. Which theorem$_i$ did you read [Kripke's proof of t_i]?

    b. Whose book$_i$ did you read [Bill's comments on t_i]?

    c. the opera$_i$ that we saw [Mary's performance of t_i]

    d. the city$_i$ that I witnessed [the enemy's destruction of t_i]

The sentences in (9) are predicted to be ungrammatical since they all contain specific NPs.

With these assumptions and revised Minimality Condition discussed in section 2.1., it is possible to rule out the ungrammatical sentences in (8) as a violation of ECP, and correctly predict that the sentences in (7) and (9) are grammatical. The S-Structure of sentence (8a) would be something like (10) :

(10) *What$_i$ did John [$_{VP}$t$_i'$[$_{VP}$eat[$_{NP}$Bill's[$_{N'}$loaf[t$_i$]]]]]?
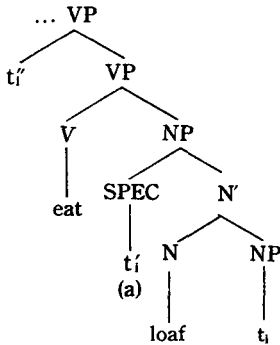
The head noun *loaf* gives a proper θ-role to its complement t$_i$, so that N' is not a barrier to government under the revised Minimality Condition (6). The NP, which is non-nexal in its nature, cannot be L-marked by a lexical head *eat*, for it is a predicate. Hence, the NP is an inherent barrier to government: antecedent t$_i'$ fails to antecedent govern t$_i$, resulting in the violation of ECP. The S-Structure of (9a) is the same one as (8a):

(11) Which theorem$_i$ did you [$_{VP}$t$_i'$[$_{VP}$read[$_{NP}$Kripke's[$_{N'}$proof[t$_i$]]]]]?

Here N' is not a barrier due to the revised Minimality Condition, for the head noun *proof* assigns a proper θ-role to t$_i$. The NP, which is nexal in its nature, is not a barrier, either, even though it is an argument, for it is L-marked by the lexical head *read*. Therefore the antecedent t$_i'$ in adjoined VP position can properly govern t$_i$ with no violation of ECP.

The facts in (7) can be accomodated by an analysis in which a complement of N must move through the SPEC position of NP in order to escape, as is proposed in Franks (1986) and Torrego (1985). That is, the indefinite article is substituted by t$_i$ at the representation in which ECP applies. The relevant representation would be something like (12):

(12)

The substitution is reasonable on the grounds that SPEC of non-nexal NP may be regarded as an adjunct position and that indefinite article is non-specific in its nature. The head noun *loaf* gives a proper θ-role to t$_i$ so that it nullifies the effect of Minimality Condition and N' is not a barrier. NP is not a barrier, for it is a predicate and an inherent barrier. The t$_i''$ in adjoined VP position fails to properly govern t$_i$ because of barrier NP, but t$_i'$ in SPEC position can antecedent-govern t$_i$ in complement position and is deleted at LF by Affect-α. Hence it becomes grammatical.

Franks (1986) picks up examples that show an interesting contrast:

(13) a. *What$_i$ did you meet [a student of t$_i$]?
     b. Who$_i$ did you see [a portrait of t$_i$]?

Contrary to his proposal, if we assume that *student* gives no θ-role to its complement and *portrait*, just like *picture, drawing*, etc.,[6] gives a θ-role to its complement, we can give a unified explanation to the contrast shown in (13). Under our proposal, S-Structure of (13a) would be something like (14):

(14) *What$_i$ did you [$_{VP}$t$_i$[$_{VP}$meet[$_{NP}$t$_i$[$_{N'}$student t$_i$]]]]?

N' is a barrier: complement t$_i$ is not given a θ-role by *student* so that the N' is a barrier due to the revised Minimality Condition (6). Antecedent-government by t$_i$ in adjoined VP position is impossible, for NP is a predicate and an inherent barrier. On the other hand, (13b) is grammatical on the same ground as (7) is.

3. Raising within NP

3.1 NPs with Raising Predicate

3.1.1. Data

Ideally speaking, there should be derived nominal counterparts for every sentence. (15a), for example, has (15b) as a derived nominal.

(15) a. The enemy destroyed the city.
    b. the enemy's destruction of the city

There are, however, certain types of sentences that do not have derived nominal counterparts. Kayne (1981) suggests several types of such sentences, three of which deserve our attention in this paper:

(16) a. *Mary's appearance to have left
    b. *its likelihood not to be there
    c. *your book's certainty to be a success

(17) a. *Mary's belief to have left by John
    b. *her acknowledgement by her superiors to be quite clever
    c. *his report by a good source to have made a killing

(18) a. *John's easiness/ease/difficulty/toughness to please
    b. *Mary's prettiness/beauty/to look at

Examples in (16a), (17a), and (18a) are assumed to be derived from (19a), (19b), and (19c), respectively:

(19) a. Mary appears to have left. (Raising to Subject)
    b. Mary is believed to have left by John. (Passive)
    c. John is easy to please. (*Tough*-Movement)

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[6] Franks (1986) claims that *student* does give a θ-role to its complement whereas *portrait* does not. Under his proposal, (13a) is ruled out by the i-within-i condition.

Why do certain types of sentences have derived nominal counterparts, and others not? There have been many approaches to this question in transformational literature with varying degrees of acceptability. This section will be devoted to a solution of the question on the basis of the ECP approach presented in the previous section. Before our analysis, it is worth reviewing previous analyses.

3.1.2. Problems with Previous Analyses

In general, preceding approaches may well be grouped into two parts : one is based on θ-theory, Case theory, and Predication theory (Predication Analysis), and the other is based on ECP (ECP Analysis). For the purpose of discussion, this section will be devoted to the critical review of Predication Analysis.

Williams' (1980) theory of predication implies that predication does not take place within NPs, because predicates must be maximal projections and, therefore, N' cannot be a predicate of NP in (20) :

(20) [NP N']

Williams supports this conclusion by noting that noun phrases unlike sentences, do not require subjects. According to Williams, it is a defining feature of predicates that they obligatorily have subjects of which they are predicated, the fact that subjects are optional in NPs supports the conclusion that the relation between the NP and N' in (20) is not a predication relation.

Actually, three things differentiate clauses from NPs, according to Williams(1982) ; NPs do not exhibit NP-movement, Predication, or Obligatory Control. To illustrate, consider the clauses in (21), and the related NP in (22), of which (21a) and (22a) are of our concern :

(21) a. John$_i$ appears t$_i$ to like Mary.
  b. John arrived nude.
  c. John attempted PRO to leave.

(22) a. *John$_i$'s appearance t$_i$ to like Mary
  b. *John's arrival nude
  c. any attempt PRO to leave (antecedent is not obligatory)

Assuming these differences, how is one to account for these facts, given the standard X'-theory analysis, relating NP and S? Two things cambine to give the desired facts : the inheritance of indices through heads, and the predication relation. Assuming that all projection of a lexical item bear the same index. Then,

(23) $N_i \rightarrow N_i' \rightarrow NP_i$

Thus, following Williams (1980), we can define predication as coindexation.

(24) NP VP $\rightarrow$ NP$_i$ VP$_i$

The desired distinction between (21) and (22) can thus be predicted the following

way. Some version of the [... i ...] i filter of Chomsky (1981) is required in order to rule out the anomalous structures in (25):

(25) a. *[a picture of itself$_i$]$_i$
     b. *[the friends of each other$_i$]$_i$

This can also be stated as Williams' NP$_i$/NP$_i$ Constraint, which is given below:

(26) NP$_i$/NP$_i$ Constraint
     No NP may be coindexed with an NP it contains.

Secondly, let us state the condition on opacity as in (27):[7]

(27) Strict Opacity Condition (SOC)
     X, for X an anaphor, cannot free in Y, for any Y.

Now if one considers the case of raising in (22a), then its S-Structure is (28):

(28) John$_i$'s[$_{N'}$appearance [t$_i$ to like Mary]]

One can thus observe that predicating the N' of the subject *John* will lead to a violation of (26), the NP$_i$/NP$_i$ Constraint, since N, N' and NP all bear the same index. If this indexing does not obtain, the anaphor left by the movement of *John* to the matrix subject position will be left free. This violates the SOC, and the structure is ruled out as ill-formed.

Williams' theory of predication is intriguing and suggestive in itself. There are, however, some problems within his argument. Firstly, he does not distinguish the referential index from anaphoric or relational index. In fact, he makes use of indices in a confusing way in NP$_i$/NP$_i$ Constraint and SOC. Secondly, his theory is of doubtful application to the phenomena of referential index : Binding theory, for example.

(29) *John$_j$'s[$_{N'}$'destruction$_i$ fo himself$_j$]

In (29) the head N$_i$ shares the same index with N$_i$' but the anaphor *himself* with the index j violates SOC yielding ungrammaticality. This means that Binding theory applies at PS (Predicate Structure), whereas Chomsky (1985) claims that it applies at LF as a licensing condition.

Rather than giving a criticism of preceding approaches, Higginbothan (1983) proceeds by reviewing some of the properties of simple and derived nominals. He takes the θ-Criterion to block raising in nominals.[8]

(30) *John$_i$'s [likelihood [t$_i$ to leave]]

Under his theory *John* is already assigned a θ-role through the VP *to leave* : hence, it cannot also be assigned a role (R-relation) through interpretation of the whole NP.

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[7] Williams (1982, 281) uses the term *free* in the following sense. "X is free in Y if X is neither coindexed with a c-commanding NP in Y nor coindexed with Y itself."

[8] Rappaport (1980) poses some problems for Kayne and has independently proposed an analysis similar to the one proposed by Higginbotham (1983).

His analysis, however, misses the point that θ-role assignment is optional. Chomsky (1985, 204) says that θ-role may be, but need not be, assigned to the position occupied by *there* as in (31):

(31) *there's fear of John

(32) a. Bill's fear of John
     b. the fear of John

In (32a), *Bill* receives the same θ-role (experiencer) that it receives in the corresponding clause, "Bill fears John," but in (32b) the corresponding θ-role is not assigned. Thus while in clauses, a transitive verb that may θ-mark the subject must do so, the same is not true of nominal heads of noun phrases. The reason for the difference is, according to Chomsky (1985), that the subject of a clause must be present or the predicate VP will not be licensed, whereas *fear of John* in (31) and (32) is an N', not a maximal projection, and therefore need not be licensed by predication: it is licensed simply as an X'-projection of its head *fear*. Therefore, no subject is required, as in (32b), though if a subject is present it must be θ-marked, barring (31): the subject cannot be an expletive.

Chomsky (1985) assumes that all lexical categories assign Case: P, N, A assign inherent Case at D-Structure, while V (along with INFL containing AGR: usually is English, finite INFL) assigns structural Case at S-Structure. Inherent Case is associated with θ-marking while structural Case is not, i.e., inherent Case is assigned by α to NP if and only if α θ-marks NP, while structural Case is independent of θ-marking. Chomsky assumes further that the association of inherent Case and θ-marking extends to Case-realization as well as Case-assignment. Thus comes the following Uniformity Condition (Chomsky (1985, 284)).

(33) Uniformity Condition
     If α is an inherent Case-marker, then α case-marks NP, if and only if α θ-marks the chain headed by NP.

Here "Case-marking" includes Case-assignment and Case-realization. Since Case-assignment is at D-Structure, the chain headed by NP will be the trivial single-membered chain (NP) in this case. This extension amounts to the requirement that inherent Case must be realized on NP under government by the category that θ-mark NP at D-Structure.

Genitive Case is assigned to the complement in (34a) and is realized in the same position in (34c) but is realized in the subject position in (34b):

(34) a. the destruction the city
     b. [the city]$_i$'s destruction t$_i$
     c. the destruction of [the city]

Case assignment and both instances of Case-realization satisfy the Uniformity Condition. Genitive Case is realized morphologically by the affixation of some element to the NP: if *of* is in a complement position, then the possessive

element POSS is in the subject position. If the Uniformity Condition is gener-
ally valid, such forms as (35) will also be barred, since *seem* does not θ-mark the
chain headed by *John* : [9]

(35) *John's seeming to be intelligent

Exactly the same explanation holds for example (36) :

(36) *John's certainty to leave

Since *certain* or *certainty* does not θ-mark the chain headed by *John*, *John*
cannot be assigned a Case so that the structure is ruled out.

Uniformity Condition does not seem to be consistent with respect to the
examples in which the head noun has a θ-role to assign.

(37) *John's belief to have left by Mary

In (37) *belief* can assign a θ-role to *John*, and it is assigned an inherent Case
which is realized by genetive *'s*. Hence there is no violation of Uniformity
Condition but the example is ungrammatical. In the next section, a solution
based on proposals in section 2 will be given with a criticism of Kayne (1981).

3.1.3.   ECP Analysis

If we briefly consider the analysis presented in Kayne (1981), we can note it
is based on the following assumptions :

(38) a. Derived nominals have deep syntactic structures which are isomorphic
to those of their verbal constructions.
b. NP-movement is restricted within NP as it is within sentences. Ill-
formed nominals are ruled out by general principles such as the ECP
and the Case Filter.
c. Nouns differ crucially from verbs in two respects :
i. Nouns do not assign Case.
ii. S is an absolute barrier to government for N : nouns cannot govern
across an S boundary.
d. *Of*-insertion depends on government : *of* many be inserted only
between an N and an NP which it governs.

The systematic absence of nominals corresponding to raising to subject con-
structions is accounted for by assumption (38cii) and the ECP. By the ECP, the
trace in the subject position of the complement in (39) must be properly gover-
ned :

(39) [[$_{NP}$John$_i$'s] certainty [$_S$t$_i$ to leave]]

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[9] If the Uniformity Condition for POSS-insertion is stated in terms of chains, then it wil
be impossible to assign POSS to expletives as in (i) :
(i) a. *there's destruction of the city
b. *there's having been too much rain last year
c. *it's seeming that John is intelligent

However in (38cii), the head noun may not govern across S. The trace remains ungoverned and the construction is ruled out by the ECP. There are no nominals corresponding to raising to object constructions such as the one in (40a) and (40b) since, by (38cii), the head noun does not govern the NP in the subject position of the complement. Thus by applying (38d), *of* may then not be inserted, the subject of the complement cannot receive Case, and the construction is ruled out by the Case Filter:

(40) a. John believes Mary a genius.
    b. *John's belief of Mary a genius

The greatest problem for Kayne's analysis is the existence of derived nominals with two complements as Rappaport (1980) points out:

(41) a. John's presentation of a medal to Mary
    b. The general's command to the troops to leave
    c. The sale of missiles to Iran
    d. His drainage of the water from the pond

By Kayne's reasoning, these double complements cannot be jointly embedded under an S node, nor can they be assigned a ternary branching structure, in the verbal or nominal constructions. They must have a representation something similar to (42):

(42)

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              NP(VP)
             /      \
        NP(VP)       PP
        /    \
     N(V)     NP
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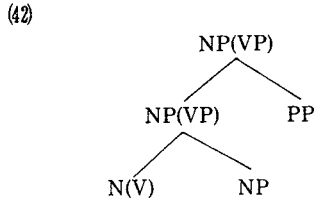
Thus these may be two representations for the double object construction (and any construction with two complements)—(42) and (43) (for (39), (40), etc.):

(43)

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           NP
          /  \
        V      S
             /   \
           NP     VP
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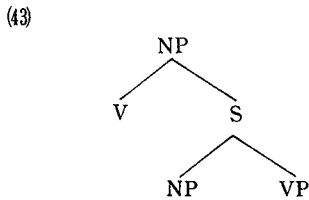
However, as Rappaport (1980, 118) indicates, there is no syntactic evidence for either representation, aside from the fact that those which are assigned (43) do not have nominals with both complements, and those assigned (42) do. Kayne speculates that the second complement in (42) may be "less closely bound to the verb"; it is a complement, but not an argument. This distinction is at best vague.

Under the X'-schema adopted in Chomsky (1986), the structure of our example (39) will be something like (44) :

(44)
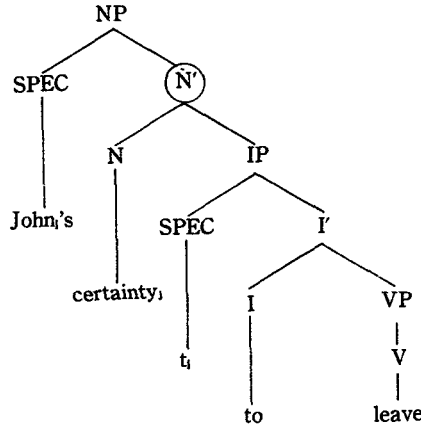
Here t_i cannot be properly governed by *John*$_i$ because the lexical head *certainty* will make the circled N' a barrier for government by the revised Minimality Condition (6).[10] *Certainty*$_i$ cannot properly govern t_i, either because it cannot be chain-coindexed with t_i[11], or because nouns are not proper governors. This analysis holds true of the examples in (16), (17), and (18) which are given at the beginning of section 3.1.1.

It is worth considering an imaginary noun phrase with which our suppositions so far connot handle :

(45) *[That John will leave]$_i$'s [$_{N'}$certainty t_i]

Under our proposal the head noun *certainty* gives a θ-role to t_i and N' is not a barrier so that the whole clause *that John will leave* can antecedent-govern t_i resulting in the satisfaction of the ECP. Our proposal with revised Minimality Condition predicts (45) will be grammatical. But the discussion is out of point, for the ungrammaticality of (45) is not a matter to be dealt with by the ECP. The fact that clauses cannot be assigned a Genitive Case by their nature would be relevant here.

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[10] Some people may object to my contention on this point. N' seems not to be a barrier at first glance, for *certainty* assigns a θ-role to its complement. But what the revised Minimality Condition (6) says is that N' is not a barrier when t_i itself receives a θ-role from the head *certainty*.

[11] Chomsky (1986) suggests several kinds of agreement or "feature sharing" mechanisms including SPEC-Head Agreement. SPEC-Head Agreement is similar to Subject-Aux Agreement in its spirit, so that only CP and IP are relevant.

(i) SPEC-Head Agreement

α and β share features if α is a head and β is SPEC of α in IP and CP.

3.2 Thematic Restrictions on Minimality Condition

Roswadowska (1986) highlights interesting examples which our proposals so far discussed seem to be unable to tackle. Compare the following examples:

(46) a. the city$_i$'s destruction t$_i$ (by the enemy)
  b. *the film$_i$'s enjoyment t$_i$ (by/of John)
  c. *the book$_i$'s delight t$_i$ (of the public)
  d. *his rude behavior$_i$'s disgust t$_i$ (of Mary)
  e. *the article$_i$'s criticism t$_i$ (by/of the professor)

Roswadowska (1986) claims that the impossibility of some arguments in a SPEC position of a nominal can be explained in terms of thematic restictions and is independent of morphological relations between nominals and verbs. She concludes that there is no movement in NP and that a principle similar to (47) is necessary.

(47) Neutral can never appear in a specifier position of a nominal.[12]

Her observation can be reinterpreted as a factor that may play a part in determining the barrierhood of a category in our revised Minimality Condition. If this reinterpretation is plausible, it will be possible to make a controversial topic fall into the domain of the ECP.

Just as Gruber (1968) and Jackendoff (1972) suggested a partial order over the set of thematic roles, I will argue that the syntactic behavior of Minimality Condition owes much to the θ-role hierarchy (48):

(48) Affected Patient > Source, Goal, Location, ... > Neutral

Let us assume that a θ-role can only nullify the effect of Minimality Condition (6), if the θ-role hierarchy than (48). (Hence comes the term "proper" in the condition (c) of (6).) That is, if the head gives a θ-role of Affected Patient to its complement, Minimality Condition has no effect, and if the head gives a θ-role of Neutral, Minimality Condition does hold.

Retruning to our examples in (46), we may draw the tree diagram of (46a) and (46b) as follows:
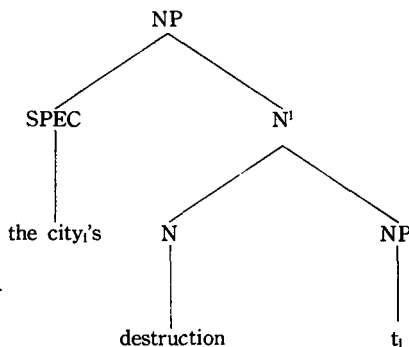
(49) a.   b.
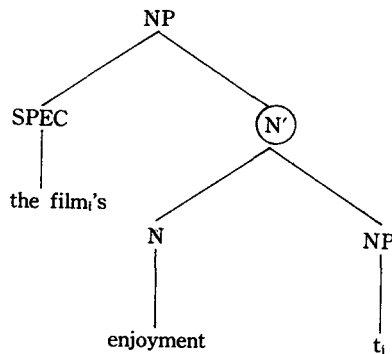
If the head noun is *destruction*, which assigns a θ-role of Affected Patient to its complement, N' is not a barrier for government, for the complement is properly connected with a head by a role. If the head noun is *enjoyment*, which assigns a θ-role of Neutral, the circled N' of (49b) forms a barrier for government, for the complement is not properly connected with a head by a θ-role. In the case of (49a), *the city* antecedent-governs its trace, while in (49b) *the film* cannot antecedent-governs its trace because of the barrier N'.

4. Conclusion

So far it has been shown that the ECP plays an important role in explaining some of data concerning both extraction from NP and movement within NP. For a consistent explanation, subject (SPEC) positions of NP were divided into two kinds: A-position and A'-position. Although they show no difference in their outer appearance, they must be interpreted as syntactically different. That is, an NP with A-subject is nexal and is an argument, whereas an NP with A'-subject is non-nexal and is a predicate, which is an inherent barrier in the recent barrier theory of Chomsky (1986).

This division, along with the assumption that nouns are not lexical proper governors coupled with the modified version of the Minimality Condition, enabled us to explain controversial nominals in relation to the problems of their interpretation, their different behavior with regard to the Specificity Condition, and their internal thematic structure.

This paper leaves much scope for future research. It has not, for example, dealt with the reason why nouns are not lexical governors, but just assumed that they are not. If these conclusions are correct, however, this paper may assist in expanding our understanding the problems in Government and Binding Theory as well as the general principles of Universal Grammar.

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[12] Roswadowska (1986) defines a label Neutral as follows:
(i) An entity holds a thematic relation Neutral with respect to a predicate Y, if
    a. X is in no way affected by the action, process, or state described by Y,
    b. X does not have any control over the action, process, or state described by Y.
She contrasts Neutral with Affected Patient (e.g., an object of *destroy*), both of which fall into the domain of the traditional Theme.

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