# A Minimalist Approach to English Possessive Case[*]

이 금 회

## I. Introduction

In English, possessive case[1] appears in two positions. One is the prenominal position, as in (1a, b), and the other is the subject position of the gerund, especially, the POSS(ESSIVE)-ING,[2] CONSTRUCTION, as in (1c).

(1) a. John's book
    b. the enemy's destruction of the city
    c. John's refusing the offer

Since Chomsky (1981) presented the overall framework of the Principles-and-Parameters theory, there have been some attempts to account for English possessive Case. First of all, Chomsky (1986a) proposes two kinds of Case: structural Case and inherent Case. Possessive Case, in his framework, belongs to inherent Case which must observe the uniformity condition. But his proposal leaves many problems, conceptually and empirically. Abney (1986) and Fukui & Speas (1986) suggest many arguments for analyzing noun phrases as DP's. Within DP-analysis, possessive Case is assigned by the functional category D (= 's).

In the 90's, we are trying to explain various linguistic phenomena in terms of 'minimalist theory', the substance of which is put forth in Chomsky (1992) and Chomsky & Lasnik (1991). The minimalist theory is based on checking of

[1] In this paper, possessive Case refers to the Case of the noun phrase with 's like *Mary's* and the Case of the possessive pronoun like *my, his, her, their,* etc. Many people call this kind of Case 'genitive'. But genitive Case includes another Case, that is, *of*-genitive. Our concern is only *'s*-genitive. So we call this possessive Case.

[2] There are three kinds of gerundive constructions in English: POSS (ESSIVE)-ING, ACC (USATIVE)-ING, and PRO-ING constructions. In this paper, gerund means POSS-ING construction.

morphological features, that is, Case and agreement features. In order for a derivation to 'converge' all morphological features must be checked by functional categories like AGRs, AGRo, and T. Chomsky (1992), however, does not pay any particular attention to possessive Case. In this paper, we will propose that English possessive Case be also checked by functional category D, via SPEC-head agreement, at LF. By this assumption, we can account for some grammatical facts, such as, specificity effects and raising asymmetry between the noun phrase and the gerund. This paper is organized as follows. Section 2 is devoted to the critical review of Chomsky's (1986a) Case theory. In section 3, we will show how DP-analysis accounts for possessive Case and what the residual problems are. A minimalist approach to English possessive Case is given in section 4. Finally, section 5 shows some consequences of our proposal.

## 2. Possessive Case in Chomsky (1986a)

Chomsky (1986a) suggests a new Case theory which differs from the previous one. He argues that there are two kinds of Case: structural Case and inherent Case. Structural Case-marking occurs at SS under the condition of adjacency and government, while inherent Case is assigned at DS in terms of theta-marking and is realized at SS. INFL (AGR) and V assign nominative Case and accusative Case, respectively. These are structural Case-markers. On the other hand, A, N, and VP in gerundive construction assign genitive Case and P assigns oblique Case. These four categories are inherent Case-markers.

### 2.1 Inherent Case and Uniformity Condition

Chomsky (1986a) proposes the uniformity condition (3) under which inherent Case is marked.

(3) Uniformity Condition
    If $\alpha$ is an inherent Case-marker, then $\alpha$ Case-marks NP if and only if $\alpha$ theta-marks the chain headed by NP.

Here Case-marking includes both Case-assignment and realization. According to (3), inherent Case is assigned to an NP at DS by the category that theta-marks the NP. In other words, (3) says that inherent Case-marker of an NP is, at the same time, theta-marker of that NP.

## 2.2 Prenominal Possessive Case

Possessive Case which is assigned at DS is realized at SS by affixation of possessive morpheme *'s*. Chomsky (1986a) formulates this affixation rule as follows:

(4) POSS-Insertion

Insert *'s* in [$_{NP}$ NP ____ $\alpha$],[3] where $\alpha$ = N', VP.

Let us consider some examples.

(5) a. John's refusal of the offer
   b. the enemy's destruction of the city
   c. Mary's store

The head noun *refusal* in (5a) theta-marks the NP in its SPEC position at DS. Therefore, it assigns inherent Case to *John* at DS. This inherent Case is realized at SS by the affixation of *'s* to the noun *John*. (5b) is the same as (5a). So these two noun phrases observe the uniformity condition. (5c), however, raises some problems with respect to the uniformity condition. The problem is that *store* does not assign any theta-role to *Mary*. It is generally assumed that derived nominals like *refusal* and *destruction* can have the 'agent' theta-role to be assigned to their subjects. But it is not likely for the common nouns like *store* to assign some theta-role to their subjects. Chomsky (1986a) does not pay any attention to this fact. According to the POSS-insertion rule, *'s* is inserted only if the NP appears in the configuration of [$_{NP}$ NP ____ N']. We must, however, remember that *'s* cannot be attached to *Mary* in (5c) if the noun *store* does not theta-mark *Mary*, since it violates the uniformity condition. Then, how can Chomsky account for the prenominal *NP's* like *Mary's* in (5c)? This is one of the problems caused by Chomsky (1986a). We will have a detailed discussion about this problem in section 2.4.1. Now let us move on to the possessive subject of the gerund.

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3) Chomsky (1986a) analyzes the noun phrase as follows:
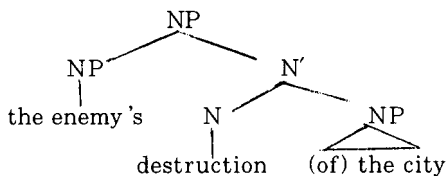
## 2.3 Subject of the Gerund

According to Chomsky (1986a), VP in the gerundive construction assigns Case to its subject at DS and possessive Case is realized at SS.

(6) a. [NP Tom's fixing the car] surprised them.[4]
    b. [NP John's reading the book] disturbed me.

In (6), the whole VP *fixing the car* and *reading the book* theta-mark *Tom* and *John*, respectively. This is in accordance with the uniformity condition.

Now Chomsky's proposal can give the answer to the question why possessive expletives cannot appear in gerunds like (7a,b,c), while it is possible in (7d).

(7) a. *there's [arriving a man here]
    b. *there's [having been too much rain last night]
    c. *its [seeming that John is intelligent]
    d. its [being obvious that John is intelligent]

In (7a-c), the expletives are not theta-marked by VP's. Nevertheless, they have *'s* which is the 'realized' form of inherent Case. The ungrammaticality of (7a-c) is due to the violation of the uniformity condition. The subject *its* in (7d), however, is theta-marked by the VP *being obvious that John is intelligent*.[5] Hence, the grammaticality difference between (7c) and (7d).

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4) Chomsky (1986a) regards the gerund as NP including subject NP and predicative VP.

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            NP
          /    \
        NP      VP
        |      /    \
      John's  fixing the car
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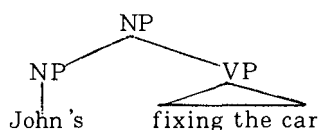
5) The predicate *be obvious* is not the raising predicate, therefore, theta-marks its subject.

(i)  John$_i$ seems [t$_i$ to be intelligent].
(ii) *John$_i$ is obvious [t$_i$ to be intelligent].

The predicate *be obvious* in (ii) does not allow the subject of the embedded clause to raise to the matrix subject position. In fact, (iii) is derived from (iv) by extraposition.

(iii) It is obvious [that John is intelligent].
(iv) [That John is intelligent] is obvious.

After extraposition, *it* is inserted to the subject position, satisfying the Extended Projection Principle.

At this point, it seems that Chomsky's explanation works well for English gerunds. But there is one conceptual problem. He claims that VP is the possessive Case-marker in gerunds. The mystery, then, is why VP is the only phrasal category Case-marker, while all other Cases are marked by lexical heads. Another mystery is why VP marks Case only when it appears inside the gerund. These mysteries cannot be solved unless we assume that VP is not a Case-marker.

## 2.4 Problems with Chomsky (1986a)

### 2.4.1 Prenominal Possessive Noun Phrases

As we have briefly mentioned in 2.2, English prenominal possessive noun phrases do not have the uniform relations with the head nouns.

(8) a. the enemy's destruction of the city
    b. Mary's description of her house
    c. Helen's reliance on her friends

(9) a. the pig's tail
    b. granfather's watch
    c. my sister's camera

(10) a. Chomsky's book (about the barrier)
     b. Mary's picture (of her baby)

(11) a. yesterday's lecture
     b. last year's marathon
     c. Wednesday's discussion
     d. Alabama's election

The head nouns in (8) are derived nominals. It is generally known that the derived nominal preserves the theta-grid of the verb from which it is derived. (Abney (1986), Murasugi (1990), Anderson (1978) etc.) *Destruction* in (8a) has 'agent' theta-role to be given to *the enemy* and 'patient' theta-role to *the city.* Likewise, other derived nominals in (8) assign theta-role to their subjects. Chomsky's analysis works well in the case of (8). Since the head noun theta-marks its subject at DS, possessive Case is assigned to the prenominal NP and it is realized as *'s* at SS. Therefore, the noun phrases in (8) observe the uniformity condition, and so far, so good. Now let us consider the common nouns in (9) which have quite different properties from those in (8). The nouns in (9) do not have any theta-role to be given to their subjects. It is generally

assumed that the 'possessor' theta-role in possessive noun phrase is not assigned by the head noun.[6] So the noun phrase with the 'possessor' theta-role is not the subject, but the modifier. Then Chomsky (1986a) cannot explain the possessive Case in (9). How can possessive Case be given to the prenominal NP, when (9) does not satisfy the uniformity condition?

Noun phrases in (11) also raise problems with respect to the uniformity condition. The prenominal adverbials in (11) have the possessive morpheme *'s*. Where does this *'s* come from? According to Chomsky (1986a), the head nouns in (11) must assign some theta-roles to the adverbials in order for the adverbials to be marked with possessive Case. But this is absolutely not the case.

Another problematic case caused by Chomsky's analysis is noun phrases, as in (10). Prenominal NP's in (10) have two differnt meanings. For example, *Chomsky's book* in (10a) may mean either (i) the book which Chomsky wrote himself or (ii) the book which Chomsky owns. In other words, prenominal NP's in (10) may be either the subjects or the modifiers of the head nouns. When (10a) means (i), the head noun *book* has 'agent' theta-role to be given to its subject *Chomsky's*. In this case, possessive Case is assigned to the prenominal subject, satisfying the uniformity condition. However, when the meaning of (10a) is (ii), *Chomsky's* is nothing but a modifier, having no theta-ralation with the head noun book. As (9) is problematic with Chomsky's analysis, so possessive Case in (10) cannot be explained, either.

To conclude, Chomsky's analysis is not appropriate for capturing the different relationship between the possessive phrase and the head noun.

### 2.4.2 Gerund

Chomsky (1986a) argues that VP occurring within the gerund assigns possessive Case to its subject NP. As we have already pointed out, this is an awkward stipulation, since all other Case-markers in English are $X^0$ categories. Then, why does he regard VP as a Case-marker? It is due to the uniformity condition. To make the uniformity condition valid for both NP's and gerunds he cannot but propose that VP should be an inherent Case-marker. But it is certain that the stipulation that VP is a Case-marker is too shaky to be taken into our theory.

Besides, there are gerunds in which VP's do not assign any theta-role to

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6) Anderson (1978, 1984) argues that prenominal possessive NP's occurring before non-theta-assigning nouns are assigned theta-role by the possessive morpheme *'s*. Abney (1986, 1987) also claims that the 'possessor' theta-role is assigned to [SPEC, DP] by a null or overt head D. See also Fukui & Speas (1986) and Stowell (1989).

their subjects, as shown in (12).

(12) a. John's [$_{VP}$ being likely [t to win]]

　　 b. John's [$_{VP}$ appearing/seeming [t to want us to leave him alone]]

　　 c. John's [$_{VP}$ being appointed t]

*John's* in (12a,b) is assigned its theta-role, not from the matrix VP, but from the embedded VP. And *John's* in (12c) is assigned its theta-role from the verb *appointed*. The uniformity condition requires that the inherent Case-marker be, at the same time, the theta-role assigner. In the gerunds above, however, the matrix VP does not assign any theta-role to its subject. But *John's* has possessive Case. If the matrix VP is a Case-marker, as Chomsky claims, then the uniformity condition is violated. What, then, can be the possessive Case-marker?

Thus far, we have seen that Chomsky's analysis of English possessive Case cannot accommodate all the counterexamples in 2.4.1 and 2.4.2. So we conclude that the uniformity condition is not an appropriate device any more for the explanation of English possessive Case. And we will propose a new minimalist approach to solve the problems. Before we do this, it is quite important to review DP analysis proposed by Abney (1986) and Fukui & Speas (1986), among others. In the next section, we will see how DP-analysis accounts for English possessive Case.

## 3. DP-Analysis

### 3.1 Abney (1986)

Abney (1986) analyzes noun phrases as DP's, not as NP's. According to him, the possessive morpheme *'s* is the determiner which is the head of DP. It assigns Case to [SPEC, DP] in the same way that I (AGR) assigns nominative Case to [SPEC, IP].

(13)

```
                      DP
            SPEC            D'
          the enemy     D        NP
                        |         N'
                        's    N        DP
                          destruction (of) the city
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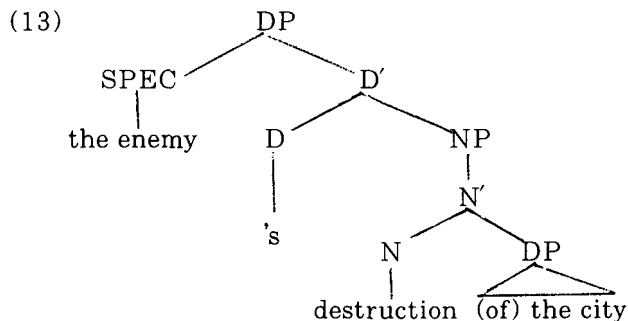
In (13) *the enemy* is assigned Case by the determiner *'s*. Abney's analysis has the advantage of capturing the complementary distribution between overt determiners (*a, the*) and prenominal possessives without assuming that they occupy the same position.

(14) a. *the enemy's the destruction
    b. *the the enemy's destruction
    c. *the enemy's a destruction
    d. *a the enemy's a destruction

Abney (1986) also analyzes the gerund as DP. He argues that the gerund is D-IP. *Ing* in the gerund is 'inflectional' in the sense of being a functional element: one which is like INFL, moreover, in selecting VP as its complement. His D-IP structure of the gerund is as follows:

(15)

```
                 DP
               /    \
          SPEC       D'
            |       /  \
         John_i   D     IP
                  |    /  \
                  's  DP    I'
                      |   /   \
                     PRO I     VP
                         |    /  \
                       -ing  fix the car
```
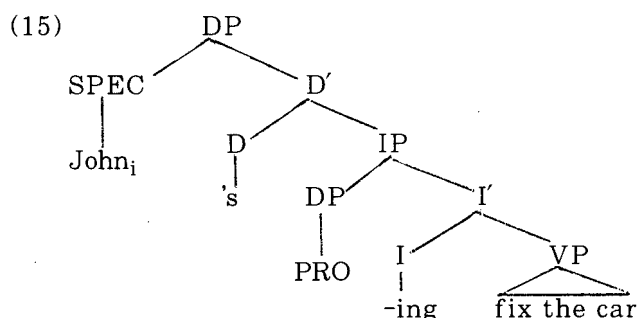
The prenominal possessive in the gerund is base-generated and not moved from the subject position of the embedded clause. Under Abney's analysis, both the nominal and sentencial properties of gerunds can be captured. Besides, by assuming that the gerund has the structure like (15), we can solve the question why gerunds allow raising, while non-gerundive noun phrases do not. (16) is the counterexample to the uniformity condition, as we have already pointed out in 2.4.2.

(16) a. John's [being likely [t to win]]
    b. John's [appearing [to want us leave him alone]] miffed Muffy.

(17) *[John's likelihood/appearance [t to win]]

Abney (1986) accounts for the different grammaticality between (16) and (17) by assuming that *'s* is a theta-assigner. (18) would be the structure of (16a).

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(18)

```
                    DP
          SPEC            D′
           |         D          IP
         John_i      |      SPEC      I′
                    's             I        VP
                                   |      /    \
                                 -ing   be likely [PRO_i to win]
```
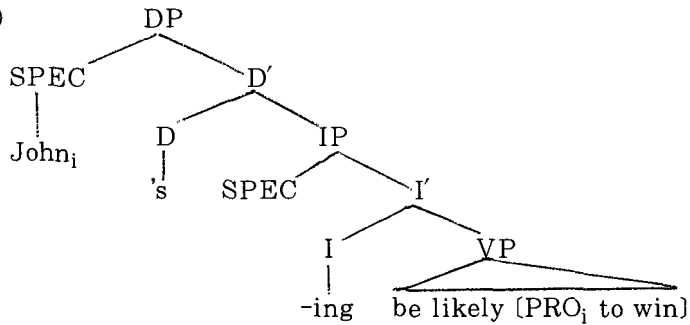
*John* is assigned theta-role by *'s* and PRO by the VP *win*, satisfying the theta-Criterion. In (17), however, the chain (*John*, *t*) is doubly theta-marked both by the VP *win* and by *'s*, resulting in the violation of the theta-Criterion. In section 5, we adopt Abney's analysis of gerunds and account for raising asymmetry between the noun phrases and gerund in terms of minimalist approach.

### 3.2 Fukui & Speas (1986)

Fukui & Speas (1986) also analyzes the noun phrase as DP, but their DP is slightly different from that of Abney (1986). They assume that the subject of the noun phrase is generated in the SPEC of N′, not in the SPEC of DP, at DS. Consider the structure proposed by them.

(19) a.        (at DS)

```
                    DP
          SPEC            D′
                    D            N′
                    |       SPEC        N′
                   's        |       N          DP
                        the enemy    |        /    \
                               destruction  (of) the city
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b.     (at SS)

```
                    DP
             _____|_____
          SPEC              D'
            |          _____|_____
        the enemy    D           N'
                     |        ____|____
                    's     SPEC        N'
                            |        ___|___
                            N      N     DP
                            |      |    /‾‾\
                           t_i  destruction  (of) the city
```

destruction     (of) the city

We can notice that in (19) N′ recursively occurs. This is due to their non-uniform projection system. They argue that there is a fundamental asymmetry between lexical categories (N, A, V, P) and functional categories (I, C, D): functional categories project up to XP, and are limited to a single SPEC position and a single complement position, while all projections of lexical categories are X′, which is indefinitely iterable. So N′ can occur recursively and have more than one SPEC, while DP has only one SPEC in (19). Then, why does the subject of N′, *the enemy*, in (19) move to the SPEC of DP at SS? It is due to the possessive Case to be assigned by *'s*. Fukui & Speas (1986) assume that government by functional categories, such as, I and D, is leftward, while government by lexical categories, such as, N, A, V, or P, is rightward. In (19), on the other hand, D governs and Case-marks *the enemy*.

Thus far, we have reviewed DP-analysis of English noun phrases. Although it solves many problems which are not accounted for by Chomsky (1986a), it also has some problems. The first problem with DP-analysis is that it does not capture the different theta-relations between prenominal possessives and the head nouns, already presented in 2.4.1. Like Chomsky (1986a), DP-analysis cannot accommodate the idiosyncratic relations between the possessive phrases and the head nouns, as shown in examples (8)-(11).

Another problem with DP-analysis, as well as Chomsky's analysis, is that the specificity effects cannot be accounted for by their analyses. English shows the specificity effect, as shown in (20).

(20) a.  What$_i$ did John eat [a loaf of t$_i$]?
     b.  *What$_i$ did John eat [Mary's loaf of t$_i$]?

Sentence (20b) shows the specificity effect, while sentence (21b) does not.

(21) a.  Who$_i$ did Jane regret [the dismissal of t$_i$]?

b. Who$_i$ did Jane regret [Bob's dismissal of t$_i$]?

Neither Chomsky (1986a) nor DP-analysis can explain this specificity difference. Later, in section 5, we will show how our analysis can capture this fact. Now let us move on to the next section which is devoted to our minimalist approach to English possessive Case.
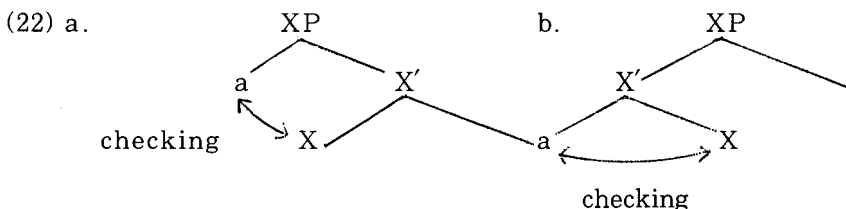
## 4. Minimalist Approach to Possessive Case

In this section, we will propose a new approach toward English possessive Case. We adopt as the theoretical foundation the minimalist theory of Chomsky (1992). Before we begin our work, it is necessary to briefly review a number of assumptions and crucial notions of the minimalist theory.
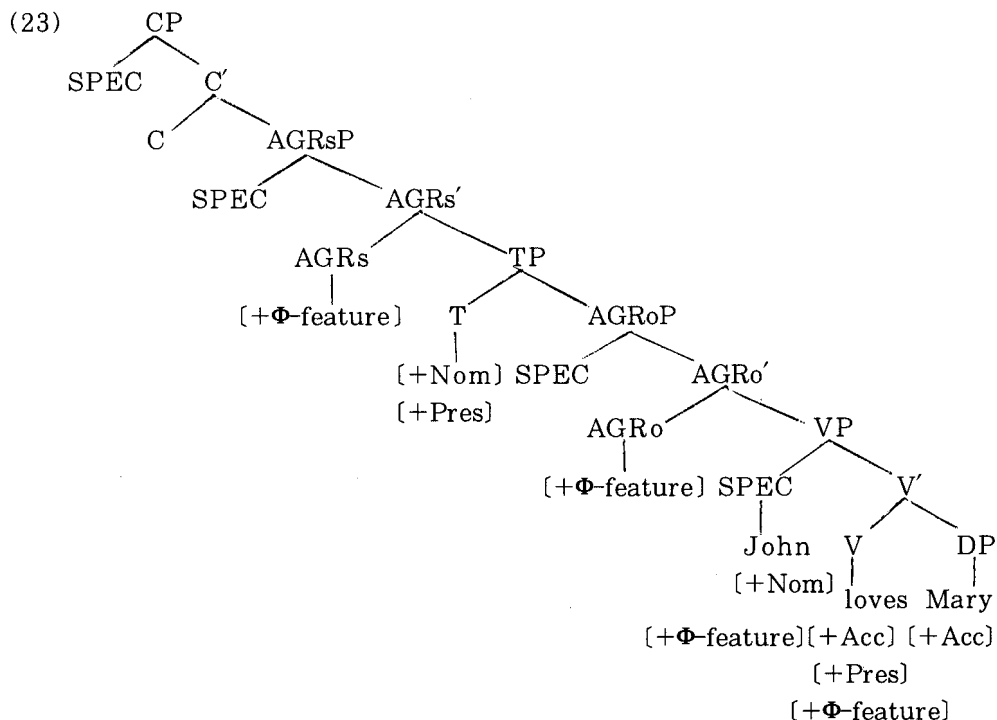
### 4.1 Introduction to Minimalist Theory

#### 4.1.1 Feature-Checking

In the minimalist theory, transformations occur only when some morphological requirements are needed. In Chomsky's (1992) terms, a derivation of a phrase is said to 'converge' if and only if it reaches a point at which each of the morphological units in the phrase has been rendered legitimate by virtue of having had all their features 'ckecked' by an appropriate head. In other words, a head can check features on its specifier, or on another head adjoined to it. The two configurations in which checking is possible are illustrated in (22).

(22) a.                    XP                    b.                    XP

            a          X'                          X'
    checking       X                      a          X
                                              checking

(23) is the basic structure of a sentence assumed in Chomsky (1992).

(23)

CP
SPEC C′
C AGRsP
SPEC AGRs′
AGRs TP
[+Φ-feature]
T AGRoP
[+Nom] SPEC AGRo′
[+Pres]
AGRo VP
[+Φ-feature] SPEC V′
John V DP
[+Nom] loves Mary
[+Φ-feature][+Acc] [+Acc]
[+Pres]
[+Φ-feature]

T has [+Nom] feature. First, T moves to AGRs, forming adjunction structure [AGRs T, AGRs]. And the subject *John* in [SPEC, VP] also moves to [SPEC, AGRsP]. These two raisings occur before SPELL-OUT due to the strong N-feature of English T. Then, T checks off the nominative Case feature of the subject *John* via SPEC-head agreement. On the other hand, at LF, the verb *loves* moves and adjoins to AGRo, and the object *Mary* moves to [SPEC, AGRoP]. Then, AGRo checks off the accusative Case feature of the object *Mary*. This checking procedure occurs at LF due to the Procrastinate principle which says that covert operations are preferred to overt operations. Incidentally, an element is inserted from the lexicon with all its morphological features, which must be checked with the feature of AGR. If the features match, then AGR disappears, as AGR has only a mediating role to ensure that NP and V are properly paired. If the features conflict, then AGR remains and the derivation will crash. The checking procedure may take place anywhere, i.e., before or after SPELL-OUT.

The operation SPELL-OUT switches the derivation to the PF-component. It may apply anywhere in the course of the derivation. Chomsky (1992) claims that variation in languages is restricted to morphological properties at PF which determine where, in the course of a derivation, SPELL-OUT applies. He

distinguishes between 'strong' features, which are visible at PF, and 'weak' features, which are invisible at PF. Strong features that are not checked before SPELL-OUT are illegitimate objects, and cause the derivation to crash. The difference between French and English verb raising is accounted for by the assumption that French has strong AGR, forcing overt raising, while English, which has weak AGR, does not require overt raising for convergence.
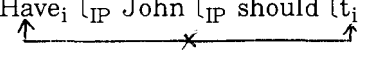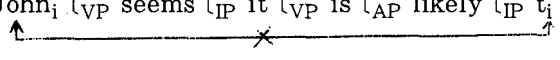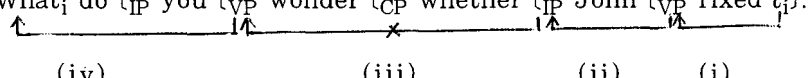
### 4.1.2 Economy of Movement

The minimalist theory constrains movement by notions of 'Economy'. Economy principle forces movement operations to choose a more economical route over a less economical one. The first constraint is the *Greed* principle. It says that one category cannot move solely in order to allow the features of another to be checked. A category can move only when it requires some checking of its own morphological features.

(24) a.  John$_i$ seems [t$_i$ to have robbed the bank]
     b. *John$_i$ seems that [t$_i$ had robbed the bank]

For example, the verb *had* in (24b) is capable of Case-checking its subject *John*, so movement of *John* to matrix [SPEC, AGRsP] violates the Greed principle. In (24a), however, raising is allowed simply because *John* cannot have its Case features checked otherwise.

The second economy constraint on movement is the principle of *the shortest link*. The intuitive core of this principle is that at LF, traces are well-formed if and only if they were created by a movement operation which takes the shortest route possible. Therefore, movement operations should not skip over any possible landing site. Any movement operation which moves an element over another element of the same type violates the shortest link principle.

(25) a. *[$_{CP}$ Have$_i$ [$_{IP}$ John [$_{IP}$ should [t$_i$ [$_{VP}$ done it]]]]]?

    b. *[$_{IP}$ John$_i$ [$_{VP}$ seems [$_{IP}$ it [$_{VP}$ is [$_{AP}$ likely [$_{IP}$ t$_i$ to [$_{VP}$ win]]]]]]].

    c. *[$_{CP}$ What$_i$ do [$_{IP}$ you [$_{VP}$ wonder [$_{CP}$ whether [$_{IP}$ John [$_{VP}$ fixed t$_i$].

             (iv)          (iii)       (ii)    (i)

For example, in (25a), head movement of *have* to C violates the shortest link principle due to the possible landing head *should*. A-movement in (25b) also skips over the possible landing site *it*, resulting in violating the shortest link principle. In (25c), what moves to [SPEC, CP] via some intermediate

adjunctions. Movement (iii) violates the shortest link principle since *whether* occupies the A'-position, making (iii) skip over the possible landing site. Traces created by operations which did not satisfy this principle bear a '*' mark which reflects the illegitimacy of their origin. If traces bearing '*' cannot be deleted at LF,[7] the phrase has the effect of ECP. And some *-marked traces which are deleted at LF give rise to weaker Subjacency violation effect.

Movement which crosses a barrier also results in an *-marked trace. The definition of barrier in the minimalist theory is given in (26).

(26) a. Lexical heads and L-related[8] functional heads L-mark their complements.
b. Non-L-related categories are barriers.
c. Adjunction to arguments is impossible.

Here we can see that the definition of barrier is much more simplified than the previous one. There do not exist inherited barriers. And IP is not a defective category any more.

Thirdly, there is a 'global' constraint on derivations: principle of *the fewest steps.* This principle requires that derivations with fewer steps be chosen over derivations with more steps.

The final Economy principle is *Procrastinate,* a principle which requires that covert movement be preferred to overt movement. This principle is largely responsible for explaining cross-linguistic variation, by blocking overt movement whenever a given language does not require that movement to be overt.

### 4.1.3 Chain Uniformity

Chomsky & Lasnik (1991) defined the notion of 'uniformity', as given in (27).

(27) The chain $C = (\alpha_1, \ldots, \alpha_n)$ is uniform with respect to P (= UN(P)) if

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7) Whether *-marked trace can be deleted at LF or not depends on the uniformity of the chain to which it belongs. We will see the notion of uniformity in the next section.

8) L-relatedness is defined as follows in Chomsky (1992). Certain functional elements are, in effect, features of a head, in that they must be adjoined to this head to check its inherent features. Tense and AGR elements are features of V in this sense. Given a lexical head L, we say that a position is L-related if it is the specifier or complement of a feature L. The L-related positions are the former A-positions. We assume that D is also L-related due to its sharing of definiteness feature with D.

each $\alpha_i$ has property P or each $\alpha_i$ has non-P.

For example, a chain is UN[L] if it is uniform with respect to L-relatedness. Heads and adjuncts are non-L-related and move only to non-L-related positions, hence the chain they form are UN[L]. An argument constitutes only of L-related positions, hence UN[L]. The basic types—heads, arguments, adjuncts—are therefore uniform chains, legitimate objects at LF. Deletion is impermissible in a uniform chain since they are already legitimate. Deletion in the chain C in (27) is, however, permissible for $\alpha_i$ in an A'-position, where $i > 1$ and $\alpha_n$ is an A-position: that is the case of successive-cyclic movement of an argument. In this case, a starred trace can be deleted at LF, voiding the violation; in other cases, it cannot.

The explation above can solve so-called complement-adjunct asymmetry.

(28) a. *[How$_i$ do [you [wonder [whether [John [fixed the car t$_i$

     [−L] (iv)     [−L] (iii)     [−L](ii) [−L] (i) [−L]

b. ??[what$_i$ do [you [wonder [whether [John [fixed t$_i$

     [−L]     (iv)     [−L]     (iii)     [−L](ii)[−L](i)[+L]

The traces left by movement (iii) in (28a) and (28b) are both *-marked since the movement violates the shortest link principle. But the deviance is different. This is due to the uniformity of chain. The chain formed by the adjunct movement in (28a) is uniform. Therefore, *t is not deletable at LF. On the other hand, the movement in (28b) forms a non-uniform chain. So illegitimate object *t is deletable at LF in (28b). As a result, Subjacency violation effect.

### 4.1.4 VP-Internal Subject and Noun Phrases as DP

Minimalist theory assumes that 'external' arguments originate inside VP, that is, [SPEC, VP], and they moves to [SPEC, AGRsP] for Case-checking. The theory also assumes that the traditional noun phrases are DP's, not NP's. We agree with these assumptions.

### 4.2 A Minimalist approach to Possessive Case

Within the minimalist framework, nominative Case and accusative Case features are checked via SPEC-head agreement. We argue that possessive Case also must be checked at LF via SPEC-head agreement. First of all, we assume

that English noun phrases have the following structure.

(29)

```
                    DP
          SPEC            D'
                    D           NP
                    |
                [+Def]    SPEC       N'
                [+Poss]    |
                      the enemy's  N      PP
                        [+Poss]    |
                              destruction  of the city
                            [+Def]
```
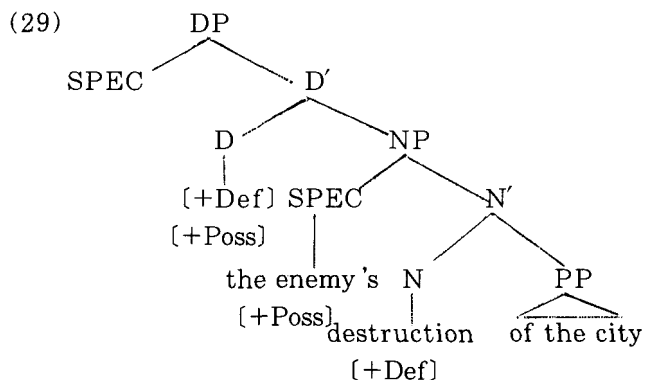
Before SPELL-OUT, the prenominal possessive occupies [SPEC, NP], not [SPEC, DP]. This is due to the theta-role of the possessive phrase, *the enemy's*. *The enemy's* in (29) is assigned its theta-role from the noun *destruction* since it preserves the theta-structure of the verb *destroy* from which it is derived. In [SPEC, DP] it cannot be assigned its theta-role by destruction. The possessive phrase is drawn from the lexicon with its Case morpheme *'s* being attached. In other words, we do not regard the possessive morpheme *'s* as a determiner category. It is just the Case morpheme. Historically, *'s* was a Case morpheme and synchronically, analyzing it as a Case morpheme is more intuitive than analyzing it as a determiner. Moreover, there is another motivation for regarding *'s* as a Case morpheme. According to Abney (1986), the *'s*-as-determiner analysis does not generalize to languages like Hungarian, where possessors and lexical determiners co-occur. On the other hand, within the minimalist theory, nouns, as well as verbs, are drawn from the lexicon with all of their morphological features, including Case and Φ-features. So our proposal should assume that the possessive phrases are inserted from the lexicon with their possessive morpheme *'s*.

Now let us consider the features of D, N, and the possessive phrase. The noun has the definiteness feature [+Def]. What appears in [SPEC, NP] or [SPEC, DP] depends on the definiteness of nouns. If N has [+Def], there are two possibilities: (i) when D has [+Def] and [+Poss], the possessive phrase occurs, (ii) when D does not have [+Poss], the lexical determiner *the* occurs. And if N has [−Def] feature, the article *a* or an empty D would result. When D is empty and has [−Def] feature, the noun phrase would be plural or non-countable.

Then, when does the possessive occur in [SPEC, DP]? We argued, in (29), that the possessive phrase like *the enemy's* occur in [SPEC, NP]. The
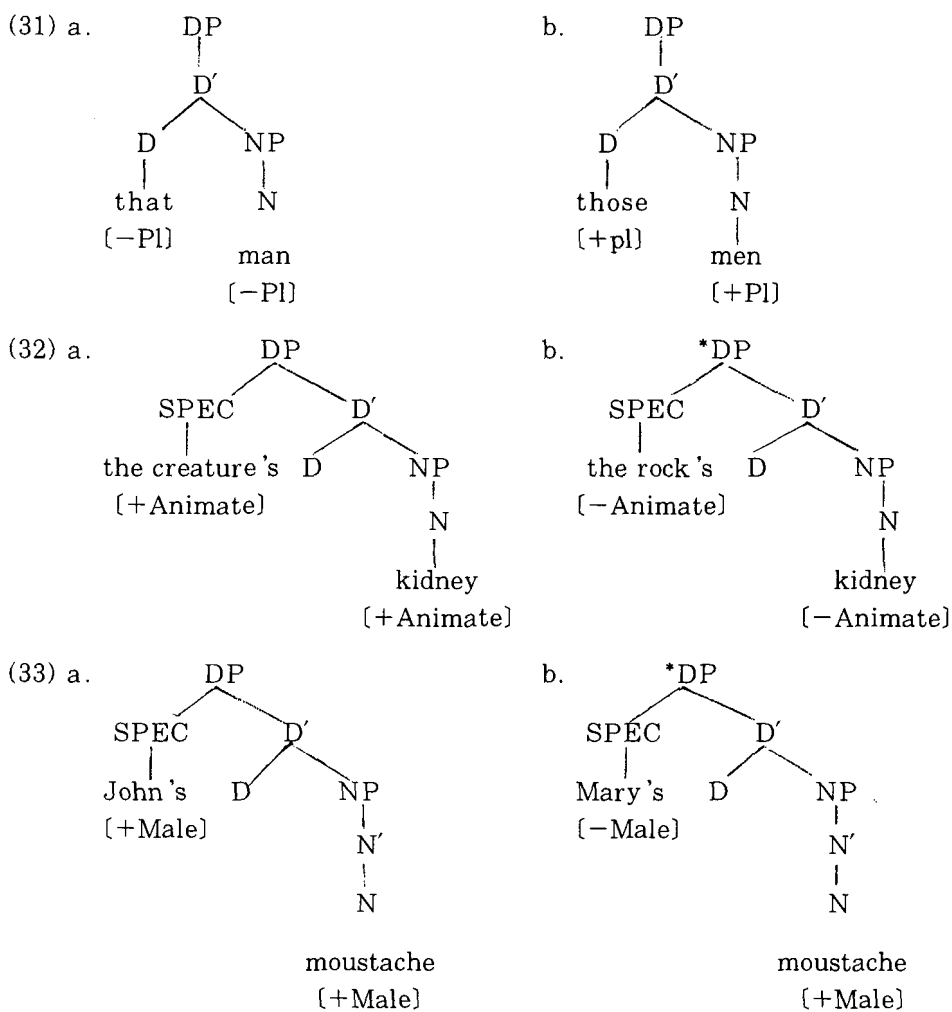
possessives which are not theta-marked by the noun appear in [SPEC, DP]
position. For example, consider the following noun phrases.

(30) a. yesterday's lecture
     b. Bill's house
     c. Chomsky's book

The possessive phrase *yesterday's* in (30a) is not theta-marked by the noun
*lecture*. So it occurs in [SPEC, DP]. This is due to the Economy principle. In
(30b), Bill is the owner of the house and house does not have any theta-role to
be given to *Bill's*. Like *yesterday's* in (30a), *Bill's* in (30b) occurs in [SPEC,
DP]. On the other hand, *Chomsky's* in (30c) can occur either in [SPEC, DP]
or in [SPEC, NP]. Where the possessive *Chomsky's* appears depends on the
meaning of (30c). If Chomsky wrote the book, the phrase *Chomsky's* is in
[SPEC, NP] before SPELL-OUT since the noun *book* assigns theta-role to
*Chomsky's*. On the other hand, if Chomsky owns that book, the possessive
*Chomsky's* would occur in [SPEC, DP] like the possessive phrase in (30a, b).

Now we will see how the possessive feature is checked during the derivation.
In (29) above, *the enemy's* moves to [SPEC, DP] at LF. N also moves to D at
LF. These two raisings are, of course, for the checking of the morphological
features of *the enemy's* and *destruction*. After raising, the [+Poss] feature of
*the enemy's* is checked off by D, and the [+Def] feature of N is checked off
by the same feature of D to which N is adjoined. The possessive Case checking
is via SPEC-head agreement, while [+Def] feature checking is via head-head
agreement.

Incidentally, we assume that N moves to D at LF for the checking of
morphological feature. The possibility of N-to-D raising is sggested Longobardi
(1990) and Chomsky & Lasnik (1991). Longobardi argues that there exist
instances of N-Movement to D in the syntax of Western Romance and that the
same type of movement is likely to take place only at LF in English and
German. We adopt his argument and assume N-to-D raising. Another
motivation for N-to-D raising can be seen in several aspects. N raises to D at
LF in order to check the feature, such as, [±Plural], [±Animate], or [±Male]
of D or [SPEC, DP], as seen in (31)-(33).

(31) a.
```
        DP
        |
        D′
       ╱  ╲
      D    NP
      |    |
    that   N
    [−Pl]
           man
          [−Pl]
```

b.
```
        DP
        |
        D′
       ╱  ╲
      D    NP
      |    |
    those  N
    [+pl]  |
           men
          [+Pl]
```

(32) a.
```
              DP
            ╱    ╲
        SPEC      D′
          |      ╱  ╲
  the creature's D   NP
   [+Animate]        |
                     N
                     |
                   kidney
                 [+Animate]
```

b.
```
             *DP
            ╱    ╲
        SPEC      D′
          |      ╱  ╲
    the rock's  D   NP
   [−Animate]       |
                    N
                    |
                  kidney
                [−Animate]
```

(33) a.
```
           DP
         ╱    ╲
     SPEC      D′
       |      ╱  ╲
    John's   D   NP
   [+Male]       |
                 N′
                 |
                 N

          moustache
          [+Male]
```

b.
```
           *DP
          ╱   ╲
      SPEC     D′
        |     ╱  ╲
     Mary's  D   NP
    [−Male]      |
                 N′
                 |
                 N

          moustache
          [+Male]
```

In (31), N moves to D at LF, forming the adjunction structure. Then, checking occurs via head-head agreement. In (32) and (33), N moves to D at LF to check the feature of the possessives which are in [SPEC, DP]. So it is tenable to assume that N moves to D at LF.

Now let us see how the Case feature in (30) is cheked. The possessives in (30a,b) are already in [SPEC, DP] at LF, therefore, they need not undergo raising. The structure of (30a) is given below.

(34)

```
                    DP
              _____|_____
          SPEC            D′
            |        _____|_____
      yesterday 's   D            NP
        [+Poss]      |        _____|_____
                  [+Def]    SPEC         N′
                  [+Poss]                 |
                                          N
                                          |
                                       lecture
                                        [+Def]
```
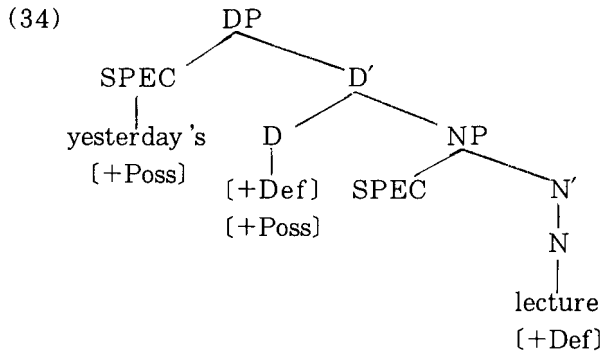
N moves to D at LF, and D checks off [+Def] featrue on N. The [+Poss] feature of *yesterday 's* is checked off by D.

Thus far, we have seen the checking procedure of possessive Case. Our proposal given above can account for some problems which cannot be solved by the prvious analyses. In the next section, we will see some consequences of our proposal.

## 5. Some Consequences of the proposal

### 5.1 Two positions of Prenominal Possessives

According to our proposal, there are two positions where possessives can occur before SPELL-OUT: [SPEC, DP] and [SPEC, NP]. Before SPELL-OUT, the possessives phrase occurs in either of these two positions. Where the possessive phrase appears depends on the relationship between the possessive phrase and the head noun. As we have already mentioned in 2.4.1, there exist different kinds of noun phrases in English, repeated here as (35).

(35) a. the enemy 's destruction of the city
     b. grandfather 's house
     c. Chomsky 's book
     d. yesterday 's lecture

The nouns *destruction, house,* and *book* represent three typical types of English nominals. Nouns like *destruction* are so called derived nominals which have their verb counterparts. So *destruction* preserves the theta-structure of the verb *destroy.* Its subject *the enemy 's* is assigned theta-role from destruction. *The enemy 's,* therefore, occurs in [SPEC, NP], not in [SPEC, DP]. At LF, it moves to [SPEC, DP] for the checking of its possessive Case-feature. The common nouns like *house* in (35b) do not have any theta-roles to

be given to the prenominal possessive phrases. The possessive phrases occurring before the common nouns like *house* are usually the possessors of the nouns. It is suggested by Abney (1986) that the 'possessor' theta-role is given by the morpheme *'s* to the noun phrase. But we do not adopt this assumption. We only assume that the 'possessor' theta-role is not assigned by the head noun. The null D may assign theta-role to [SPEC, DP]. In the case of (35b) and (35c), the 'possessor' theta-role is assigned, while *yesterday's* in (35d) is assigned some other theta-role than the 'possessor' theta-role. So the phrase *grandfather's* in (35b) appears in [SPEC, DP] before SPELL-OUT, and [+Poss] feature is checked in-situ by D at LF. On the other hand, the nouns like *book* in (35c) have the properties of both derived nominals and common nouns. Whether the noun like *book* can assign its theta-role to its subject or not depends on the meaning of the possessive phrase. If the prenominal noun phrase is the writer of the book, it is the same case as (35a). So *Chomsky's* in (35c) occurs in [SPEC, NP] before SPELL-OUT, moving to [SPEC, DP] for Case-checking at LF. If the prenominal noun phrase is the owner of the book, it appears in [SPEC, DP] like (35b). Our theory can capture this fact appropriately by assuming that there exist two positions where possessives can occur before SPELL-OUT. Chomsky (1986a) and DP-analysis cannot capture this fact since they assume only one position where possessives can occur both at DS and at SS. Finally, *yesterday's* in (35d) is an adverb phrase. It, of course, occurs in [SPEC, DP] before SPELL-OUT and its possessive Case feature is checked off by D at LF. To recapitulate, we can account for the idiosyncratic relations between the typical possessive phrases and the head nouns within our theory.

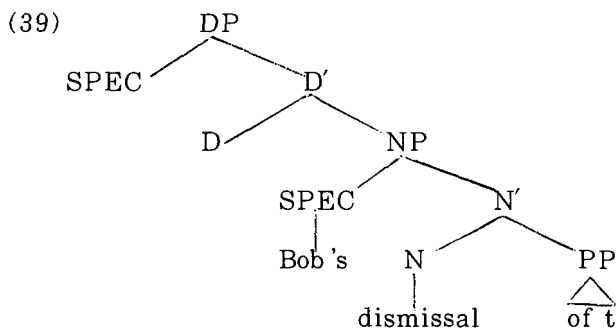## 5.2 Specificity

(36b) shows the specificity effect.

(36) a.  What$_i$ did Mary eat [a loaf of t$_i$]?
    b.  *What$_i$ did Mary eat [Bill's loaf of t$_i$]?

The specificity condition says that an element may not be extracted from the specific noun phrases. In (36b), *what* is extracted from the specific noun phrase, resulting in ungrammaticality. Specificity condition is not accounted for by the barrier framework. Neither can the previous proposals by Chomsky (1986a) and DP-analysis suggest any explanation about specificity. Moreover, the movement in (37) does not cause the violation of the specificity condition.

(37) a. Who$_i$ does Jane regret [Bob's dismissal of t$_i$]?

    b. [Which theorem]$_i$ did you read [Kripke's proof of t$_i$]?
    c. [Whose book]$_i$ did you read [Bill's comments on t$_i$]?

How can these facts be accounted for within our framework? (38) and (39) are the structure of (36b) and (37a), respectively.

(38)

```
            DP
          /    \
      SPEC      D'
        |      /  \
     Bill's   D    NP
                  /  \
              SPEC    N'
                |    /  \
                N    PP
                |    /\
              loaf  of *t
```

(39)

```
            DP
          /    \
      SPEC      D'
              /   \
            D      NP
                  /  \
              SPEC    N'
                |    /  \
             Bob's   N    PP
                |    /\
            dismissal of t
```
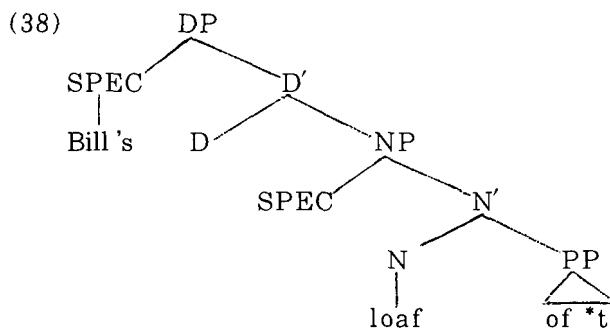
First, we assume that NP in (38) is an argument, while NP in (39) is not an argument. This is due to the theta-assigning capability of the head noun. The noun *loaf* in (38) does not give any theta-role to its specifier. In this case, the possessive phrase like *Bill's* is not an argument of the head noun, but a modifier just like an adverbials. So NP alone can be an argument in (38). On the other hand, [SPEC, DP] in (39) is the position where an argument, which is assigned theta-role from the head noun, would come at LF. Therefore, the whole DP, not NP, in (39) is an argument. With this assumption in mind, let us consider what makes the different specificity effects between (38) and (39). In (38), *what* is not allowed to be adjoined to NP since NP is an argument. As a result, the movement crosses the barrier, leaving *t within PP. This *t cannot be deleted at LF though the chain formed by the movement of *what* is a non-uniform chain, since *t is the last member of the chain.[9] So (38) is ruled out due to the illegitimacy of the chain (*what*, *t) at LF. Now consider

---

9) Remember that the intermediate traces within a non-uniform chain is deletable.

(39). First, *what* adjoins to NP which is not an argument. This adjunction can nullify the barrierhood of the NP, leaving no *t. So the chain formed in (39) is a legitimate object at LF. At this point, we can notice that derived nominals like *dismissal, proof,* and *comment* do not cause the violation of the specificity condition since the NP within DP is not an argument for itself. Non-derived nominals, however, cause the violation of the specificity condition since the NP within DP is an argument which does not allow adjunction, resulting in the crossing of a barrier.

## 5.3 Raising Asymmetry

Within our framework, we can answer the question why raising within noun phrases is not possible, while gerunds allow raising, as shown in (40).

(40) a. [Dan$_i$ appears/is likely [t$_i$ to pass the final exam].
     b. [Dan$_i$'s appearing/being likely [t$_i$ to pass the final exam]]
     c. *[Dan$_i$'s appearance/likelihood [t$_i$ to pass the final exam]]

We regard the gerund as DP, the inner structure of which is quite different from that of the noun phrase. The structure of the gerund is (41).

(41)
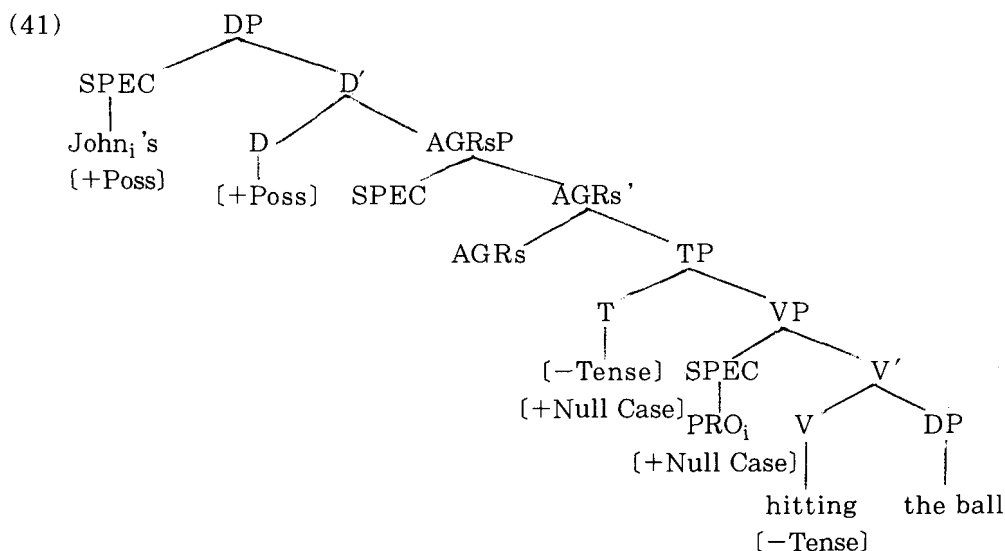


The possessive phrase occurs in [SPEC, DP] and a controlled PRO in [SPEC, VP]. At LF, PRO moves to [SPEC, AGRsP], and V to T and successively to AGRs for the checking of Null Case feature and the Tense feature. T within the gerund has [−Tense] and [+Null Case] features. At LF, V adjoined to T
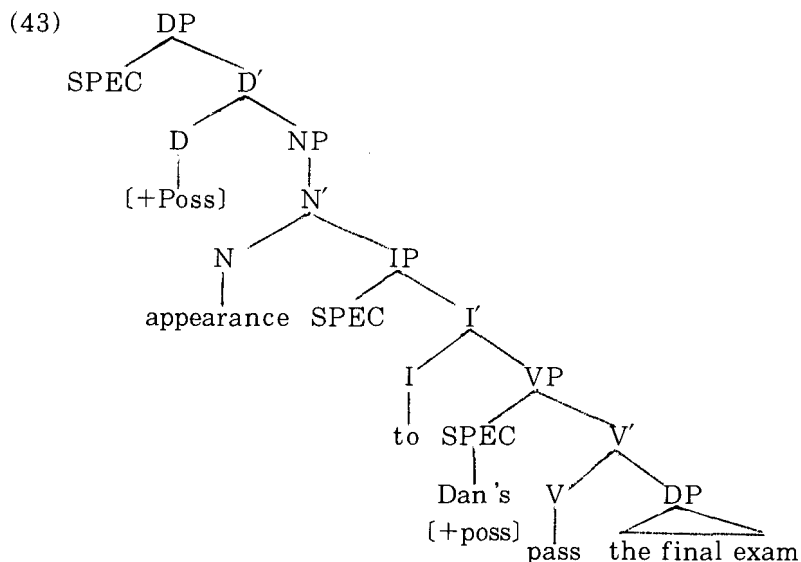
checks off [−Tense] feature of PRO in [SPEC, AGRsP]. This is also via SPEC-head agreement like other Case-checkings.

Another assumption we propose is that *-ing* in gerunds has [−Tense] feature which is checked off by T at LF. With this assumption in mind, let us see how we can account for the raising asymmetry between gerunds and noun phrases. The gerund (40b) has the structure like (42).[10]

(42)

```
              DP
         ┌────┴────┐
       SPEC        D′
         |      ┌───┴────┐
       Danᵢ's   D      AGRsP
       [+Poss]  |    ┌───┴────┐
            [+Poss] SPEC    AGRs′
                      ┌───────┴───────┐
                    AGRs             TP
                              ┌───────┴───────┐
                              T              VP
                              |               |
                          [−Tense]            V′
                         [+Null Case]    ┌────┴────┐
                                         V         IP
                                         |     ┌───┴───┐
                                    appearing SPEC     I′
                                      [−Tense]     ┌───┴───┐
                                                   I       VP
                                                   |   ┌───┴───┐
                                                  to  SPEC    V′
                                                       |   ┌───┴───┐
                                                     PROᵢ  V      DP
                                                  [+Null Case]|  △
                                                          pass the final exam
```
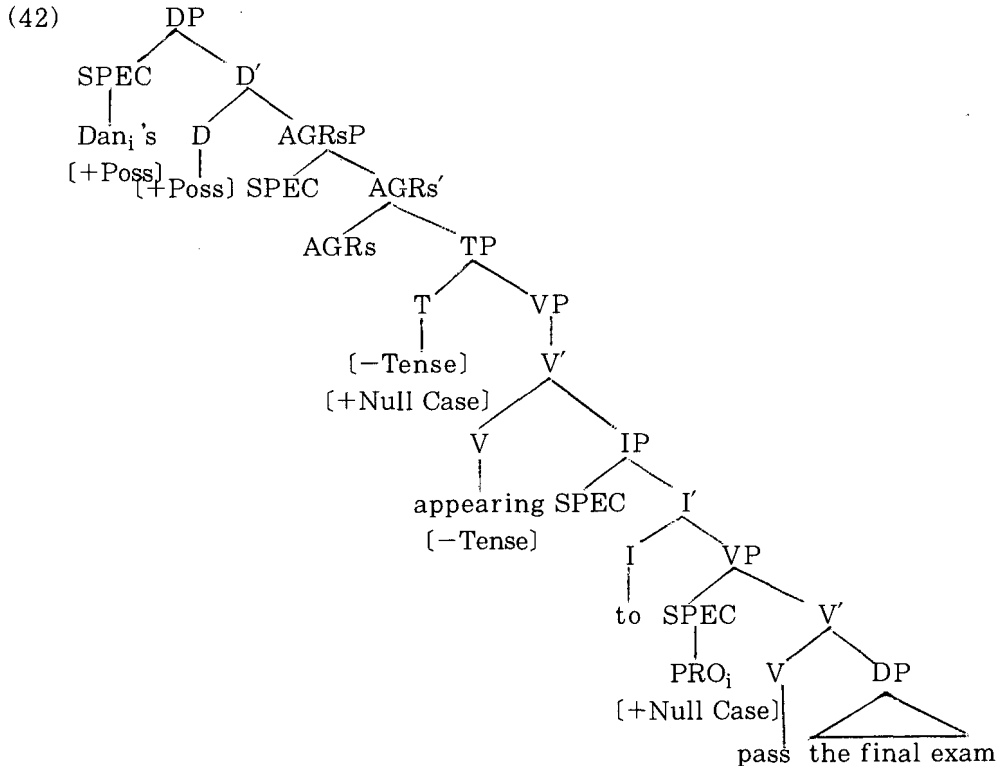
(40b) is derived from (42), as a result of raising of PRO in [SPEC, VP] to matrix [SPEC, AGRsP]. PRO movement to [SPEC, AGRsP] does not raise any problem. But this is not the case in (40c), the structure of which is (43).
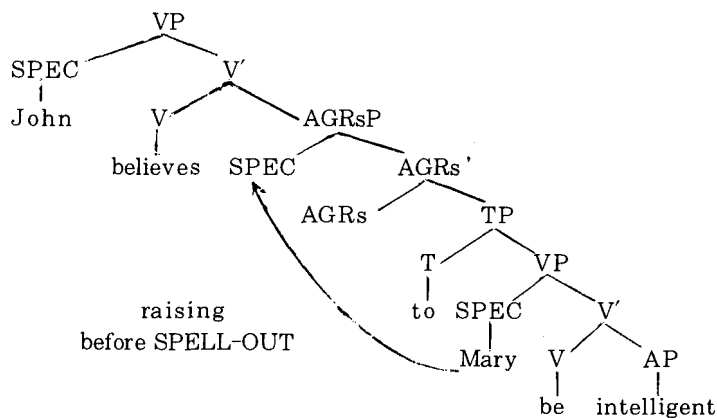
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10) In tree (42), I is AGRs + T. For convenience's sake, we use I instead of AGRs + T. Raising predicates like *appear* in (42) do not have external theta-role, having no [SPEC, VP] position.

(43)

```
                    DP
              SPEC      D′
                     D      NP
                   [+Poss]   N′
                          N        IP
                      appearance SPEC    I′
                                       I      VP
                                      to  SPEC     V′
                                         Dan's  V       DP
                                        [+poss] │    ⟋▔▔▔▔⟍
                                               pass  the final exam
```

*Dan's* in [SPEC, VP] moves to [SPEC, IP] before SPELL-OUT. This is due to the Extended Projection Principle.[11] However, it does not have to move any longer to [SPEC, DP] before SPELL-OUT. Since [+Poss] feature is checked at LF, it is not necessary for *Dan's* to move to [SPEC, DP] before SPELL-OUT. Actually, it must not move since it causes the violation of the Procrastinate principle. So we cannot derive the form *Dan's appearance* to *pass the final exam* since *Dan's* is between *appearance* and *to* before SPELL-OUT. Therefore,

---

11) Chomsky & Lasnik (1991) propose that in infinitival clauses the subject of VP should move to the SPEC of AGRsP due to the Extended Projection Principle. This proposal is made for ECM constructions like (i) below:

(i) John believes [Mary to be intelligent].

```
                 VP
          SPEC        V′
          John      V      AGRsP
                 believes SPEC    AGRs′
                             AGRs     AGRs′
                                  AGRs     TP
                                        T     VP
              raising              to  SPEC     V′
          before SPELL-OUT           Mary  V       AP
                                          be   intelligent
```

the correct form cannot be derived. Our theory can capture the raising asymmetry between gerunds and noun phrases appropriately.

## 6. Conclusion

In this paper, we have attempted to suggest a minimalist approach to English possessive Case. We propose that possessive Case be checked at LF via SPEC-head agreement like other kinds of Case. This assumption enables us to account for some grammatical facts, such as, specificity effects, raising asymmetry between gerunds and noun phrases, and different relations between typical English possessive phrases and the head nouns.

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