The Visibility Condition and the Distribution of Clausal Arguments

Yoshihiro YAMADA

北海道大学「言語文化部紀要」1990年　第19号別刷

The Visibility Condition and the Distribution of Clausal Arguments

Yoshihiro YAMADA

1. Introduction

The main purpose of the present paper is to investigate the distribution of clausal arguments under the Visibility Hypothesis developed in Chomsky (1981, 1986a). Chomsky (1981) argues that the Case Filter and the θ-criterion have a considerable overlap of consequences. Elimination of redundancies in grammatical theory has served as a guiding principle in the study of generative grammar. Following this methodological guideline, Chomsky proposes that the Case Filter should be integrated into the θ-criterion as the Visibility Condition. The Visibility Condition can be construed as a Case requirement on arguments in general. Although the Visibility Hypothesis has a number of desirable consequences with respect to the distribution of NP arguments, there has been much controversy over whether clausal arguments are constrained by the Visibility Condition. I attempt to show in the following discussion that some extension of Case-marking will enable us to account for the distribution of clausal arguments under the Visibility Hypothesis.

2. Theoretical background

Our discussion takes place within the framework of GB theory developed in Chomsky (1986a, 1986b), which includes many notions I will assume without discussion. In this section, I will introduce some of the basic concepts and principles which are relevant to the discussion in the present paper.

2. 1 X-bar theory

I assume the version of X-bar theory proposed in Chomsky (1986a, 1986b). Chomsky distinguishes between lexical categories and non-lexical categories. The lexical categories include the categories N, V, A, and P, while the non-lexical categories include Complementizer and INFL. I follow Chomsky in assuming that both types of

categories are projected into higher level, phrasal categories in accordance with the following schemata (order parametrized; the choices here for English):

(1) a. $X'' \rightarrow X''^{*}\ X'$
b. $X' \rightarrow X\ \ X''^{*}$

where "X" ranges over the category types and "X''*" stands for zero or more occurrences of X''.[1] Then, the categories conventionally labeled as S and S'' will be I'' and C'', respectively as in (2).

(2) a. $S = I''(IP) = [\ldots[_{I'} I[_{VP} V\ldots]]]$
b. $S'' = C''(CP) = [\ldots[_{C'} C[_{IP}\ldots]]]$

I also assume the DP-hypothesis proposed in Fukui (1986), Fukui and Speas (1986), Abney (1987), etc., where noun phrase is headed by the non-lexical category D(eterminer).[2] Then, the internal structure of noun phrase is as follows:

(3) $D''(DP) = [\ldots[_{D'} D[_{NP}\ldots]]]$

2. 2 Government theory

This subtheory defines the notion of government, which plays a central part in GB theory since it is a key condition in many of its principles. I assume the definition of government argued for in Baker (1988) without discussion.[3]

(4) Government
A governs B iff A c-commands B and there is no category C such that C is a barrier between A and B.

(4) is defined by the notions, "c-command" and "barrier".

(5) C-command
A c-commands B iff A does not dominate B and for every maximal projection C, if C dominates A then C dominates B.

(6) Barrier

Let D be the smallest maximal projection containing A. Then C is a barrier between A and B iff C is a maximal projection that contains B and excludes A, and either:

i) C is not selected, or

ii) the head of C is distinct from the head of D and selects some WP equal to or containing B.

The crucial notions which define "barrier" in (6) are "selection" and "distinctness." These notions are defined as follows:

(7) Selection

A selects B iff:

i) A assigns a θ-role to B, or

ii) A is of category C and B is its IP, or

iii) A is of category I and B is its VP.

(8) Distinctness

X is distinct from Y only if no part of Y is a member of a chain containing X.

2. 3 Case theory

This subtheory will be of great importance for the discussion below. I adopt several assumptions on Case-marking made in Chomsky (1986a). I assume that Case is uniformly assigned under government.[4] I also assume that the direction of Case-marking for lexical categories is uniform, corresponding to the head parameter of X-bar theory. Thus, Case-marking by lexical categories is uniformly to the right in English.

Following Chomsky, I distinguish two kinds of Case: structural Case and inherent Case. Structural Case is assigned by V, P, and INFL with AGR at S-structure, while inherent Case is assigned by N and A at D-structure.[5] Structural Case-marking is constrained by the Adjacency Condition in the sense of Chomsky (1981), Stowell (1981), etc., while inherent Case is not. Inherent Case is crucially different from structural Case in that it is associated with θ-marking.[6] To be more specific, inherent Case is assigned by α to β if and only if α θ-marks β, while structural Case is assigned independently of θ-marking. The association of inherent Case and θ-marking is for-

mulated as the Uniformity Condition.[7)]

(9) The Uniformity Condition

If α is an inherent Case-marker, then α Case-marks β if and only if α θ-marks β.

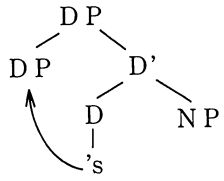
Thus, inherent Case cannot be assigned to an embedded subject of the so-called Exceptional Case-marking (henceforth, ECM) Construction, because it is not θ-marked by its governing head.

(10) a. We believe [John to be honest].

b. *the belief [of John to be honest].

I diverge from Chomsky (1986a) in assuming that "prenominal Genitive NP" in English is not assigned inherent Case by N, but rather receives its Case from the head of DP, as illustrated in (11).

(11)



This assumption is motivated by the facts in (12), where Genitive Case is assigned independently of θ-marking; *destruction* does not θ-mark *yesterday* in (12a), and *John* is not governed by the predicate which θ-marks it in (12b-c).[8)]

(12) a. Yesterday's destruction of the city

b. [John's$_i$ being likely t_i to win] will only spur Bill on.

c. [John's$_i$ appearing/seeming t_i to want us to leave him alone] miffed Muffy.

I tentatively assume in this paper that D assigns Genitive Case structurally to the SPEC position under government.

I also assume that Case-marking is basically optional like other grammatical

processes (e. g. Move α), following Stowell (1981). This assumption is of crucial importance for the discussion of Case-marking to clausal arguments below.

2. 4 θ-theory

Also of importance for the following discussion is θ-theory. The fundamental principle of θ-theory is the θ-criterion, which, following Chomsky (1986a), I assume to be a property of chains. The θ-criterion can be stated informally as follows:

(13)The θ-criterion

Every chain contains a unique θ-position and a unique argument.

3. The Case Filter and the Visibility Condition

The Case Filter (14) has been proposed as a fundamental principle of the theory of abstract Case, which constrains the distribution of overt NP.

(14) The Case Filter

*NP, where NP has a phonetic content.

[-Case]

Chomsky (1981, 1986a) argues that consequeces of the Case Filter and the θ-criterion overlap considerably. It is claimed there that the Case Filter can be reduced to the θ-criterion if the latter principle is formulated as a well-formedness condition on A-chains. He proposes that the Case Filter should be integrated into the θ-criterion as the Visibility Condition on θ-marking, as in (15).

(15)The θ-criterion

Each argument α appears in a chain containing a unique visible θ-position P, and each θ-position P is visible in a chain containing a unique argument α.

Two kinds of requirements on A-chains are involved in the formulation of the θ-criterion above, which can be stated roughly as follows:

(16)(=(13)) Thematic Requirement on A-chains

Each chain C=(α_1, ..., α_n) must have a unique θ-position and a unique argument.

(17)Case Requirement on A-chains

i) Each chain C=(α_1, ..., α_n) must be visible for θ-marking.

ii) A chain is visible for θ-marking iff α_1 is Case-marked.

We refer to the Case requirement (17) as the Visibility Condition for the sake of clarification, although it is actually part of the θ-criterion (15). The Visibility Hypothesis is more desirable and promising on conceptual grounds in that it will enable us to eliminate the redundancy between Case theory and θ-theory by reducing the Case Filter, a highly theory-internal principle, to the θ-criterion, as Chomsky claims.

The Case Filter and the Visibility Condition have different empirical consequences. The Visibility Condition diverges from the Case Filter in the following cases:

(18) a. empty categories

b. non-θ-marked NPs

c. non-NP categories

Chomsky (1986a) argues that the Visibility Condition yields desirable consequences with respect to empty categories and non-θ-marked NPs.

In the first case (18a), the Visibility Condition predicts that empty categories must be Case-marked if they are arguments. The prediction is borne out for variables.[9] Compare the following pair.

(19) a. What are you aware of t?

b. *What are you aware t?

The contrast between (19a) and (19b) follows directly from the Visibility Condition. The *wh*-trace in (19), which is a variable bound by *what*, must receive a θ-role from *aware*. The trace in (19a) is assigned Genitive Case by *aware*, which is realized through *of*-insertion, so that it is visible for θ-marking. If the trace is not assigned Case as in (19b), the Visibility Condition prohibits it from receiving a θ-role; hence

we have a θ-criterion violation in (19b). The Case Filter, on the other hand, has no effects on the contrast in (19). Some stipulative assumption would be necessary to account for the contrast in terms of the Case Filter (cf. Safir (1985)).

Let us consider the second case (18b). The Visibility Condition entails that non-θ-marked NP need not receive Case, while the Case Filter requires that it must be Case-marked if it has a phonetic content. The following data will serve as empirical evidence for the Visibility Condition.

(20) a. John is [a fine mathematician].
b. [John] , I consider [a fine mathematician].
c. John did it [himself].

Predicate nominals, topicalized NPs and emphatic reflexives are not arguments; they are not assigned θ-roles. The Visibility Condition correctly predicts that the bracketed phrases in (20) are well-formed without Case although they are of category NP.[10]

Let us now turn to the third case (18c). The Visibility Condition can be construed as a Case requirement on a chain; it constrains θ-role assignment to an argument appearing in a chain. Given the null hypothesis that a θ-role is assigned to an argument under the same conditions, the Visibility Condition should apply to any argument irrespective of its categorial status. It is well known that PP can occur in a subject position as an argument.[11]

(21) a. [Under the stars] is a nice place to sleep.
b. It is a bit dubious for [in the silo] to be the chosen place for alternations.
c. I approve of [under the bed]'s being chosen for our meeting place.

The following contrast shows that prepositional phrases cannot be in a non-Case-marked position when they are arguments.[12]

(22) a. [On the table] is the best place for that typewriter.
b. *the decision [[on the table] to be the best place for that typewriter]

The contrast, again, follows automatically from the Visibility Condition. If *on the table*, which is an argument to be θ-marked by its predicate, is Caseless, it is not vis-

ible for θ-marking. Hence, we have a θ-criterion violation in (22b). Thus, the prediction that every argument must be Case-marked irrespective of its categorial type holds for PP arguments.

Another typical non-NP category which can function as an argument is a clausal one. Although the facts we have seen so far show that the Visibility Condition can be justified on empirical grounds, whether θ-marking to clausal arguments is regulated by the Visibility Condition remains a controversial issue. Davis (1986), Safir (1985), etc. argue against the Visibility Hypothesis on the basis of the facts below.

(23) a. It seems [that John is guilty].
b. It is believed [that John is guilty].
c. They are believed [t to be shifty].

The Visibility Hypothesis wrongly predicts that (23a-c) would violate the θ-criterion, because the bracketed clauses do not have Case and, therefore, are not visible for θ-marking.

Faced with this problem, we may take three possible approaches. The first one is straightforward: to abandon the Visibility Condition entirely, and to allow the Case Filter to be an independent principle of UG. Safir, taking this approach, refines the Case Filter to solve some of its empirical problems mentioned above. Second, we might make clausal arguments immune to the Visibility Condition by restricting the chain relevant to the θ-criterion (15) to an NP-headed chain, as suggested in Chomsky (1981). A clausal argument would, then, be θ-marked in the position it occupies, not through a position of a chain, since it does not belong to a chain. In this system, however, we must, as Chomsky suggests, allow two kinds of θ-role assignment; this would add an extra cost to the theory. The third approach is to maintain the Visibility Condition in its strongest form and to explore some mechanism that makes clausal arguments visible for θ-marking or makes them immune to the condition.

In the present paper, I will take the third approach, which I think to be optimal on theoretical grounds.

4. Extension of Case-marking

In this section, I revise the version of Case theory outlined in Section 2.3, extending the notion of Case-marking to include "Case-identification;" this will be clarified

below. It is plausible to suppose that the Visibility Condition applies to arguments in general irrespective of their categorial types, as I have argued above. We would then naturally expect that clausal arguments would fall under the condition. However, they may occur in a non-Case-marked position, contrary to our expectation, as shown in (23). How is it, then, that they should be visible for θ-marking? The basic idea I propose here is that a clause bears a Case feature intrinsically and that this feature is realized under certain conditions.[13)]

Assuming that CP bears the Case feature [+C] intrinsically, I extend the notion "Case-making" to include Identification of the Case feature [+C].

(24) α Case-marks β iff i) α assigns Case to β, or
ii) α Case-identifies β.

We now ask under what conditions Case-identification is applicable. I assume that Case-identification obeys the general conditions on Case-marking mentioned in Section 2.3: government requirement, a requirement on the directionality of Case-marking by lexical heads, etc. (25) shows that Case-identification is further constrained by the Uniformity Condition, as is inherent Case-assignment.

(25)*the belief [[that John is guilty] to be true]
cf. *the belief [of John to be guilty]

I propose the following Uniformity Condition on Case-identification.

(26) The Uniformity Condition on Case-identification
α Case-identifies β only if α θ-marks β.

The Uniformity Condition prevents the embedded subject clause in (25) from being Case-identified by *belief*, since the clause is governed, but not θ-marked by *belief*.

Given the Uniformity Condition (26), the following requirement follows from the assumptions on the directionality of Case-marking by lexical heads.

(27) β must be on the right of α in (24ii).

According to the Uniformity Condition, α in (24ii) must be lexical categories, since

only lexical categories θ-mark elements.[14] Case-marking by lexical heads is uniformly to the right in English. Thus, β must be on the right of α.

The requirements on Case-identification can be summarized as (28):

(28) α Case-identifies β iff i) β bears the Case feature [+C],
ii) α governs β,
iii) α θ-marks β, and
iv) β is on the right of α,

where the crucial property of Case-identification is (i), (ii-iv) being derived from the Uniformity Condition and the general assumptions on Case-marking.

I assume that Case-identification applies at S-structure, which is motivated by the following fact:

(29)*It seems [[that John is guilty] to be believed t by everyone].

If Case-identification were applied at D-structure, the embedded subject clause would be Case-identified by *believed* at that level. Then, the chain headed by the clause would be visible for θ-marking. One might ask whether the Case feature is among features that are left behind by the application of Move α or not. Consider the following instances.

(30) a. *[That John is happy], it seems t.
b. *[That John is honest], it is believed t.
c. *[That he has to eat well], John is aware t.

The trace left behind by Topicalization is a variable, which must be Case-marked when it is an argument. The facts above show that the [+C] feature must move with the element which bears it. Otherwise, the traces in (30) would be licensed by Case-identification at S-structure. Thus, I conclude that the Case feature is not left behind by the application of Move α.

I also assume the following condition.

(31) Case may not be *assigned* to a category bearing the Case feature [+C].

(31) is strongly reminiscent of the Case Resistance Principle proposed in Stowell (1981). But Stowell's proposal, although appealing, does not seem to be workable as it stands in the version of Case theory proposed here.[15]

With all this in mind, let us consider the distribution of clausal arguments.

5. The distribution of clausal arguments

I have assumed in the last section that clausal arguments can be Case-marked by Case-identification under several conditions. The Case-marking system developed above enables us to discuss the issue of how the Visibility Condition determines the distribution of clausal arguments, interacting with other principles of UG. I will discuss the distributional properties of subject clauses in Section 5.1, and deal with complement clauses in Section 5.2.[16]

5. 1 Subject clauses

The core fact about the distribution of subject clauses seems to be that they may appear in tensed sentences, but may not occur in infinitival clauses.[17] Consider the following paradigm.

(32) a. [That John is poor] proves his guilt.
b. [That grass is green] is obvious.
c. [To bother him] upset Mary.
d. [To kill the bear] is difficult.
e. *We believe [[that grass is green] to be obvious].
f. *I believe [[for John to like Mary] to be unlikely].
g. *[For[that John is sick] to bother the teacher] is quite possible.
h. *[[That John is sick] to bother the teacher] is quite possible.
i. *It seems [[that John is guilty] to be true].
j. *It is believed [[that John is guilty] to be true].

Note that it is not the case that clauses never appear as subjects in embedded clauses.[18]

(33) a. I wonder [whether[for John to resign his position] would really upset Mary].
b. I think [that[for Bill to remain] would so upset so many people that he and everyone else would be very much more comfortable if he left quietly but

immediately].

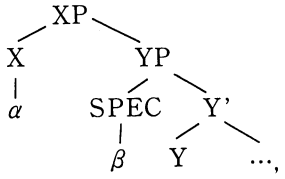
c. It seems [[that[that Fred left early] so bothered all the people who have been waiting for him that they now refuse to do business with him].

I show in this section that this distributional fact follows from the Visibility Condition and other principles of UG, given the Case-marking system developed above.

I have assumed two possible ways of Case-marking: Case-assignment and Case-identification. Case-assignment to clausal arguments, however, is always blocked by the condition (31), because the Case feature [+C] they bear resists Case-assignment. Thus, clausal arguments must be Case-identified to be visible for θ-marking. Case-identification is constrained by the requirements in (28). These requirements, interacting with each other, determine the possible configuration of Case-identification. Subject position is generally identified as the SPEC of IP. Then, for subject clauses to be licensed by Case-identification, this position must satisfy the configurational requirements in (28). Let us consider a consequence of (28) with respect to the SPEC position, before entering into the discussion of the distribution of subject clauses.

Suppose that β in (28) is in the SPEC position. It follows from (28ii) and (28iv) that Case-identification must apply under rightward government. Rightward government to β by α is only possible in the configuration below for X-bar theoretic reasons; the SPEC position is always on the left of its head in English.[19]

(34)



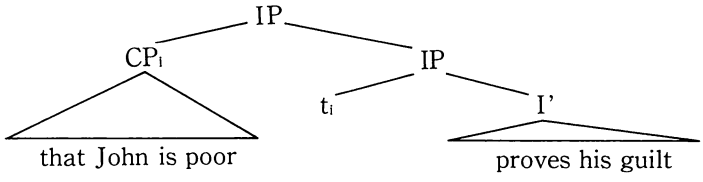
where YP is not a barrier. In the configuration above, however, the requirement (28iii) is not satisfied, because α does not θ-mark β by definition. Consequently, β in (28) can never be Case-identified if it is in the SPEC position. I state this as the theorem (35).

(35) α cannot Case-identify β if β is in the SPEC position.

Let us now consider Case-marking to subject clauses, with the theorem (35) in mind. The Visibility Condition requires that subject clauses must be Case-marked. We have two alternative ways of Case-marking: Case-assignment and Case-identification. The application of Case-identification to the elements in the SPEC position is always blocked by the theorem (35). Case-assignment to clausal arguments is also blocked by (31). Consequently, subject clauses are never Case-marked, and, therefore, should be uniformly blocked by the Visibility Condition. This prediction holds true for embedded subjects in infinitival clauses, but does not hold for those in tensed sentences.

A question, then, arises about how subject clauses should be licensed in tensed clauses. It is argued in Emonds (1976), Koster (1978) and Stowell (1981) that subject clauses are not really in the subject position, but rather in the Topic position. I assume, following Stowell, that the Topic position is an A'-position and the element in the position functions as an operator of some kind which binds its trace. I show below that the Topic Construction serves as a "saving device" for escaping the effects of the Visibility Condition.[20] The Visibility Condition is a Case requirement on A-chains. Thus, Topicalization of subject clauses makes them immune to the effects of the Visibility Condition, since they do not belong to A-chains after the application of Topicalization. Suppose that Topicalization is adjunction to IP.[21] Then, (32a), for example, is represented as (36) at S-structure.

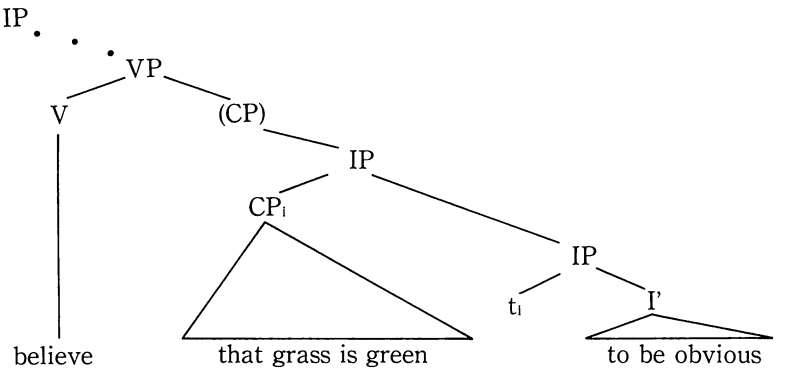
(36)



The chain headed by CP_i (CP_i, t_i) is not subject to the Visibility Condition for the reason mentioned above. The relevant chain which is regulated by the Visibility Condition is the single-membered chain (t_i). t_i is a variable bound by CP_i, and must receive a θ-role from the predicate. The Visibility Condition requires that t_i should be Case-marked to be visible for θ-marking. We have been assuming that movement does not leave the [+C] feature behind on the trace. Thus, t_i is assigned Nominative Case by INFL without violating (31) and the θ-criterion is satisfied, as required.

One might claim that sentential subjects in infinitival clauses would also be saved by the application of Topicalization. The Topic Construction, however, does not serve as a saving device in this case. Suppose that the embedded subject clause in (32e) is adjoined to the lower IP by Topicalization to escape from the effects of the Visibility Condition (I will refine the internal structure of the ECM Construction in the next section).[22]

(37)



The Visibility Condition now requires that the trace left behind by Topicalization should be Case-marked. The only possible Case-assigner for t_i is the matrix verb, which governs t_i as we shall see below. However, it cannot assign Accusative Case to t_i in this configuration, because structural Case-assignment is constrained by the Adjacency Condition; CP_i in between V and t_i blocks it. Thus, (32e) cannot be saved by Topicalization. The same argument holds for all the other instances of embedded subject clauses of infinitives in (32), which I will not discuss here for lack of space.

It is predicted from the analysis above that Topicalization of the embedded subject of (32e) would be possible to the matrix IP. This prediction is borne out in (38).

(38) [That grass is green]$_i$, we believe t_i to be obvious.

The variable left behind by Topicalization is assigned Accusative Case by *believe* without violating the Adjacency Condition.

I have shown that the core distributional fact about subject clauses is derived from the Visibility Condition together with other principles of UG, given the Case-marking system proposed in Section 4. It follows from the Case-marking system that clausal arguments must be Case-identified to be visible for θ-marking. The requirements on Case-identification prohibit them from appearing in the SPEC position. Subject clauses

can therefore never be visible for θ-marking if they stay in the subject position. The only way of escaping the effects of the Visibility Condition is to move them to an A'-position. I have shown that subject clauses in tensed sentences can be saved by the Topic Construction, but it does not serve as a saving device in the case of infinitival clauses because of the Adjacency Condition. Thus, clausal arguments are systematically excluded from the subject position of infinitival clauses.

5. 2 Complement clauses

In this section, I will consider the problem of how complement clauses are licensed under the Visibility Condition, concentrating on the following set of data.[23]

(39) a. Mary considers [that Jill is foolish].
b. Mary is happy [that Charles is leaving home].
c. We object to John's claim [that Bill is a fool].
d. I told him [that Jill was happy].
e. I persuaded Mary [to do the job].

(40) a. It is believed [that John is honest].
b. It seems [that John will win the race].
c. It is likely [that John will win the race].

(41) a. I believe [John to be honest].
b. John is believed [t to be honest].
c. John seems [t to be happy].

I first consider (39) and (40), and then turn to the discussion of (41). I have argued in the last section that clausal arguments must be Case-identified to be visible for θ-marking, since Case-assignment to clausal arguments is always blocked by the condition (31). Thus, all the bracketed clauses in (39) and (40) must be licensed by Case-identification, although the governing heads have a Case-assigning feature in (39). Note that we have been assuming throughout that Case-assignment is basically optional; the governing head of a complement clause need not assign Case to the clause even if it bears a Case-assigning feature. Thus, clauses are not necessarily rejected by (31) even if their governing heads are Case-assigners. The possible configuration of Case-identification is determined by the requirements in (28). In (39) and (40), the

requirements are all satisfied in a trivial way, since the bracketed clauses are both governed and θ-marked by their heads and are on the right of them. Thus, they are successfully Case-marked in terms of Case-identification and are therefore visible for θ-marking.

One advantage of my analysis is that we need not assume the notion of CHAIN in the sense of Chomsky (1986a) to account for (40) under the Visibility Hypothesis. Chomsky proposes to extend the notion of a chain relevant to the θ-criterion to include an expletive/pleonastic-argument pair (i. e. *there*-NP, *it*-CP). His proposal is motivated by the observation that an expletive/pleonastic-argument pair behaves in the manner of a chain with regard to the Visibility Condition.[24] He defines the extended notion of a chain as CHAIN : a CHAIN includes a chain and an expletive/pleonastic-argument pair. On this assumption, the Visibility Condition applies to the CHAIN (*it*, CP), not to the single-membered chain (CP), in (40). The CHAIN (*it*, CP) contains a Case-marked position occupied by *it*, so that it is visible for θ-marking through the position *it* occupies.

But the CHAIN analysis has some problems, both conceptual and empirical. If a pleonastic-argument pair forms a CHAIN, a problem arises with respect to Binding theory, as Safir (1985) argues. The CHAIN (*it*, CP) is an "unbalanced chain" in Safir's sense, and violates the Binding Condition (C).[25]

(42) Binding theory
  (A) An anaphor is bound in its governing category
  (B) A pronominal is free in its governing category
  (C) An R-expression is free

The CHAIN account is untenable on empirical grounds as well, because it wrongly predicts that (43) would be grammatical.[26]

(43) *It seems [[that John is happy] to be obvious].

The complement clause of *seem* can be independently licensed without forming a CHAIN with pleonastic *it*, as we can see from (44).

(44) [That John is happy]$_i$ seems [t_i to be obvious].

Then, *it* forms a CHAIN with the embedded subject clause. Note that this CHAIN satisfies the conditions on CHAIN links, because the corresponding chain formed by movement is well-formed in (44). The CHAIN analysis makes a wrong prediction that the CHAIN (*it, that John is happy*) would satisfy the Visibility Condition, because it is Case-marked through the position occupied by pleonastic *it*. Thus, we must stipulate some condition to account for (43).[27]

Given the version of Case theory proposed in this paper, the notion "chain" need not be extended to include pleonatic-argument pairs; complement clauses in (40) are visible for θ-marking by Case-identification. If we reject the notion of CHAIN, then the binding theoretic problem mentioned above does not arise in (40), and furthermore, the unacceptable status of (43) is correctly predicted by our Case theory (see the discussion in the last section).

Let us now turn to complement clauses of ECM-type verbs and raising predicates (*seem, appear*, etc). A number of analyses have been proposed to account for peculiar properties of these constructions. I assume in this paper that the ECM Construction is derived by incorporation of ϕ complementizer into the main verb, as is suggested in Baker (1988).[28] Let us take a brief look at Baker's analysis. Incorporation is assumed to be X^0 movement, which is subject to the Empty Category Principle.

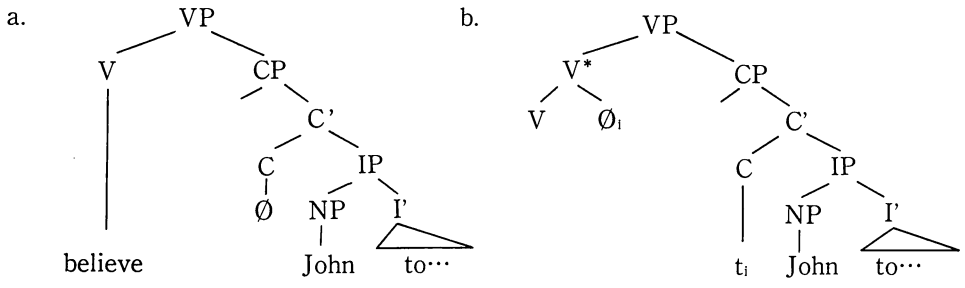
(45) The Empty Category Principle

a. A non-pronominal category must be properly governed.

b. α properly governs β iff α governs β and α is coindexed with β.

Baker assumes that ϕ complementizer is a null affix, which is incorporated into its governing V at S-structure. The D-structure representation of (41a) is (46a), which is mapped to (46b) at S-structure.

(46)



In (46a), V does not govern *John*. CP protects *John* from government by V, because the closer governor ϕ is distinct form V (see Section 2.2 for the definition of barrier). In the configuration (46b), on the other hand, the government relation between V and *John* alters by ϕ incorporation. V* governs *John* in (46b), because the head of CP is not distinct from V* after incorporation and CP is not a barrier between them. Thus, *John* receives Accusative Case from V* at S-structure, as required. I assume that the so-called Raising Construction is derived in the same manner.

Baker's ϕ incorporation analysis has an interesting consequence with respect to licensing of the complements of ECM and raising verbs. The following assumptions made in Section 4 are crucial for the discussion below.

(47) a. Case-identification is applied at S-structure.
b. The [+C] feature is not left behind by Move α.

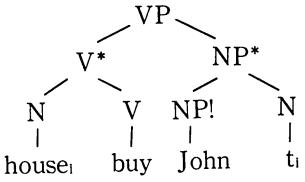
I have been tacitly assuming that it is the head of CP that bears the [+C] feature, which percolates up to its maximal projection; CP is marked [+C] only if the head bears the [+C] feature. Suppose that ϕ complementizer bears the [+C] feature. ϕ complementizer, a null affix, is incorporated into the main verb at S-structure. According to the assumption (47b), the feature is not left behind on the trace after incorporation. Thus, at the level of S-structure where Case-identification applies, CP does not retain the [+C] feature, since the head is no longer marked [+C]. Consequently, the complement clauses of the ECM and Raising Constructions cannot be Case-identified because of the requirement (28i). The other option of Case-marking (i.e. Case-assignment), on the other hand, would be available after incorporation; the complement clauses could be assigned structural Case by their governing heads without

violating (31), since they do not bear the Case feature at S-structure. However, this possibility is rejected in the case of the Raising Construction, since raising verbs do not assign Accusative Case. We cannot assign Case to clausal complements of ECM verbs, either. If they receive Accusative Case, the embedded subject NPs would be Caseless and, therefore, violate the Visibility Condition. Thus, neither option of Case-marking is available for the complement clauses of ECM and raising verbs. We, then, have a problem of how they should be visible for θ-marking.

Baker proposes that the notion of what counts as "visibility" should be extended to include incorporation as well as Case-marking. His proposal, which I refer to as the extended Visibility Hypothesis, is amply motivated by the analysis of Noun Incorporation in a number of languages which have been traditionally called "polysynthetic." Consider, for instance, the following Noun Incorporation fact from Oneida.

(48) a. *Wa-hi-nuhs-ahni:nu:* *John.*
PAST-1sS/3_M-house-buy John
"I bought John's house"

b.



The verb assigns Case to *John,* not to NP*, as indicated by the verbal agreement (*hi*, 1s subject and masculine object). But NP* should be visible for θ-marking, since it receives a θ-role from *buy* successfully. On the basis of the observation above, Baker claims that incorporation suffices to make elements visible for θ-marking.

If Baker's extended Visibility Hypothesis is correct, we can give a natural account of the problem above (i.e. the problem of how the complement clauses of ECM and raising verbs should be visible for θ-marking). ϕ incorporation in the ECM Construction has the same effects as Noun Incorporation in (48). ϕ incorporation creates the configuration where the main verb governs the embedded subject. The embedded subject NP in (41a) satisfies the Visibility Condition in terms of Case-marking by the matrix V. On the other hand, the complement clause of which ϕ complementizer is

the head will be visible for θ-marking by ϕ incorporation under the extended Visibility Hypothesis. The same argument holds for the Raising Construction. ϕ incorporation deprives barrierhood of CP. Thus, the embedded subject can move to the matrix subject position to receive Case at S-structure. In this case, too, ϕ incorporation makes the complement clause visible for θ-marking.

6. Conclusion

The crucial assumption in the present paper is that a clause has the Case feature [+C] intrinsically. On this assumption, I have proposed to extend the notion of Case-marking to include Identification of the Case feature. This extension of Case-marking enables us to discuss the distribution of clausal arguments under the Visibility Hypothesis. I have argued that the Visibility Condition, interacting with other principles of UG, determines the distribution of subject clauses. Arguing about Case-marking to complement clauses, I have explored some consequences of the version of Case theory developed in this paper. I have shown that given the Case-marking system proposed here, we can dispense with the notion of CHAIN to deal with pleonastic-argument pairs under the Visibility Hypothesis. I have also argued that it follows from our Case-marking system that complement clauses of ECM and raising verbs should be visible for θ-marking by incorporation, not by Case-marking, and that this gives support to the extended Visibility Hypothesis proposed in Baker (1988).

NOTES

* I would like to thank all the members of Sapporo Linguistics Circle for their comments and suggestions on the earlier version of this paper. I am also grateful to Willie Jones for his helpful suggestions for stylistic improvements. All inadequacies are, of course, my own.

1) I refer to X″ in (1a) as the SPEC(ifier) of X', and X″ in (1b) as the complement of X. In English, the SPEC is on the left of X' and the complement on the right of X.
2) Though I assume the DP Hypothesis, the conventional label, NP, will be used throughout this paper to stand for the category of noun phrase.
3) For discussion, the reader is referred to Baker (1988), Chapter 2.
4) Non-lexical categories (e.g. INFL) might assign Case by SPEC-head agreement. Cf. Fukui and Speas (1986), Fukui (1986), Koopman and Sportiche (1988), etc.
5) P assigns a structural Case in English, though it typically assigns an inherent Case in other languages.
6) θ-marking is defined informally as follows:
   (i) α θ-marks β only if α and β are sisters.
   I restrict the class of possible θ-markers to lexical categories, as is generally assumed in the literature. On the possibility that INFL θ-marks VP, see Chomsky (1986b).

7) Actually, Chomsky extends the Uniformity Condition to cover Genitive Case-assignment to prenominal NP.
   (i) the city's destruction t
   (ii) If α is an inherent Case-marker, then α Case-marks NP iff α θ-marks the chain headed by NP.
   I will assume immediately below that "prenominal Genitive NP" is not assigned Case by N, but by the non-lexical head, D. Thus, we need not refer to "chain" in the formulation of the condition.
8) (12b-c) are cited from Abney (1987).
9) The element PRO, which is always an argument, is visible for θ-marking even though it is not Case-marked. Following Chomsky (1986a), I assume that PRO has a Case intrinsically.
10) Pleonastic *it*, expletive *there*, weather *it*, and idiom chunks must be Case-marked, though they are generally assumed to be non-arguments. A number of proposals have been made to account for the problem under the Visibility Hypothesis, which I will not discuss here. Cf. Chomsky (1981, 1986a, 1990).
11) The examples in (21) are from Fabb (1984). This construction is also discussed in Stowell (1981), Safir (1985), Chametzky (1984), Jaworska (1986), etc.
12) (22) is from Chomsky (1986a).
13) It is independently argued in Levin and Massam (1984) that a clause is inherently (i.e. intrinsically) Case-marked.
14) See note 6.
15) Stowell's formulation of the Case Resistance Principle is as follows:
   (i) Case may not be assigned to a category bearing a Case-assigning feature.
   (i) is incompatible with the version of Case theory assumed in this paper, where even N bears a Case-assigning feature.
16) I limit myself to clauses with a [-wh] head in this paper. Clauses headed by *wh*-elements have rather different distributional properties. I will not deal with extraposed clauses, either.
17) The only exceptional case I have found is (i) from Delahunty (1983).
   (i) Bill wants that Fred lied to be obvious to everyone.
18) (33a) is from Marantz (1979) and (33b-c) from Delahunty (1983).
19) See note 1.
20) For similar discussion on subject clauses, see Stowell (1981).
21) The analysis of clausal topicalization as adjunction to IP is motivated by the observation in (33), which indicates that clausal subjects are not in the SPEC of CP or in some higher position than that. Cf. Baltin (1982) for further arguments for topicalization as adjunction to IP.
22) Topicalization is possible in embedded clauses, as can be seen from (i).
   (i) Bill thinks that Mary, I like.
   See Baltin (1982).
23) Virtually no preposition in English takes a clausal argument as its complement. I tentatively assume that P assigns Case obligatorily in English, so that clauses cannot be in the complement position of P without violating (31). Note that P can take a clausal argument in other languages. Safir (1985), for example, offers the following instance in Icelandic.
   (i) John var að hugsa um [að [Maria væri líklega farin]] .
      "John was thinking about that Mary had probably gone"
24) Chomsky mainly discusses expletive-argument pairs, but the same argument holds for pleonastic-argument pairs.
25) Safir describes the notion "unbalanced chain" as follows:

(i) A θ-chain is "unbalanced" if it contains an argument that is not the head of the chain.

26) For similar arguments about expletive-argument pairs, see Chomsky (1990).

27) Chomsky (1986a) suggests that expletive-argument pairs should not cross an S-boundary.

(i) *There seems [a unicorn to be in the garden] .

For discussion of (i), see also Chomsky (1990).

28) It is generally assumed in the literature that an ECM verb subcategorizes for IP as well as CP. It seems to me that the ϕ incorporation analysis is superior to the IP subcategorization analysis on conceptual grounds, because we can restrict the Canonical Structural Realization of Proposition to the category CP. We find variation across languages with regard to whether they have the ECM Construction or not; English allows the construction, but French does not. We can explain the variation by assuming that languages differ with respect to whether or not they have ϕ complementizer.

REFERENCES

Abney, S. P. (1987) "The English Noun Phrase in its Sentential Aspect." Ph. D. dissertation, MIT.

Baker, M. (1988) *Incorporation : A Theory of Grammatical Function Changing.* The Univ. of Chicago Press.

Chomsky, N. (1981) *Lectures on Government and Binding.* Foris.

————. (1986a) *Knowledge of Language : Its Nature, Origin, and Use.* Praeger.

————. (1986b) *Barriers.* MIT Press.

————. (1990) "Some Notes on Economy of Derivation and Representation." *MIT Working Papers in Linguistics* 10.

Chametzky, R. (1984) "NPs or arguments: exocentricity vs. predication," *CLS* 21.

Davis, L. J. (1986) "Remarks on the θ-Criterion and Case," *Linguistic Inquiry* 17.

Delahunty, G. (1983) "But Subject Sentences do Exist." *Linguistic Analysis* 12.

Emonds, J. (1976) *A Transformational Approach to Syntax.* Academic Press.

Fabb, N. (1984) "Syntactic Affixation," Ph. D. dissertation, MIT.

Fukui, N. (1986) "A Theory of Category Projection and Its Application," Ph. D. dissertation, MIT.

Fukui, N. and M. Speas (1986) "Specifiers and Projection," *MIT Working Papers in Linguistics* 8.

Grosu, A. and S. Thompson (1977) "Constraints on the Distribution of NP Clauses," *Language* 53.

Jaworska, E. (1983) "Prepositional Phrases as Subjects and Objects," *Journal of Linguistics* 22.

Koopman, H. and D. Sportiche (1988) "Subjects," ms., UCLA.

Koster, J. (1978) "Why Subject Sentences don't Exist," *Recent Transformational Studies in European Languages,* ed. by Samuel I. Keyser. MIT Press.

Kuno, S. (1973) "Constraints on Internal Clauses and Sentential Subjects," *Linguistic Inquiry* 4.

Levin, J. and D. Massam (1984) "Surface Ergativity: Case/Theta Relation Reexamined," *NELS* 14.

Marantz, A. (1979) "Assessing the X' Convention: Embedded Sentences in English," ms., MIT.

Safir, K. (1979) "On Extra Position Complements and Control," ms., MIT.

————. (1985) *Syntactic Chains.* Cambridge University Press.

Stowell, T. (1981) "Origins of Phrase Structure," Ph. D. dissertation, MIT.

《要　　旨》

節の分布と可視性の条件

山　田　義　裕

本論文の目的は，θ役割付与に対する可視性の条件に基づき節の分布を説明することである。名詞句の分布を規定するのに二つの下位理論，すなわち格理論とθ理論が重要な役割を果たしている。格理論の中心的原則として，格フィルターが仮定されている。このフィルターは，名詞句の分布を格の面から規定する条件である。一方，θ理論では，名詞句を含む項一般の分布を意味的に制限する原則としてθ基準が仮定されている。Chomsky（1981, 1986b）は，格理論とθ理論の余剰性を指摘し，これを解消するため格フィルターを「θ役割付与に対する可視性の条件」としてθ基準に組み込むことを提案している。可視性の条件は，名詞句の分布に関してはいくつかの好ましい帰結を持つことがこれまでの研究で示されている。しかし，節の分布が可視性の仮設のもとで正しく説明されるかどうかに関しては議論が分かれている。本稿では，格標示のシステムを拡張することにより，可視性の仮設のもとで節の分布上の特性が正しく説明されることを示す。