

Case Marker Drop and *Wh*-Movement in Japanese*

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0. Introduction

In this article I will examine various facts related to the so-called Case marker drop phenomena, exploring both empirical and theoretical consequences of a principles-and-parameters approach. In particular, I will discuss a constraint on Case marker drop, noting some problems in previous analyses. I will also discuss the status of Case markers in the system of X-bar Theory and examine some effects brought about by the absence of Case markers. Furthermore, I will demonstrate that *wh*-movement shows some peculiar properties when Case markers are deleted and I will provide a unified explanation for these phenomena.

This article is organized as follows. In section 1, I examine various facts of Case marker drop and propose a satisfactory account for a certain restriction on Case marker drop. In section 2, I provide an explanation for the mechanism of *wh*-movement in Japanese and claim that Case markers are stranded in their original positions at LF when *wh*-movement takes place and that they can act as proper governors for traces left by *wh*-movement, assuming that Case markers are heads of DP. In section 3, I provide an analysis of some Subjacency and ECP effects in Japanese which arise from the interaction of Case marker drop and *wh*-movement. Some concluding remarks are provided in section 4.

1. Characteristics of Case Marker Drop

First, as illustrated in the following "regular" Japanese sentence, nominative Case is morphologically realized as *ga*, and accusative Case as *o*:

- (1) John-ga sono hon-o kat-ta
-Nom that book-Acc buy-Past
'John bought that book'

Secondly, as shown in the following sentences, either the nominative Case marker *ga* or the accusative Case marker *o* can be deleted, where ϕ represents the omitted Case marker:

- (2) a. John- ϕ sono hon-o kat-ta
 -Nom that book-Acc buy-Past
 b. John-ga sono hon- ϕ kat-ta
 -Nom that book-Acc buy-Past
 'John bought that book'

However, Kuno (1973b) claims that the deleted Case marker in (2a) is not the nominative Case marker *ga* but the topic marker *wa*:¹

- (3) John-wa sono hon-o kat-ta
 -Top that book-Acc buy-Past
 'As for John, he bought that book'

In what follows, I will argue against Kuno's claim along the lines of Fukuda (1993) and propose that the nominative Case marker *ga* as well as the topic marker *wa* and the accusative Case marker *o* can be deleted.

1.1. Fukuda (1993)

Contrary to Kuno (1973b), Fukuda (1993), citing data pointed out by Masunaga (1988), claims that the nominative Case marker *ga* can be dropped in appropriate contexts, where particles such as *yo* or *zo* appear in sentence final position:

- (4) a. John- ϕ sono hon-o yon-da yo
 -Nom that book-Acc read-Past Prt
 'John read that book'
 b. John-ga sono hon- ϕ yon-da yo
 -Nom that book-Acc read-Past Prt

- (5) a. John- ϕ sono hon-o yon-da zo
 -Nom that book-Acc read-Past Prt
 'John read that book'
- b. John-ga sono hon- ϕ yon-da zo
 -Nom that book-Acc read-Past Prt

Fukuda also claims that *ga* (Nom) can be deleted in interrogative sentences which end with the question marker *no*:

- (6) a. John- ϕ sono hon-o yon-da no
 -Nom that book-Acc read-Past Q
 'Did John read that book?'
- b. John-ga sono hon- ϕ yon-da no
 -Nom that book-Acc read-Past Q

I assume here that this judgement is basically correct. Thus I conclude that not only the accusative Case marker *o* but the nominative Case marker *ga* as well can be deleted. Although the naturalness of sentences with *ga* (Nom) deletion depends on the presence of sentence final particles, I further assume that sentences involving *ga* (Nom) deletion are basically grammatical even when sentence final particles such as *yo*, *zo* and *no* (Q) are absent. In fact, Masunaga (1988) observes that sentence (7a) involves *ga* (Nom) deletion, where sentence final particles need not necessarily appear (although instead of sentence final particles, the phrase with the intensifier *mo*, *sando-mo* 'at least three times' occurs in the sentence):

- (7) a. John- ϕ sono hon-o sando-mo yon-da
 -Nom that book-Acc three times-Intens read-Past
 'John read that book at least three times'
- b. John-ga sono hon- ϕ sando-mo yon-da
 -Nom that book-Acc three times-Intens read-Past

Thus it is not unreasonable to conclude that sentences involving *ga* deletion are basically grammatical even if sentence final particles

are absent.

1.2. A Structural vs. Inherent Case Asymmetry

In this subsection I will show that a structural/inherent Case asymmetry exists with respect to Case marker drop.

First of all, consider the following example:

- (8) John-ga Mary-ni sono hon-o kat-te age-ta
 -Nom -Dat that book-Acc buy-to give-Past
 'John bought Mary that book'

Sentence (8) involves three types of Case markers; nominative *ga*, dative *ni*, and accusative *o*. All of these are associated with arguments of the complex verb *kat-te age* 'buy', which selects one external argument (agent) and two internal arguments (goal and theme). Interestingly enough, both the nominative Case marker *ga* and the accusative Case marker *o* can be deleted, whereas the dative Case marker *ni* cannot as shown in (9):

- (9) a. John- ϕ Mary-ni sono hon-o kat-te age-ta
 -Nom -Dat that book-Acc buy-to give-Past
 b. John-ga Mary-ni sono hon- ϕ kat-te age-ta
 -Nom -Dat that book-Acc buy-to give-Past
 c. *John-ga Mary- ϕ sono hon-o kat-te age-ta
 -Nom -Dat that book-Acc buy-to give-Past

In (9a) the sentence involving nominative Case marker drop is judged grammatical though it sounds a little unnatural. Similarly, the sentence in (9b), in which the accusative Case marker *o* is deleted, is also grammatical. However, in contrast, the sentence in (9c) is totally ungrammatical regardless of the fact that the dative NP *Mary-ni* 'Mary-Dat' is selected by the verb as in the case of nominative and accusative NPs. The sharp contrast between (9a,b) and (9c) confirms our conclusion that a nominative Case marker as well as an accusative

Case marker can be deleted. However, we must explain why the dative *ni* cannot be deleted while the nominative and the accusative Case markers can.

Incidentally, the ungrammaticality of (9c) suggests that Fukuda's (1993) analysis of Case marker drop, which is based on the Empty Category Principle (ECP), is untenable.² Fukuda (1993) proposes that empty categories left by Case marker deletion must be properly head-governed by either a given verb or a sentence final particle in the head C.³ Thus, in Fukuda's system sentence (9c) would improve if sentence final particles such as a question marker *no* are added to it.⁴ However, this is not the case. Consider the following sentence:

- (10) *John-ga Mary- ϕ sono hon-o kat-te age-ta no?
 -Nom -Dat that book-Acc buy-to give-Past Q
 'Did John buy Mary that book?'

Therefore, from the fact that sentence (10) is still ungrammatical, we may say that Fukuda's analysis cannot be maintained.

Notice here that the asymmetry in grammaticality shown between (9a,b) and (9c) can be ascribed to the distinction between structural and inherent Case in the sense of Chomsky (1986b). Chomsky claims that inherent Case is associated with theta-marking, while structural Case is assigned independently of theta-marking. Thus it is plausible to assume that the dative Case marker *ni* is a realization of inherent Case, which is closely associated with a particular thematic role, in this case, "Goal".⁵ Given this assumption, we can provide the following generalization: the structural Case markers *ga* (Nom) and *o* (Acc) can be deleted, while the inherent Case marker *ni* (Dat) cannot. Later, I will discuss how this descriptive generalization can be captured in the theory of grammar.

However, one might argue that the dative *ni* is not a pure Case marker such as *ga* (Nom) or *o* (Acc), but a postposition such as *kara* 'from'. Thus, the ungrammaticality of (9c) would be attributed to the same reason that the following sentence in (11b), which involves deletion of the postposition *kara* 'from', is ill-formed:

- (11) a. John-wa Mary-kara sono tegami-o uketot-ta
 -Top -from that letter-Acc receive-Past
 'As for John, he received that letter from Mary'
 b. *John-wa Mary- ϕ sono tegami-o uketot-ta
 -Top -from that letter-Acc receive-Past

In (11b) the postposition *kara* 'from' is deleted, which yields an ungrammatical sentence, because the content of the postposition is not recoverable. Thus, if the dative *ni* were a postposition such as *kara* 'from', it would be unclear whether the structural/inherent Case asymmetry with respect to Case marker drop is involved in (9). However, there are two pieces of evidence for the claim that the dative *ni* should be regarded as a pure Case marker.

First, consider the following sentence involving the numeral quantifier (NQ) *san-satu*, which consists of the numeral *san* 'three' and the classifier (CL) *satu*, which agrees with the type of entities being counted (in this case, books):

- (12) John-ga [_{NP} san-satu-no hon]-o kat-ta
 -Nom three-CL-Gen books-Acc buy-Past
 'John bought three books'

In (12) the NQ *san-satu* 'three-CL' appears with the genitive Case marker *no* in the prenominal position. The crucial point is whether or not the NQ can be separated from its host NP. Consider the following sentence:

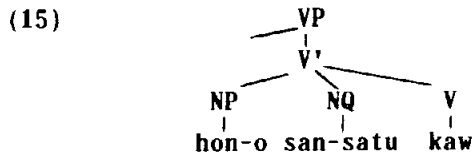
- (13) John-ga [_{NP} hon]-o san-satu kat-ta
 -Nom books-Acc three-CL buy-Past
 'John bought three books'

Following Miyagawa (1989), I assume here that the NQ in (13) can be related to its host NP by the theory of predication in the sense of Williams (1980). The condition on predication can be stated as follows:

(14) Mutual C-Command Requirement (Miyagawa 1989:30):⁶

For a predicate to predicate of a NP, the NP or its trace and the predicate or its trace must c-command each other.

Thus, in light of the condition in (14), the relevant configuration of (13) can be represented as follows:

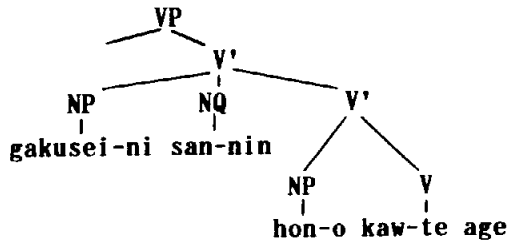


In (15) the NP *hon-o* 'books-ACC' and the NQ *san-satu* 'three-CL' are in a mutual c-command relation, yielding a grammatical sentence, as we predict. Assume that (14) is correct. Keeping this in mind, consider sentence (16b), where the NQ *san-nin* 'three-CL' is floated out of the dative phrase [*san-nin-no gakusei*]-*ni* 'for three students' in (16a):⁷

- (16) a. John-ga [_{NP} san-nin-no gakusei]-ni hon-o kat-te
 -Nom three-CL-Gen students-Dat books-Acc buy-to
 age-ta
 give-Past
 'John bought books for three students'
- b. John-ga [_{NP} gakusei]-ni san-nin hon-o kat-te
 -Nom students-Dat three-CL books-Acc buy-to
 age-ta
 give-Past

The grammaticality of (16b) indicates that the NP *gakusei-ni* 'students-Dat' is in a mutual c-command relation with the NQ *san-nin* 'three-CL'. The relevant structure of (16b) is as follows:

(17)

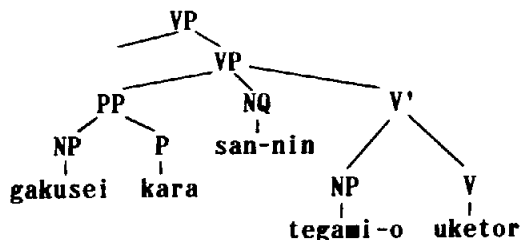


In contrast, consider the following example in (18b), where the NQ *san-nin* 'three-CL' is floated out of the postpositional phrase [*san-nin-no gakusei*]-*kara* 'from three students' in (18a) and the sentence is totally ungrammatical:

- (18) a. John-ga [_{NP} san-nin-no gakusei]-kara tegami-o
 -Nom three-CL-Gen students-from letters-Acc
 uketot-ta
 receive-Past
 'John received letters from three students'
- b. *John-ga [_{NP} gakusei]-kara san-nin tegami-o
 -Nom students-from three-CL letters-Acc
 uketot-ta
 receive-Past

The ungrammaticality of (18b) is due to the lack of a mutual c-command relation between the NQ *san-nin* 'three-CL' and its host NP *gakusei* 'students', as the configuration in (19) illustrates:

(19)



In (19) the NQ c-commands its host NP, but not vice versa. PP prevents the NP *gakusei* 'students' from c-commanding the NQ if we assume the

definition of c-command proposed by Reinhart (1976).⁹ Thus it follows that the sentence in (18b) is correctly ruled out by the condition in (14). The contrast between (16b) and (18b) leads us to conclude that the dative marker *ni* is not a postposition such as *kara* 'from', but a pure Case marker associated with some particular thematic role, and, thus, (16b) meets with the mutual c-command requirement for the licensing of numeral quantifier floating.

For the second piece of evidence on the status of *ni* phrases, consider the following sentences noted by Oka (1988):

- (20) a. *kin-medaru-ga sono kuni kara de-ta*
 gold-medal-Nom that country from come out-Pres Perf
 'A gold medal has come out from that country' (A gold medal has been won by that country)
- b. *John-ga sono mura kara ki-ta*
 -Nom that village from come-Pres Perf
 'John has come from that village'

Oka (1988) points out the following contrast in (21), suggesting that the verb *de* 'come out' in (20a) assigns NP-*kara* 'NP-from' a particular inherent Case, whereas the verb *ku* 'come' in (20b) does not:

- (21) a. [_{NP} *sono kuni*]₁-wa [_{IP} *kin-medaru-ga e₁*
 that country-Top gold-medal-Nom
de-ta
 come out-Pres Perf
 'As for that country, a gold medal has come out'
- b. * [_{NP} *sono mura*]₁-wa [_{IP} *John-ga e₁ ki-ta*]
 that village-Top -Nom come-Pres Perf
 'As for that village, John has come'

sono kuni 'that country' in (21a) and *sono mura* 'that village' in (21b) are topic phrases which are associated with an empty pronoun *e* in the original position. I assume, following Hoji (1985), that topic phrases with the particle *wa* (Top) are base-generated in Topic Phrase

(TopP) positioned higher than CP.⁹ Assuming that each *e* in (21) is *pro*, Oka (1988) proposes the following condition on *pro* in Japanese:

(22) *Pro* must be identified by a category which Case-marks it.

In (21a) the *pro* is assigned inherent Case and thus it can be identified. On the other hand, the *pro* in (21b) cannot be identified because it is not assigned any Case. Thus, the contrast in (21) follows straightforwardly. The existence of the empty pronominal which cannot be Case-marked violates the principle of Full Interpretation (FI) in Chomsky (1986b) or the principle of Economy of Representation in the sense of Chomsky (1991, 1992), both of which state that every element of Phonological Form (PF) and Logical Form (LF) must receive an appropriate interpretation. In other words, no superfluous elements should be included in the representation of either PF or LF. Therefore, sentence (21b) is correctly excluded since the null element *pro*, which does not have any abstract Case, cannot be identified and it is regarded as a superfluous element in LF.

Now let us consider the case where the NP in the dative *ni* phrase undergoes topicalization. If Oka's proposal in (22) is correct, we predict that the sentence involving topicalization of the NP in the dative *ni* phrase is well-formed, since the *pro* in the original position, which is coindexed with the phrase in the SPEC of TopP, can be identified by being assigned inherent Case. This prediction is borne out:

- (23) a. John-ga Mary-ni sono hon-o kat-te age-ta
 -Nom -Dat that book-Acc buy-to give-Past
 'John bought Mary that book'
- b. [_{TOPP} [[Mary]₁-wa] [_{1P} John-ga pro₁ sono hon-o
 -Top -Nom that book-Acc
 kat-te age-ta]]
 buy-to give-Past
 'As for Mary, John bought her that book'

Sentence (23b) is perfectly grammatical. This is in sharp contrast with sentence (24b), where the NP in the postpositional phrase is topicalized, and is ungrammatical, in parallel with (21b):

- (24) a. John-ga Mary-kara sono tegami-o uketot-ta
 -Nom from that letter-Acc receive-Past
 'John received that letter from Mary'
- b. *_[Top PP] [[Mary]₁-wa] [_{IP} John-ga pro₁ sono tegami-o
 -Top -Nom that letter-Acc
 uketot-ta]
 receive-Past
 'As for Mary, John received that letter from her'

In (24b) the *pro* cannot be identified since it is assigned no Case, and thus the sentence is excluded because of a violation of the principle of Economy of Representation. Therefore, the contrast between (23b) and (24b) suggests the plausibility of our contention that the dative *ni* is a realization of inherent Case.

Notice that the NP assigned accusative Case *sono tegami* 'that letter' in (24a) can be topicalized, as illustrated in (25):

- (25) [_{Top PP} [[sono tegami]₁-wa] [_{IP} John-ga Mary-kara pro₁
 that letter -Top -Nom from
 uketot-ta]
 receive-Past
 'As for that letter, John received it from Mary'

The well-formedness of (25) patterns with the case of the topicalization of the NP in the dative *ni* phrase. Therefore, we can conclude that the dative *ni* is a pure Case marker, not a postposition such as *kara* 'from'.

To summarize I have shown in this subsection that a structural/inherent Case asymmetry really exists, arguing that the dative *ni* is a pure Case marker, not a postposition. Thus, as I mentioned above, we have the following descriptive generalization:

- (26) The Case markers bearing structural Case *ga* (Nom) and *o* (Acc) can be deleted, while the inherent Case marker *ni* (Dat) cannot.

We will see how this descriptive generalization can be accommodated within the theory of Universal Grammar (UG). Before proceeding, I will touch on Kuno's (1973b) claim and provide further evidence for our contention that *ga* (Nom) can be deleted as we have seen in the previous subsections.

1.3. *Kuno (1973b): Is Ga (Nom) Deletion Really Wa (Top) Deletion?*

In this subsection, I will provide direct evidence against Kuno's (1973b) claim, showing that the nominative Case marker *ga*, as well as the topic marker *wa* and the accusative Case marker *o*, can be deleted. This implies that there is no subject/object asymmetry with respect to Case marker drop.

As I mentioned above, Kuno (1973b) argues that apparent cases of *ga* (Nom) deletion are really examples of *wa* (Top) deletion. Consider the following sentence:

- (27) John- ϕ sono hon-o kat-ta
 -Nom that book-Acc buy-Past
 'John bought that book'

Kuno claims that sentence (27) is derived from (28a), not from (28b):

- (28) a. John-wa sono hon-o kat-ta
 -Top that book-Acc buy-Past
 'As for John, he bought that book'
 b. John-ga sono hon-o kat-ta
 -Nom that book-Acc buy-Past
 'John bought that book'

I agree with Kuno that sentence (27) could involve *wa* (Top) deletion.

However, I will demonstrate that sentences such as (27) really involve *ga* (Nom) deletion. That is, sentence (27) can be interpreted ambiguously as a case of both *wa* (Top) and *ga* (Nom) deletion.

First of all, consider the following sentence with a relative clause:

- (29) [_{NP}[_{CP} John-ga kai-ta] ronbun]-ga totemo
 -Nom write-Past paper -Nom very
 yomi-yasukat-ta
 read-easy-Past
 'The paper that John wrote was very easy to read'

The point relevant to our argument here is the fact that the NP *John* appears with the nominative Case marker *ga* as the subject of the relative clause. On the other hand, the topic marker *wa* cannot appear with an NP in relative clauses:

- (30) * [_{NP}[_{CP} John-wa kai-ta] ronbun]-ga totemo
 -Top write-Past paper -Nom very
 yomi-yasukat-ta
 read-easy-Past
 Lit. 'The paper that as for John, he wrote was very easy to read'

Thus, if Case marker drop applies to the nominative NP *John-ga* in sentence (29), it is unambiguously interpreted as *ga* (Nom) deletion. Consider the following sentence:

- (31) ? [_{NP}[_{CP} John- ϕ kai-ta] ronbun]-ga totemo
 -Nom write-Past paper -Nom very
 yomi-yasukat-ta
 read-easy-Past
 'The paper that John wrote was very easy to read'

Although sentence (31) with *ga* (Nom) deletion sounds a little un-

natural, it seems to me that it is fully grammatical, in contrast with (30). Therefore, sentence (31) supports our hypothesis that the nominative Case marker *ga* can be deleted as well as the topic marker *wa* and the accusative Case marker *o*, suggesting that Kuno's (1973b) claim is no longer tenable.

However, the situation is in fact more complicated. Consider the following sentence, similar to (29), in which the genitive Case marker *no* can appear instead of the nominative Case marker *ga*. This phenomenon is called *Ga/No* conversion (cf. Harada 1971):

- (32) [_{NP}[_{CP} John-ga/no kai-ta] ronbun]-ga totemo
 -Nom/Gen write-Past paper -Nom very
 yomi-yasukat-ta
 read-easy-Past
 'The paper that John wrote was very easy to read'

From the above fact, one might argue that in (31) the genitive Case marker *no* is deleted instead of the nominative Case marker *ga*. This means that sentences such as (31) cannot be used as evidence for our hypothesis that the nominative Case marker *ga* can really be dropped.

To avoid this undesirable state of affairs, let us consider the following sentence, in which the subject NP in the *toki* 'when' clause is marked by the nominative Case marker *ga*:

- (33) [_{NP}[_{CP} John-ga sono hon-o yon-de i-ta] toki],
 -Nom that book-Acc read-Prog-Past when
 zisin-ga oki-ta
 earthquake-Nom occur-Past
 'When John was reading that book, an earthquake occurred'

In contrast with (33), in the *toki* 'when' clause the genitive Case marker *no* can not appear on the subject NP if the *toki* 'when' clause is an adjunct (cf. Miyagawa 1989):

- (34) *_{[NP][CP John-no sono hon-o yon-de i-ta] toki},
 -Gen that book-Acc read-Prog-Past when
 zisin-ga oki-ta
 earthquake-Nom occur-Past

Neither can the topic marker *wa* appear on the subject NP in the adjunct *toki* 'when' clause:

- (35) *_{[NP][CP John-wa sono hon-o yon-de i-ta] toki},
 -Top that book-Acc read-Prog-Past when
 zisin-ga oki-ta
 earthquake-Nom occur-Past
 'When as for John, he was reading that book, an earthquake occurred'

Again we can predict that the sentence is well-formed if *ga* (Nom) deletion applies to sentence (33), excluding the possibility of *no* (Gen) and *wa* (Top) deletion. This prediction can also be supported by the grammaticality of sentence (36):

- (36) _{[NP][CP John-ϕ sono hon-o yon-de i-ta] toki},
 -Nom that book-Acc read-Prog-Past when
 zisin-ga oki-ta
 earthquake-Nom occur-Past

Sentence (36) is much better than (35). Therefore, we can conclude that nominative Case marker *ga* (Nom) deletion is possible, suggesting that Kuno's claim cannot be maintained.

The same conclusion can be drawn from the following examples involving *wh*-elements:

- (37) a. dare-ga sono hon-o kat-ta no
 who -Nom that book-Acc buy-Past Q
 'Who bought that book?'

- b. *dare-wa sono hon-o kat-ta no
 who -Top that book-Acc buy-Past Q

The contrast between (37a) and (37b) indicates that the topic marker *wa* is incompatible with *wh*-elements. Thus, if Case marker drop applies to *dare-ga* 'who-Nom' in (37a), the sentence can be interpreted unambiguously as *ga* (Nom) deletion. Consider the following sentence:

- (38)??dare- ϕ sono hon-o kat-ta no
 who -Nom that book-Acc buy-Past Q
 'Who bought that book?'

Although the sentence is marginal, we can find a sharp contrast between (37b) and (38), which confirms that the nominative Case marker *ga* can be deleted.

However, we must explain, in some way or other, why sentence (38) is marginal, assuming that the marginality of (38) can be attributed to the theory of grammar, not to some pragmatic factor.

The marginal status of (38) is parallel with that of sentence (39b), where the phrase *nani- ϕ* 'what-Acc', in which the accusative Case marker *o* is deleted, is moved to the sentence initial position by scrambling:

- (39) a. John-ga nani- ϕ kat-ta no
 -Nom what-Acc buy-Past Q
 'What did John buy?'
 b. ??nani- ϕ John-ga kat-ta no
 what-Acc -Nom buy-Past Q

The ungrammaticality of (40) shows that (39b) does not involve topic *wa* deletion:

- (40) *nani-wa John-ga kat-ta no
 what-Top -Nom buy-Past Q

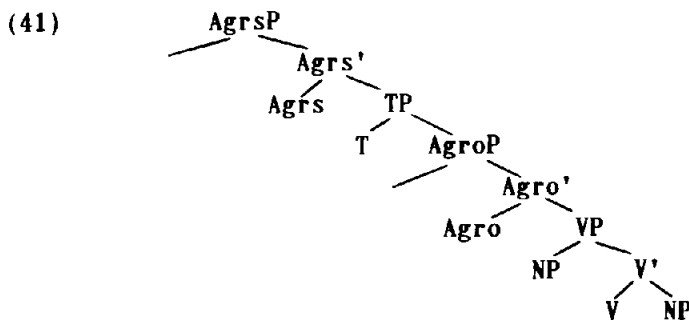
The contrast between (39a) and (39b) should also be accounted for under the principles-and-parameters approach. In section 3 I will attempt to provide an explanation for the marginal status of (38) and (39b).

To summarize, we have seen so far that not only the accusative Case marker *o* and the topic marker *wa*, but also the nominative Case marker *ga* can be deleted, showing that Kuno's claim is untenable. In the next subsection, I will discuss a problem remaining unsolved in subsection 1.2, that is, the structural/inherent Case asymmetry, and I will provide an account for this asymmetry in a principled way, assuming as a null hypothesis that the mechanism of the LF Case-checking system proposed in Chomsky (1992) can be extended to Japanese.

1.4. The "Big Theory" Model in Chomsky (1992)

In this last subsection I will attempt to explain why such a structural/inherent Case asymmetry exists with respect to Case marker drop, following the Case-checking system in Chomsky (1992).

Chomsky proposes that NPs bearing structural Case such as nominative and accusative must uniformly undergo Case-checking under the SPEC-Head agreement at LF. If we assume the existence of a functional projection *AgroP* which is responsible for object agreement whether or not the agreement is overt, the articulated phrase structure of an English sentence can be represented as follows:



In (41) the subject NP begins in the SPEC position of VP according to

the VP-internal subject hypothesis (cf. Fukui and Speas 1988, Koopman and Sportiche 1988, Kuroda 1988). It must move to the SPEC of AgrsP at S-structure to check the morphological property that the head Agrs has, otherwise the derivation of a sentence would "crash" in the sense of Chomsky (1992). On the other hand, the object NP, which is base-generated in the complement position of a given verb, cannot move to the SPEC of AgroP until LF because the NP-feature of Agro is weak. This is due to "Procrastination", which is an economy condition, stating that LF movement is "cheaper" than overt movement.

Now let us turn to the issue relevant to our argument here. Consider the sentences in (9), which are repeated as (42) for ease of reference:

- (42) a. John- ϕ Mary-ni sono hon-o kat-te age-ta
 -Nom -Dat that book-Acc buy-to give-Past
 'John bought Mary that book'
 b. John-ga Mary-ni sono hon- ϕ kat-te age-ta
 -Nom -Dat that book-Acc buy-to give-Past
 c. *John-ga Mary- ϕ sono hon-o kat-te age-ta
 -Nom -Dat that book-Acc buy-to give-Past

We have provided the following generalization in order to capture the above contrast:

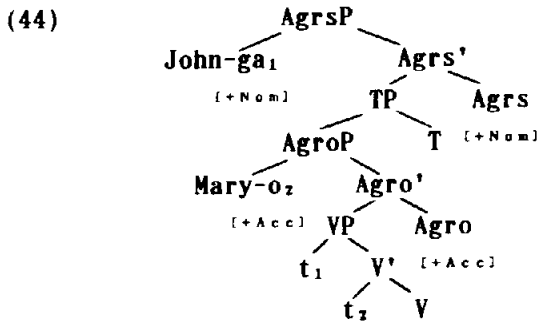
- (43) The Case markers bearing structural Case *ga* (Nom) and *o* (Acc) can be deleted, while the inherent Case marker *ni* (Dat) cannot.

A natural question to be addressed here is how we can reduce the descriptive generalization in (43) to some deep principle of UG.

Notice that having recourse to proper head government is not sufficient to explain the structural/inherent Case asymmetry in (42), since, as I mentioned in note 4, the dative Case marker *ni*, which can not be deleted as indicated in (42c), can be properly head governed by a given verb on the assumption that dative phrases are adjoined to V'

as arguments in the VP-internal configuration. Thus if proper head government is relevant to the licensing of Case marker drop, it would be falsely predicted that (42c) is grammatical. Furthermore, if we assume, following Ueda (1990), that subject NP in Japanese moves to the SPEC of AgrsP at S-structure, we would again incorrectly predict that the nominative Case marker *ga*, which is not properly head-governed by any verb, cannot be deleted, contrary to fact. Thus the descriptive generalization in (43) cannot be reduced to the proper head government requirement.

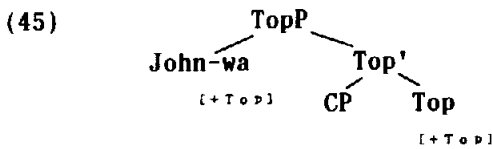
Alternatively, I propose that the above generalization can be properly captured under the Case-checking system in Chomsky (1992). First of all, let us assume as a null hypothesis that the LF Case-checking system can also be applied to Japanese. Furthermore, let us suppose that Case marker drop creates an empty category.¹⁸ Since the empty categories are subject to an identification requirement due to the principle of Economy of Representation, we can say that the null elements in (42a,b) can be identified by a head which bears the same feature that the null elements have under the SPEC-Head agreement at LF. The relevant LF representation of a sentence involving nominative and accusative Case in Japanese is as follows:



In (44) nominative and accusative Case are checked under the SPEC-Head agreement at LF, and thus we can say that the empty categories left by nominative and accusative Case marker drop are licensed by the heads bearing the same features that the empty categories have, i.e., [+Nom] and [+Acc] under the SPEC-Head configuration at LF.

This situation is analogous to the case of the licensing of *pro* in null subject languages like Italian (Rizzi 1982). *Pro* in subject position can be licensed in a SPEC-Head relation to "strong" Agrs. Thus, it is not unreasonable to propose that empty categories created by Case marker drop can be identified by appropriate heads under the SPEC-Head agreement at LF.

Similarly, we can capture the fact that the topic marker *wa*, which can be governed by neither verbs nor sentence final particles such as *yo* and *zo*, can be deleted, assuming that an NP with the topic marker *wa* is in a SPEC-Head relation with the head Top, as illustrated in the following structure in (45).



If the topic *wa* is deleted in (45), the empty category left by *wa* deletion can be identified by the head Top under the SPEC-Head agreement relation, yielding a grammatical sentence.

On the other hand, if the assumption that inherent Case cannot undergo Case-checking at LF is correct (cf. Chomsky and Lasnik 1991), there is no way for the empty category left by deleting the dative Case marker *ni* to be identified, hence resulting in a violation of the principle of Economy of Representation: the empty category in (42c) is regarded as a superfluous element at LF. Thus, the contrast in (42) automatically follows.

As a consequence of our proposal, we can explain the fact that the contrastive marker *wa* cannot be deleted, if we assume, following Hoji (1985), that phrases with the contrastive marker *wa* are adjoined to AgrsP at LF (although he uses the category IP in his notation). Consider the following sentences noted by Masunaga (1988):

- (46) a. Hanako-wa osusi-o, Taroo-wa suteeki-o tabe-ta
 -Contra sushi-Acc -Contra steak-Acc eat-Past

'Hanako ate sushi and Taro ate steak'

- b. *Hanako- ϕ osusi-o, Taroo- ϕ suteeki-o tabe-ta
 -Contra sushi-Acc -Contra steak-Acc eat-Past

In (46) the contrastive phrases are adjoined to AgrsP at LF, where no SPEC-Head agreement relation can be established, hence the ungrammaticality of sentence (46b).

To summarize, we have seen in this subsection how the generalization in (43) can be accommodated within the theory of UG. Our conclusion is that the generalization in (43) can be reduced to the identification requirement for empty categories under the SPEC-Head relation in the LF Case-checking system proposed in Chomsky (1992), assuming as a null hypothesis that the system is applicable to Japanese.

2. *Wh*-Movement in Japanese and the Status of Case Markers

In this section, I will discuss the mechanism of *wh*-movement in Japanese. In particular, I assume, following Watanabe (1991a,b, 1992), that S-structure movement of an empty operator is involved in *wh*-in-situ in Japanese. Furthermore, following Saito and Murasugi (1989), Tateishi (1989) and Ueda (1990), I assume the DP-hypothesis: Case markers are conceived as heads of DPs. I will demonstrate that these assumptions lead to both theoretical and empirical consequences. I will also discuss the status of Case markers and conclude that they can act as proper governors for the traces left by LF *wh*-movement.

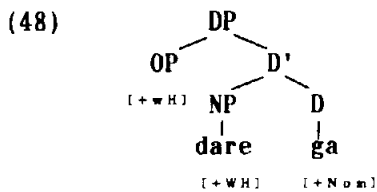
2.1. *S*-Structure Movement of a Pure *Wh*-Operator

Consider the following sentences involving *wh*-elements in Japanese:

- (47) a. dare-ga sono hon-o kat-ta no
 who -Nom that book-Acc buy-Past Q
 'Who bought that book?'

- b. John-ga nani-o kat-ta no
 -Nom what-Acc buy-Past Q
 'What did John buy?'

Take, for example, sentence (47a). The internal structure of the phrase *dare-ga*, which consists of the *wh*-element *dare* 'who' and the nominative Case marker *ga*, can be represented as follows under the DP-hypothesis:



In (48), the nominative Case marker *ga*, which takes an NP-complement, is identified as the head of DP. This implies that Case markers such as *ga* (Nom) and *o* (Acc) are regarded as members of the functional category D. There are at least two theory-internal arguments which indirectly support the DP-hypothesis. The first is that the DP-hypothesis conforms to the restrictive version of X-bar Theory proposed in Chomsky (1986a) in that every head (zero-level category) has its own maximal projection. Thus it is natural to assume that the hypothesis also applies to NPs in Japanese. The second is that, as Abney (1987:64-65) points out, functional elements such as complementizers have the following general properties:

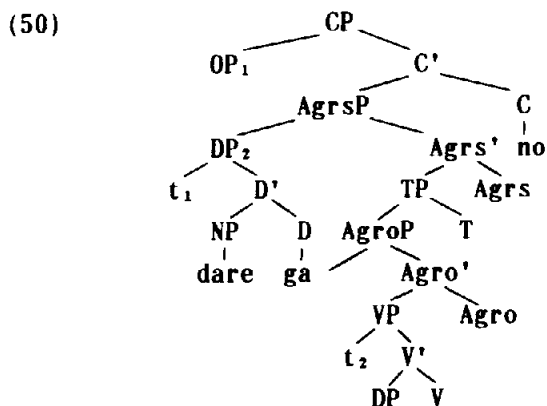
- (49) a. Functional elements constitute closed lexical classes.
 b. Functional elements are generally phonologically and morphologically dependent. They are generally stressless, often clitics or affixes, and sometimes even phonologically null.
 c. Functional elements permit only one complement, which is in general not an argument. The arguments are CP, PP, and DP. Functional elements select IP, VP, NP.

- d. Functional elements are usually inseparable from their complement.
- e. Functional elements lack what I [Abney] will call "descriptive content". Their semantic contribution is second-order, regulating or contributing to the interpretation of their complement. They mark grammatical or relational features, rather than picking out a class of objects.

As Ueda (1990) notes, all the properties of functional elements listed in (49) are shared by Case markers. Thus the application of the DP-hypothesis to NPs in Japanese becomes more plausible.

Let us now return to the problem of how sentences involving *wh*-elements can be derived under the hypothesis of the S-structure movement of an empty operator in *wh*-in-situ (henceforth we will call the empty operator the "pure *wh*-operator").

The first point to notice is that the pure *wh*-operator originates in the SPEC of DP and that it must move to the SPEC of CP at S-structure on the hypothesis that a [+*wh*] feature is universally strong (Watanabe 1991a,b, 1992. cf. Chomsky 1992). We can represent the S-structure derivation of (47a) roughly as follows, assuming that subject DP in Japanese moves to the SPEC of AgrsP at S-structure:



In (50) the pure *wh*-operator *OP* moves to the SPEC of CP headed by the

Q-morpheme *no* out of the subject DP, satisfying the morphological property that the operator has. However, it must be noted that the derivation in (50) appears to violate what is called the "Subject Condition", as illustrated in (51):

(51)?*Who₁ did [_{DP} a story about t₁] amuse you?

Generally speaking, extraction out of a domain is well-formed if the domain is in a position assigned some thematic role. In (51) the DP cannot be theta-marked in the SPEC of AgrSP and thus it becomes a barrier for movement, resulting in a violation of Subjacency. Therefore, we would incorrectly predict that sentences such as (47) always exhibit a grammatically deviant status due to a violation of Subjacency.¹¹ This would be problematic for our hypothesis that a pure *wh*-operator must move to the SPEC of CP at the level of S-structure, where we assume Subjacency to be applicable (Watanabe 1991a,b, 1992. cf. Huang 1982).^{12, 13}

To avoid this, I propose that in Japanese the DP in non-theta position can void barrierhood if it can recover by percolation from the Case marker the theta role which is assigned by a given verb in the SPEC of VP. To put this more precisely, once a theta role is assigned to the DP in a VP-internal position, it gets percolated down to the head D. Moreover, after the DP moves to another position, the theta role can get percolated up from the head D to the DP. Thus, even if a DP moves to a position which is not assigned any theta role, the DP can recover its theta role by percolation from the head of DP. Consequently, the DP in non-theta positions such as the SPEC of AgrSP always has the effect of being theta-marked and it does not become a barrier. At this point we do not have any clear reasons why this operation cannot apply to English. I conjecture that the operation is peculiar to Japanese, where Case markers can be morphologically realized, but not to languages like English in which Case markers are not realized morphologically except for genitive Case. In what follows, I will demonstrate that this proposal seems to be plausible, which implies that the hypothesis of the S-structure movement of a pure *wh*-

operator is not implausible.

First, consider the following examples noted by Lasnik and Saito (1992):

(52) a. ??*dono hon-o₁ Mary-ga [_{DP}[_{NP} John-ga t₁ kat-ta*
which book-Acc -Nom -Nom buy-Past
koto]-o] mondai-ni siteru no
fact -Acc problem-to making Q
 Lit. 'which book is it that Mary is calling the fact
 that John bought it into question'

b. ??*dono hon-o₁ Mary-ga [_{DP}[_{NP} John-ga t₁ kat-ta*
which book-Acc -Nom -Nom buy-Past
koto]-ga] mondai-da to omotteru no
fact -Nom problem-Cop Comp think Q
 Lit. 'which book is it that Mary thinks that the fact
 that John bought it is a problem'

In (52a,b) a DP is preposed out of a complex NP by scrambling. The marginality of the sentences indicates that scrambling in Japanese obeys the complex NP constraint, as noted by Haig (1976) and Harada (1977). However, (52b) is no worse than (52a) regardless of the fact that in (52b) the DP *dono hon-o* 'which book-Acc' is extracted out of the complex NP in the subject position. This suggests that there are no Subject Condition effects in Japanese. This fact can be explained by the hypothesis that Case markers can recover the theta role assigned to the DP in the SPEC of VP by a given verb, which voids barrierhood of the DP in non-theta position.

Secondly, let us consider the following sentences:

(53) a. *Bill-ga [Mary-ga [_{DP}[_{NP} John-ga sono hon-o kat-ta*
-Nom -Nom -Nom that book-Acc buy-Past
koto]-o] mondai-ni siteiru to] hihansi-ta
fact -Acc problem-to making Comp criticize-Past
 'Bill criticized that Mary is calling the fact that John
 bought that book into question'

- b. Bill-ga [_{DP} [_{NP} John-ga sono hon-o kat-ta koto]
 -Nom -Nom that book-Acc buy-Past fact-Acc
 -o]₁ [Mary-ga t₁ mondai-ni siteiru to] hihansi-ta
 -Acc -Nom problem-to making Comp criticize-Past

(53b) derives from (53a) by scrambling. I assume, following Saito (1985), that scrambling is an operation that left-adjoins a maximal projection. In (53b) the DP is left-adjoined to AgrsP. Saito (1992a) claims, following Mahajan (1989), that the adjoined position created by clause-internal scrambling can be either an A position or an A-bar position. However, whether it qualifies as an A position or as an A-bar position, no theta role can be assigned to the position, as otherwise it would violate the theta-criterion: the argument would be assigned two theta roles illicitly. Thus, we would predict that further application of scrambling out of the DP in the adjoined position in (53b) results in a severe violation of Subjacency since the DP is a barrier. The fact that an adjoined position generally becomes a barrier for extraction is indicated by the following contrast pointed out by Lasnik and Saito (1992):

- (54) a. Who₁ do you think that John wanted [_{DP} pictures of t₁]?
 b. ??Who₁ do you think that [_{DP} pictures of t₁]₂, John wanted t₂?

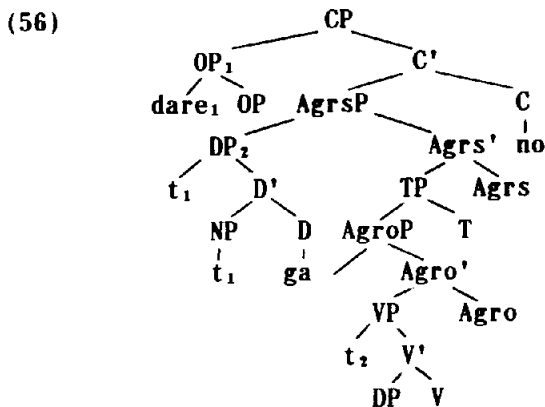
However, this does not hold of scrambling in Japanese. Compare the following examples:

- (55) a. ??sono hon-o₁ Bill-ga [Mary-ga [_{DP} [_{NP} John-ga t₁
 that book-Acc -Nom -Nom -Nom
 kat-ta koto]-o] mondai-ni siteiru to] hihansi-ta
 buy-Past fact -Acc problem-to making Comp criticize-Past
 b. ??sono hon-o₂ Bill-ga [_{DP} [_{NP} John-ga t₂ kat-ta koto]
 that book-Acc -Nom -Nom buy-Past fact
 -o]₁ [Mary-ga t₁ mondai-ni siteiru to] hihansi-ta
 -Acc -Nom problem-to making Comp criticize-Past

In (55a) *sono hon-o* 'the book-Acc' is extracted out of the DP in (53a) which stays in situ, observing the complex NP constraint. However, (55b), where extraction occurs out of the DP in the adjoined position, is no worse than (55a). This fact indicates that the DP in the adjoined position can void its barrierhood, which implies the correctness of our assumption that Case markers can recover the theta role assigned to the DP by the mechanism of percolation. Given this assumption, we can explain the fact that no severe Subjacency effects arise in the case of (47). Therefore, the derivation in (50) is no longer problematic for the hypothesis that a pure *wh*-operator must move to the SPEC of CP at S-structure.

2.2. LF Wh-Movement and the Status of Case Markers

Now let us return to the second point. Consider the LF of (47) relevant to our argument, given in (56):



In (56) the NP *dare* 'who', bearing a [+wh] feature, adjoins to the pure *wh*-operator to satisfy the identification requirement for empty categories. That is, since the pure *wh*-operator is regarded as a kind of empty category, the content of the pure *wh*-operator must be identified. Hence I assume that a pure *wh*-operator can be identified by adjoining the overt *wh*-element to the operator coindexed with it.

Notice here that the trace left by the movement of a pure *wh*-op-

erator is not subject to the ECP, since the operator can be replaced by the "real" *wh*-element at LF. Following Watanabe (1991a), I assume that the trace created by movement of a pure *wh*-operator must be deleted at LF. The question is then how traces created by the LF movement of a real *wh*-phrase can be licensed. I claim that Case markers can act as proper governors for the trace of the real *wh*-phrase (cf. Lasnik and Saito 1992, and Maki 1991). The notion of proper head government is defined as follows:

- (57) A nonpronominal empty category must be properly head-governed:
- a. "properly governed" means "governed by X^0 within X' "
 - b. α head-governs β iff:
 - (i) α is an X^0
 - (ii) α is coindexed with β (cf. Jaeggli 1991)
 - c. no barrier intervenes

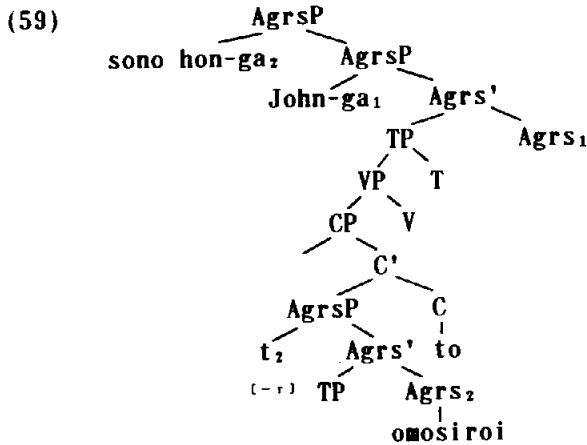
Thus, the trace of a real *wh*-phrase can be properly head-governed within D' by the head D , which is coindexed with its complement NP, i.e., a real *wh*-phrase, by a head-complement relation.¹⁴

Given the definition in (57), we can account for the ungrammaticality of sentence (58b), involving scrambling of the subject (cf. Saito 1985):

- (58) a. John-ga [_{Agrr,DP} sono hon-ga omosiroi to] it-ta
 -Nom that book-Nom interesting Comp say-Past
 'John said that that book was interesting'
- b. *sono hon-ga_i [John-ga [_{Agrr,DP} t_i omosiroi to] it-ta]
 that book-Nom -Nom interesting Comp say-Past

In (58b) the trace left by scrambling of the subject DP *sono hon-ga* 'that book-Nom' cannot be properly head-governed by the coindexed Agrs within the immediate projection of the Agrs, i.e., Agrs', yielding an empty category which cannot be licensed. Assuming the mechanism of γ -marking proposed by Lasnik and Saito (1984, 1992), we can conclude

that the trace of the argument DP in (58b) is subject to γ -marking at S-structure and that the trace is assigned $[-\gamma]$ since it is not properly head-governed. The relevant configuration is represented roughly as follows:¹⁵



This fact suggests that the definition of proper government in (57) is tenable and, thus, we will assume it to be correct.

Let us return to the LF in (56). We have seen that at LF a real *wh*-element adjoins to the pure *wh*-operator moved into the SPEC of CP at S-structure in order for the empty operator to be identified. However, a question arises here: why cannot the whole DP move up at LF? Let us assume that only an element bearing a [+wh] feature can move to the SPEC of CP. It thus follows that NPs such as *dare* 'who' and *nani* 'what', intrinsically [+wh], can move to the SPEC of CP. So, if the whole DP involving a *wh*-phrase cannot move up at LF, the next question to be asked is why the whole DP cannot carry a [+wh] feature. The assumption that it is not the whole DP but only the NP bearing a [+wh] feature which moves to the SPEC of CP can be supported empirically. Consider the following examples, where elliptical sentences with the sentence-ending (copula) particle *da/desu* are used as one possible way of answering *wh*-questions:¹⁶

- (60) a. dare-ga ki-ta no
 who -Nom come-Past Q
 'Who came?'
- b. John desu.
 Cop
 'It is John'
- c. *John-ga desu
 -Nom Cop

In (60b) the NP *John* is the target of the answer to the *wh*-question in (60a) and it is well-formed. (60c), on the other hand, is ungrammatical, where the whole DP involving the nominative Case marker *ga*, *John-ga* 'John-Nom' is the target of the answer to the *wh*-question. Nishigauchi (1990) claims that a short answer with *da/desu* to a *wh*-question must match the value for the operator expression of the question. If Nishigauchi's claim is correct, then we can straightforwardly explain the ungrammaticality of (60c), since in the short answer which ends with the copula *da/desu*, the whole DP *John-ga* 'John-Nom' does not correspond to the value for the *wh*-expression *dare* 'who' on the assumption that only an NP bearing a [+wh] feature can move to the SPEC of CP. There are more examples which illustrate the same point:

- (61) a. John-wa nani-o tabe-ta no
 -Top what-Acc eat -Past Q
 'What did John eat?'
- b. huransu-ryoori desu
 French cuisine Cop
 'It is French cuisine'
- c. *huransu-ryoori-o desu
 French cuisine-Acc Cop
- (62) a. John-wa dare-ni at-ta no
 -Top who -Dat meet-Past Q
 'Who did John meet?'

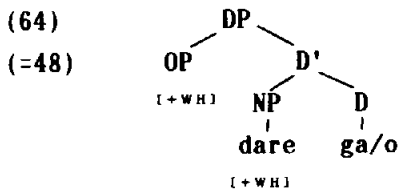
- b. Mary desu
 Cop
 'It is Mary'
 c.?*Mary-ni desu
 -Dat Cop

Therefore, the assumption that at LF only an NP bearing a [+wh] feature can move to the SPEC of CP becomes more plausible.

In order to account for the above phenomena, let us assume the following condition:

- (63) The feature of SPEC is copied onto the head only if both the SPEC and the head are occupied by some morphologically overt elements.¹⁷

The internal structure of the DP *dare-ga/o* 'who-Nom/Acc' can be represented as follows:



In (64) although the pure *wh*-operator and the head D are in a SPEC-Head relation, the operator is not morphologically overt and thus the [+wh] feature that the operator has cannot be copied onto the head D under the condition in (63). And consequently, we may say that the DP cannot have the [+wh] feature, assuming that only the features of a head can get percolated up to its maximal projection (Selkirk 1982). Therefore, it follows that the only elements that can have a [+wh] feature are NPs such as *dare* 'who' and only such NPs are subject to LF *wh*-movement. However, notice here that this explanation entirely depends on the condition in (63). So it would be better to show that the condition in (63) is needed independently of explaining the facts

shown in (60)-(62). Now let us consider the following sentences:

- (65) a. What did John buy?
 b. *What bought John?
 c. *What John bought?

The abstract representation of each sentence in (65) is as follows:

- (66) a. [_{CP} what₁ [_C did₂ [_{Agr,SP} John [_{Agr,SP} t₂ [_{VP} buy t₁]]]]]
 b. *[[_{CP} what₁ [_C bought₂ [_{Agr,SP} John [_{Agr,SP} t'₂ [_{VP} t₂ t₁]]]]]]]
 c. *[[_{CP} what₁ [_C e [_{Agr,SP} John [_{Agr,SP} [_{VP} bought t₁]]]]]]]

In (66a) the auxiliary verb *did*, inserted in the head Agrs, moves to the head C and then the [+wh] feature of *what* in the SPEC position of CP can be copied onto *did* in the head C, yielding an appropriate SPEC-Head relation (cf. Rizzi 1991). Thus the grammaticality of (66a) indicates that Agr-to-C movement is possible in English. In contrast, as the ungrammaticality of (66b) suggests, no V-to-C movement via Agr is allowed in English, whether the appropriate SPEC-Head relation can be obtained or not. The contrast between (66a) and (66b) thus follows straightforwardly. However, how should we deal with cases like (66c)? The ungrammaticality of (66c) cannot be ascribed to the fact that in English V-to-C movement via Agr is prohibited since in (66c) the verb *bought* remains in the head position of VP at S-structure. Thus if the [+wh] feature in the SPEC of CP were copied onto the empty head *e* in (66c), the representation would be well-formed, yielding an appropriate SPEC-Head relation and hence the grammaticality of sentence (66c), contrary to fact. So we must exclude the possibility that the empty head in (66c) can bear a [+wh] feature by SPEC-Head agreement. It is obvious that one possible way to exclude the false prediction is to assume the condition in (63). Given the condition, we can explain not only the facts indicated in (60)-(62) but the ungrammaticality of (66c). That is, according to (63), the [+wh] feature in the SPEC of CP cannot be copied on to the head C since, in (66c), the empty category,

which of course is morphologically covert, is in the head position of CP. Thus it seems reasonable to assume the condition in (63), which is needed independently of explaining the facts indicated in (60)-(62).^{1*}

So far we have seen how *wh*-questions in Japanese are derived at LF. I have claimed that only an NP bearing a [+*wh*] feature moves up to the SPEC of CP to license its pure *wh*-operator, insisting that Case markers which are stranded at LF can act as proper governors for traces created by LF *wh*-movement.

2.3. Multiple *Wh*-Movement in Japanese

In this subsection I will discuss how multiple *wh*-questions are derived at LF. First of all, consider the following example:

- (67) dare-ga nani-o tabe-ta no
 who -Nom what-Acc eat-Past Q
 'Who ate what?'

Interestingly enough, in multiple *wh*-questions the whole DP with the nominative Case marker *ga* can be the target of the short answer to (67) involving copula *da/desu*:

- (68) a. John-ga huransu-ryoori, Mary-ga itaria-ryoori desu
 -Nom French cuisine -Nom Italian cuisine Cop
 'John ate French cuisine, and Mary ate Italian cuisine'
 b.?*John-ga huransu-ryoori-o, Mary-ga itaria-ryoori-o
 -Nom -Acc -Nom -Acc
 desu
 Cop
 c. *John huransu-ryoori-o, Mary itaria-ryoori-o desu
 -Acc -Acc Cop
 d. *John huransu-ryoori, Mary itaria-ryoori desu

Only (68a) is a well-formed short answer to the multiple *wh*-question

in (67): the whole subject DP with the nominative Case marker *ga* can be the target of the answer to (67), whereas the whole object DP with the accusative Case marker *o* cannot. (68a) is in sharp contrast with (60c), repeated here as (69b) for ease of exposition:

- (69) a. dare-ga ki-ta no
 who -Nom come-Past Q
 'Who came?'
 b. *John-ga desu
 -Nom Cop

In what follows, I will attempt to explain the well-formedness of (68a), that is, why the nominative Case marker *ga* can appear as part of the target of the answer to the question in (67). Before turning to this task, we must pay attention to the conditions under which the derivation of a multiple *wh*-question is well-formed. Let us consider the following examples noted by Watanabe (1991a,b, 1992):

- (70) a. ?John-ga nani-o naze kat-ta no
 -Nom what-Acc why buy-Past Q
 'Why did John buy what?'
 b. *John-ga naze nani-o kat-ta no
 -Nom why what-Acc buy-Past Q
 'What did John buy why?'

Watanabe claims that the above contrast can be accounted for by the ECP, assuming the following generalization of what he calls "anti-superiority effect":

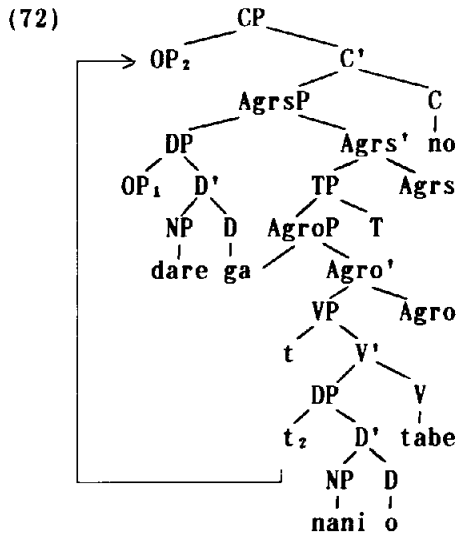
- (71) Anti-superiority effect (Watanabe 1992):
 The *wh*-phrase that is moved first cannot c-command the other *wh*-phrase at S-structure which takes the same scope.¹⁹

In (70a) the pure *wh*-operator of *naze* 'why' must move first to the SPEC of CP at S-structure because of (71). If we assume some kind of

Comp indexing mechanism in the sense of Aoun et al. (1981), the trace of *naze* 'why' can be properly head-governed at LF by the head C, which is assumed to be coindexed with the *wh*-element moved into the SPEC of CP first. The trace of *nani* 'what' need not be governed by the head C since it is properly head-governed by the verb. Thus we can obtain the well-formed LF representation in (70a). In (70b), on the other hand, the pure *wh*-operator of *nani* 'what' must move first to the SPEC of CP at S-structure according to (71). This indicates that the Comp indexing mechanism disallows proper head government of the trace of *naze* 'why' at LF, resulting in an ECP violation, since the trace of *naze* 'why' cannot be properly head-governed by the verb. Therefore the contrast in (70) can be properly captured by the generalization in (71).

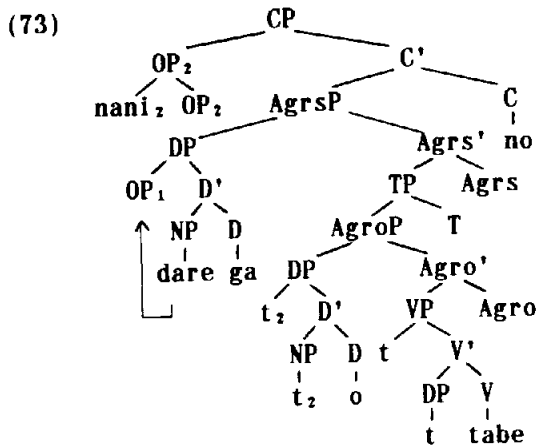
Assuming that (71) is correct, let us now return to the S-structure derivation of (67):

- (67) dare-ga nani-o tabe-ta no
 who -Nom what-Acc eat-Past Q
 'Who ate what?'



(71) forces the pure *wh*-operator of *nani* 'what' to move first to the

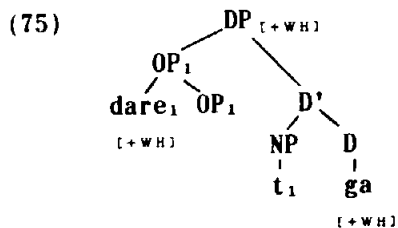
SPEC of CP at S-structure. The question is then how the LF representation can be derived from (72). At least two types of LF derivations seem to be logically possible. Consider the first possibility:



What is focused on in (73) is the derivation of the *wh*-in-situ in the subject position. In (73) *dare* 'who' adjoins to the pure *wh*-operator to satisfy the identification requirement for empty categories. As a result of this operation, we can predict that the whole DP can have the [+wh] feature through the following condition in (63), repeated below as (74):

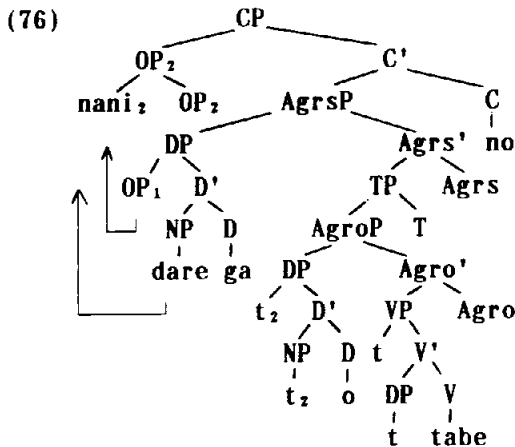
- (74) The feature of SPEC is copied onto the head only if both the SPEC and the head are occupied by some morphologically overt elements.

Thus, the subject DP in (73) can be represented as follows:



In (75) the SPEC of DP is occupied by the morphologically overt element *dare* 'who'. Thus the [+wh] feature can be copied onto the head D, which is also occupied by the overt nominative Case marker *ga*. The whole DP moves to the SPEC of CP, undergoing absorption (in the sense of Higginbotham and May 1981) with the other *wh*-phrase. Notice here that the trace created by the LF movement of the whole DP can be properly governed by the coindexed head *Agrs*, which adjoins to the head of CP by head movement at LF (cf. Stowell 1981, Pesetsky 1982, Whitman 1991). Therefore, it follows that the whole DP in the subject position involving the nominative Case marker *ga* can be the target of the answer to the multiple *wh*-question in (67), indicating that the short answer with *da/desu* to (67) matches the value for the operator expression of the question.

However, there seems to be another possibility in the LF derivation. Let us consider the derivation in (76):



Here the pure *wh*-operator of *dare* 'who' moves first to the SPEC of CP and then the real *wh*-phrase *dare* 'who' adjoins to it to satisfy the identification requirement for empty categories. If this derivation is correct, we cannot explain why the whole DP in the subject position is the target of a multiple *wh*-question. However, we can exclude the derivation in (76), assuming the principle of Economy of Derivation (Chomsky 1991, 1992), which can be stated roughly as follows:

(77) A derivation with a shorter link is more economical.

It is clear that in (76) the real *wh*-element has failed to make the "shortest" move. That is, the movement of *dare* 'who' to the SPEC of CP in (76) is longer than the movement of *dare* 'who' to the SPEC of DP in (75) with respect to the purpose of the identification of the pure *wh*-operator. Therefore, we may say that the derivation in (76) can be excluded in terms of the principle of Economy of Derivation.

To summarize, in this section I have mainly discussed the mechanism of *wh*-movement in Japanese. I have argued that *wh*-elements in Japanese at S-structure involve movement of a pure *wh*-operator and that at LF only an NP bearing the [+*wh*] feature moves to the SPEC of CP and adjoins to the pure *wh*-operator to satisfy the identification requirement for empty categories. This indicates that Case markers can act as proper governors for the trace of real *wh*-phrases. Moreover, we have seen that the DP in a non-theta position can void its barrierhood on the assumption that the DP can recover its theta role from the head by percolation. Finally, I have discussed the derivation of multiple *wh*-questions and have concluded that the whole DP in subject position can move to the SPEC of CP on the basis of the condition in (63).

3. Subjacency and ECP Effects in Japanese

In this section I will point out some Subjacency and ECP effects in Japanese which arise from the interaction of Case marker drop and *wh*-movement, and show that these effects can be explained in a principled way by assuming the mechanism of *wh*-movement in Japanese proposed in the previous section.

3.1. Subjacency Effects

First, let us consider the following example, which remained unexplained in section 1.3:

(78)??dare- ϕ sono hon-o kat-ta no
 who -Nom that book-Acc buy-Past Q
 'Who bought that book?'

The grammatically deviant status of (78) sharply contrasts with the following sentence involving nominative *ga* deletion:

(79) John- ϕ sono hon-o kat-ta no
 -Nom that book-Acc buy-Past Q
 "Did John buy that book?"

A question thus arises here: why does the nominative Case marker drop in (78) produce its grammatically deviant status? Similar effects can be found in the following sentences:

(80) a. John-ga nani- ϕ kat-ta no
 -Nom what-Acc buy-Past Q
 'what did John buy?'
 b.??[nani- ϕ]₁ John-ga t₁ kat-ta no
 what-Acc -Nom buy-Past Q

Notice that the deviant status of (80b) does not arise from scrambling. Scrambling of phrases without Case markers such as *o* (Acc) is fully grammatical. Consider the following sentence in (81b):

(81) a. John-ga sono hon- ϕ kat-ta (koto)
 -Nom that book-Acc buy-Past fact
 '(the fact that) John bought that book'
 b. [sono hon- ϕ]₁ John-ga t₁ kat-ta (koto)
 that book-Acc -Nom buy-Past fact

The deviant status of both (78) and (80b) should be accounted for by the theory of UG, since the deviancy is relevant to the position of *wh*-phrases without Case markers. That is, if *wh*-phrases without Case markers are in non-theta positions such as a subject position or an

adjoined position, the grammaticality of sentences is reduced. Thus the deviancy of these examples may be because of Subjacency since the movement of a pure *wh*-operator is assumed to be involved at S-structure. However, recall here that the DP in a non-theta position can recover its theta role from its head by percolation, suggesting that the barrierhood of the DP can be voided. Therefore, the following sentence in which the pure *wh*-operator moves from the DP in the subject position to the SPEC of CP at S-structure is perfectly grammatical, resulting in no violation of Subjacency:

- (82) dare-ga sono hon-o kat-ta no
 who -Nom that book-Acc buy-Past Q
 'Who bought that book?'

However, there is a crucial difference between sentences such as (78) and (80b) on the one hand and (82) on the other: the difference of whether a Case marker appears or not. In order to explain the deviant status of grammaticality shown in (78) and (80b), I assume the following condition:

- (83) Some feature of a head cannot get percolated up to its maximal projection when the head is phonetically empty.

If the condition in (83) is valid, then we can explain the fact that sentences such as (78) and (80b) are deviant in grammaticality, indicating that the DP in non-theta position cannot recover its theta role by percolation since the head of the DP in (78) and (80b) is phonetically empty. Thus the sentences result in a violation of Subjacency since the pure *wh*-operator moves to the SPEC of CP out of the DP in a non-theta position. This implies that a DP with an empty head in a non-theta position is always a barrier unless it is in a position theta-marked by a given verb. Following Lasnik and Saito (1992), we assume the definition of Subjacency stated in (84):

(84) Subjacency Condition:

- a. X can move from position α to position β only if α is subjacent to β .
- b. β is subjacent to α if for every γ , γ a barrier for β , the maximal projection immediately dominating γ dominates α .

For example, consider again (78), repeated here as (85):

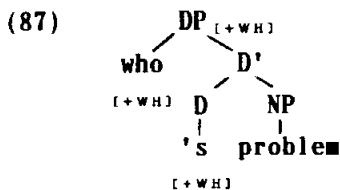
- (85)??dare- ϕ sono hon-o kat-ta no
 who -Nom that book-Acc buy-Past Q
 'Who bought that book?'

The movement of the pure *wh*-operator in (85) violates Subjacency, since the subject DP without the nominative Case marker *ga*, which contains the trace created by the operator movement, is a barrier for the trace, and the pure *wh*-operator is not contained in the maximal projection immediately dominating this DP, namely AgrsP. Hence the deviance of (85).

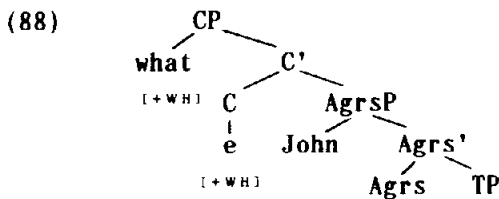
The condition in (83) not only allows us to account for the Subjacency effects in (78) and (80b), but at the same time enables us to explain the following contrast. Consider the examples below involving the pied-piping of *wh*-phrases at S-structure, which are pointed out in Webelhuth (1989):

- (86) a. [_{CP} [_{DP} Whose problem] [_C did [_{AgrsP} he solve]]]?
 b. *[[_{CP} [_{CP} What John said]] [_C do [_{AgrsP} you know]]]?

The internal structure of the DP in (86a) can be represented as (87):



In (87) both the SPEC and the head position are occupied by morphologically overt elements and thus the features of SPEC can be copied onto the head. And then the features of the head can percolate up to its maximal projection, indicating that the whole DP can have a [+wh] feature. Therefore it follows that in (86a) the pied-piping of the whole DP *whose problem* is possible. On the other hand, the internal structure of the CP in (86b) can be represented roughly as follows:



Although the head C in (88) is selected by the matrix verb *know* at the original position and has a [+wh] feature, the [+wh] feature of the head C cannot percolate up to its maximal projection CP, since the position of the head C is occupied by the phonetically null element. Thus the whole CP cannot have a [+wh] feature and it cannot move up to the SPEC of CP at S-structure. Therefore, it is natural to assume the condition in (83), which can explain not only the deviant status of (78) and (80b) but independent phenomena concerning S-structure pied-piping, that is, the ungrammaticality of (86b).

To sum up, we have seen in this subsection how the deviant status of (78) and (80b) can be explained by the theory of UG. We have argued that the movement of the pure *wh*-operator out of the DP in non-theta position violates Subjacency if the head of DP is empty, suggesting that the feature of a head cannot percolate up to its maximal projection when the head is empty, a fact which is independently supported.

3.2. ECP Effects

Next, consider the following sentences involving multiple *wh*-questions:

- (89) a. dare-ga nani-o kat-ta no
 who -Nom what-Acc buy-Past Q
 'Who bought what?'
 b. [nani-o]₁ dare-ga t₁ kat-ta no
 what-Acc who -Nom buy-Past Q

If Case marker drop applies to the subject DP *dare-ga* 'who-Nom' in (89a) and to the preposed object DP *nani-o* 'what-Acc' in (89b), the sentences become totally ungrammatical:²⁴

- (90) a. *dare- ϕ nani-o kat-ta no
 who -Nom what-Acc buy-Past Q
 b. *[nani- ϕ]₁ dare-ga t₁ kat-ta no
 what-Acc who -Nom buy-Past Q

The sentences in (90a) and (90b) sharply contrast with the following sentences in (91a) and (91b), where the second NP *nani-o* 'what-Acc' in (90a) and *dare-ga* 'who-Nom' in (90b) are replaced with the full NPs *sono hon-o* 'that book-Acc' and *John-ga* 'John-Nom', respectively:

- (91) a. ??dare- ϕ sono hon-o kat-ta no
 who -Nom that book-Acc buy-Past Q
 'Who bought that book?'
 b. ??[nani- ϕ]₁ John-ga t₁ kat-ta no
 what-Acc -Nom buy-Past Q
 'what did John buy?'

The sentences in (91) violate Subjacency: the movement of the pure *wh*-operator out of the DP in non-theta position produces the deviant status when Case markers are absent. However, the sentences in (91) are better than those in (90). Therefore, it is natural to assume that the sentences in (90) also violate some other principle of UG besides Subjacency. That is, I assume that the ungrammaticality of (90) can be attributed to a violation of the ECP. The same effects can be found in sentence (92b):

- (92) a. John-ga dare-ni nani- ϕ kat-te age-ta no
 -Nom who -Dat what-Acc buy-to give-Past Q
 'what did John buy for whom?'
 b. *John-ga [nani- ϕ]₁ dare-ni t₁ kat-te age-ta no
 -Nom what-Acc who -Dat buy-to give-Past Q

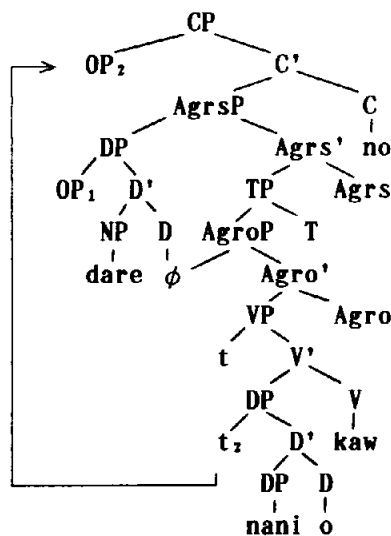
Notice here that in (92a) the movement of the pure *wh*-operator out of the DP *nani- ϕ* 'what-Acc' does not violate Subjacency since the DP is in a position theta-marked by the verb. On the other hand, (92b), which is totally ungrammatical, is in sharp contrast with the following sentence which violates Subjacency:

- (93)??John-ga [nani- ϕ]₁ Mary-ni t₁ kat-te age-ta no
 -Nom what-Acc -Dat buy-to give-Past Q
 'what did John buy for Mary?'

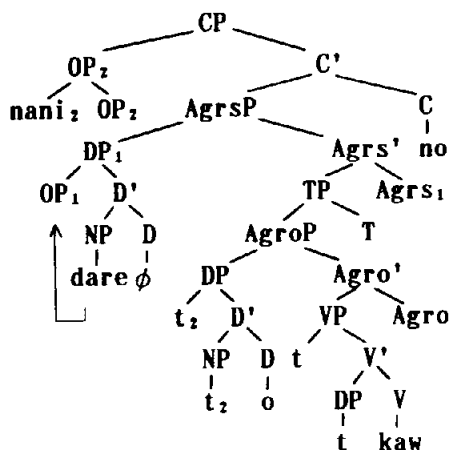
The fact that (92b) is worse than (93) suggests that (92b) involves a violation of the ECP in addition to the Subjacency violation.

Now let us take, for example, the multiple *wh*-question in (90a) and consider its derivation:

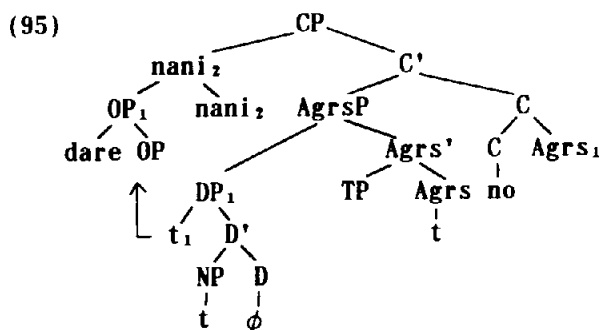
- (94) a. SS:



b. LF:



What is crucial here is the LF in (94b). The real *wh*-phrase *dare* 'who' adjoins to the pure *wh*-operator in order to satisfy the identification requirement for empty categories. However, in (94b) the feature of the SPEC of DP cannot be copied onto the head since the head is occupied by the phonetically empty element. Thus, it follows that the DP cannot carry a [+*wh*] feature and that the pied-piping of the whole DP is impossible. However, the real *wh*-phrase in the SPEC of DP, which is amalgamated with the pure *wh*-operator, must move up and adjoin to the other *wh*-phrase to undergo absorption. Consider the relevant structure of (94b):



In (95) a trace is created by raising the real *wh*-phrase amalgamated

with its pure *wh*-operator to the SPEC of CP. However, the trace violates the proper head government requirement: the DP in subject position is always a barrier since it can neither void its barrierhood by percolation nor be theta-marked by the verb. Thus the DP disallows the proper head government of the trace by the head *Agrs* in the head of CP which is coindexed with the subject DP by SPEC-Head relation, resulting in a violation of the ECP.²¹

To summarize, we have seen in this subsection that ECP effects in multiple *wh*-questions can be accounted for in terms of the failure of the proper head government of traces, assuming that the DP in a non-theta position always becomes a barrier when the head of the DP is occupied by the empty category produced by Case marker drop.

4. Concluding Remarks

In this article we have examined the constraint on Case marker drop and the mechanism of *wh*-movement in Japanese. We have argued that empty categories created by Case marker drop are subject to an identification requirement and that the empty categories are licensed by the head bearing identical features, i.e., [+Nom] or [+Acc], under the SPEC-Head relation at LF, assuming the Case-checking system proposed in Chomsky (1992). We have also argued that at S-structure pure *wh*-operator movement is involved in *wh*-elements in Japanese and that at LF a real *wh*-phrase bearing a [+wh] feature moves to the SPEC of CP, suggesting that Case markers can act as proper governors for the traces created by the LF *wh*-movement. We have seen that movement of a pure *wh*-operator out of the DP in a non-theta position violates Subjacency when the head of the DP is occupied by the empty category created by Case marker drop. Furthermore, we have discussed some ECP effects in multiple *wh*-questions in Japanese, which can be explained by the assumption that a DP in a non-theta position, the head of which is empty, cannot void its barrierhood.

Notes

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¹ See also Saito (1983, 1985), who independently concludes that *ga* (Nom) deletion is impossible because of his Case marking system proposed for Japanese. Saito argues that sentences involving nominative Case drop violate the Case Filter (Chomsky 1981), claiming that nominative Case is not assigned by any element in Japanese and that no abstract Case is assigned to subject position:

(i) Case Filter

*NP if NP has phonetic content and has no Case.

However, Takezawa (1987) points out the following contrast and proposes that the presence of Tense (Infl) is responsible for nominative Case marking (of the embedded subject position):

- (ii) a. John-wa [_s [_s [Mary-no yokogao]-*ga* totemo utukusi-*i*]
 -Top -Gen profile-Nom very beautiful-Pres
 to] omot-ta
 Comp think-Past
 'John thought that Mary's profile was ((lit.) is) very
 beautiful'
- b. *John-wa [_s [Mary-no yokogao]-*ga* totemo utukusiku]
 -Top -Gen profile-Nom very beautiful

omot-ta

think-Past

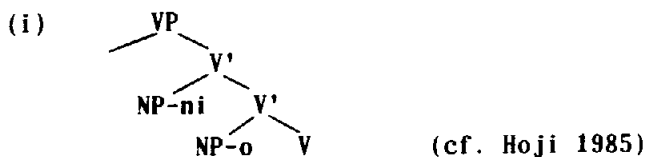
'John thought [Mary's profile (to be) very beautiful]'

If Takezawa's proposal is correct, we cannot maintain Saito's analysis of Case marking. This implies that there is no theoretical reason to assume that nominative Case marker drop is prohibited. For more detailed discussion of the mechanism of nominative Case assignment in Japanese, see Takezawa (1987).

² In fact, Fukuda (1993) does not deal with data concerning the Case marker drop of dative *ni*.

³ Rizzi (1990) defines "proper head government" as government by an appropriate head within the immediate projection of the head.

⁴ I assume here that no barrier intervenes between the particle and the empty category created by Case marker drop in the dative NP position, following Cinque (1990), who states that a maximal projection does not become a barrier if it is directly selected by a category nondistinct from [+V]. However, if the dative phrase is adjoined to V' as an argument in the internal structure of VP, then it follows that the empty category can meet the proper head government requirement irrespective of whether sentence final particles appear or not. Let us assume that the VP-internal structure is represented as follows, where the dative phrase is positioned higher than the accusative:



Then if Fukuda's proposal is adopted, we again falsely predict that sentences such as (10) are well-formed, satisfying the ECP.

⁵ The assumption that the dative *ni* in (8) is a realization of inherent Case is parallel with the case of "double object" constructions such as *John gave Mary a book*, where the NP *Mary*, which is associated with the thematic role "Goal", is assigned inherent Case.

⁶ If we assume the DP-hypothesis (Abney 1987), then the category referred to as NP in the definition can be replaced by DP.

⁷ *-nin* in (16) is a classifier that agrees with human beings.

⁸ *A c-commands B* if neither dominates the other and the first branching node dominating *A* also dominates *B*.

⁹ See also Chomsky (1977) and Kuno (1973a).

¹⁰ The assumption that deleting some elements creates empty categories seems to be natural. Stowell (1981) claims that deletion of the complementizer *that* in English creates some kind of empty category, which is subject to the ECP. Lobeck (1991) also argues that ellipted constituents are base-generated empty categories and that they must be head-governed by some appropriate head.

¹¹ I assume, following Chomsky (1986a), that adjunction to an argument is prohibited. Thus we cannot resort to adjunction in order to void the barrierhood of the DP in a non-theta position. However, Watanabe (1991a,b) claims that adjunction is possible only to heads, predicates and operators. Thus, in his system, since he assumes that the whole DP is raised to the SPEC of CP at LF, it is identified as an operator and adjunction to it is possible. However, as we will see, I assume that the whole DP cannot move up to the SPEC of CP in a simple *wh*-question. Therefore, the DP in a subject position cannot be identified as an operator and adjunction to it is impossible. For an alternative analysis of possible adjunction sites, see Saito (1992b).

¹² Watanabe (1991a,b, 1992) argues that movement of a pure *wh*-operator obeys Subjacency, suggesting that the Subjacency condition should be applicable at S-structure. Consider the following sentences:

- (i) a. ??John-wa [Mary-ga nani-o kat-ta ka dooka] Tom-ni
 -Top -Nom what-Acc buy-Past whether -Dat
 tazune-ta no
 ask -Past Q
 'What did John ask Tom whether Mary bought t?'
- b. John-wa [Mary-ga nani-o kat-ta ka dooka] dare-ni
 -Top -Nom what-Acc buy-Past whether who -Dat

tazune-ta no
 ask -Past Q
 'Who did John ask t whether Mary bought t?'

In (ia) the movement of the pure *wh*-operator of *nani* 'what' across the *wh*-island produces weak Subjacency effects. However, in (ib), the *wh*-phrase *dare-ni* 'who-Dat' is added outside the island, improving the sentence. Watanabe claims that this contrast is attributed to the S-structure movement hypothesis of a pure *wh*-operator, assuming that the S-structure movement only affects *dare-ni* 'who-Dat' in (ib), while the *wh*-phrase inside the island must be affected in (ia). Thus if Subjacency applies to LF, we falsely predict that the sentence in (ib) is deviant on the general assumption that *wh*-movement takes place at LF. (However, see Aoun and Li (1993), who argue that *wh*-elements in situ need not be raised to the SPEC of CP in the LF component in both Chinese and English).

¹³ However, Nishigauchi (1986, 1990) and Pesetsky (1987) argue that Subjacency is applicable at LF as well as at S-structure. For detailed discussion of the level at which Subjacency is applicable, see Nishigauchi (1986, 1990), Pesetsky (1987) and references cited there.

¹⁴ However, if Case markers can be proper governors, we would incorrectly predict that the following sentence is well-formed, where the NP *sono hon* 'that book' is preposed by scrambling out of the object DP:

- (i) a. John-ga sono hon-o kat-ta (koto)
 -Nom that book-Acc buy-Past fact
 'John bought that book'
- b. *sono-hon₁ [John-ga t₁-o kat-ta] (koto)
 that-book -Nom -Acc buy-Past fact

In (ib) the trace of the scrambled NP can be properly head-governed by the stranded accusative Case marker *o* and thus the sentence would be licensed, contrary to fact. The same phenomenon can be found in English:

(ii) *Book₁, John bought the t₁.

For detailed discussion of the above phenomena, see Hoshi (1993). I leave the matter open here.

¹⁵ If the scrambled subject DP is raised to the embedded CP SPEC in successive cycles, we would predict that the head C in the embedded CP is coindexed with the DP by SPEC-Head agreement and thus the trace in the SPEC of the embedded AgrSP can be properly head-governed by the coindexed head C. However, even if this is the case, we might say that the intermediate trace in the SPEC of the embedded CP cannot be properly head-governed by any head coindexed with the scrambled DP, assuming that the intermediate trace is needed to maintain the SPEC-Head relation for the purpose of coindexation.

¹⁶ If the answer to the *wh*-question in (60a) is not elliptical, it is well-formed even if the nominative Case marker *ga* appears:

(i) John-ga ki-masi-ta
 -Nom come-Polite-Past
 'John came'

¹⁷ Notice that we must distinguish the copying of a feature from that of an index. Consider the following example:

(i) Who₁ do you think [_{CP} t'₁ [_C e₁ [_{AgrSP} t₁ left early]]]

Lasnik and Saito (1992) argue that (i) is good because SPEC-Head coindexing can occur with the empty C⁰ (cf. Rizzi 1990, and Tiedeman 1989). I am grateful to Robyne Tiedeman (personal communication) for bringing this matter to my attention.

¹⁸ In sentences such as *who bought the book*, I claim, following Culicover (1991), that the *wh*-element in the subject position need not move to the SPEC of CP, assuming that the *wh*-element can be licensed at the SPEC of AgrSP. For detailed discussion, see Culicover (1991) and Hoshi (1992).

¹⁹ I assume here that the whole DP involving a *wh*-element can be

regarded as relevant *wh*-phrases in (71).

²⁰ As far as I know, this kind of data was first pointed out by Mamoru Saito, which is cited in Watanabe (1991a).

²¹ I assume here that the phrase moved by "short distance" scrambling need not be undone in LF. However, in the case of "long distance" scrambling of a *wh*-element, the scrambled constituent must be undone at LF if it takes embedded scope (Saito 1989). Thus I tentatively assume that the *wh*-phrase raised by "long-distance" scrambling is moved back to the nearest A position, not to the original position, which implies that scrambling can occur in successive cycles. This assumption is derived from the principle of Economy of Derivation, which says that a derivation with a shorter link is more economical (see (77)). I leave this issue open here. For relevant discussion of scrambling, see Saito (1989, 1992a), Katada (1991) and Yoshimura (1990).

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