# On the Notion "Surface Filter" in Japanese

Masanobu Ueda

## 1. Introduction

In "Remarks on Nominalization" (1970) Chomsky first explicitly stated the possibility of restricting the expressive power of transformations by enriching the lexicon and simplifying the transformational component. Chomsky referred to the theoretical position pursuing this possibility as the "lexicalist position."

Recently Ostler (1980), Farmer (1980) and Miyagawa (1980) propose a new approach to the analysis of Japanese case-marking and complex verbs from this position. The most salient feature of this approach is the claim that various transformations (e. g., cyclic case-marking rules, predicate raising and so on) and other devices such as "surface filters" are not necessary in order to account for case-marking phenomena and derivations of complex verbs.

The purpose of this paper is to show that the notion "surface filter" plays a crucial role even in the lexicalist approach to the analysis of case-marking and complex verbs. In the following discussion we will be only concerned with Farmer's analysis, which is the most detailed and comprehensive as to the problems to be discussed.

## 2. Farmer's Analysis

Farmer's analysis falls under the general framewowrk of the version of the Extended Standard Theory developed in Chomsky (1975, 1977a, 1977b, 1980). Under this framework a "highly restricted system of 'core grammar'" approximately with the following structure is assumed:[1)]

1) Chomsky (1980), p. 3.

(1) 1. Base rules (and the lexicon)
2. Transformational rules
3a. Deletion rules 3b. Construal rules
4a. Filters 4b. Interpretive rules
5a. Phonology and Stylistic rules 5b. Conditions on binding

The rule systems 1 and 2 are referred to as the syntax of core grammar and the structures generated by them as "surface structures." The surface structures are associated with phonetic representations by the rules 3a–5a and with representations in "logical form" (LF) by the rules 3b–5b.

A set of parameters is embedded in this theory and the core grammar of a particular language is determined by fixing the values of these parameters.[2] Farmer actually makes a particular choice in fixing the values of the parameters, assuming the following system of core grammar for Japanese:

(2) 1. Base rules and the enriched lexicon
2a. Phonology 2b. Evaluation
3b. Construal rules
4b. Interpretive rules
5b. Conditions on binding

The most remarkable peculiarity of (2) lies in the elimination of transformational rules,[3] and the assumption of the lexicon with a fairly enriched internal structure. Furthermore, deletion rules and (surface) filters, which are relevant to the association of surface structures with phonetic representations, are also excluded from the set of rules in core grammar.

Now let us briefly review the rules in (2). Base rules are a version

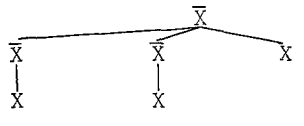
2) Chomsky (1979), p. 1.
3) This possibility is also suggested by Chomsky (1979: 2), though a proposed alternative to the transformational component is not an enriched lexicon, as in Farmer's framework, but a system of interpretive rules which have basic properties of transformational rules.

of $X$-bar theory of the following form:[4]

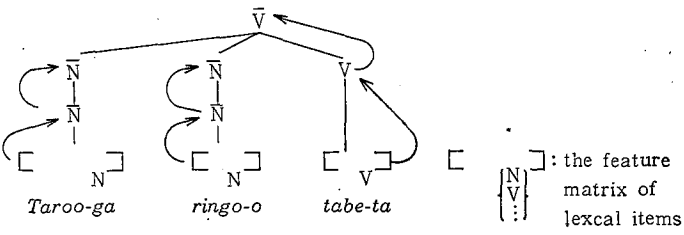
(3) $\bar{X} \longrightarrow \bar{X}^{*}\ X$ ($X$ is the head and $*$ means that the number of $\bar{X}$ is arbitrary.)

(3) specifies only the depth of structure and the position of the head. Lexical insertion takes place in a context free manner, inserting a lexical item with its feature matrix into a phrase-marker permitted by (3). Then the categorial content of nodes is specified by the process of "feature percolation," which raises the categorial feature in the feature matrix up to node $X^{max}$.[5] Thus, (4a) is an instance of phrase-markers generated by (3) and (4b) an illustration of "feature percolation":

(4) a.



b.




Farmer notes, among others, the following two consequences from these assumptions: 1. the elimination of the rule of "Scrambling," i. e., the effect of this rule is simply a result of context-free lexical insertion. 2. the occurrence of the problem of overgeneration, i. e., actually any number of NP's with any case specification can be inserted in the phrase-markers permitted by (3). Farmer argues that the cases of overgeneration are accounted for by conditions on semantic interpretation. We will

4) Farmer (1980), p. 70.

5) Farmer (op. cit.: 72) assumes that a specification for case is included in the feature matrix of the lexical item and that it is later spelled out as a case particle such as *ga* (nominative), *o* (accusative), *ni* (dative) and so on.

return to this problem later.

The lexicon plays a central role in Farmer's system of core grammar. Linguistic phenomena which were considered to be handled by transformations or (surface) filters are now accounted for by the rules or processes in the lexicon or the interaction of these rules with other grammatical components.

The enriched lexicon in Farmer's system contains "word formation rule" (henceforth, WFR). WFR's are responsible for the formation of complex verbs such as *tabe-sase* 'make (someone) eat' and *sute-rare* 'be discarded', which was effected by the transformational rule "predicate raising" operative in the syntactic domain in previous studies. Lexical entries of verbal suffixes as well as verbs listed in the permanent lexicon are associated with fragments of "propostional argument structure" (henceforth, PAS), which are utilized to generate representations in LF. Given in (5) are instances of PAS's of verbs and in (6) those of verbal suffixes:

| | | | | |
|---|---|---|---|---|
| (5) | a. | *hatarak* 'work' : | (___ *hatarak*) | (intransitive verb) |
| | b. | *home* 'praise' : | (___ ___ *home*) | (transitive verb) |
| | c. | *okur* 'send' : | (___ ___ ___ *okur*) | (ditransitive verb) |
| (6) | a. | *sase* 'make' : | (___ (___) *sase*) | (causative) |
| | b. | *rare* 'be-en'[6] : | (___ (___) *rare*) | (indirect passive) |
| | | | ((___) *rare*) | (direct passive) |

The underlined position represents an argument position, and these positions are ordered according to the thematic hierarchy: Agent > Source > Goal > Theme. The position of (___) is filled with another PAS through a WFR, as in:

| | | | |
|---|---|---|---|
| (7) | a. | *hatarak-ase* 'make (someone) work' : | (___ (___ *hatarak*) *sase*) |
| | b. | *home-rare* 'be praised' : | (___ (___ ___ *home*) *rare*) |
| | | | ((___ ___ *home*) *rare*) |

6) Two types of passives have been distinguished in Japanese in previous studies. These are referred to as direct passives and indirect passives respectively. Farmer assumes two different PAS's are associated with these two types of passives. Cf. Howard and Niyekawa-Howard (1976) for discussion of the two types of passives.

Farmer proposes two kinds of lexical redundancy rules, both of which operate on the PAS. One is the "principle of 'S' assignment" and the other "case linking rules."

The notion of "subject" has played a crucial role in the previous studies of Japanese generative grammar. Many grammarians have repeatedly argued that this notion is inevitable in describing the phenomena of reflexivization and subject honorification.[7] However, the notion has never been given any satisfactory definition, being assumed only as an "undefined" theoretical primitive instead. Farmer, recognizing the importance of the notion, argues that it can be defined as the primary argument position in the PAS. She proposes the principle of 'S' assignment (8), which assigns the diacritic 'S' indicating "subject" to the appropriate argument position :[8]

(8) Assign 'S' to the primary argument (i. e., agent/most active participant). If this argument cannot be a subject for some reason, then assign 'S' to any other argument (each PAS is subject to this principle; that is, both the innermost and outermost PAS's are subject to the principle).

The assignment of 'S' by (8) is performed as in:

(9) a. ($\underset{S}{\_\_}$ __ __ *age*)

b. ($\underset{S}{\_\_}$ ($\underset{S}{\_\_}$ __ *yom*) *sase*)

The distribution of cases such as *ga* (nominative), *o* (accusative), and *ni* (dative) has been accounted for in terms of cyclic case-marking transformations in previous studies. However, Farmer distinguishes between the distribution of morphological cases expressed by case particles and the case arrays associated with verbs, and states that the former is completely free, as reflected in the syntax of core grammar and the latter are expressd in

7) Cf. Shibatani (1977) for discussion of the importance of this notion.
8) Farmer (1980), p. 136.

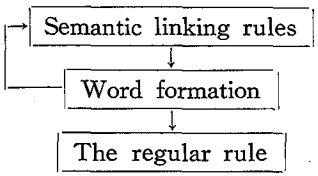
the PAS by a new device "case linking rule" which has the function of assigning a linking register to each argument position. She postulates two kinds of case linking rules: the "regular rule" and "stative linking rule" which account for the linking of grammatical cases such as *GA*, *O* and *NI*; the "semantic linking rule" which accounts for the semantic case linking, e. g., that of *KARA*, *NI* in causatives and passives and so on:[9]

(10) Regular Rule
  a. Link leftmost 'S': *GA*
  b. Link rightmost argument: *O*
  c. Elsewhere link: *NI*

(11) Semantic Linking Rules
  a. *NI*-linking rule:
     Link second argument: *NI*
  b. *KARA*-linking rule:
     Link first argument: *KARA* (optional)
  etc.

These rules apply non-cyclically, i. e., ignoring the boundary of the embedded PAS. Furthermore, Farmer assumes that the semantic linking rules which are assumed to be in the permanent lexicon are ordered before the regular rule with WFR's in between, as charted in:[10]

(12)




9) (10) is cited from Farmer op. cit.: 99) and (11 a-b) from Farmer (op. cit.: 102, 136). We exclude the "stative linking rule" from our discussion for ease of expostion. The ultimaely proposed formulation of this rule is like:
(i) The stative linking rule
  (1) Link leftmost 'S': *NI* (optional)
  (2) Link rightmost argument: *GA* (obligatory)

10) Farmer (op. cit.: 101–106), following Hale's suggestion, assumes that the lexicon

and says that this ordering is intrinsic, being a derivative from the organization of the lexicon. Note in passing that the 'S' principle applies somewhere before the application of the regular rule. Now let us see how the case linking rules guarantee the case arrays exhibited in sentences (13) and (14):

(13) *Taroo ga Hanako ni hon o age-ta*
'Taro gave a book to Hanako.'

a. (___ ___ ___ *age*)
b. The 'S' principle: ($\underset{S}{\_\_\_}$ ___ ___ *age*)
c. Regular rule: *GA*: ($\underset{S}{GA}$ ___ ___ *age*)
d. *O*: ($\underset{S}{GA}$ ___ $\underline{O}$ *age*)
e. *NI*: ($\underset{S}{GA}$ $\underline{NI}$ $\underline{O}$ *age*)

(14) *Taroo ga Hanako ni aruk-ase-ta*[11]
'Taro had Hanako walk.'

a. Word Formation: Causative *-sase*: (___ (___ *aruk*) *sase*)
b. The 'S' principle: ($\underset{S}{\_\_\_}$ ($\underset{S}{\_\_\_}$ *aruk*) *sase*)
c. *NI*-linking rule: (lla): ($\underset{S}{\_\_\_}$ ($\underset{S}{NI}$ *aruk*) *sase*)
d. Regular rule: *GA*: ($\underset{S}{GA}$ ($\underset{S}{NI}$ *aruk*) *sase*)

*O*: not applicable
*NI*: not applicable

---

consists of three levels: the permanent lexicon to which semantic linking rules belong (level I); word formation rues (level II); grammatical linking rules which include the regular rule (level III) and that these three levels are ordered as in (12). One point to be noted about (12) is that the return from level II to level I is incorporated for the explanation of the case arrays of complex verbs.

11) We have two types of causative sentences in Japanese, i. e., *ni*-causatives and *o*-causatives. (14) is an instance of *ni*-causatives and (i) is the corresponding *o*-causative:

(i) *Taroo ga Hanako o aruk-ase-ta*
'Taro made Hanako walk.'

Cf. Shibatani (1976 a) for discussion of the problems concerned with these two types of causatives.

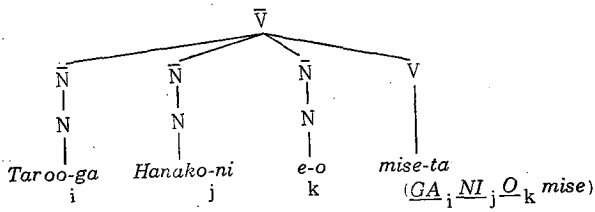
In (13), after the application of the 'S' principle, the regular rule (10a, b, c) apply in the listed order and assign *GA*, *O*, *NI* to appropriate argument positions. In (14), after the determination of the "subject" position by the 'S' principle, the *NI*-linking rule which is triggered by a certain class of verbs and verbal suffixes assigns the second position *NI*, and the regular rule (10a) assigns the subject postion *GA*. The other components of the regular rule are inapplicable, since no vacant argument position is left.

Now turning to the rule 2a which gives phonetic representations, Farmer has almost nothing to do with this rule, just implying that other rules of this type, e. g., surface filters and so on, are not necessary.

On the other hand, the system of rules which gives representations in LF in (1) is retained intact in Farmer's system (2). Moreover, Evaluation 2b, which is not mentioned in (1) despite the obvious necessity of it, is added to the system in (2). We review only 2b, since only that has a direct relevance to our discussion.

Evaluation is the process of combining an overt NP in the phrase-marker with an argument position in the PAS by means of indexing, as in:

(15)




In other words, this process evaluates the occurrence of morphological cases freely generated in the phrase-marker by seeing if it conforms to the case array expressed in the PAS. Farmer argues that this process is subject to the conditions like (16) and that, given (16), the process "acts as a filter for the cases of overgeneration that involve too many overt NP's or the wrong NP's":[12]

(16) a. After evaluation has been completed ("completion" is defined either as: there are no more argument positions

12) Farmer (1980), p. 92.

or NP's to be indexed) all NP's in the clause are indexed.

b. Only one NP per argument position and only one position per NP.

Thus, the overgeneration permitted by the syntax of core grammar is restricted by (16).

This concludes a rather lengthy introduction of Farmer's analysis. In the following sections we will present a discussion of the inadequacies inherent in Farmer's analysis, which ultimately leads to the claim to the necessity of the notion "surface filter" in the core grammar of Japanese.

## 3. Inadequacies of Farmer's Analysis

We investigate two types of inadequacies of Farmer's analysis: one is concerned with the case linking rules and the other with evaluation. We show that it is necessary in Farmer's analysis to further stipulate a condition expressing the contextual dependency of case linking rules and an additional condition on evaluation to avoid these inadequacies.

### 3.1. Case Linking Rules

There seem to be at least three cases where Farmer's system of case linking rules cannot accomodate case arrays adequately.

First, notice that verb *aw* 'meet' is peculiar in that the second argument position is not linked with *O*, but *NI*:

(17) *Fuyuko ga Taroo ni at-ta* PAS: (*GA NI aw*)
'Fuyuko met Taro.'

Farmer assumes that the semantic *NI*-linking rule (11a) is responsible for the linking of this position. Thus, the PAS of *aw* prior to a WFR is as follows: (___ *NI aw*). The causative form with *aw*, i. e., *aw-ase* 'make (someone) meet' is associated with two case arrays, as exhibited in *ni*-causative (18a) and *o*-causative (18b):

(18) a. *Boku ga Haruko ni Taroo ni aw-ase-ta*[13]
'I had Haruko meet Taro.'
b. *Boku ga Haruko o Taroo ni aw-ase-ta*
'I made Haruko meet Taro.'

However, Farmer's system of case linking rules only provides the case array associated with *ni*-causative (18a), as shown in (19):[14]

(19) a. Word formation: Causative *-sase*: ( ___ ( ___ *NI aw*) *sase*)
b. The 'S' principle: ( ___ ( ___ *NI aw*) *sase*)
S S
c. Regular rule: *GA*: (*GA* ( ___ *NI aw*) *sase*)
S S
*O* : not applicable
*NI*: (*GA* (*NI* *NI aw*) *sase*)
S S

A possible solution to this problem is to stipulate the autonomy of the two components of case linking rules, i. e., the semantic linking rules and the regular rule, to the effect that the latter does not count the argument position linked by the former. Under this stipulation, the rightmost argument position in (19a) being ignored, the second position can be linked with *O* by the regular rule (10b), resulting in the case array of (18b).[15]

Second, there are cases where the stipulation of the autonomy of the linking components is not enough. First, observe the following causative sentences with transitive verbs:

13) This sentence is not perfectly grammatical. We will discuss the grammatical status of this sentence later in section 4.3 and footnote 41.

14) Note also that redundancy arises as to the explanation of the linking of *NI* in the second argument position, since it can be linked either by the semantic *NI*-linking rule (11a) or the regular rule (10c). This could be another inadequacy of Farmer's system.

15) The redundancy pointed out in footnote 14 is eliminated in this solution at the same time, since the seond position is now linked with *NI* only by the semantic *NI*-linking rule (11a). This is another favorable consequence drawn from this solution.

(20) a. *Titi ga imooto ni kutu o migak-ase-ta*
'My father had my sister polish his shoes.'
b. **Titi ga imooto o kutu o migak-ase-ta*
'My father made my sister polish his shoes.'

*O*-causatives are always ungrammatical, as shown by (20b), when they contain transitive verbs such as *migak* 'polish,'[16] In this case, Farmer's system of case linking rules correctly avoids providing the case array in (20b), since the third argument position is linked with *O* by the regular rule (10b) and no rule links the second position with *O*. However, observe the superficially similar cases of *o*-causatives which contain locative NP's marked with the partcile *o* instead of direct object NP's (in traditional terms):

(21) a. **Taroo ga Ziroo o sono hasi o watar-ase-ta*
'Taro made Jiro cross the bridge.'
b. **Fuyuko ga kodomo o sono kooen o aruk-ase-ta*
'Fuyuko made her child walk in the park.'

There is some evidence that the rightmost position in the PAS of the verbs in (21) is linked by the semantic linking rule.[17] If this is correct, the stipulation of the autonomy permits the case array in (21), since the regular rule (10b) does not count the rightmost position linked with *O* by the semantic linking rule and assigns the second position *O*. Thus, we must impose a condition like (22) on the application of case linking rules,[18]

16) This fact was first pointed out by Kuroda (1965) and has been an issue of discussion ever since. Cf. Shibatani (1973), Harada (1973, 1975) for discussion.

17) There are at least two differences between locative NP's and ordinary direct objects. One is that locative NP's denote the path or location where the action denoted by a verb takes place. The other is that locative NP's resist being subjectivized by the rule of passive:
(i) **Sono hasi wa Taroo ni watar-are-ta*
(ii) **Sono kooen wa kodomo ni aruk-are-ta*
These two observations clearly indicate the syntactic and semantic ideocyncrasies of locative NP's, suggesting the necessity of a special treatment of these NP's.

18) (22) expresses the contextual dependency of case linking rules. The introduction of such a constraint is tantamount to the assumption of surface filters.

(22) More than one argument position may not be assigned the same linking register.

to block the provision of the case array in (21). In this case, (22) blocks the application of the regular rule (10b).

Thirdly, an analogous problem arises in the case of a semantic linking rule. Farmer states that the leftmost position in the PAS of a certain class of verbs may be optionally linked with *KARA*.[19] Observe the case of sentences with *okur* 'send':

(23) a. *Taroo ga Katoo-san ni hon o okut-ta*
'Taro sent a book to Mr. Kato.'
b. *Taroo kara Katoo-san ni hon o okut-ta*[20]

Farmer postulates an optional semantic linking rule "*KARA*-linking rule" which links the leftmost position with *KARA* in order to account for the case array of (23b).

However, verb *okur* optionally takes another *kara*-phrase as in (24):

(24) *Taroo ga Otaru kara Katoo-san ni hon o okut-ta*
'Taro sent a book from Otaru to Mr. Kato.'

If the *KARA*-linking rule applies in this case, the result is the following ungrammatical string (25):

(25) **Taroo kara Otaru kara Katoo-san ni hon o okut-ta*

Thus, condition (22) must also block the application of the semantic linking rule to prevent the provision of the case array in (25).

In this section we have shown that the optimal operation of Farmer's system of case linking rules depends on the stipulation of the autonomy of

19) This observation is also pointed out by Inoue (1972).

20) This sentence may sound a little unnatural to some speakers. The following causative version of (23b) is much better, though the reason is not clear at present:
(i) *Boku wa Taroo kara Katoo-san ni hon o okur-ase-ta*
'I made Taro send a book to Mr. Kato.'

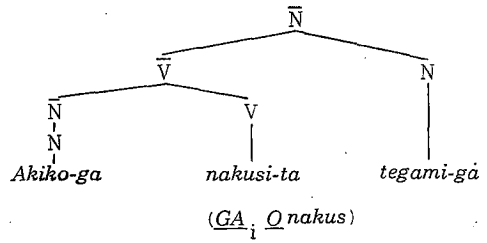
the two linking components and the assumption of condition (22) expressing the contextual dependency of case linking rules, obviously an undesirable complication of the grammar.

### 3.2. Evaluation

Farmer stipulates that "evaluation" associates an argument position with an overt NP which is a "sister" to the verb by means of indexing.[21] However, she is obliged to introduce further complications as to the operation of this process later. The first case of complication is that of relative clauses where one of the argument positions is left open (unindexed):[22]

(26) a. *Akiko ga nakusi-ta tegami ga...*
'The letter which Akiko has lost....'

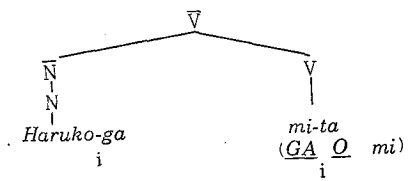
b.




Recognizing the necessity of the modification of the notion "sister," Farmer proposes a possibility of utilizing a structure-building rule of logical form, which produces a copy of the head in the relative clause, in accordance with Hale's (1980) suggestion. Another case is that of sentences with a phonologically-null pronoun:[23]

(27) a. *Haruko ga ___ mi-ta*
'Haruko saw.'

b.




21) Farmer (1980), p. 91.
22) Ibid., pp. 190–191.
23) Ibid., pp. 197–199.

Farmer simply states that the unindexed argument position is interpreted as a pronoun. However, in this case, some mechanism to determine the antecedent of the pronoun is yet to be stipulated. We tentatively assume that the necessary mechanism in both of these cases is basically of the same property, i. e., it associates the argument position with an overt NP outside the syntactic domain, whose constituents are c-commanded by the verb in question, and that there is actually such a mechanism.

What we introduce in the rest of this section is more complex cases of evaluation of this sort. These cases are concerned with the set of ungrammatical sentences presented in the previous section at the same time. We repeat them here for convenience:

(28) a. **Titi ga imooto o kutu o migak-ase-ta*
b. **Taroo ga Ziroo o sono hasi o watar-ase-ta*
c. **Fuyuko ga kodomo o sono kooen o aruk-ase-ta*
d. **Taroo kara Otaru kara Katoo-san ni hon o okut-ta*

A basic property of (28) is that they contain two identically case-marked NP's in a single clause. Another property which is crucial to our dicussion is that their ungrammaticality is rectified when one of the two identically case-marked NP's ceases to be a sister to the verb in one way or another. Thus, observe the pseudo-cleft versions of (28) where one of the two NP's in the same case is replaced in the focus position:[24]

(29) a. **Titi ga imooto o migak-ase-ta no wa kutu (o) dat-ta*
'What my father made my sister polish was his shoes.'
b. *Taroo ga Ziroo o watar-ase-ta no wa sono hasi (o) dat-ta*
'What Taro made Jiro cross was the bridge.'
c. *Fuyuko ga kodomo o aruk-ase-ta no wa sono kooen (o) dat-ta*
'Where Fuyuko made her child walk was the park.'
d. *Taroo kara Katoo-san ni hon o okut-ta no wa Otaru kara dat-ta*
'It was from Otaru that Taro sent a book to Mr. Kato.'

24) We owe the finding of the contrast between (29a) and (29b-c) to Harada (1973: foatnote 24).

The occurrence of a phonologically-null pronoun also exerts a favorable effect to the grammaticality of (28):

(30) A: *Kimi wa sono kutu o doosu-ru tumori de-su ka*
'What are you going to do with the shoes?'
B: **Ie ni mot-te kaet-te, imooto o φ migak-ase-ru tumori desu*
'I will bring them to my house and make my sister polish them.' (*φ=sono kutu o*)

(31) A: *Taroo wa sono hasi de nani o si-ta no desu ka*
'What did Taro do on the bridge?'
B: *φ₁ Zibun no inu o φ₂ watar-ase-ta no desu*
'He made his dog cross it.'
'(*φ₁=Taro ga, φ₂=sono hasi o*)

In the first place, it should be noted that the ungrammaticality of (28a), an *o*-causative with a transitive verb, cannot be rectified, as shown in (29a) and (30B). This sentence is different from the other sentences in (28) in that the case array associated with it is simply impossible under the present system of case linking rules, as stated below (20), being irrelevant to condition (22).[25] On the other hand, to guarantee the grammaticality of (29b)–(29d) and (31B), we must add a proviso like (32) to condition (22):

(32) The effect of (22) is nullified when one of the overt NP's is outside the syntactic domain of the verb, i. e., evaluation is dependent on some mechanism whose necessity is pointed out above.

This proviso suggests the necessity of assuming a more intricate interaction of case-linking rules and the process of evaluation.

The behaviour of quanitifier-like particles such as *wa*, *sae*, *sika* and so on provides a more complicated case. Observe that the addition of these

25) This analysis is a possible—perhaps most promising—solution to the puzzling problem of explaining the difference in grammaticality between (29a) and (29b-d). Cf. Harada (1975) for discussion of this problem within the framework of a version of relational grammar.

particles partially rectifies the ungrammaticality of (28b–d):

(33) a. **Titi ga imooto sika kutu o migak-ase-nakat-ta*
'My father made only my sister polish his shoes.'
b. *? Taroo ga Ziroo dake o sono hasi o watar-ase-ta*
'Taro made only Jiro cross the bridge.'
c. *? Fuyuko wa kodomo o sono kooen sika aruk-ase-nakat-ta*
'Fuyuko made her child walk only in the park.'
d. *? Otaru kara wa, Taroo kara Katoo-san ni hon o okut-ta*
'? As for from Otaru, Taro sent a book to Mr. Kato.'

The effect of these quantifier-like particles cannot be accounted for in terms of (32). A further complication must be introduced about the interaction of case linking rules and evaluation in order to account for the effect of these particles.

In the next section we will show that the conditions proposed in this section to avoid the inadequacies of Farmer's case linking system and evaluation can be dispensed with if we assume a surface filter of an appropriate form.

## 4. Filter Analysis

### 4.1. Core Grammar and Markedness

At the beginning of section 2, we introduced the term of "core grammar" without any definition. Before presenting a formulation of a surface filter in Japanese, a few remarks should be in order about the general theoretical considerations underlying the notion of core grammar.

Koster (1978) criticizes the traditional studies of generative grammar as being based on what he calls "naive falsificationism" as well as "the use of unspecific transformational formalism." Koster states that the way out of this defect is "to postulate rigorous idealizations, and to stop interpreting conflicts between idealizations and data as immediate refutations of these idealizations." He even says as follows:[26]

26) Koster (1978), p. 566.

> Interesting theories do not avoid conflicts with data, but rather create clashes on purpose. Much scientific research can be seen as an attempt to solve the created conflict by attaining descriptive adequacy in a new way, by the invention of new concepts, by revising auxiliary hypotheses, and so on.

Chomsky's recent introduction of the distinction between the core (or unmarked) and peripheral (or marked) parts of the knowledge of language is, as Koster points out, an extremely interesting hypothesis in the direction of eliminating this defect.

Chomsky (1979) assumes the theory of universal grammar (henceforth, UG), which, he argues, "mut be compatible with the diversity of existing (indeed, possible) grammars," and "be sufficiently rich and restrictive in structure so as to provide an account for the fact that each of these grammars can develop in the mind on the basis of quite limited evidence."[27] According to Chomsky, a set of parmeters, whose values are to be determined by experience, is embedded in the theory of UG and the grammar of a particular language is determined by fixing the values of these parametrs. He further assumes that the determined grammar, which is called "a core grammar," represents only the unmarked (or core) part of the language, since the core grammar is still an idealization, and an actual language "will incorporate a large periphery of borrowings, historical residues, inventions, and so on, that we can hardly expect to— and indeed would not want to—incorporate within a principled theory of UG."[28] However, Chomsky does not expect the periphery (or the marked part) of the language to be chaos, but to have a structure which "relates to the theory of core grammar by such devices as relaxing certain conditions of core grammar, processes of analogy in some sense to be made precise, and so on, ...."[29]

The analysis of a filter in Japanese to be proposed in the following section is crucially dependent on this distinction of core grammar and

27) Chomsky (1979), p. 1.
28) Ibid., p. 3.
29) Ibid., p. 4.

periphery. Conversely, it might be said that our analysis shows an interesting consequence drawn from the assumption of this distinction in the case of Japanese grammar.

### 4.2. The Formulation of a Filter

Chomsky and Lasnik (1977) argue that surface fiilters can capture "the consequences of ordering, obligatoriness, and contextual dependency" of transformations, which are problematic in the restricted theory of core grammar.[30] The same argument holds in the case of Farmer's system of case linking rules, which has an analogous status to the transformational rules in the core grammar of other languages than Japanese like English, as is immediately clear below.

Considering the fact that all the ungrammatical sentences discussed in section 3 contain two identically case-marked NP's in a single clause in surface structure, we propose the following formulation as a surface filter in the core grammar of Japanese :[31]

(34) The Double-Case Filter

$*[_S \ldots NP_1 \quad Y \quad NP_2 \ldots]$[32]

where (a) $NP_1$ and $NP_2$ are lexical and in the same case
and (b) Y does not contain an S-boundary or a conjunction

30) Chomsky and Lasnik (1977), p. 433.

31) Aissen (1974: 189) proposes a universal constraint with essentially the same property as (34). She refers to this constraint as "the Double-Case Constraint":

(i) *The Double-Case Constraint*: No language torelates structural ambiguity which is the result of there being two identically case-marked NPs in a clause.

She argues that the sentences in the domain of (i) are either ungrammatical or grammatical, but unambigous, and that which possibilty to be realized depends on a language. Though Aissen's analysis points to the correct direction, the formulalion of (i) is too loose to attain the explanatory adequacy. This looseness of the formulation seems to be a reflex of the attempt to account for the diversity across languages as to the data in question within the tradition of "naive falsificationism." Our analysis is free from this defect, though there still remains much to be stipulated.

32) Though Farmer adopts $\overline{V}$ for S and $\overline{N}$ for NP, we retain traditional notations S and NP for ease of exposition.

We assume that surface filter (34) applies after the application of deletion rules in case these rules are adopted. Condition (a) of (34) correctly excludes sentences (28b–d), since they contain two NP's in the same case in a single clause, while it permits sentence (31B) in which one of the relevant NP's is not lexical, but a phonologically-null pronoun.[33] Note that condition (22) is no longer necessary, since (28b–d) are excluded by (34). On the other hand, condition (b) prevents (34) from excluding (29b–d), the pseudo-cleft versions of (28b–d), since (29b–d) include an S-boundary between the two NP's in the same case, as illustrated in the following structure of (29d):

(29′) b. $[_S[_S$ *Taroo ga* $[_{NP_1}$ *Ziroo o*] *watar-ase-ta*] *no wa* $[_{NP_2}$ *sono hasi o*] *dat-ta*]

Note that condition (b) is necessary in any way to exclude the following grammatical sentences from the domain of surface filter (34):

(35) a. $[_S[_S$ *Taroo*$_i$ *ga* $[_{NP_1}$ *hon*$_j$ *o*] *kai,*$]$ $[_S\phi_i$ $[_{NP_2}$ *sore*$_j$ *o*] *sono hi no uti ni yon-da*]]

b. $[_S$ *Fuyuko ga* $[_{NP_1}$ *hon o*] *sansatu to* $[_{NP_2}$ *nooto o*] *gosatu katta*][34]

(35a) includes an S-boundary between the two NP's in the same case, and (35b) a conjunction *to*.

Note that, given surface filter (34), there is no necessity of assuming a complicated interaction between case linking rules and evaluation such as expressed in proviso (32) nor the condition on case linking rules, (22), which expresses the contextual depedency of these rules. Thus, the

33) We tentatively assume that surface structures may contain phonologically-null pronouns.

34) This sentence is assumed to be derived by Quantifier Float in previous studies. However, Inoue (1978: chaper 4) suggests a possibility that the sentences of this sort are treated by an interpretive rule which associates a base-generated quantifier with an appropriate NP. Cf. Inoue (1978) for discussion.

assumption of surface filters permits a more restrictive formulation of the system of case linking rules, leading to the reduction of the class of possible grammars which is a progress toward the ultimate goal of generative grammar, i. e., the explanation of the ability of human beings to acquire language.

### 4.3. Marked Constructions

It is fairly easy to find apparent counterexamples to surface filter (34). In the previous sections we have only examined sentences with two accusative NP's, (28a–c) and a sentence with two ablative NP's, (28d). Besides them, we have sentences with two nominative NP's, such as (36), those with two dative NP's, such as (37) and an additional set of sentences with two accusative NP's, such as (38), whose case arrays can be provided by Farmer's system of case linking rules:

(36) a. *Fuyuko ga suugaku ga suki-da*
'Fuyuko likes mathematics.'
b. *Akiko ga eigo ga deki-nai*
'Akiko is incompetent in English.'
c. *Natuko ga Furansugo ga hanas-e-ru*
'Natuko can speak French.'

(37) a. *Boku ga Haruko ni Taroo ni aw-ase-ta* (=(18a))
'I had Haruko meet Taro.'
b. *Haha ga Natuko ni Fuyuko ni tegami o kak-ase-ta*
'My mother had Natuko write a letter to Fuyuko.'
c. *Boku ga kodomo ni hako ni omotya o ire-sase-ta*
'I had my child put his toys into the box.'

(38) a. *Heitaitati wa kiri no naka o nagai miti o arui-ta*[35]
'The soldiers walked along a long road in the mist.'
b. *Titi wa kodomo o ame no naka o aruk-ase-ta*
'The father made his child walk in the rain.'

Surface filter (34) predicts that all these sentences are ungrammatical, yet

35) We owe the finding of these examples to Shibatani (1978: 291).

they are grammatical—at least assumed to be so in previous studies. In the rest of this section we will show that sentences (36)–(38) have a quite differnt status in the grammatical description under the framework incorporating the distinction between core grammar and periphery.

It is not an easy task to determine what systems constitute the core (ummarked) part of the knowledge of language and what ones constitute the peripheral (marked) knowledge. However, Koster suggests some "standard features of marked constructions" as criteria for demarcating marked constructuions and umarked ones.[36] They are summarized as follows:

(39) a. Marked constructions are less general across languages.
b. The judgement in grammaticality of marked constructions varies according to individuals.
c. Marked constructions are more susceptible to lexical and nongrammatical factors.

In the light of these criteria, the marked nature of (36)–(38) is rather obvious. In the first place, the grammaticality of sentences with two identically case-marked NP's differ from language to language fairly systematically, as argued by Aissen (1974).[37] Secondly, the grammaticality of them is not invariable, i. e., some of them may sound less natural to some speakers. Moreover, the grammatical status of all of them is somewhat marginal, being not completely grammatical. Thirdly, perceptual factors may influence the grammaticality of these sentences. For example, (36a) becomes ungrammatical if the two identically case-marked NP's are interchanged, as shown in (40a), while it becomes more natural if embedded in another sentence, as shown in (40b):

(40) a. **Suugaku ga Fuyuko ga suki-da*
b. *Minna wa Fuyuko ga suugaku ga suki-na koto o sit-te-i-ru*
'Everyone knows that Fuyko likes mathematics.'

36) Koster (1978), p. 571.
37) Cf. footnote 31.

We assume that these marked constructions are derived by relaxing the autonomy thesis of grammatical components in such a way that the information in the semantic representation may weaken the effect of surface filter (34) under certain conditions. These conditions are the cost at which the marked constructions are free from the effect of surface filter (34).

Before examining them, it should be noted that we assume Jackendoff's (1972) framework where semantic representation is not a "single hierarchical structure," but consists of four independent parts: the functional structure which "represents relations in the sentence induced by the verbs, including such notions as agency, motion, and direction." This is represented by the PAS in Farmer's framework; the modal structure, which "specifies the conditions under which a sentence purports to correspond to situations in the real world"; the table of coreference, which "indicates whether pairs of noun phrases in the sentence are intended to be coreferential or not"; the focus and presupposition, which "designates what informasion in the sentence is intended to be new and what is intended to be old."[38]

Turning to (36)-(38), notice first that the peculiariarity of (36) is that the first nominative NP not only fills the first argument position in the functional structure (i. e., PAS), but also undergoes an exhaustive-listing interpretation which belongs to another part of semantic representation "the focus and presupposition."[39] As Kuno implies, this is almost always the case when the NP-*ga* NP-*ga* pattern occurs.[40] Thus, we tentatively assume

38) Jackendoff (1972), p. 3.

39) The exhaustive-listing interpretation of X-*ga* is represented as "X (and only X)" or "It is X that...," as shown in the English translation of the following example from Kuno (1973: 38):

(i) *John ga gakusei desu*
'(Of all the people under discussion) John (and only John) is a student.'
'It is John who is a student.'

40) Kuno (1973: 60) states that "if the predicate represents a stable state, the subject with *ga* can receive only the exhaustive-listing interpretation," and, at the same time, postulates (op. cit.: 330) the rule of object marking which assigns *ga* to the first unmarked NP to the left of the *stative* verb. It is not clear at present whether all the cases including these two classes of verbs coincide or not. However, it is obvious that in almost all cases these two

the following condition:

(41) If an overt NP specified in the surface filter plays some role in the semantic representation of the focus and presupposition, the effect of the surface filter is weakened.

Note that (41) also accounts for the enhanced grammaticality of (33b-d) in which a quantifier-like particle is attached to one of the identically case-marked NP's, since the interpretation of quantifier-like particles such as *dake* 'only', *sae* 'even' and so on belongs to the part of the focus and presupposition.

Next, (37) are the case where there are no other syntactic constructions to represent the semantic situations expressed by (37). In this case, since the included verbs are ditransitive ones which have the maximal array of grammatical cases, i. e., *GA, NI, O*, if another argument position is added to the PAS by a WFR, it is inevitably linked with *NI* which is the only possible linking resister permitted by Farmer's system of case linking rules. The result is the case array of *GA, NI, NI, O*, which is excluded by (34). Thus, we assume a tentative condition as follows:[41]

(42) If a syntactic construction which is in the domain of the surface filter uniquely represents a semantic situation, the syntactic construction is permitted at the expense of the optimal operation of the surface filter.

Lastly, (38) are the case where one of the two identically case-marked NP's does not have a corresponding argument postion in the PAS. *Ame*

do coincide. Thus, when the two nominative NP's occur in a single sentence, the first NP almost always has a sense of exhaustive-listing as stated in the text. Cf. Kuno (op. cit.: 57-59) for further discussion.

41) (37a) cannot be accounted for by (42), since it has another syntactic construction for the semantic situation of this sentence:

(i) *Boku wa Haruko o Taroo ni aw-ase-ta* (=(18b))
'I made Haruko meet Taro.'

We do not have a definite explanation for the grammaticality of (37a). We leave this problem open for further study.

*no naka o* 'in the rain' and *kiri no naka o* 'in the mist' are actually predicate modifiers. There is a piece of evidence for this. Note that ambiguity is induced when the positions of the two NP-*o*'s are exchanged in causative sentence (38b):

(43) *Titi wa ame no naka o kodomo o aruk-ase-ta*
1. 'While they were in the rain, the father made his child walk.'
2. 'The father made his child walk in the rain.'

In (43), *ame no naka o* can modify both *aruk-ase* 'make (someone) walk' and *aruk* 'walk', as reflected in the two English translations. Thus, another condition is necessary for the explanation of this case:

(44) If one of the overt NP's specified in the surface filter does not correrpond to an argument position, the effect of the surface filter is weakened or almost nullified.

The result of the above discussion is an unsystematic enumeration of the conditions under which the effect of surface filter (34) is weakened. However, it seems that the existence of these conditions for each of the marked constructions shows that the analysis presented here is basically correct, though a full-fledged analysis of the marked constructions must await a more detailed analysis of the various aspects of semantic representation.

## 5. Conclusion

We have examined Farmer's analysis of case-marking and complex verbs and pointed out that the two devices in her analysis, i. e., the system of case linking rules and the process of evaluation, are inadequate in that they necessitate the introduction of further complications, including the stipulation of ad hoc conditions on the application of them. We have argued that these inadequacies can be eliminated if we assume a surface filter and proposed the 'Double-Case Filter' as a possible surface filter in Japanese under the theory of core grammar and markedness. However, we leave open for future study a few problems concerned with general

properties of a surface filter, such as the locality requirement stipulated in Chomsky and Lasnik (1977) and the universality.

## References


Aissen, J. (1974) *The Syntax of Causative Constructions*, unpublished Doctoral dissertation, Harvard University, Cambridge, Massachusetts.

Chomsky, N. (1970) "Remarks on Nomianlization," in R. A. Jacobs and P. S. Rosenbaum, eds. (1970).

Chomsky, N. (1975) *Reflections on Language*, Pantheon, New York.

Chomsky, N. (1977a) *Essays on the Form and Interpretation*, American Elsevier, New York.

Chomsky, N. (1976b) "On *Wh*-Movement," in P. Colicover, T. Wasow, and A. Akmajian, eds. (1977).

Chomsky, N. (1979) "Markedness and Core Grammar," unpublished mineographed paper, MIT, Cambridge, Massachusetts.

Chomsky, N. (1980) "On Binding," *Linguistic Inquiry* 11, 1-46.

Chomsky, N. and H. Lasnik (1977) "Filters and Control," *Linguistic Inquiry* 8, 425-504.

Culicover, P., T. Wasow, and A. Akmajian, eds. (1977) *Formal Syntax*, Academic Press, New York.

Farmer, A. K. (1980) *On the Interaction of Morphology and Syntax*, unpublished Doctoral dissertation, MIT, Cambridge, Massachusetts.

Hale, K. (1980) "Remarks on Japanese Phrase Structure: Comments on the Papers on Japanese Syntax," in Y. Otsu and A. Farmer, eds. (1980).

Harada, S. I. (1973) "Counter Equi NP Deletion," *Annual Bulletin* 7, RILP, University of Tokyo, Tokyo, 113-147.

Harada, S. I. (1975) "Functional Uniqueness Principle," *Attempts in Linguistics and Literature* 2, ICU, Tokyo, 17-24.

Howard, I. and A. M. Niyekawa-Howard (1976). "Passivization," in M. Shibatani, eds. (1976b).

Inoue, K. (1972) "Agent and Source in Japanese," *Papers in Japanese Linguistics* 1, 195-217.

Inoue, K. (1978) *Nihongo no bunpoo-kisoku*, Taishukan, Tokyo.

Jacobs, R. A. and P. S. Rosenbaum, eds. (1970) *Readings in English Transformational Grammar*, Ginn and Company, Waltham, Massachusetts.

Koster, J. (1978) "Conditions, Empty Nodes, and Markedness," *Linguistic Inquiry* 9, 551-593.

Kuno, S. (1973) *The Structure of the Japanese Language*, MIT Press, Cambridge, Massachusetts.

Kuroda, S. Y. (1965) "Causatve Forms in Japanese," *Foundations of Language* 1, 327-373.

Miyagawa, S. (1980) *Complex Verbs and the Lexicon*, unpublished Doctoral dissertation, University of Arizona.

Ostler, N. D. M. (1980) "A Non-Transformational Account of Japnese Case-Marking & Inflexion," in Y. Otsu and A. Farmer, eds. (1980).

Otsu, Y. and A. Farmer, eds. (1980) *MIT Working Papers in Linguistics* Vol. 2: *Theoretical Issues in Japanese Linguistics*, MIT Press, Cambridge, Massachusetts.

Shibatani, M. (1973) "Semantics of Japanese Causativization," *Foundations of Language* 9, 327-373.

Shibatani, M. (1976a) "Causativization," in M. Shibatani, eds. (1976b).

Shibatani, M., eds. (1976b) *Syntax and Semantics* 5: *Japanese Generative Grammar*, Academic Press, London.

Shibatani, M. (1977) "Grammatical Relations and Surface Cases," *Language* 53, 789-809.

Shibatani, M. (1978) *Nihongo no bunseki*, Taishukan, Tokyo.