ANALYSIS OF QUANTIFIER IN JAPANESE

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0. INTRODUCTION

Quantifier Floating (henceforth QF) in Japanese has been discussed in the literature by several linguists (Okutsu 1969, Harada 1976, Kamio 1977, Shibatani 1977, Kuno 1978, Inoue 1978). Their analyses have focused on two issues. One issue concerns whether QF should be considered in terms of grammatical relations; subject, direct object and indirect object, or grammatical surface cases; nominative case GA, accusative case O, and dative case NI. The other issue concerns whether QF phenomenon is to be accounted for by virtue of a transformational rule or by virtue of an interpretive rule. This paper consists of two sections. In the first section, I will present a review of previous analyses of QF in the literature, ultimately questioning any transformational account of QF. In the second section, I will examine sentence structures containing quantifiers.

1. REVIEW OF QUANTIFIER FLOATING

1.1 Grammatical Relations Or Surface Cases?

In contrast to English quantifiers, quantifiers in Japanese, including numerals along with classifiers can be rather freely extraposed from the NP with which they are associated.[1] Referring to such a syntactic phenomenon, Okutsu (1969) suggests that grammatical relations are important for QF, namely, quantifiers can be postposed only from subject or direct object NP but not from indirect object NP.

(1) a. San- nin no otoko-ga ki-ta.
three classifier GEN. man NOM. come past

b. Otoko-ga san-nin ki-ta.

'Three men came.'

(2) a. Taroo-wa suu-satu no hon-o yon -da.
Taro TOP. a few GEN book ACC. read past

b. Taroo-wa hon-o suu-satu yon-da.

'Taro read a few books.'

(3) a. Taroo-wa kare no hon-o suu-nin no yuujin -ni
Taro TOP. he 's book ACC. a few GEN friend DAT.
kasi-ta.
lend past

b. *Taroo-wa kare no hon-o yuujin-ni suu-nin kasi-ta.

'Taro lent his book to a few friends (of his).'

As indicated in examples (1) - (3), grammatical relations often times correspond with surface cases; NP marked by nominative case GA is subject, NP marked by accusative case O is direct object and NP marked by dative case NI is indirect object. However, the correspondence is not maintained in the following examples:

(4) a. Kono kurasu de suu-nin no amerikajin-ni nihongo- -ga
this class in a few GEN. American DAT Japanese NOM

wakar-u.
understand pres.

b. *Kono kurasu de amerikajin-ni suu-nin nihongo-ga wakar-u.

'In this class, a few Americans understand Japanese.'

(5) a. Ooku no nanmin -ni enjo -ga ir-u.
many GEN refugee DAT support NOM need pres.

b. *Nanmin-ni ooku enjo-ga ir-u.

'Many refugees need support.'

(6) a. Tanaka san -ni san-nin no musuko-ga i-ru.
Tanaka Mr. DAT three GEN son NOM have pres.

b. Tanaka san-ni musuko-ga san-nin i-ru.

'Mr. Tanaka has three sons.'

The subjects amerikajin 'American' in (4) and nanmin 'refugee' in (5) are both marked by dative case NI and are associated with stative verbs. However, in these two examples, QF cannot postpose quantifiers suu-nin 'a few' and ooku 'many' from each subject, while in (1), QF can apply to nominative GA marked NP, the subject. In (2) and (6), quantifiers can be moved from accusative O marked NP and nominative GA marked NP, which are both direct objects. In the case of dative NI marked NP (the indirect object in (3a)) QF is blocked as indicated in (3b). Shibatani (1977) claimed that QF should be accounted for in terms of surface cases, i.e., QF can apply to nominatively and accusatively marked NP's, but not to NI marked NP, which is dative case.

Counter to Shibatani's claim of evidence for quantifier floatibility, Harada (1976) maintains that QF must be considered in terms of grammatical relations as Okutsu does. Consider the following examples (Harada: p. 47-48):

(7) a. Taroo-wa hutari no tikara no tuyosoo na hito-ni
Taro TOP two GEN force strong look man DAT

kite-mora-tta.
come receive past

b. Taroo-wa tikara no tuyosoo na hito-ni hutari kite-mora-tta.

'Taro had two tough-looking men come.'

(8) a. ?Hitori no eigo no dekiru hito -ni kite-hosi-i
one GEN English competent person DAT come want pres.

b. Eigo no dekiru hito-ni hitori kite-hosi-i.

'I want one person competent in English (to come).'

(9) a. ?Ziroo-wa san-nin no kodomo-ni sin -are -ta.
Ziro TOP three GEN child DAT die passive past

b. ?Ziroo-wa kodomo-ni san-nin sin-are-ta.

'Ziro had three (of his) children die.'

(10) a. ?Kantoku -ga zenin no sensyu -ni akai herumetto-o
head coach NOM all GEN members DAT red helmet ACC
kabur -ase -ta.
wear causative past

b. Kantoku-ga sensyu-ni zenin akai herumetto-o kabur-ase-ta.

'The head coach had all the players put on a red helmet.'

All the NP's marked with dative case in (7) - (10) are the underlying subjects of the embedded complements (i.e., subject of 'kite', (7) - (8); 'sin', (9) and 'kabur' (10)). Compare the following example in (11) with (9).

(11) a. Taroo-wa ni-hiki no inu-ni oikaker-are -ta.
Taro TOP two GEN dog DAT chase passive past

b. *Taroo-wa inu-ni ni-hiki oikaker-are-ta.

'Taro was chased by two dogs.'

(9a) is the "adversitive" (of "indirect") passive while (11a) is a "pure" (or "direct") passive. As indicated, the former permits the postposing of a quantifier but the latter does not. In order to account for such a distinction, Harada considers the NPs marked by dative case NI to be 'cyclic subjects' in (7) - (10), while the ones in (3a) and (11a) are not. His observations are summed up by the following statement (p. 48): "Quantifier Float is a cyclic rule applying to subjects and objects with a proviso that the subject of a stative predicate is exempt from it. This conclusion seems to be in perfect comformity with the finding in the relationalist framework. Quantifier Float falls under the category of what I would like to refer to 'ralatio-structural rule' i.e., rules that must refer to terms of grammatical relation but do not effect a relational change."

In reference to adversity passive such as in (9), one notation which is not touched upon by Harada must be kept in mind. Dative NI marked NP in adversity passive does not always trigger QF. Consider the following examples:

(12) a. Taroo-wa ni san-nin no dooryoo -ni syusses
Taro TOP two three GEN collegue DAT succeed
-are -ta.
passive past

b. Taroo-wa dooryoo-ni ni san-nin syusses-are-ta.

'Taro had two or three (of his) colleagues succeed.'

(13) a. Yamada san -wa hitori no musume -ni kini ira-nai
Yamada Mr. TOP one GEN daughter DAT like NEG

otoko-to kekkons-are -ta.
man with marry passive past

b. Yamada san-wa musume-ni hitori kini ira-nai otoko-to kekkons-are-ta.

'Mr. Yamada had one daughter marry the man he did not like.'

(14) a. Tuiteinai kotoni saihu -o hutari no suri -ni
unluckly wallet ACC two GEN pickpocket DAT

tor -are -ta.
steal passive past

b. *Tuiteinai kotoni saihu-o suri-ni hutari tor-are-ta.

'Unluckly, I had (my) wallet stolen by two pickpockets.'

(15) a. Ziroo-wa niwatori-o suu-hiki no ookami-ni osow
Ziro TOP chicken ACC a few GEN wolf DAT attack

-are -ta.
passive past

b. *Ziroo-wa niwatori-o ookami-ni suu-hiki osow-are-ta.

'Ziro had (his) chickens attacked by a few wolves.'

The quantifiers in (12a) and (13a) may be postposed as in (12b) and (13b), but not those in (14a) and (15a) as in (14b) and (15b). These examples indicate that postposing quantifiers is ultimately due to the predicates of each embedded complement. Syusse suru 'succeed' and kekkon suru 'marry' in (12) and (13) respectively as well as sinu 'die' in (9) are intransitive verbs, while toru 'steal' and osou 'attack' in (14) and (15) are transitive verbs. Therefore, in contrast to pure passive, NP marked by dative case NI in adversity passive can trigger QF if the predicate in the embedded complement is intransitive. Moreover, exclusive generalization for NI marked NP claimed by Shibatani is wrong because in certain conditions, QF can apply.

Counter to claims based on either grammatical relation or surface cases, Kuno (1978) argues that conditions for QF cannot be stated purely on the basis of grammatical relations or purely on the basis of surface cases, but require reference to both. In order to justify this argument, he presents examples that quantifiers can float rather freely from NO marked subject of adjectival clauses in accordance with the so-called rule of GA/NO conversion.[2]

Inoue (1978) states that NI marked NP can trigger QF under certain conditions, refuting Shibatani's analysis that QF cannot apply to NI case marked NP's. The following examples illustrate this point.

(16) a. Yamada san -wa hutari no tomodati-ni denwasi-ta.
Yamada Mr. TOP two GEN friend call past

b. Yamada san-wa tomodati-ni hutari denwasi-ta.

'Mr. Yamada called two (of his) friends.'

(17) a. Yamada san -wa tokyo de suu-nin no tomodati-ni
Yamada Mr. TOP Tokyo in a few GEN friend

a-tta.
meet past

b. Yamada san-wa tokyo de tomodati-ni suu-nin a-tta.

'Mr. Yamada met a few (of his) friends in Tokyo.'

(18) a. Yamada san -wa yuube san-gen no baa-ni hai-tta.
Yamada Mr. TOP last night three GEN bar enter past

b. Yamada san-wa yuube baa-ni san-gen hai-tta.

'Mr. Yamada went to three bars last night.'

As indicated above, examples (16a), (17a) and (18a) have their counterparts whose quantifiers are postposed. NI case marked NP's like these must be subcategorized. Inoue also points out that O case marked NP's, which are always associated with verbs expressing motion, can trigger QF as in (19) and (20).

(19) a. Sono mura no kodomotati-wa hutatu no hasi-o watatte
that village children TOP two GEN bridge cross

gakko -e ik-u.
school to go pres.

b. Sono mura no kodomotati-wa hasi-o hutatu watatte gakko-e ik-u.

'Children in that village go to school, crossing two bridges.'

(20) a. Kare-wa hutatu no daigaku-o de -ta.
he TOP two GEN university graduate past

b. Kare-wa daigaku-o hutatu de-ta.

'He graduated from two universities.'

To sum, in previous QF analyses, quantifiers are optionally postposed in sentences with the following structures associated with surface cases. Phrasal categories are in canonical order, as in (21).

(21) Q no NP-x or NP-x Q (x=case)

a. NP ga V

b. NP ga NP o V

c. NP ga *NP ni NP o V

d. NP ga NP ni V (not in the case of pure passive)

e. NP ga NP ga V

f. *NP ni NP ga V

1.2 Transformational Or Interpretive?

The basic assumption behind QF phenomenon seems to be that the floating is operated by a transformational rule. Even through neither Shibatani nor Kuno have questioned it in the literature, their analyses are based on this assumption. If we assume a transformational rule and take the derivation shown in the example sentences in 1.1 into consideration, the following rule can be postulated.

(22) $[Q \underline{no}\ NP]_{NP}\ -x \longrightarrow [[NP]_{NP}\ -x\ .....Q.....]_{S}$

x=ga, o, (ni, no)

Maintaining the assumption that QF is transformational, Kamio (1977) presents his analysis in the framework of $\bar{X}$-theory, although he uses different terminology, i.e., Quantifier Postposing.[3]

However, if transformations are meaning preserving, then the following examples are a problem.

(23) a. Inhure -de untin-ga niju-paasento neagarisi-ta.
inflation because fee NOM twenty percent raise past

b. Inhure-de niju-paasento no untin-ga neagarisi-ta.

'Because of inflation, the fee was raised twenty percent.'

(24) a. Kono mati-ni nihonjin -ga san-paasento sunde i-ru.
this town in Japanese NOM three percent live pres

b. Kono mati-ni san-paasento no nihonjin-ga sunde i-ru.

'Three percent of the people in this town are Japanese.'

We can assume (23a) and (24a) are derived from (23b) and (24b) respectively by the rule in (22). However, the transformational rule causes a difference in meaning between (a)s and (b)s. (23a) can be uttered to describe the situation in which the new bus fee of 120 yen is 20% more than the old fee of 100 yen and was raised because of inflation. However, (23b) is uttered to describe the situation in which 20% of various fees were raised. In other words, the specific fee is focused in (23a) while several fees are focused in (23b). The meaning of (24a) is that 3% of the whole population in the town are Japanese, while the meaning of (24b) is that 3% of the whole Japanese population lives in the town.

When an NP is modified by prepositional phrase or relative clause, the interpretation of outputs of QF will be clearly different.

(25) a. Tukue no ue no suu-satu no hon -ga nakuna -tta.
desk on a few GEN book NOM disappear past

b. Tukue no ue no hon-ga suu-satu nakuna-tta.

'A few books on the desk disappeared.'

(26) a. Taroo-wa tomodati-kara kari -ta ni-satu no hon -o
Taro TOP friend from borrow past two GEN book ACC
yon- da.
read past

b. Taroo-wa tomodati-kara kari-ta hon-o ni-satu yon-da.
'Taro read two books which he borrowed from his friend.'

In (25a), the prepositional phrase tukue no ue no 'on the desk' modifies the 'Q no NP' constituent, suu-satu no hon 'a few books'. In (25b), the prepositional phrase modifies the NP hon 'book'. Therefore, it is possible to interpret that there are more than a few books and a few of them disappeared. In (26a), the relative clause strictly modifies 'Q no NP' constituent, ni-satu no hon 'two books', while in (26b), the relative clause modifies the NP hon 'book'. Therefore, as in (25), there are only two books that Taro borrowed from his friend and he read both in (26a), while there are more than two books and he read two of them in (26b).

The synonymity of these sentences is questionable. In order to justify my proposal, I again present the examples from 1.1.

(27) a. San-nin no otoko-ga ki -ta.
three GEN man NOM come past

b. Otoko-ga san-nin ki-ta.
'Three men came.'

(28) a. Yamada san -wa hitori no musume -ni kini ira-nai
Yamada Mr. TOP one GEN daughter DAT like NEG
otoko-to kekkons -are -ta.
man with marry passive past

b. Yamada san-wa musume-ni hitori kini ira-nai otoko-to kekkons-are-ta.
'Mr. Yamada had one daughter marry the man who he did not like.'

(27a) and (28a) have restricted readings, compared to their counterparts, which are outputs of QF, as in (27b) and (28b). (27a) makes reference to three specific men. On the other hand, in (27b), there can be more than three men and three of them came. In (28a), Mr. Yamada has only one daughter while in (28b), he has more than one daughter and one of them married the man whom he did not like.[4]

I presented three instances supporting the claim that the transformational rule which operates QF is rather weak from the point of view of meaning preserving. I would like to present one more example. Q-zutu 'each'[5] behaves in a syntactically similar way as quantifiers. That is, Q-zutu appears in the same environments as quantifiers, indicated in (21). However, Q-zutu cannot preceed NP (*Q-zutu no NP) as in (29b) and (30b).[6]

(29) a. Sensei to gakusei -ga san-nin-zutu i-ru.
teacher and student NOM three each be pres.

b. *San-nin-zutu no sensei to gakusei-ga i-ru.

'There are three teachers and three students.'

(30) a. Gakusei -o hutari-zutu yon-da.
student ACC two each call past

b. *Hutari-zutu no gakusei-o yon-da.

'I called students, two at a time.'

(29a) is derived from san-nin no sensei to san-nin no gakusei by QF followed by coordination conjunction reduction, which collapses the structure and introduces 'zutu'. On the other hand, (30a) cannot be derived from a coordinate structure since there is only one NP, i.e., gakusei, and hutari-zutu cannot preceed Gakusei. Therefore, it should be base generated. Space limitation prevents presentation of a detailed analysis. Returning to the matter of QF, neither (29a) nor (30a) can be considered to be derived from its ungrammatical counterpart. If we tentatively assume that sentences containing Q-zutu are subject to the same transformational process as in (22), such a rule cannot be justified since it requires ungrammatical underlying structures in some cases.

To sum, a transformational rule creates or adds different interpretation when the phenomenon of QF is involved. From the strict standpoint of the principle of meaning preserving of transformations (as in the Standard Theory) QF is not conclusively accounted for by virtue of a transformational rule. Also, if it is correct to treat sentences containing Q-zutu in the same way as sentences containing quantifiers, QF obviously fails to be justified by a transformational rule. Consequently, I will suggest that a quantifier is 'base generated' in its 'surface' position, and a semantic interpretation rule operates instead.

2. ANALYSIS OF STRUCTURE WITH QUANTIFIERS[7]

In this section, I will formulate sentence structures containing quantifiers based on the assumption that there is no need for a transformational rule to operate QF in Japanese. I will adopt the endocentric X-bar schema which is proposed by Farmer (1980). Based on a version of the X-bar theory, Farmer states (p. 69-70):

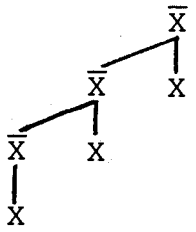
> Phrase structure rules have always had the role of defining the structure of categories..that is, relating super categories, $\overline{X}$, $\overline{\overline{X}}$.....X^k, where X is some lexical category, to X. The head of the phrase is identified as X^{n-1}, or X if it is the terminal node. For Japanese, we will propose a phrase structure rule that only specifies depth of structure and indicates the location of the head (X^{n-1}). The phrase structure rule itself does not project categories (N, N^{n-1}). Instead, the PS rule projects node-markers, X, which do not have any categorical contents, but are associated with an exponent. The exponent presents the level of structure. The head in each expansion is identified by the reduction in the exponent.

The principles contained in the above statement are represented by the Phrase Structure rule, (31a), and by the possible structures shown as (31b) and (31c).

(31) a. $\bar{X} \longrightarrow \bar{X}^* X$

b.

c.



$\bar{X}$'s are unspecified categories and X is the head. The head, X, takes any number of complements (including none), i.e., $\bar{X}^*$. The order of complements is free. In (32), we can see the relation between the head and complements.

(32)

	complements ($\bar{X}$)			
head (X)	N	ADV	ADJ	Q
V	+	+	-	+
N	+	+	+	+
ADV	-	+	-	-
ADJ	-	+	-	-

Some examples of free linear arrangement of complements shown in (33) below.

(33) a. Taroo no totemo omositoi ni-satu no hon ($\bar{N}$-$\overline{ADV}$-$\overline{ADJ}$-$\bar{Q}$-N)
Taro 's very interesting two GEN book

b. Taroo no ni-satu no totemo omosiroi hon ($\bar{N}$-$\bar{Q}$-$\overline{ADV}$-$\overline{ADJ}$-N)

c. Ni-satu no Taroo no totemo omosiroi hon ($\bar{Q}$-$\bar{N}$-$\overline{ADV}$-$\overline{ADJ}$-N)

d. Ni-satu no totemo omosiroi Taroo no hon ($\bar{Q}$-$\overline{ADV}$-$\overline{ADJ}$-$\bar{N}$-N)

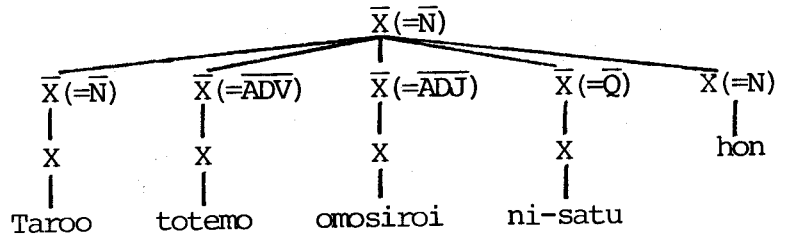
e. Totemo omosiroi Taroo no ni-satu no hon ($\overline{ADV}$-$\overline{ADJ}$-$\bar{N}$-$\bar{Q}$-N)

f. Totemo omosiroi ni-satu no Taroo no hon ($\overline{ADV}$-$\overline{ADJ}$-$\bar{Q}$-$\bar{N}$-N)

'Taro's two very interesting books.'

Because of limited space, I present only the structure of (33a) in (34).

(34)



As indicated in (35), quantifiers are allowed three positions within sentence structure, i.e., Q with genitive case no proceeds NP, Q follows NP, and Q proceeds NP without genetive case.

(35) a. Kinoo san-nin no yuujin -ga tazunete ki-ta.
yesterday three GEN friend NOM visit past

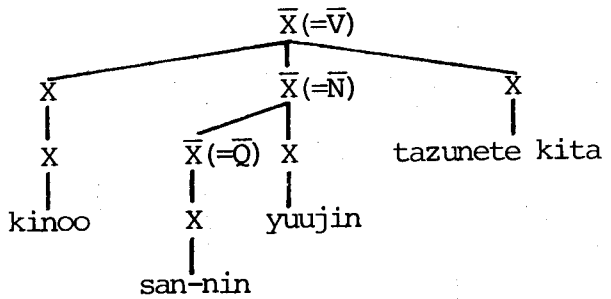
b. Kinoo yuujin-ga san-nin tazunete ki-ta.

c. Kinoo san-nin yuujin-ga tazunete ki-ta.

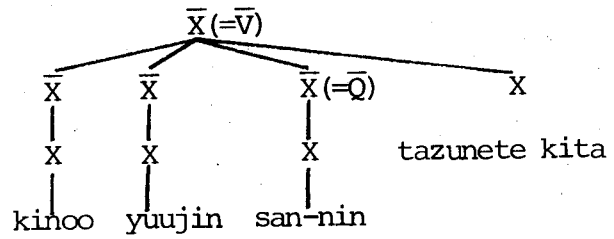
'Yesterday, three (my) friends visited me.'

(36) shows the structure of each sentence in (35).[8]

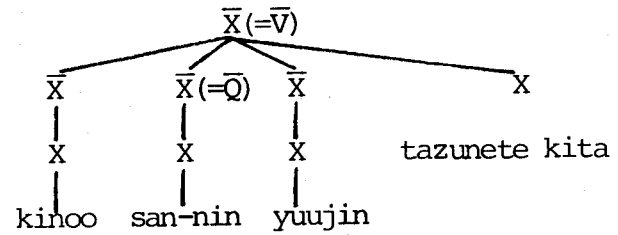
(36) a.



b.



c.



in (36a), the maximal projection, Q̄, is immediately dominated by N̄, while in (36b) and (36c), it is immediately dominated by V̄. This daughter or sister relation with the head (N or V) plays a crucial role in determining interpretation. For example, the configuration in (36a) corresponds

to the restricted interpretation while the one in (36b) or (36c) correspond to the non-restricted interpretation, as I discussed in the previous section. The following examples are sentences which contain more than one quantifier:

(37) a. Goju-nin no jookyaku -ga zenin sin-da.
fifty GEN passenger NOM all die past

b. Zenin goju-nin no jookyaku-ga sin-da.

c. Jookyaku-ga goju-nin zenin sin-da.

d. Goju-nin zenin jookyaku-ga sin-da.

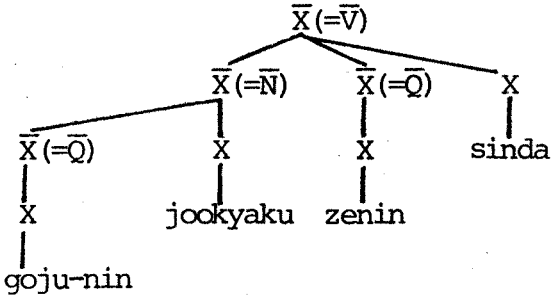
e. Goju-nin jookyaku-ga zenin sin-da.

f. ?Zenin goju-ni jookyaku-ga sin-da.

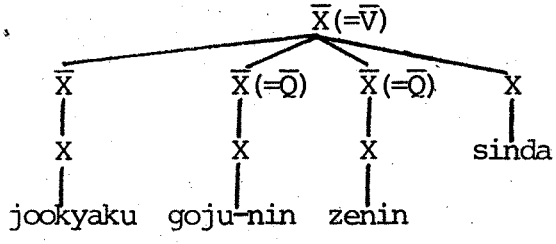
'All fifty passengers died.'

(38) indicates the configuration of the sentences in (37).

(38) a.



b.



When the maximal projection $\bar{X}$ (=$\bar{Q}$) is dominated by $\bar{V}$, it is allowed to arrange in free linear order, as in (37b), (37d) and (37e). However, if zenin 'all' preceeds another quantifier, goju-nin 'fifty', the sentence will be less acceptable, as in (37f). On the other hand, when two quantifiers, zenin and goju-nin, are not in sister relation, the sentence is perfectly well-formed, as in (37b). Zenin is dominated by $\bar{V}$ while goju-nin is dominated by $\bar{N}$.

(39) a. San-nin no dansei-ga yo-nin no josei -o shootaisi-ta.
three GEN man NOM four GEN woman ACC invite past

b. Dansei-ga san-nin yo-nin no josei-o shootaisi-ta.

c. San-nin dansei-ga yo-nin no josei-o shootaisi-ta.

d. San-nin no dansei-ga josei-o yo-nin shootaisi-ta.

e. San-nin no dansei-ga yo-nin josei-o shootaisi-ta.

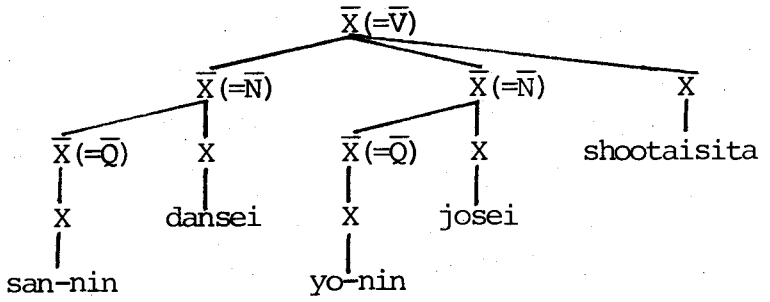
f. Dansei-ga san-nin yo-nin josei-o shootaisi-ta.

g. Dansei-ga san-nin josei-o yo-nin shootaisi-ta.

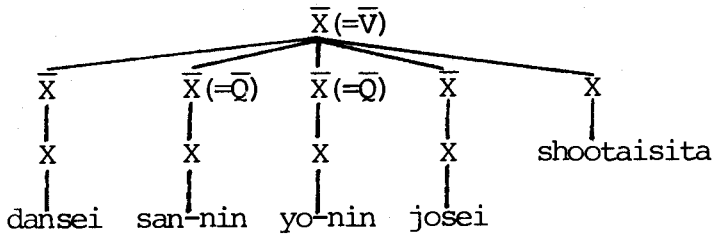
h. *San-nin yo-nin dansei-ga josei-o shootaisi-ta.
'Three men invited four women.'

The structure of some of the sentences in (39) are shown in (40).

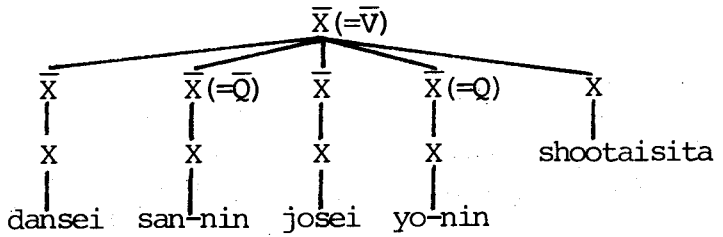
(40) a.



b.



c.



When $\bar{Q}$'s are dominated by $\bar{V}$, that is, when they are in sister relation, certain restrictions are needed to identify the domain of each quantifier. $\bar{Q}$ can be either in the left hand side of $\bar{N}$ or in the right hand side of $\bar{N}$. However, the two quantifiers cannot be in the same domain, that is, they both cannot modify the single NP. In order to generalize such restrictions, I propose the two filters indicated in (41).

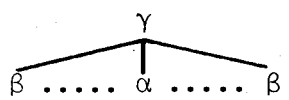
(41) Filter 1 $*[Q_1 \text{ — } Q_2]$

Filter 2 $*[Q_1 \text{ — } N \text{ — } Q_2]$

except Q_2 = zenbu, subete, minna. 'all'

Observation of the linear arrangement of complements and structures of sentences containing quantifiers allows generalization of the domain of quantification to be made, as in (42).

(42)



α, which is itself a maximal projection (=$\bar{Q}$), can quantify β:

1) if $\gamma = \bar{N}$, then $\beta = \gamma^{n-1}$ (i.e., the head)

2) if $\gamma = \bar{V}$, then any $\bar{N}$s cannot be contained between α and β, and there is only one instance of β $(=\bar{N})$.

In 1.2 I claimed that sentence structure containing quantifiers with three possible positions are not accounted for by a transformational rule. Each sentence can be represented independently in the structure by simple X-bar schema. Context-free lexical insertion and free linear arrangement of complements justify the proposal that Quantifier Floating is not needed in Japanese, but is instead handled by an interpretive rule.

3. CONCLUSION

The syntactic phenomenon called Quantifier Floating cannot be accounted for only by reference to grammatical relations or by reference to surface cases. Instead, it requires reference to both. A transformational approach to Quantifier Floating is rather weak. Even though sentences in which the quantifier is either inside or outside the NP constituent have been considered synonymous, this cannot be the case as was shown in Section 1.2.

In Section 2 of this paper, we started to develop an account of Quantifiers without utilizing the problematic QF transformation, instead all Quantifiers and complements are generated without reference to linear order. The configuration of the string determines the scope of the quantifier and if the quantifier is a complement of the noun it modifies and it must be marked with genitive case no.

FOOTNOTES

[1]Quantifiers may be postposed to a position immediately after the NP, proceeding case.

Example: Go-hiki no inu -ga ⟶ Inu go-hiki-ga
five classifier GEN dog NOM
'five dogs'

To differentiate from QF, we call such postposing 'Quantifier Movement', adopting Shibatani's terminology (1978). However, I will not touch upon this in this paper.

[2]See Kuno (1978) for detailed discussions.

[3]Kamio argues that there are two structures relating to postposing quantifiers.

a) $[Q.....]_{NP}$ (deep structure)

b) $[[.....NP]_{NP}.....Q\ .....]_{S}$ (QP I)

c) $[[.....]_{NP}\ .....Q]_{NP}$ (QP II)

See Kamio (1977) for detailed discussions and Inoue (1978) for remarks on Kamio's analysis.

[4]Kitagawa: personal communication.

[5]Notice the following example:

(1) Gakusei -ga ju-ppeeji-zutu no repooto -o kai-ta.
student NOM 10 pages each GEN report ACC write past
'Each student wrote a 10 page report.'

Ju-ppeeji-zutu no repooto has the same schema as 'Q no NP'. However, ju-ppeeji-zutu must be distinct from Q-zutu. That is, ju-ppeeji-zutu-no is not a quantifier but an adjective. It is because it is possible for ju-ppeeji-zutu no repooto, which is NP, to take a quantifier such as; ?[[mittu]$_Q$ no[ju-ppeeji-zutu no repooto]]$_{NP}$ NP 'three 10 page reports'. Inoue (1978: p. 181) presents the following examples:

a. Saburoo-wa sono Chomsky no hon -o san-peeji yon-da.
Saburo TOP that 's book ACC three pages read-past
'Saburo read three pages of Chomsky's book.'

b. *Saburoo-wa san-peeji no sono Chomsky no hon-o hon-da.

Regarding QF, Inoue argues that sentence (a) cannot be considered to be derived from the ill-formed sentence (b). I think the ungrammaticality of (b) is due to semantic argument rather than syntactic argument. San-peeji no sono Chomsky no hon represents the meaning; Chomsky's book which consists of three pages. If such a book exists, (b) will be accepted as a perfect sentence.

(2) a. Kare-wa ronbun -o hyaku-peeji kai-ta.
he TOP thesis ACC 100 pages write past

b. Kare-wa hyaku-peeji no ronbuo-o kai-ta.

Next, I will consider the case of the non-specific item. (2a) means that he wrote a hundred pages for (his) thesis. It does not provide any information about how many pages (his) thesis is going to be. (2b) means he wrote (his) thesis and it contains a hundred pages. As well as ju-ppeeji-zutu (no) in (1), kyaku-peeji (no) in (2b) is not a quantifier but an adjective, and it can take a quantifier like hutatu no hyaku-peeji no ronbun 'two 100 pages theses'. I assume that san-peeji in Inoue's example and hyaku-peeji in (2a) are adverbs (Nakajima's suggestion).

[6]Kitagawa provided examples (29) and (30), which were pointed out by Miyagawa in his personal communication.

[7]I gratefully acknowledge Prof. Farmer's valuable suggestions for the analysis presented in this section.

[8]The strict version of Case Linking Rule will be adopted. The Case Linking rule consists of two rules; the Semantic Linking Rule and the Grammatical Linking rule. Inherent case NI which is associated with verb au 'meet', case particle NI 'to', E 'to', DE 'at' or 'with', KARA

'from' and TO 'with' are all linked to the proper constituent by the Semantic Linking Rule in the permanent lexicon. Only in the case of Quantifier proceed NP, the genitive case NO must be linked to quantifier as well as the case of 'NP no NP' (examples; Taroo no hon 'Taro's book', Kinoo no dekigoto 'yesterday's happening'). I assume genitive case NO is treated in the same way as inherent case and case particles by the Semantic Linking Rule. See Farmer (1980) for a detailed analysis of the Case Linking Rule.

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