

## CHAPTER 4

### LOCALITY ON SCRAMBLING IN JAPANESE

#### 4.0 Introduction

In chapter 3, I have argued that the "domain barrier" effects with respect to feature-driven A'-movement like English overt wh-movement and topicalization straightforwardly follow from our theory of the composition of phrase structure. It was shown that when we come to the stage where a strong feature is to be checked, the "domain barrier," whose merger is not triggered by any UFF, has not been merged with the main structure. Hence, the strong feature cannot be checked by copying anything within the "domain barrier"; the "domain barrier" effects follow. In this chapter, I will investigate scrambling in Japanese. It is shown that unlike English overt wh-movement and topicalization, Japanese scrambling does not obey the "domain barriers." I will argue that this asymmetry between these two types of movement with the "domain barrier" effects straightforwardly follows from our theory of phrase structure if we assume following Fukui (1993b), Fukui and Saito (1996), and Saito (1994) that Japanese scrambling is not feature-driven. Since this asymmetry only follows from our phrase-structural analysis of the "domain barriers" but not from the previous analyses, it constitutes another empirical support in favor of our theory of phrase structure.

The organization of this chapter is as follows. Section 4.1 considers locality restrictions on scrambling in Japanese. It is pointed out that contrary to Saito's (1985, 1986) observation, scrambling does not exhibit any "domain barrier" effects. Section 4.2 argues that the

asymmetry between feature-driven movement like English overt wh-movement and topicalization and non-feature-driven movement like Japanese scrambling concerning the "domain barrier" effects straightforwardly follows from our analysis. It is shown that scrambling, which is not driven by any formal feature, is required to apply postcyclically by the ICP and the EP. It then follows that scrambling may apply after merger of the domain barrier" with the main structure and thus does not exhibit any "domain barrier" effects. Section 4.3 discusses the apparent "domain barrier" effects with scrambling. I will argue that they should be attributed to an A-over-A condition which applies in the PF-component. Section 4.4 considers extraction out of a scrambled phrase. It is shown that extraction out of a scrambled phrase is acceptable regardless of whether it is feature-driven or not. I will argue that the nonbarrierhood of scrambled phrases also follows from our analysis. Section 4.5 deals with scrambling in generic sentences. It is shown that scrambling in generic sentences exhibits the "domain barrier" effects. I will argue that scrambling in generic sentences necessarily induces a focus reading and thus counts as a feature-driven movement. It then follows from our analysis that like English overt wh-movement and topicalization, scrambling in generic sentences exhibits the "domain barrier" effects. Section 4.6 makes concluding remarks.

## **4.1 Locality Restrictions on Scrambling in Japanese**

### **4.1.1 No "Domain Barrier" Effects with Scrambling**

As argued by, among others, Haig (1976), Harada (1977), Miyara (1982), Muraki (1979), and Saito (1985), scrambling is responsible for the

relatively free word order in Japanese. For instance, (1b-f) are derived from (1a) through scrambling:<sup>1</sup>

- (1) a. John-ga Mary-ni hon-o ageta (koto)  
                   -Nom           -Dat book-Acc gave (fact)  
 b. John-ga **hon-o** Mary-ni *t* ageta (koto)  
 c. **Mary-ni** John-ga *t* hon-o ageta (koto)  
 d. **Mary-ni<sub>j</sub> hon-o<sub>i</sub>** John-ga *t<sub>j</sub> t<sub>i</sub>* ageta (koto)  
 e. **hon-o<sub>i</sub>** John-ga Mary-ni *t<sub>i</sub>* ageta (koto)  
 f. **hon-o<sub>i</sub> Mary-ni<sub>j</sub>** John-ga *t<sub>j</sub> t<sub>i</sub>* ageta (koto)  
                   'John gave a book to Mary'

Apart from short distance (= clause internal) scrambling exemplified by (1b-f), long-distance scrambling is also possible, as shown below:

- (2) **sono mura-ni** [John-ga [Mary-ga *t* *sundeiru to*  
                   that village-Dat   -Nom           -Nom reside   Comp  
                   omotteiru] (koto)  
                   think           (fact)  
                   'John thinks that Mary lives in that village'

In (2), *sono mura-ni* 'that village-Dat' is scrambled from within the complement clause to the clause-initial position; the result is acceptable.

Saito (1985, 1986) observes that exactly like overt wh-movement and topicalization in English, scrambling in Japanese is subject to the "domain barriers," presenting the following examples (the judgments are mine):<sup>2</sup>

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<sup>1</sup>Here and in the relevant examples to follow, *koto* 'the fact that' is added to the end of some examples in order to avoid the unnaturalness resulting from the lack of topic in a matrix clause.

<sup>2</sup>Recall that the Subject Condition does not hold in Japanese due to the lack of overt subject raising.

## (3) Complex NP Constraint

## a. Relative Clauses

?**ano hon-o** [John-ga [[*t* katta] hito]-o  
 that book-Acc -Nom bought person-Acc  
 sagasite iru rasii]  
 looking-for seem  
 'it seems that John is looking for the person who  
 bought that book'

## b. Non-relative Complex NPs

?**Bill-o** [John-ga [[Mary-ga *t* sakete iru to yuu]  
 -Acc -Nom -Nom avoiding Comp say  
 uwasa]-o kiita] (koto)  
 rumor-Acc heard (fact)  
 'John heard a rumor (which says) that Mary is  
 avoiding Bill'

(Saito 1985:246)

## (4) Adjunct Condition

- a. ?**sono hon-o** [John-ga [Mary-ga *t* yomioete  
that book-Acc -Nom -Nom finish-reading  
kara] dekaketa] (koto)  
after went-out (fact)  
'John went out after Mary finished reading that book'
- b. ?**sono hon-o** [John-ga [minna-ga *t* kau node]  
that book-Acc -Nom all-Nom buy because  
tigau hon-o katta] (koto)  
different book-Acc bought (fact)  
'because everyone buys that book, John bought a  
different one'
- c. ?**Tookyoo-ni** [Mary-ga [John-ga *t* ikitagatte iru  
Tokyo-Dat -Nom -Nom want-to-go  
noni ] musisite iru rasii]  
although ignoring seem  
'it seems that although John wants to go to Tokyo,  
Mary is ignoring that fact'

(Saito 1985:247)

In (3), the clause-initial phrases are extracted out from the complex NPs. In (4), the clause-initial phrases are extracted out from the adjuncts. All of these examples are mildly deviant. Based on these observations, Saito (1985, 1986) claims that scrambling is subject to the "domain barriers."

I argue contra Saito that there is evidence to suggest that scrambling in Japanese is not subject to the "domain barriers." First, although the examples in (3) and (4) are awkward, they are much better than the normal "domain barrier" violations induced by feature-driven

movement like English overt *wh*-movement and topicalization.<sup>3</sup> Second, there are cases where the adjunct condition effects with scrambling are abrogated. Let us look at the following examples (cf. Ikawa (1996)):

- (5) a. **sono hana-ni**<sub>i</sub> [daremo<sub>j</sub>-ga [e<sub>j</sub> **t<sub>i</sub>** mizu-o yara-  
that flower-Dat everyone-Nom water-Acc give  
zu ] dekakete itta] (koto)  
without went-out (fact)  
'everyone went out without watering that flower'
- b. **sono isu-ni**<sub>i</sub> [daremo<sub>j</sub>-ga [e<sub>j</sub> **t<sub>i</sub>** suwari nagara]  
that chair-Dat everyone-Nom sit while  
hon-o yondeita ]] (koto)  
book-Acc was reading (fact)  
'everyone was reading a book while sitting on that  
chair'
- c. **siai-no kekka-ni**<sub>i</sub> [daremo<sub>j</sub>-ga [e<sub>j</sub> **t<sub>i</sub>** totemo  
game-Gen result-Dat everyone-Nom very  
gakkarisite] kyuujuu- atonisita] (koto)  
disappointed ball park-Acc left (fact)  
'everyone left the ball park, disappointed about the  
result of the game'

In (5a-c), although the clause-initial phrases are extracted out of the adjuncts through scrambling, the results are acceptable. I argue that the difference between (4) and (5) resides in the fact that while the adjunct clauses of the former have overt subjects, those of the latter have empty subjects. While scrambling out of adjuncts with an empty subject is

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<sup>3</sup>See Fukui and Saito (1996) for a similar observation.

legitimate, scrambling out of those with an overt subject is not. In other words, when scrambling takes place out of adjuncts with an empty subject, the adjunct condition effects disappear.<sup>4</sup>

I take these facts as evidence to suggest that unlike English overt *wh*-movement and topicalization, Japanese scrambling is not subject to the "domain barriers." I argue that the apparent "domain barrier" effects with scrambling observed in (3) and (4) should be attributed to a condition applying at the PF interface.

#### 4.1.2 The "Domain Barrier" Effects in Japanese

I have argued in the last subsection that unlike overt *wh*-movement and topicalization in English, scrambling in Japanese does not exhibit any "domain barrier" effects. This might lead one to claim that unlike English, Japanese does not exhibit any "domain barrier" effects. I will show, however, that a *wh*-adjunct in-situ and empty operator movement in Japanese exhibit the "domain barrier" effects, arguing that the asymmetry with the "domain barrier" effects exists not between English and Japanese but between feature-driven movement and non-feature-driven movement.

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<sup>4</sup>It should be noted that the immunity of the "domain barriers" as observed in (5) may not be attributed to the existence of the coreference relation between the matrix and adjunct subjects. Scrambling out of the adjunct with an overt subject which corefers with the matrix subject like (i) is deviant:

- (i) ?**sono hana-ni** [John<sub>j</sub>-ga [zibun<sub>j</sub>-ga **t<sub>i</sub>** mizu-o yatte  
that flower-Dat -Nom -Nom water-Acc give  
kara] dekaketa] (koto)  
after went-out (fact)  
'John went out after he watered that flower'

As will be extensively argued in the next chapter, *wh*-adjuncts in-situ in Japanese like *naze* 'why' exhibit the "domain barrier" effects, as shown below (cf. Fukui (1988)):

(6) Complex NP Constraint

a. Relative Clauses

\*John-wa [Bill-ga **naze** Mary-ni watasita tegami]-o

-Top -Nom why -Dat gave letter-Acc

sagasite iru no

looking for Q

Lit. 'John is looking for the letter which was sent to Mary why'

b. Non-relative Complex NPs

\*?John-wa [Bill-ga **naze** sono kuruma-o katta

-Top -Nom why that car-Acc bought

koto]- sonnani okotte iru no

fact-Acc so much be angry Q

Lit. 'John is so angry with the fact that Bill bought that car why'

## (7) Adjunct Condition

- a. \*John<sub>i</sub>-wa [<sub>*e<sub>i</sub>*</sub> sono hana-ni **naze** mizu-o yara-  
 -Top that flower-Dat why water-Acc give  
 zu ] dekakete itta no  
 without went-o Q

Lit. 'John went out without watering that flower  
 why'

- b. \*John<sub>i</sub>-wa [<sub>*e<sub>i</sub>*</sub> sono isu-ni **naze** suwari nagara]  
 -Top that chair-Dat why sit while  
 hon-o yondeiru no  
 book-Acc is reading Q

Lit. 'John is reading a book while sitting on that  
 chair why'

- c. \*John<sub>i</sub>-wa [<sub>*e<sub>i</sub>*</sub> siken-no kekka-ni **naze**  
 -Top examination-Gen result-Dat why  
 gakkarisite] kaette itta no  
 disappointed went-back Q

Lit. 'John went back, disappointed about the result of  
 the examination why'

## (8) The Non-bridge Verb Condition

- \*?John-wa [Bill-ga **naze** sono hon-o katta tte]  
 -Top -Nom why that book-Acc bought Comp  
 tubuyaita no  
 murmured Q

Lit. 'why did John murmur that Bill bought that book *t*'

In (6-8), the adjunct *wh*-element in-situ *naze* 'why', which is contained within the "domain barrier," may not be associated with the matrix Q-

morpheme. The distribution of *wh*-adjuncts in-situ is constrained by the "domain barriers." I will argue in the next chapter that the Q-feature of *naze* 'why', being strong and thus uninterpretable, is required to raise to the Q-morpheme in order to be checked off. This Q-feature movement is constrained by the "domain barriers." It should be noted that in (7), the *wh*-adjuncts in-situ appear within the adjuncts with an empty subject. The results are still as severely deviant as the adjunct condition violations induced by overt *wh*-movement in English. This is in contrast with the lack of the adjunct condition effects with scrambling when adjuncts have an empty subject.

The "domain barrier" effects are also observed with empty operator movement, which has been assumed to be triggered by a strong feature of C. There are several constructions which have been argued to involve empty operator movement in Japanese. First, according to Hoji (1990), the cleft construction in Japanese may involve empty operator movement. In the cleft construction in Japanese, an NP, a Case-marked NP, or a PP appears in the focus position, as exemplified below:

(9) The Cleft Construction with an NP Focus

John-ga yonda no wa **sono hon** da  
 -Nom read Comp Top that book be  
 'it is that book that John read'

(10) The Cleft Construction with an NP-Case Focus

John-ga yonda no wa **sono hon-o** da  
 -Nom read Comp Top that book-Acc be  
 'it is that book that John read'

## (11) The Cleft Construction with a PP Focus

John-ga itta no wa **Tookyoo-ni** da  
 -Nom went Comp Top Tokyo-Dat be  
 'it is to Tokyo that John went'

Hoji argues that the cleft construction with an NP-Case or PP focus necessarily involves empty operator movement. Under his analysis, therefore, (11), which has a PP focus, is assigned structure (12):<sup>5</sup>

(12) [[***Op<sub>i</sub>*** [John-ga *t<sub>i</sub>* itta]] no]-wa **Tookyoo<sub>i</sub>-ni** da

In (12), the empty operator moves from its original position to the Spec of CP, where it is associated with the PP focus *Tookyoo-ni* 'to Tokyo' through predication.

The cleft construction with an NP focus, on the other hand, involves either empty operator movement or an empty pronoun. Hence, (9), which has an NP focus, is assigned either (13a) or (13b) depending on which strategy is to be employed:

(13) a. [***Op<sub>i</sub>*** [John-ga *t<sub>i</sub>* yonda] no]-wa **sono hon<sub>i</sub>** da  
 b. [[John-ga ***pro<sub>i</sub>*** yonda] no]-wa **sono hon<sub>i</sub>** da

In (13a), the empty operator *Op* moves to the Spec of CP, where it is associated with the NP focus *sono hon* 'that book' through predication.

In (13b), the empty pronoun *pro* is base-generated and associated with the NP focus *sono hon* 'that book' through the aboutness relation advocated by Kuno (1973) and Saito (1985). In the following discussion, we will only take the cleft construction with an NP-Case or PP focus but not the one

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<sup>5</sup>Following Kikuchi (1987) and Hoji (1990), we assume that an empty operator moves leftward to the clause-initial position, though the present discussion holds regardless of the directionality of empty operator movement.

with an NP focus as an example in order to exclude the possibility of the base-generation of an empty pronoun.

Second, Takezawa (1987) argues that the *tough* construction may involve empty operator movement. Among four types of the *tough* constructions presented by Inoue (1978), he only deals with Type IV, which exhibits different syntactic behaviors than the other types (see Kuroda (1978) and Saito (1982)). The *tough* construction has either an NP or PP as its subject, as exemplified below:

(14) The *Tough* Construction with an NP Subject

**sono hon-ga** John-nitotte yomi-nikui (koto)  
 that book-Nom -for hard-to-read (fact)  
 'it is hard for John to read that book'

(15) The *Tough* Construction with a PP Subject

**imooto-kara-ga** John-nitotte okane-o kari-yasui  
 sister-from-Nom -for money-Acc easy-to-borrow  
 (koto)  
 (fact)  
 'it is easy for John to borrow money from his sister'

Following the insight given by the analysis of Japanese topicalization in Saito (1985), Takezawa claims that while the *tough* construction with a PP subject necessarily involves empty operator movement, the one with an NP subject does not. The *tough* construction with an NP subject has two possible derivations. It is derived by either empty operator movement or the base-generation of an empty pronoun.

For example, (15), which has a PP subject, is only assigned structure (16):

- (16) [**imooto-kara<sub>i</sub>**-ga [John<sub>j</sub>-nitotte [**Op<sub>i</sub>** [*e<sub>j</sub>* **t<sub>i</sub>** okane-o kari]] yasui]]

In (16), the empty operator *Op* moves from its original position to the Spec of CP, where it is associated with the PP subject *imooto-kara* 'from his sister' through predication. On the other hand, (14), which has an NP subject, has the following two derivations:

- (17) a. [**sono hon<sub>i</sub>**-ga [John<sub>j</sub>-nitotte [**Op<sub>i</sub>** [*e<sub>j</sub>* **t<sub>i</sub>** yomi]] nikui]]  
 b. [**sono hon<sub>i</sub>**-ga [John<sub>j</sub>-nitotte [*e<sub>j</sub>* **pro<sub>i</sub>** yomi]] nikui]]

In (17a), the empty operator *Op* moves to the Spec of CP, where it is associated with the NP subject *sono hon* 'that book' through predication. In (17b), the empty pronoun *pro* is base-generated and associated with the NP subject *sono hon* 'that book' through the aboutness relation. In order to exclude the possibility of the base-generation of an empty pronoun, we will only consider the *tough* construction with a PP subject but not the one with an NP subject as an example in the following discussion.

Third, Ishii (1991) and Kikuchi (1987) argue that the comparative deletion construction involves empty operator movement. Although they differ as to the categorial status of the empty operator involved in this construction, we will assume Kikuchi's analysis for expository purposes. It should be noted that the arguments to follow hold under either of the analyses. Under Kikuchi's analysis, (18) is assigned structure (19):

- (18) John-ga tabeta yorimo Tom-wa keeki-o takusan tabeta  
 -Nom ate than -Top cake-Acc many ate  
 'Tom ate more cakes than John ate'  
 (Kikuchi 1987:4)
- (19) [***Op<sub>i</sub>*** [John-ga *t<sub>i</sub>* tabeta] yorimo] Tom-wa keeki-o takusan  
 tabeta

In (19), the empty operator *Op* moves from its original position to the Spec of CP.

It has been observed (see the references cited above) that the dependencies involved in these three constructions are unbounded in nature. In other words, so called "long-distance" empty operator movement is possible in these constructions, as shown below:

- (20) The Cleft Construction
- [***Op<sub>i</sub>*** [John-ga [Mary-ga kinoo *t<sub>i</sub>* sono syorui-o  
 -Nom -Nom yesterday that document-Acc  
 miseta to] omotteiru] no ]-wa [ano CIA agent]<sub>i</sub>-ni da  
 showed Comp think Comp-Top that CIA agent-Dat be  
 'it is to that CIA agent that John thinks that Mary showed  
 that document yesterday'  
 (Hoji 1990: Ch5, 32)

(21) The *Tough* Construction

[[zibun-no ootoo-kara]<sub>i</sub>-ga [(John<sub>j</sub>-nitotte) [**Op**<sub>i</sub> [<sub>e<sub>j</sub></sub> [<sub>e<sub>j</sub></sub> **t**<sub>i</sub>  
 self's brother-from-Nom -for  
 okane-o takusan karite iru to] mitome]] nikui]] (koto)  
 money-Acc a lot borrow Comp admit hard (fact)  
 Lit. '[from self's brother]<sub>i</sub> is hard (for John<sub>j</sub>) to admit that  
 he<sub>j</sub> has borrowed a lot of money *e<sub>i</sub>*'

(Takezawa 1987:196)

## (22) The Comparative Deletion Construction

[**Op**<sub>i</sub> [[[John-ga **t**<sub>i</sub> yonda to] iwareteiru to] Tom-ga  
 -Nom read Comp is said Comp -Nom  
 uwasa-siteiru] yorimo] Mary-wa takusan hon-o yondeita  
 rumor make than -Top many book-Acc read  
 'Mary read more books than Tom made the rumor that it is  
 said that John read'

(Kikuchi 1987:12)

In (20-22), the empty operator is extracted out of the complement clause. The results are acceptable.

Exactly like overt wh-movement in English, the unbounded dependencies involved in these constructions exhibit the "domain barrier" effects. They are subject to the CNPC, as shown in (23-25):

## (23) The Cleft Construction

\*?[**Op<sub>i</sub>** [John-ga [[*e<sub>j</sub>* **t<sub>i</sub>** atta-koto-ga aru] nihonzin<sub>j</sub>]-o  
 -Nom have met Japanese-Acc  
 oozei sitte iru] no ]-wa Russell<sub>i</sub>-ni da  
 many know Comp-Top Russell-Dat be  
 'It is with Russell<sub>i</sub> that John knows many Japanese that have  
 met *e<sub>i</sub>*'

(Hoji 1990:Ch5, 31)

(24) The *Tough* Construction

\*[[anna taipu-no zyosei-to]<sub>i</sub>-ga [(John<sub>j</sub>-nitotte) [**Op<sub>i</sub>** [*e<sub>j</sub>* [[*e<sub>k</sub>* **t<sub>i</sub>**  
 that type of woman-with-Nom -for  
 kekkon site iru] otoko<sub>k</sub>]-to hanasi]] nikui]] (koto)  
 marry man-with talk hard (fact)  
 Lit. '[with that type of woman]<sub>i</sub> is hard (for John) to talk to  
 the man who marry *e<sub>i</sub>*'

(Takezawa 1987:215)

## (25) The Comparative Deletion Construction

\*[**Op<sub>i</sub>** [[[*e<sub>j</sub>* sono tukue-de **t<sub>i</sub>** yondeita] hito]-o John-ga  
 that table-on read person-Acc -Nom  
 nagutta] yorimo] Paul-wa takusan hon-o yondeita  
 hit than -Top many book-Acc read  
 Lit. 'Paul has read more books than John hit a person who  
 was reading at that table'

(Kikuchi 1987:13)

It should be noted that (23-25) are as severely deviant as the CNPC violations induced by overt wh-movement in English.



(27) The *Tough* Construction

- a. \*[[kono taipu-no hasigo-kara]<sub>i</sub>-ga [(syooboosi]-  
 this type of ladder-from-Nom fireman  
 nitotte) [**Op**<sub>i</sub> [<sub>e</sub><sub>j</sub> [<sub>t</sub><sub>i</sub> asi-o humihazusa-zu ]  
 for miss their footing-without  
 biru-kara hito-o kyuusyutusi]] yasui]] (koto)  
 building-from person-Acc rescue easy (fact)  
 Lit. '[from this type of ladder]<sub>i</sub> is easy for firemen to  
 resucue persons from the buidling without missing  
 their footing *e*'
- b. \*[[kono syu-no kinyuukikan-kara]<sub>i</sub>-ga [(keieisyaj-  
 this type of financial company-from-Nom manager  
 nitotte) [**Op**<sub>i</sub> [<sub>e</sub><sub>j</sub> [<sub>t</sub><sub>i</sub> syakkin-o si nagara]  
 for have a loan of money while  
 kaisya-o tatenaosi]] nikui]] (koto)  
 company-Acc rebuild hard (fact)  
 Lit. '[from this type of financial companies]<sub>i</sub> is hard  
 (for the manager) to rebuild the company while having  
 a loan of money *e*'

## (28) The Comparative Deletion Construction

- a. \*? [**Op**<sub>i</sub> [Bill]<sub>j</sub>-ga [<sub>e</sub><sub>j</sub> [<sub>t</sub><sub>i</sub> kiki nagara] benkyoositeita]  
 -Nom listen-to while was studying  
 yorimo] John-wa takusan recoodo-o kiita  
 than -Top many record-Acc listened-to  
 Lit. John listened to more records than Bill was  
 studying while listening to'

- b. \*? [*Op<sub>i</sub>* [Bill]<sub>j</sub>-ga [<sub>e<sub>j</sub></sub> *t<sub>i</sub>* kangekisite] namida-o nagasita]  
 -Nom moved tear-Acc dropped  
 yorimo] John-wa ookuno eiga-ni kangekisita  
 than -Top many movie-Dat was moved  
 Lit. 'John was moved by more movies than Bill  
 dropped tears, moved by'

It should be noted that in (26-28), an empty operator is extracted out of the adjunct with an empty subject. The results are still as severely deviant as the adjunct condition violations induced by overt wh-movement in English. This is in contrast with the lack of the adjunct condition effects with scrambling when adjuncts have an empty subject.

Finally, the empty operator movement is subject to the non-bridge verb condition:

(29) The Cleft Construction

- \*? [*Op<sub>i</sub>* [John-ga [Mary-ga kinoo *t<sub>i</sub>* sono  
 -Nom -Nom yesterday that  
 syorui-o miseta to] sasayaita] no]-wa [ano CIA  
 document-Acc showed Comp whisper Comp-Top that CIA  
 agent]<sub>i</sub>-ni da  
 agent-Dat be  
 Lit. 'it is to that CIA agent that John whispers that Mary  
 showed that document yesterday'

(30) The *Tough* Construction

\*?[[sinyuu-kara]<sub>i</sub>-ga [(John<sub>j</sub>-nitotte) [*Op*<sub>i</sub> [<sub>e<sub>j</sub></sub> [<sub>e<sub>j</sub></sub> *t<sub>i</sub>*]]

best friend-from-Nom -for

buziyoku-o uketa to] sakebi]] nikui]]

insult-Acc suffer Comp holler hard

Lit. '[from his best friend]<sub>i</sub> is hard (for John<sub>j</sub>) to holler that

he<sub>j</sub> suffer an insult *e<sub>i</sub>*'

## (31) The Comparative Deletion Construction

\*?[*Op*<sub>i</sub> [[Mary-ga *t<sub>i</sub>* katta to] John-ga tubuyaita]

-Nom bought Comp -Nom murmured

yorimo] Susy-wa ookina daiamondo-o katta

than -Top large diamond-Acc bought

Lit. Susy bought a larger diamond than John murmured

that Mary bought'

The above observations suggest that unlike scrambling in Japanese, feature-driven movement like empty operator movement and Q-feature movement in Japanese obeys the "domain barriers." The asymmetry with the existence of the "domain barrier" effects therefore exists not between English and Japanese, but between feature-driven movement and scrambling. In the next section, I will argue that this asymmetry straightforwardly follows from our analysis of the "domain barriers."

#### 4.2 Non-feature-driven Movement and the "Domain Barriers"

This section considers the immunity of scrambling from the "domain barriers." I will argue that if we assume following Fukui (1993a), Fukui and Saito (1996), and Saito (1994) that scrambling is not feature-driven, the insensitivity of scrambling to the "domain barriers"

straightforwardly follows from our theory of the composition of phrase structure.

#### 4.2.1 Scrambling as Non-feature-driven Movement

Fukui (1993a), Fukui and Saito (1996), and Saito (1994) argue that unlike movement operations like overt *wh*-movement and topicalization in English, scrambling in Japanese is optional and thus not triggered by any formal feature. They present two arguments in support of this view.<sup>6</sup>

First, as first pointed out by Saito (1986, 1989), scrambling, but not English overt *wh*-movement and topicalization, is subject to "radical reconstruction":<sup>7</sup>

- (32) a. [John-ga [[minna-ga [Mary-ga dono hon-o  
 -Nom all-Nom -Nom which book-Acc  
 yonda to] omotteiru] ka] siritagatteiru] (koto)  
 read Comp think Q want-to-know (fact)  
 '[John wants to know [Q [everyone thinks [that Mary  
 read which book]]]]'
- b. ?[[**Mary-ga dono hon-o yonda to**]<sub>i</sub> [John-ga  
 [[minna-ga *t<sub>i</sub>* omotteiru] **ka**] siritagatteiru]] (koto)  
 (Fukui and Saito 1996:4)

In (32b), the complement clause *Mary-ga dono hon-o yonda to* 'that Mary read which book', which contains the *wh*-element *dono hon-o* 'which book',

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<sup>6</sup>See Poole (1996) for another argument in favor of this view. Miyagawa (1997) argues, on the other hand, that scrambling is not optional. See Takano (1996) for extensive arguments against Miyagawa.

Note that under our analysis where Attract/Move is reinterpreted as Copy + Merge, the optionality of scrambling can be captured by the fact that scrambling is not subject to the last resort condition imposed on Copy proposed in the previous chapter.

<sup>7</sup>See Lee (1995) for further discussion of this subject.

is scrambled to a position outside the domain of the Q-morpheme *ka*.

Although (32b) is marginal, it does not have the ungrammatical status of (33), where the *wh*-element *dare-ga* 'who-Nom' is outside the domain of the Q-morpheme *ka*:

- (33) \***[dare-ga** [[John-ga    sono hon-o    katta    ] **ka**]  
           who-Nom        -Nom that book-Acc bought    Q  
           siritagatteiru] (koto)  
           want-to-know    (fact)  
           '[who wants to know [Q [John bought that book]]]'

(Fukui and Saito 1996:3)

They argue that the contrast between (32b) and (33) follows from their claim that scrambling is "semantically vacuous" and thus scrambled phrases can be "moved back" to their original position at LF. They first assume an LF-condition which states that the *wh*-element must be within the domain of a Q-morpheme at LF. It then follows that (33) is deviant, since it violates this LF condition. (32b), on the other hand, need not violate this LF condition, since at LF, the scrambled phrase can be "moved back" to its original position and thus the *wh*-element can be within the domain of the Q-morpheme.

Fukui and Saito claim that this "radical reconstruction" property cannot be observed with English *wh*-movement or topicalization. Let us look at English *wh*-movement as an example:

- (34) a. [who<sub>i</sub> [<sub>t<sub>i</sub></sub> wonders [[which picture of **whom**]<sub>j</sub> [Bill  
           bought <sub>t<sub>j</sub></sub>]]]]  
       b. ??[[which picture of **whom**]<sub>j</sub> does [John wonder [who  
           [<sub>t<sub>i</sub></sub> bought <sub>t<sub>j</sub></sub>]]]]

(Fukui and Saito 1996:5)

In (34a), *whom* can be interpreted as taking either matrix or embedded scope. In (34b), on the other hand, *whom* can only take matrix scope but not embedded scope. They assume as a descriptive generalization that a *wh*-element in-situ can be interpreted at a Spec of CP only if it is contained in the CP at LF. Then, the unambiguity of (34b) follows, since the embedded CP does not contain *whom* and thus *whom* cannot take embedded scope. It should be noted that this argument only holds if there is no "radical reconstruction" with overt *wh*-movement. This is because if the moved *wh*-phrase *which picture of whom* moved back to its original position at LF, then *whom* would be contained by the embedded CP and thus could be interpreted as taking embedded scope. They argue that the lack of "radical reconstruction" with *wh*-movement is due to the fact that a chain created for the purpose of feature-checking must be retained at LF. If this analysis is correct, we can conclude that scrambling, which allows "radical reconstruction," is not triggered by any formal feature.

Another argument in favor of the non-feature-driven property of scrambling can be formulated based on the lack of the Minimal Link Condition (MLC) effects with scrambling, as argued by Fukui and Saito (1996). The MLC, which is incorporated into the definition of Attract/Move-F in Chomsky (1995), states that when we come across a feature to be checked during a derivation, it attracts and thus enters into a checking relation with the closest appropriate feature. Hence, feature-driven movement like overt *wh*-movement and topicalization in English is subject to the MLC.

Chomsky (1995) argues that the Wh-island Constraint follows from the fact that *wh*-movement is subject to the MLC:

- (35) ??[**which book**<sub>j</sub> [do you wonder [**which boy**<sub>i</sub> [to persuade **t**<sub>i</sub> to buy **t**<sub>j</sub>]]]]

During the derivation of (35), we come to a stage where the strong Q-feature of the embedded C is to be checked:

- (36) [C<sub>[Q]</sub> [to persuade which boy to buy which book]]

Since *which boy* c-commands *which book*, the former is closer to C than the latter. Hence, *which boy* raises to the embedded Spec of CP, resulting in the following structure:

- (37) [**which boy**<sub>i</sub> [to persuade **t**<sub>i</sub> to buy which book]]

As the derivation proceeds, we come to a stage where the strong Q-feature of the matrix C is to be checked:

- (38) [C<sub>[Q]</sub> [you wonder [**which boy**<sub>i</sub> [to persuade **t**<sub>i</sub> to buy which book]]]]

Since *which boy* is closer to the matrix C than *which book*, the former raises to the Spec of CP. Note that in Chomsky (1995), the Q-feature of a *wh*-element is assumed to be interpretable and thus still accessible after checked. According to the MLC, therefore, there is no way to raise *which book* to the matrix Spec of CP; the deviant status of (35) follows. After *which boy* raises to the matrix Spec of CP, we get the following:

- (39) [**which boy**<sub>i</sub> [do you wonder [**t**'<sub>i</sub> [Q [to persuade **t**<sub>i</sub> to buy which book]]]]]

Chomsky (1995) claims that although this derivation converges, the result is gibberish.

As pointed out by Fukui and Saito (1996), however, unlike overt *wh*-movement in English, scrambling does not exhibit any MLC effects. Multiple scrambling like (40b) is acceptable:

- (40) a. John-ga [[Bill-ga [Mary-ni [sono hon-o  
 -Nom -Nom -Dat that book-Acc  
 watasita]]] to] omotteiru (koto)  
 gave Comp think (fact)  
 'John thinks that Bill gave that book to Mary'
- b. [**sono hon-o**<sub>j</sub> [John-ga [[**Mary-ni**<sub>i</sub> [Bill-ga [**t<sub>i</sub>** [**t<sub>j</sub>**  
 watasita]]]]] to] omotteiru]] (koto)

If scrambling were subject to the MLC, (40b) would be ruled out by the MLC just like the wh-island violation cases like (35). The fact that examples like (40b) are acceptable therefore leads us to claim that scrambling is not subject to the MLC. If feature-driven movement is subject to the MLC, we can conclude that scrambling is not driven by any formal feature.

Given that Japanese scrambling is not feature-driven, it counts as optional movement. Optional movement has been under debate, since it apparently violates the last resort principle, which requires that every movement operation should have a trigger. We therefore need a theory which accommodates optionality under the MP. Fukui (1993a) and Fukui and Saito (1996) argue that certain movement operations count as "costless" for the purpose of economy and thus may take place without having any triggers. Putting the details of their analysis aside, they claim that in head-final languages like Japanese, leftward movement is "costless" while rightward movement is "costly." In head-initial languages like English, on the other hand, leftward movement is "costly" while rightward movement is "costless." Japanese scrambling, being a leftward movement operation in the head-final language, counts as "costless" and thus does not need any trigger. Saito (1994) argues, on the

other hand, scrambling is not licensed by feature-checking but by virtue of its contribution to the construction of phrase structure. Under either of these approaches, scrambling is exempt from the last resort principle and thus counts as optional.

The discussion to follow assumes that scrambling in Japanese is optional and thus not driven by any formal feature whatever theory is adopted to accommodate optionality under the MP. I will argue that the lack of "domain barrier" effects with scrambling in Japanese straightforwardly follows from our theory of phrase structure if Fukui and Saito are correct in claiming that scrambling is not triggered by any formal feature.

#### 4.2.2 An Account

It was shown in the last subsection that unlike overt wh-movement and topicalization in English, scrambling in Japanese is not triggered by any formal feature. In this subsection, I will argue that our analysis of the "domain barriers" proposed in the previous chapter can correctly predict that unlike feature-driven movement like English overt wh-movement and topicalization, non-feature-driven movement like Japanese scrambling does not exhibit any "domain barrier" effects.

Let us consider the case where the adjunct condition effects are canceled, taking (5a) (repeated here as (41)) as an example:

- (41) **sono hana-ni<sub>i</sub>** [daremo<sub>j</sub>-ga [e<sub>j</sub> **t<sub>i</sub>** mizu-o yara-zu]  
 that flower-Dat everyone-Nom water-Acc give-without  
 dekakete itta] (koto)  
 went-out (fact)  
 'everyone went out without watering that flower'

Considering how to construct the the adjunct clause *ej sono hana-ni mizu-o yara-zu* 'without watering that flower', we can construct it through checking the UFFs of the selected items, conforming to the ICP and the EP, as represented below:

- (42) [*ej* [[*sono hana*]-*ni*    *mizu-o*    *yara-zu*]]  
           that flower-Dat water-Acc give-without

Turning to consider how to construct the main structure of (41), i.e., *daremo-ga dekakete itta* 'everyone went out', we first select *dekakete itta* 'went out'. Its selectional restriction feature, being uninterpretable, is checked immediately by combining *dekakete itta* 'went out' with *daremo-ga* 'everyone-Nom' in conformity with the ICP:

- (43) [*daremo-ga*    *dekakete itta*]  
           everyone-Nom went-out

At this stage of derivation, we have two possible continuations. We either apply scrambling to *sono hana-ni* 'that flower-Dat' or combine the main structure *daremo-ga dekakete itta* 'everyone went out' with the adjunct clause *sono hana-ni mizu-o yara-zu* 'without watering that flower'. If scrambling were triggered by a strong feature (say, a [SCRAMBLING] feature), the ICP would require that the next step should be to apply scrambling to *sono hana-ni* 'that flower-Dat' to check the strong [SCRAMBLING] feature, since the latter is uninterpretable. Since *sono hana-ni* 'that flower-Dat' would be within the adjunct clause which would not have been merged with the main structure, the strong [SCRAMBLING] feature could not be checked at this point. This would violate the ICP and thus the derivation would be canceled.

As argued above, however, scrambling is not triggered by any formal feature. Hence, merger of the main structure with the adjunct clause before the application of scrambling does not violate either the ICP or the EP, since neither of these operations involves any UFF. In other words, like merger of adjuncts, scrambling is required to apply postcyclically.<sup>8</sup> We are allowed to first combine the main structure with the adjunct structure and then apply scrambling to *sono hana-ni* 'that flower-Dat'. We can therefore scramble *sono hana-ni* 'that flower-Dat' out of the adjunct clause *sono hana-ni mizu-o yara-zu* 'without watering that flower' without violating the ICP or the EP. The lack of the adjunct condition effect with scrambling in (41) straightforwardly follows. The other examples, where the adjunct condition effects are abrogated, can be accounted for in the same way.

To recapitulate the above discussion, I have argued that the asymmetry between feature-driven and non-feature-driven movement with respect to the "domain barrier" effects straightforwardly follows from the ICP together with the EP. It should be noted that this asymmetry cannot be accounted for by the previous locality theories. Those theories claim that no element can ever be extracted out of a certain domain regardless of whether the movement operation is feature-driven or not. The asymmetry between feature-driven and non-feature-driven movement cannot be accommodated within the previous locality theories without

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<sup>8</sup>It might be possible to claim that the postcyclic property of scrambling captures the insight given by, among others, Chomsky (1991) that scrambling takes place in the stylistic component. It has been claimed that stylistic rules are those which apply after cyclic rules. It should be noted that the "stylistic" characteristic of scrambling follows from our analysis without assuming any extra component like the stylistic component in grammar. This is because the ICP coupled with the EP requires that scrambling, which is required to apply postcyclically, should apply after cyclic rules.

recourse to any extra devices. Hence, this asymmetry provides strong empirical evidence in support of our analysis of the "domain barriers" and against the previous locality theories.

### 4.3 The Apparent "Domain Barrier" Effects with Scrambling

I have shown in the last subsection that unlike English overt wh-movement and topicalization, Japanese scrambling is not subject to the "domain barriers," arguing that its immunity from the "domain barriers" immediately follows from our analysis. As presented in section 4.1, however, there are cases where scrambling *prima facie* exhibits the "domain barrier" effects. I will argue that the apparent "domain barrier" effects with scrambling should be attributed to an A-over-A condition at PF, which refers to [-V] and the notion of closedness. It is also shown that when scrambling takes place from within adjuncts with an empty subject, there is no violation of the A-over-A condition. We can therefore account for the lack of any locality effects with scrambling out of adjuncts with an empty subject.

#### 4.3.1 An A-over-A Condition

This subsection discusses the apparent "domain barrier" effects with scrambling. I will argue that they should not be attributed to the "domain barriers" but to an A-over-A condition which applies at PF.<sup>9</sup>

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<sup>9</sup>The discussion to follow is based on the judgment that there is a substantial contrast in acceptability between scrambling out of "domain barriers" like (3-4) and scrambling out of complement clauses like (i):

- (i) **Mary-ni** John-ga [Bill-ga *t* urami-o motteiru to] kanzita  
 Mary-Dat -Nom -Nom grudge-Acc have Comp felt  
 (koto)  
 (fact)

The A-over-A condition, which was originally proposed by Chomsky (1964) and further developed by, among others, Bresnan (1976) and Hasegawa (1974), was intended to capture the locality restrictions on overt movement. Although the formulation of the A-over-A condition varies among its advocates, its essential insight is that elements may not be extracted out of those with the same property. In order to account for the apparent "domain barrier" effects with scrambling, I propose the following A-over-A condition:

(44) The A-over-A Condition

A PF representation is ruled out as illegitimate if it contains a structure of the following form:

$\alpha \dots [\beta \dots t_\alpha \dots] \dots$ ,

where  $\alpha$  and  $\beta$  are both [-V] categories.

(44) states that no [-V] category may be extracted out from another [-V] category. I argue that the A-over-A condition (44), which is representational in nature, applies at PF. A violation of (44) leads a derivation to crash at PF.<sup>10, 11</sup>

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'John felt that Bill have a grudge against Mary

For some speakers including myself, however, it is not entirely clear whether there is a substantial contrast between the two. Compared with short-distance scrambling, long-distance scrambling like (i) is also awkward or at least hard to parse. If the judgment of the latter type is on the right track, we can say that scrambling is immune from any locality conditions. Note that scrambling out of "domain barriers" count as long-distance scrambling in the sense that it crosses a clausal boundary. It follows that scrambling out of "domain barriers," though they are awkward, are in fact grammatical just like long-distance scrambling.

<sup>10</sup>Strictly speaking, the A-over-A condition (44) cannot apply at the PF interface. This is because at the PF interface which only consists of phonetic symbols, there is no relevant structure, not even words. Hence, to be precise, this condition applies at the intermediate level between the point of Spell-Out and the PF interface. Since Chomsky (1995) assumes that the morphological component, which clearly refers to structures, resides on the PF side, it is reasonable to claim that there still remain relevant structures on the PF side. It might be possible to identify this intermediate level as "shallow structure," which dates back to works in the early generative grammar like

Before turning to look at how the A-over-A condition (44) works, let us explicate a categorial feature system which the discussion to follow assumes. Let us assume as in the standard literature that the universal lexicon is divided into two distinct subsets; the set of lexical categories which includes N, V, A, and P and the set of functional categories which includes C, T, and D.<sup>12</sup> Let us assume following Abney (1987) and Fukui (1995) that we state this lexical/functional distinction by postulating a universal feature [+/- F]:<sup>13</sup>

- (45) a. Functional Categories: [+F]  
 b. Lexical Categories: [-F]

It is widely accepted (see, among others, Chomsky (1972, 1981)) that lexical categories are further crossclassified in terms of two primitive features [+/- N] and [+/- V]. The feature specifications of the lexical categories are given below:

- (46) Feature Specifications of the Lexical Categories
- a. N = [-F, +N, -V]  
 b. V = [-F, -N, +V]  
 c. A = [-F, +N, +V]  
 d. P = [-F, -N, -V]

Turning to functional categories, Abney (1987) introduces the notions of c-projection and s-projection. The c-projection of a category is

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Lakoff (1971) and Postal (1966). Note in passing that such a constraint may not be formulated as applying at LF, since, as mentioned above, scrambled phrases may be "radically reconstructed" to their original position at LF.

<sup>11</sup>It might be possible to claim that the A-over-A condition (44) does not count as a grammatical constraint but rather as a parsing constraint. Note that the arguments to follow hold regardless of whether this condition is grammatical in nature or not.

<sup>12</sup>Chomsky (1993) assumes another functional category AGR, whose existence is denied in his subsequent works like Chomsky (1995, 1996).

<sup>13</sup>See Jackendoff (1977) and Reuland (1985) for different feature systems of categories.

its syntactic projection in the usual sense. For example, the maximal c-projection of V is VP (=  $V^{\max}$ ). That of T is TP (=  $T^{\max}$ ). The s-projection of a category, which is defined in (47), is the path of nodes along which its descriptive content is "passed along":

- (47)  $\beta$  is an s-projection of  $\alpha$  iff
- a.  $\beta = \alpha$ , or
  - b.  $\beta$  is a c-projection of an s-projection of  $\alpha$ , or
  - c.  $\beta$  f-selects an s-projection of  $\alpha$

(Abney 1987:57)

F-selection is the syntactic relation between a functional head and its complement. For example, C f-selects a projection of T. D f-selects a projection of N. According to the definition of the notion of s-projection, the maximal s-projection of V is  $C^{\max}$  via  $T^{\max}$ . The maximal s-projection of T is also  $C^{\max}$ . The maximal s-projection of N is  $D^{\max}$ . Abney argues that this captures the intuition that the verb is the head of a clause while the noun is the head of a nominal without supposing literally  $\text{Clause} = V^{\max}$  or  $\text{Nominal} = N^{\max}$ .<sup>14</sup>

Essentially following Abney (1987), I claim that the notion of s-projection can be captured in terms of a feature system where the functional categories are divided based on [+/- N] and [+/- V]. The feature specifications of the functional categories are given below:<sup>15, 16</sup>

<sup>14</sup>See, among others, Emonds (1985), Jackendoff (1977), Koster (1978, 1987), and Marantz (1980) for the view that S is the maximal projection of V.

<sup>15</sup>Fukui (1995) proposes a different feature system of functional categories, though his system is also based on [+/- N] and [+/- V].

<sup>16</sup>There are gaps in this feature system of functional categories. There is no functional category whose feature specification is [+F, +N, +V] or [+F, -N, -V]. It is possible to claim that AGR, if it really exists, is the category with [+F, +N, +V]. It is clear that AGR is closely related to a verb. AGR has also been assumed to be "nominal" in its nature (see, among others, Chomsky (1981)). Conjunctions like *and* and *or* possibly

## (48) Feature Specifications of the Functional Categories

- a.  $D = [+F, +N, -V]$
- b.  $C, T = [+F, -N, +V]$

These feature specifications of the functional categories capture the fact that while C and T belong to the V system, D belongs to the N system.

In these feature specifications, only N, P, and D have [-V] as its feature. It then follows from the A-over-A condition (44) together with these feature specifications that no category with N, P, or D as its head may be extracted from another category with N, P, or D as its head. As far as movement of a maximal projection is concerned, the A-over-A condition claims that no  $N^{\max}$ ,  $P^{\max}$ , or  $D^{\max}$  may be extracted out from another  $N^{\max}$ ,  $P^{\max}$ , or  $D^{\max}$ .

Let us consider how the A-over-A condition (44) works. Let us first look at the apparent CNPC effects with scrambling, taking the relative clause case of the CNPC (3a) (repeated here as (49)) as an example:

- (49) ?**ano hon-o**<sub>i</sub> [John-ga [[*e*<sub>j</sub> **t**<sub>i</sub> katta] hito]<sub>j</sub>]-o  
 that book-Acc -Nom bought person-Acc  
 sagasite iru rasii]  
 looking-for seem  
 'it seems that John is looking for the person who bought that  
 book'

In (49), *ano hon-o* 'that book-Acc' is extracted from the containing phrase *[[*e*<sub>j</sub> ano hon-o katta] hito]<sub>j</sub>-o* 'the person who bought that book'. These

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count as categories with [+F, -N, -V], since they have no close relation with the N system or the V system. If this conjecture is correct, then we would predict that extraction of a projection of N, P, or D out of the coordinated structure is ruled out by the A-over-A condition (44), given that the coordinate structure is headed by a conjunct (see Zoerner (1995)). The coordinate structure constraint therefore follows from the A-over-A condition (44).

phrases are either  $N^{\max}$  or  $D^{\max}$  depending on whether D exists in Japanese or not (see Fukui (1986, 1995) for detailed discussion of this subject). Both of these phrases are [-V] whether they are  $N^{\max}$  or  $D^{\max}$ . Hence, extraction of *ano hon-o* 'that book-Acc' out of [*e<sub>j</sub> ano hon-o katta*] *hito*]-o 'the person who bought that book' results in a representation which is ruled out as illegitimate by the A-over-A condition (44). Hence, the apparent CNPC effects with scrambling follows. Note that  $P^{\max}$  scrambling out of a complex NP can also be ruled out by the A-over-A condition (44):

- (50) ?**Bill-ni**<sub>i</sub> [John-ga [*e<sub>j</sub> t<sub>i</sub>* atta] hito]<sub>j</sub>-o sagasite iru  
 -Dat -Nom met person-Acc looking-for  
 rasi]  
 seem

'it seems that John is looking for the person who met Bill'

This is because the scrambled  $P^{\max}$  *Bill-ni* 'Bill-Dat' and the complex NP are both [-V].

Let us turn to the apparent adjunct condition effects with scrambling, taking (4a) (repeated here as (51)) as an example:

- (51) ?**sono hon-o** [John-ga [Mary-ga *t* yomioete kara]  
 that book-Acc -Nom -Nom finish-reading after  
 dekaketa] (koto)  
 went-out (fact)

'John went out after Mary finished reading that book'

Given that adjuncts like the one in (51) count as  $P^{\max}$ , *sono hon-o* 'that book-Acc' is extracted out of the  $P^{\max}$  *Mary-ga sono hon-o yomioete kara* 'after Mary finished reading that book' in (51). Since both of these

phrases are [-V], this extraction leads to a representation which violates the A-over-A condition (44). Hence, the apparent adjunct condition effects with scrambling follow. Note that  $P^{\max}$  scrambling out of an adjunct like (4c) (repeated here as (52)) can also be ruled out as illegitimate by the A-over-A condition (44):

- (52) ?**Tookyoo-ni**<sub>i</sub> [Mary-ga [John-ga *t<sub>i</sub>* ikitagatte iru  
Tokyo-Da -Nom -Nom want-to-go  
noni] musisite iru rasii]  
although ignoring seem  
'it seems that although John wants to go to Tokyo, Mary is  
ignoring that fact'

This is because both the scrambled  $P^{\max}$  *Tookyoo-ni* 'Tokyo-Dat' and the adjunct  $P^{\max}$  are both [-V].

The above discussion has shown that the apparent "domain barrier" effects with scrambling in Japanese can be accounted for by the A-over-A condition (44) which applies in the PF component. This analysis gives us a way of explaining the contrast in acceptability with the (apparent) "domain barrier" effects between feature-driven movement, on the one hand, and scrambling, on the other. We have observed that the apparent "domain barrier" effects with scrambling are much weaker than the "domain barrier" effects with feature-driven movement like overt wh-movement and topicalization in English. Recall that under our analysis of the "domain barriers," a derivation violating a "domain barrier" is canceled before the point of Spell-Out due to a violation of the ICP. The derivation therefore never reaches either of the interface levels, specifically LF. Scrambling in Japanese, on the other hand, is not triggered by any formal feature. Scrambling never induces a violation of

the ICP and thus never causes a derivation to be canceled before the point of Spell-Out. Even when scrambling exhibits the apparent "domain barrier" effects and thus violates the A-over-A condition (44) within the PF-component, the derivation reaches LF without being canceled and converges at that level. There is no violation of any constraint whatsoever in the course of the computation from N to LF. As argued by Chomsky (1995), computational procedures from N to LF are uniform. The mapping from Spell-Out to PF, on the other hand, has different properties, modifying structures by processes which are different from those permitted in the N -> LF computation. It follows that the N -> LF computation, which is uniform, counts as a core computation in language while the mapping from Spell-Out to PF, which has special properties, counts as peripheral. It is then reasonable to claim that derivations which violate a constraint in the core computation like those violating a "domain barrier" result in severely deviant. On the other hand, derivations which only violate a constraint in the mapping from Spell-Out to PF like those violating the A-over-A condition (44) result in mildly deviant, since they converge as far as the core computation is concerned. Hence, we can correctly predict that the apparent "domain barrier" effects with scrambling are much weaker than the "domain barrier" effects with feature-driven movement like overt wh-movement and topicalization in English.<sup>17</sup>

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<sup>17</sup>Recall that the derivations which violate the Subject Condition may reach both of the interface levels without being canceled. The subject condition effects, however, are severe. Recall that the Subject Condition is accounted for by the ban against vacuous quantification and the condition of inclusiveness. If the ban against vacuous quantification is relevant to the notion of convergence, its violation leads a derivation to crash at LF and thus in the core computation. Hence, we can correctly predict that the subject condition effects result in severely deviant. As argued in chapter 2, however, a

Apart from the apparent "domain barrier" effects with scrambling, the A-over-A condition (44) receives further empirical support from facts on scrambling out of nominals. If we scramble a phrase out of a nominal, the result is as mildly deviant as the apparent "domain barrier" effects, as shown below:

- (53) a. John-ga [[Bill-ga  $e_j$  kakusi motte ita]  
 -Nom -Nom had-been-hiding  
 [Mary-kara-no tegami]<sub>j</sub> ]-o mituketa (koto)  
 -from-Gen letter-Acc found (fact)  
 'John found a letter from Mary which Bill had been  
 hiding'
- b. ?**Mary-kara-no<sub>i</sub>** [John-ga [[Bill-ga  $e_j$  kakusi motte ita]  
 [ $t_i$  tegami]<sub>j</sub> ]]-o mituketa (koto)

In (53b), the  $P^{\max}$  *Mary-kara-no* 'Mary-Dat-Gen' is scrambled out of the nominal phrase *[[Bill-ga  $e_j$  kakusi motte ita] [Mary-kara-no tegami]<sub>j</sub>]-o* 'a letter from Mary which Bill had been hiding'. This violates the A-over-A condition (44), since the scrambled  $P^{\max}$  and the extraction domain are both [-V]. Hence, we can correctly predict that scrambling out of a nominal like (53b) is as mildly deviant as the apparent "domain barrier" effects due a violation of the A-over-A condition (44).

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violation of the ban against vacuous quantification might not make a derivation crash but only make an interpretation anomalous. Its derivation, which converges at both PF and LF, converges in the core computation. Under this view, the severely deviant status of the subject condition effects can be accounted for by the fact that its derivation violates not only the ban against vacuous quantification but also the condition of inclusiveness.

### 4.3.2 Scrambling out of Adjuncts with Empty Subjects

The last subsection has proposed the A-over-A condition (44), arguing that it accounts for the apparent "domain barrier" effects with scrambling. As mentioned above, however, unlike examples like (51) and (52) where extraction takes place from within adjuncts with an overt subject, scrambling out of adjuncts with an empty subject like (41) (repeated here as (54)) is acceptable:

- (54) **sono hana-ni<sub>i</sub>** [daremo<sub>j</sub>-ga [*e<sub>j</sub>* *t<sub>i</sub>* mizu-o yara-zu]  
 that flower-Dat everyone-Nom water-Acc give-without  
 dekakete itta] (koto)  
 went-out (fact)  
 'everyone went out without watering that flower'

A question now arises as to why such cases do not violate the A-over-A condition (44). I argue that the A-over-A condition should be revised to refer not only to [-V] but also to the notion of closeness:

- (55) The A-over-A Condition (Revised)  
 A PF representation is ruled out as illegitimate if it contains a structure of the following form:  
 $\alpha \dots [\beta \dots t_\alpha \dots] \dots$ ,  
 where  $\alpha$  and  $\beta$  are both [-V] and closed categories.

Closed categories are those which count as "saturated" in the sense of Higginbotham (1985) and Speas (1984) and thus function as arguments of a predicate.  $C^{\max}$  and  $D^{\max}$  are typical closed categories. Open categories, on the other hand, are those which count as "unsaturated" and thus function as predicates.  $V^{\max}$  and  $A^{\max}$  are typical open

categories.<sup>18</sup> Following Clark (1985) and Hasegawa (1984/1985), I argue that adjuncts with an empty subject as in (54) involve empty operator movement and thus count as open rather than as closed. Hence, extraction of the closed category like *sono hana-ni* 'that flower-Dat' in (54) out of the adjunct with an empty subject, which is an open category, does not lead to a violation of the A-over-A condition (44). Before turning to an analysis of examples like (54), let us consider the structure of adjuncts with an empty subject.

Kuroda (1965) observes that the empty subject in an adjunct can only refer to the matrix subject but not to someone in the discourse. The relevant example is shown below:

- (56) John<sub>i</sub>-ga [*e<sub>i</sub>*\*; hana-ni mizu-o yatte kara]  
 -Nom flower-Dat water-Acc give after  
 dekakete itta (koto)  
 went-out (fact)  
 'John went out after having watered the flower'

In (56), the empty subject of the adjunct clause can only refer to the matrix subject *John* but not to anyone else. In other words, the empty subject of the adjunct is obligatorily controlled by the matrix subject. Based on this observation, Hasegawa (1984/1985) argues that the empty subject in an adjunct is not an empty pronominal. If it were an empty pronominal, it could refer not only to the matrix subject but also to

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<sup>18</sup>It is generally true that categories which are open and thus "unsaturated" in the sense of Higginbotham (1985) and Speas (1984) do not function as "barriers." For instance, in Chomsky's (1986a) system, IP and VP, being "unsaturated," are always devoid of barrierhood due to the exceptional clause in the definition of "barrier" and an adjunction operation, respectively. Then, we might not need to revise the A-over-A condition (44), making the latter only refer to [-V].

someone else in the discourse. She rather argues that the adjunct with an empty subject involves either PRO or empty operator movement, as represented below:

- (57) a. **John<sub>i</sub>**-ga [**PRO<sub>i</sub>** hana-ni mizu-o yatte kara] dekakete  
it<sub>i</sub>ta
- b. **John<sub>i</sub>**-ga [**Op<sub>i</sub>** [**t<sub>i</sub>** hana-ni mizu-o yatte kara]]  
dekakete it<sub>i</sub>ta

What is important to the present discussion is that the adjunct with an empty subject can be analyzed as involving empty operator movement, as in (57b). In (57b), the empty operator moves from the subject position of the adjunct to the peripheral position of the adjunct, where it is associated with the matrix subject *John* through predication.<sup>19</sup>

A similar analysis can be found in Clark (1985). Clark proposes a theory of control, arguing that the control structure always involves empty operator movement. For example, (58), which is a well-known case of obligatory control, is analyzed as in (59):

- (58) John tried to enter the race  
(Clark 1985:267)
- (59) **John<sub>i</sub>** tried [**Op<sub>i</sub>** [**t<sub>i</sub>** to enter the race]]  
(Clark 1985:268)

In (59), the empty operator moves from its original position to the Spec of the embedded C<sup>max</sup>, where it is associated with the matrix subject through predication.

Clark also analyzes obligatory control in an adjunct like (60):

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<sup>19</sup>It is not clear at this point whether adjuncts as in (57) count as C<sup>max</sup> or P<sup>max</sup>. If they count as P<sup>max</sup>, empty operators adjoin to P<sup>max</sup>. If they count as C<sup>max</sup>, empty operators move to the Spec of C<sup>max</sup>.

(60) John<sub>i</sub> kissed Mary [after  $e_i$  seeing himself<sub>i</sub> in the mirror]

(Clark 1985:271)

In (60), the empty subject of the adjunct refers to the matrix subject. In such an environment, the empty subject of an adjunct cannot refer to anything but the matrix subject. In other words, the empty subject is obligatorily controlled by the matrix subject. This is confirmed by the fact that the following examples are deviant:

(61) a. \*John kissed Mary<sub>i</sub> [after  $e_i$  seeing herself<sub>i</sub> in the mirror]

(Clark 1985:271)

b. \*John kissed Mary [after  $e_{arb}$  seeing oneself in the mirror]

In (61a), the empty subject of the adjunct is intended to refer to the matrix object *Mary*. In (61b), the empty subject of the adjunct is intended to refer to an arbitrary person. They are, however, deviant. She argues that obligatory control in adjuncts like (60) also involves empty operator movement, as represented in (62):

(62) **John<sub>i</sub>** kissed Mary [**Op<sub>i</sub>** [after  $t_i$  seeing himself<sub>i</sub> in the mirror]]

In (62), the empty operator moves from its original position to the Spec of the adjunct, where it is associated with the matrix subject through predication. Although Clark only deals with English examples, she would say that the control structure in Japanese can be analyzed essentially in the same way. Hence, under her analysis, obligatory control in adjuncts like (56) would be analyzed as involving empty operator movement as in (57b).

Hasegawa (1984/1985) and Clark (1985) agree that the adjunct with an empty subject involves empty operator movement, though they differ as to whether the empty subject can also be identified as PRO. Since the empty operator is interpreted through predication, it is reasonable to claim that the adjunct as a whole, being a predicate, counts as "unsaturated." Hence, if their analysis is correct, the adjunct with an empty subject may count as an open category.

With the above discussion in mind, let us consider scrambling out of adjuncts with an empty subject again, taking (54) (repeated here as (63)) as an example:

- (63) **sono hana-ni<sub>i</sub>** [daremo<sub>j</sub>-ga [e<sub>j</sub> **t<sub>i</sub>** mizu-o yara-zu]  
 that flower-Dat everyone-Nom water-Acc give-without  
 dekakete itta] (koto)  
 went-out (fact)  
 'everyone went out without watering that flower'

The scrambled phrase *sono hana-ni* 'that flower-Dat' is a closed category. The adjunct, on the other hand, is an open category. This is because it contains an empty subject which is obligatorily controlled by the matrix subject and thus involves empty operator movement. Extraction of the closed category out of the open adjunct does not result in a violation of the A-over-A condition (44), though both of these categories are [-V]. Hence, we can correctly predict that scrambling out of adjuncts with an empty subject like (63) is acceptable.

Note also that unlike scrambling out of adjuncts with an empty subject, scrambling out of adjuncts with an empty object is deviant, as shown below:

- (64) a. John-ga [Bill-ga *e* kooen-de nagutta node]  
 -Nom -Nom park-in hit because  
 keisatu-ni todokedeta (koto)  
 police-Dat report (fact)  
 'John reported to the police because Bill hit him in the  
 park'
- b. ?**kooen-de** John-ga [Bill-ga *e* *t* nagutta node]  
 keisatu-ni todokedeta (koto)

In (64b), the  $P^{\max}$  *kooen-de* 'park-in' is scrambled out of the adjunct with an empty object. The result is mildly deviant. I argue that this also follows from the A-over-A condition (44). Before turning to this issue, let us consider the interpretation of the empty object within an adjunct.

Kuroda (1965) and Hasegawa (1984/1985) observe that exactly like the empty subject in an adjunct, the empty object in an adjunct can only refer to the matrix subject. Let us consider (65) as an example:

- (65) John-ga [Mary-ga *e* nagutta node] keisatu-ni  
 -Nom -Nom hi because police-Dat  
 uttaeta (koto)  
 complained (fact)  
 'John complained to the police because Mary hit him'

They observe that the empty object in the adjunct can only refer to the matrix subject *John* but not to anyone else. Based on this observation, Hasegawa argues that like the adjunct with an empty subject, the one with an empty object may also involve empty operator movement.

Contrary to their observation, however, there is a subject/object asymmetry concerning the interpretation of empty categories within adjuncts, as observed by, among others, Hoji (1985). Within an adjunct,

the subject empty category can only refer to the matrix subject while the object empty category can refer to either the matrix subject or someone else in the discourse. In (65), the empty object may either refer to the matrix subject *John* or someone else. I therefore claim following, among others, Hoji (1985) that the object empty category in an adjunct is identified as an empty pronoun, as represented below:

- (66) John<sub>i</sub>-ga [Mary-ga *pro*<sub>i/j</sub> nagutta node] keisatu-ni  
 -Nom -Nom hit because police-Dat  
 uttaeta (koto)  
 complained (fact)  
 'John<sub>i</sub> complained to the police before Mary hit him<sub>i/j</sub>'

Returning to (64b), since the adjunct with an empty object does not involve any empty operator movement, it counts as a closed category just like the adjunct without any empty categories. Both the adjunct and the scrambled phrase are closed as well as [-V]. Scrambling of the  $P^{\max}$  *kooen-de* 'park-in' out of the adjunct therefore results in a violation of the A-over-A condition (44). Hence, we can correctly predict that scrambling out of adjuncts with an empty object like (64b) is mildly deviant.

### 4.3.3 Against the Base-generation Analysis of Scrambling

Based on the insight given by Hale (1980, 1983), Boskovic and Takahashi (1995) argue that scrambling is not an instance of movement. They rather claim that "scrambled" phrases originate in their surface positions and undergo LF-movement to the positions where they receive their  $\theta$ -roles.

Let us consider (67) as an example:

- (67) **sono hon-o** [John-ga [Mary-ga yonda to] itta (koto)  
 that book-Acc -Nom -Nom read Comp said (fact)  
 'John said that Mary read that book'

Under their analysis, (67) would be derived as follows:

- (68) a. **sono hon-o** [John-ga [Mary-ga yonda to] itta  
 that book-Acc -Nom -Nom read Comp said  
 b. [John-ga [Mary-ga **sono hon-o** yonda to] itta  
 -Nom -Nom that book-Acc read Comp said

As shown in (68a), the "scrambled" phrase *sono hon-o* 'that book-Acc' is base-generated in its surface position. At LF, *sono hon-o* 'that book-Acc' lowers to the object position of the verb *yonda* 'read' where the former receives its  $\theta$ -role from the latter. They follow Lasnik and Saito (1992) in claiming that movement does not have to leave a trace. This LF-lowering does not leave a trace and thus satisfies the proper binding condition. Note that they are assuming that  $\theta$ -roles are formal features which count as illegitimate at LF. Thematic features therefore must be eliminated until a derivation reaches LF. Otherwise, the derivation crashes. Hence,  $\theta$ -roles function as triggers for the LF-movement of "scrambled" phrases.

Boskovic and Takahashi present conceptual and empirical arguments in favor of the base-generation analysis of scrambling. Although we do not go into the details of their arguments, the consistency of their base-generation analysis with the last resort principle is worth mentioning. Under their analysis, "scrambling" counts as a feature-driven movement, since a "scrambled" phrase originates in its surface position and then undergoes LF-movement to check a  $\theta$ -feature. Unlike the analyses proposed by Fukui and Saito where optional movement is

allowed, their analysis is consistent with the last resort principle without recourse to any extra device.

There are, however, conceptual and empirical problems which make us reluctant to adopt the base-generation analysis of scrambling. Conceptually, their base-generation analysis raises a problem of globality as it stands. Recall that they claim that thematic features count as illegitimate objects at LF and thus must undergo elimination before LF for convergence. "Scrambled" phrases undergo LF-movement for eliminating thematic features, which makes the derivation converge. As extensively argued in chapter 2, however, such an interface condition on formal features necessarily needs global considerations. In the present case, when we have an option of applying LF-movement to a "scrambled" phrase, we must look ahead to see whether the application/nonapplication of the LF-movement would yield an LF interface only with legitimate objects. In other words, we cannot decide whether to apply the LF-movement or not only on the basis of information available at that stage. Such global considerations should be avoided, since they necessarily induce much computational complexity.

Turning to its empirical problems, recall that scrambling exhibits some locality effects although they are weaker than those with feature-driven movement like overt wh-movement and empty operator movement. I have argued that they should be attributed to the A-over-A condition at PF. Under the base-generation analysis of scrambling, however, "scrambled" phrases are expected to appear in any base-generated positions. The base-generation analysis would therefore predict that there do not exist any locality effects with scrambling whatsoever. Hence, the base-generation analysis of scrambling is empirically

problematic, unless it gives an account of the locality effects with scrambling.

#### 4.4 Extraction out of Scrambled Phrases

It was shown in chapter 3 that when phrases undergo feature-driven movement like overt *wh*-movement and topicalization, they constitute "barriers" for further feature-driven movement, presenting the following examples:

- (69) Topicalization out of Topic  
 \*?**vowel harmony**<sub>i</sub>, I think that [[articles about *t<sub>i</sub>*]<sub>j</sub> [you read *t<sub>j</sub>*]]
- (70) Wh-movement out of moved *wh*-phrases  
 \*?**who**<sub>i</sub> do you wonder [[which pictures of *t<sub>i</sub>*]<sub>j</sub> [Mary bought *t<sub>j</sub>*]]
- (71) Wh-movement out of Topic  
 \*?**who**<sub>i</sub> do you think that [pictures of *t<sub>i</sub>*]<sub>j</sub> John wanted *t<sub>j</sub>*

I have argued that like the "domain barriers," this locality condition also follows from our theory of phrase structure.

Let us quickly go over our analysis of this locality condition, taking (69) as an example. During the derivation, we come to the stage where the strong [TOPIC] feature of the embedded F is to be checked. Since it is uninterpretable, the ICP requires that it should be checked immediately by copying *articles about vowel harmony*, as in (72):

- (72) a. [F<sup>max</sup> F [T<sup>max</sup> T [V<sup>max</sup> you read [D<sup>max</sup> **articles about vowel harmony**]]]]  
 b. you  
 c. [D<sup>max</sup> **articles about vowel harmony**]

The copied  $D^{\max}$  *articles about vowel harmony* may not be merged with the main structure at this point of the derivation due to the ICP and the EP.

As the derivation proceeds, we come to the stage where the strong [TOPIC] feature of the matrix F is required to be checked immediately by the ICP:

- (73) a.  $[F^{\max} F_{[TOPIC]} [T^{\max} T [V^{\max} I [think [C^{\max} that$   
 $[F^{\max} F [T^{\max} T [V^{\max} you read [D^{\max} articles about$   
 $vowel harmony]]]]]]]]]$
- b. you
- c.  $[D^{\max} articles about vowel harmony]$
- d. I

It should be noted that *vowel harmony* within the copied  $D^{\max}$  (73c), which is eventually merged into the Spec of the embedded F, may not be subject to the copy operation triggered by the strong [TOPIC] feature, since the latter does not c-command the former. Hence, we can derive the fact that topicalization out of a topic is illegitimate. Although the strong [TOPIC] feature of the matrix F can attract *vowel harmony* within the  $D^{\max}$  which stays in its original position, it would violate the ban against vacuous quantification and the condition of inclusiveness.

As observed by Saito (1985), however, scrambling out of a scrambled phrase is acceptable:

- (74) [**sono mura-ni**<sub>i</sub> [John-ga [[Mary-ga **t<sub>i</sub>** *sunde iru to*]<sub>j</sub>  
 that village-Dat -Nom -Nom live Comp  
 [Bill-ga **t<sub>j</sub>** *itta to*]] *omotte iru*]] (koto)  
 -Nom said Comp think (fact)  
 'John thinks that Bill said that Mary lives in that village'

In (74), *Mary-ga sono mura-ni sunde iru to* 'that Mary lives in that village', which is the complement clause of the verb *itta* 'said', is scrambled to the initial position of the embedded clause. The P<sup>max</sup> *sono mura-ni* 'in that village' is further scrambled out of the scrambled phrase to the initial position of the matrix clause. The result is acceptable.

Furthermore, feature-driven movement like empty operator movement may take place from within a scrambled phrase, as shown below:

## (75) The Cleft Construction

[**Op<sub>i</sub>** [[Mary-ga *t<sub>i</sub>* itta to]<sub>j</sub> [John-ga *t<sub>j</sub>* omotte iru]]

-Nom went Comp -Nom think

no]-wa Tookyoo<sub>i</sub>-ni da

Comp-Top Tokyo-Dat be

'it is to Tokyo that John thinks that Mary went'

(76) The *Tough* Construction

[[sooiu taipu-no dansei-kara]<sub>i</sub>-ga [(Mary<sub>j</sub>-nitotte)

such a type of man-from-Nom -for

[**Op<sub>i</sub>** [*e<sub>j</sub>* [[*e<sub>j</sub>* *t<sub>i</sub>* purezento-o moratta to]<sub>k</sub> [otto-ga

present-Acc was given Comp husband-Nom

*t<sub>k</sub>* gokaisite iru to]] tomodati-ni hanasi]] nikui]] (koto)

misunderstand Comp friend-Dat sa hard (fact)

Lit. '[from such a type of man]<sub>i</sub> is hard (for Mary<sub>j</sub>) to say to

her friend that her husband is under the false impression

that she was given a present *e<sub>i</sub>*'

## (77) The Comparative Deletion Construction

[**Op<sub>i</sub>** [[[John-ga *t<sub>i</sub>* yonda to] iwareteiru to]<sub>j</sub>

-Nom read Comp is said Comp

Tom-ga *t<sub>j</sub>* uwasa-siteiru] yorimo] Mary-wa takusan

-Nom rumor make than -Top many

hon-o yondeita

book-Acc read

'Mary read more books than Tom made the rumor that it is

said that John read'

(Kikuchi 1987:12)

In (75-77), empty operator movement takes place from inside the scrambled phrases. The results are acceptable. I argue that this asymmetry between feature-driven movement, on the one hand, and scrambling, on the other, concerning extraction domains also follows from the ICP coupled with the EP given that scrambling is not feature-driven.

#### 4.4.1 Scrambling out of Scrambled Phrases

Before considering how to account for (74-77), let us look at Saito's (1992) theory of the status of the landing site of scrambling. Modifying Mahajan (1990), Tada (1990), and Webelhuth (1989), Saito argues that scrambling is movement to a non-operator, non-A-position. Since a non-operator, non-A-position is not licensed at LF, however, it is reanalyzed in either of the following ways:

- (78) a. The position disappears at LF.  
 b. The position is reanalyzed as an operator position.  
 c. The position is reanalyzed as an A-position.

(Saito 1992:99-100)

(78a) is achieved when the scrambled phrase is undone at LF. When the scrambled phrase is not undone, it is either reanalyzed as an operator position or an A-position. It is reanalyzed as an operator position in the case of either clause-internal or long-distance scrambling. It is reanalyzed as an A-position only in the case of clause-internal scrambling but not in the case of long-distance scrambling, given the descriptive generalization that CP (= C<sup>max</sup>) breaks A-chains (see, among others, Aoun (1981) and Chomsky (1986a)).

With the above discussion in mind, let us first consider scrambling out of a scrambled phrase, taking (74) as an example. Since scrambling

is not triggered any formal feature, our theory of phrase structure requires that like merger of adjuncts, scrambling should take place postcyclically. There is therefore no ordering imposed on the application of the two instances of scrambling. We can either scramble the complement clause *Mary-ga sono mura-ni sunde iru to* 'that Mary lives in that village' first and then scramble the  $P^{\max}$  *sono mura-ni* 'that village-Dat' out of the latter or scramble the  $P^{\max}$  out of the complement clause first and then scramble the remaining complement clause. Given the copy theory of movement, these two possible derivations are represented below:

- (79) a. John-ga [Bill-ga [Mary-ga sono mura-ni  
 -Nom -Nom -Nom that village-Dat  
 sunde iru to] itta to] omotte iru  
 live Comp said Comp think  
 — Scrambling of the Complement Clause →
- b. John-ga [[[Mary-ga sono mura-ni sunde iru to];  
 [Bill-ga [Mary-ga sono mura-ni sunde iru  
 to]; itta]] to] omotte iru  
 — Scrambling of the  $P^{\max}$  *sono mura-ni* →
- c. **sono mura-ni**; [John-ga [[[Mary-ga **sono mura-ni**;  
 sundeiru to]; [Bill-ga [Mary-ga sono mura-ni sunde iru  
 to]; itta]] to] omotte iru]

- (80) a. John-ga [Bill-ga [Mary-ga sono mura-ni  
 -Nom -Nom -Nom that village-Dat  
 sunde iru to] itta to] omotte iru  
 live Comp said Comp think  
 — Scrambling of the  $P^{\max}$  *sono mura-ni* —▶
- b. **sono mura-ni<sub>i</sub>** [John-ga [Bill-ga [Mary-ga **sono  
 mura-ni<sub>i</sub>** sundeiru to] itta to] omotte iru]  
 — Scrambling of the Complement Clause —▶
- c. sono mura-ni<sub>i</sub> [John-ga [[[**Mary-ga sono mura-ni<sub>i</sub>;  
 sunde iru to**]; [Bill-ga [**Mary-ga sono mura-ni<sub>i</sub>;  
 sunde iru to**]; itta]] to] omotte iru]

Note that regardless of which derivation is to be adopted, we get the same output except the following point. In (80c), the three occurrences of *sono mura-ni* 'that village-Dat' are all identical in constitution, as we can see from the fact that they are all assigned the same index. Hence, if (80c) reaches LF without any scrambled phrases undone, the following three-membered chain is formed:

$$(81) \quad CH = (\textit{sono mura-ni}, \textit{sono mura-ni}, \textit{sono mura-ni})$$

In (79c), on the other hand, its occurrences in the clause-initial position and within the scrambled complement clause are identical in constitution. Its occurrence in its original position, which is not assigned any index, is not identical in constitution with the other occurrences. Hence, if (79c) reaches LF without any scrambled phrases undone, the following two-membered chain is formed:

$$(82) \quad CH = (\textit{sono mura-ni}, \textit{sono mura-ni})$$

Note that this chain consists of the  $P^{\max}$  *sono mura-ni* 'that village-Dat' in the clause initial position and the one within the scrambled complement.

It is important to note that as in (79), scrambling of *sono mura-ni* 'that village-Dat' may take place from within the scrambled complement clause. This is in contrast with the fact that movement out of a moved phrase is illegitimate in the case of feature-driven movement like overt wh-movement and topicalization in English. In order to see why there is such a contrast, let us consider how derivation (79) proceeds more precisely under the copy theory of movement. Given that scrambling consists of Copy and Merge, we first copy the complement clause *Mary-ga sono mura-ni sunde iru to* 'that Mary lives in that village':

- (83) a. John-ga [Bill-ga [**Mary-ga sono mura-ni sunde iru to**] itta to] omotte iru  
 b. [**Mary-ga sono mura-ni sunde iru to**]

Here, we have two possible continuations. We either merge the copied complement clause (83b) with the main structure or copy the  $P^{\max}$  *sono mura-ni* 'that village-Dat' within the complement clause which stays in its original position. Since neither of these operations is triggered any formal feature, we may apply either of them. We therefore apply merger of the complement clause with the main structure at this stage, yielding (79b). We then copy the  $P^{\max}$  *sono mura-ni* 'that village-Dat' within the scrambled complement clause. We finally apply merger of the copied  $P^{\max}$  with the main structure, yielding (79c). Hence, scrambling out of the scrambled phrase is possible as in (79). The crucial difference between feature-driven movement and non-feature-driven movement therefore resides in the fact that a copied phrase may be merged immediately with the main structure in the latter, but not in the former.

Let us consider possible continuations of (79c) and (80c) depending on how the scrambled phrases are reanalyzed. According to Saito (1992),

since scrambling of *sono mura-ni* 'that village-Dat' is an instance of long-distance scrambling, the scrambled position is either undone at LF or reanalyzed as an operator position. Scrambling of the complement clause *Mary-ga sono mura-ni sunde iru to* 'that Mary lives in that village', on the other hand, is an instance of clause-internal scrambling. The scrambled position can be reanalyzed as any of (78a-c).

Let us first consider the case where both of the scrambled phrases are undone at LF. In such a case, we get a representation where the scrambled phrases both move back to their original positions. There is therefore no violation of any condition. Hence, the derivation converges.

Let us next consider the case where only *sono mura-ni* 'that village-Dat' is undone at LF. In (79c), *sono mura-ni* 'that village-Dat' in the clause-initial position only moves back to its position within the scrambled complement but not to its original position, since its occurrence in the latter position does not count as identical in constitution or form a chain with the other occurrences. In (80c), on the other hand, *sono mura-ni* 'that village-Dat' moves back to its original position through its position within the scrambled complement. From either (79c) or (80c), we get (84):

- (84) John-ga [[[Mary-ga sono mura-ni sunde iru to]<sub>j</sub> [Bill-ga  
[Mary-ga sono-mura ni sunde iru to]<sub>j</sub> itta]] to] omotte iru

In this derivation, we create the following chain:

- (85) CH = (*Mary-ga sono mura-ni sunde iru to*, *Mary-ga sono  
mura-ni sunde iru to*)

Given that the non-head positions of chains delete within the covert component, *Mary-ga sono mura-ni sunde iru to* 'that Mary lives in that

village' in its original position deletes. We get the following representation:

- (86) John-ga [[[Mary-ga sono mura-ni sunde iru to]<sub>j</sub> [Bill-ga *t<sub>j</sub>* itta]] to] omotte iru

Representation (86) is legitimate regardless of whether the chain is interpreted as an A-chain or an operator-variable construction. This derivation converges.

If only the complement clause *Mary-ga sono mura-ni sunde iru to* 'that Mary lives in that village' is undone at LF, on the other hand, we get (87) from either (79c) or (80c):

- (87) sono mura-ni<sub>i</sub> [John-ga [Bill-ga [Mary-ga sono-mura<sub>i</sub> ni sunde iru to] itta to] omotte iru]

In this derivation, we create the following chain:

- (88) CH = (*sono mura-ni*, *sono mura-ni*)

The  $P^{\max}$  *sono mura-ni* 'that village-Dat' in its original position deletes in the covert component. We get the following representation:

- (89) **sono mura-ni<sub>i</sub>** [John-ga [Bill-ga [Mary-ga *t<sub>i</sub>* ni sunde iru to] itta to] omotte iru]

Representation (89) is legitimate, since the chain can be interpreted as an operator-variable construction. Note that since the  $C^{\max}$  intervenes between *sono mura-ni* 'that village-Dat' and its trace, the chain may not be interpreted as an A-chain. Hence, this derivation also converges.

Let us finally consider the case where neither of the scrambled phrases is undone at LF. From (79c), we get the following two chains:

- (90) a. CH = (*sono mura-ni*, *sono mura-ni* )  
 b. CH = (*Mary-ga sono mura-ni sunde iru to*, *Mary-ga sono mura-ni sunde iru to* )

Note that chain (90a) consists of the  $P^{\max}$  *sono mura-ni* 'that village-Dat' in the clause-initial position and the one within the scrambled complement, but not the one in its original position. Given that the non-head positions of chains delete within the covert component, *sono mura-ni* 'that village-Dat' within the scrambled complement clause and the complement clause in its original position delete. We get the following representation:

- (91) **sono mura-ni<sub>i</sub>** [John-ga [[[**Mary-ga t<sub>i</sub> sundeiru to**]<sub>i</sub>]  
 [Bill-ga t<sub>j</sub> itta]] to] omotte iru]

In (91), the chain of the  $P^{\max}$  which undergoes long-distance scrambling may be interpreted as an operator-variable construction. The chain of the complement clause which undergoes clause-internal scrambling may either be interpreted as an A-chain or an operator-variable construction. This derivation converges.

From (80c), on the other hand, we get the following two chains:

- (92) a. CH = (*sono mura-ni*, *sono mura-ni*, *sono mura-ni*)  
 b. CH = (*Mary-ga sono mura-ni sunde iru to*, *Mary-ga sono mura-ni sunde iru to* )

The  $P^{\max}$  *sono mura-ni* 'that village-Dat' within the scrambled complement clause, the one in its original position, and the complement clause in its original position delete in the covert component. We also get (91). Hence, this derivation also converges.

To summarize the above discussion, no matter how the scrambled phrases may be reanalyzed, there is always a derivation which converges.

Hence, the ICP coupled with the EP correctly predicts that scrambling out of a scrambled phrase like (74) is acceptable.

#### 4.4.2 Empty Operator Movement out of Scrambled Phrases

Let us next consider empty operator movement out of a scrambled phrase, taking (75) (repeated here as (93)) as an example:

(93) The Cleft Construction

[[*Op<sub>i</sub>* [Mary-ga *t<sub>i</sub>* itta to]<sub>j</sub> [John-ga *t<sub>j</sub>* omotte iru]]

-Nom went Comp -Nom think

no]-wa Tookyoo<sub>i</sub>-ni da

Comp-Top Tokyo-Dat be

'it is to Tokyo that John thinks that Mary went'

We will only consider how to construct the presuppositional part of (93), which is relevant to the present discussion, ignoring the rest.

During its derivation, we construct the following structure:

(94) [John-ga [Mary-ga *Op* itta to] omotte iru]

-Nom -Nom said Comp think

It is important to note that we are not allowed to apply scrambling of the complement clause at this stage of the derivation. This is because scrambling is non-feature-driven and thus required to apply postcyclically by the ICP and the EP. The next step is to select the COMP *no*, as required by the EP. Then, the strong operator feature of C must be checked immediately by copying the operator *Op* within the complement clause, which has not undergone scrambling yet:

(95) a. [[[John-ga [Mary-ga *Op<sub>i</sub>* itta to] omotte iru] no]

b. *Op<sub>i</sub>*

We then apply merger of the operator (95b) with the main structure and scrambling of the complement clause postcyclically, yielding (96):

$$(96) \quad [Op_i \text{ [[Mary-ga } Op_i \text{ itta to] } [\text{John-ga } [\text{Mary-ga } Op_i \text{ itta to}]_j \text{ omotte iru}]] \text{ no}]$$

Here we have two possible continuations depending on whether the scrambled phrase is undone. If the scrambled phrase is undone, we get (97):

$$(97) \quad [Op_i \text{ [John-ga } [\text{Mary-ga } Op_i \text{ itta to}] \text{ omotte iru}] \text{ no}]$$

In this derivation, we create the following chain of the operator:

$$(98) \quad \text{CH} = (Op, Op)$$

We delete the tail position of the chain, yielding the following representation:

$$(99) \quad [Op_i \text{ [John-ga } [\text{Mary-ga } t_i \text{ itta to}] \text{ omotte iru}] \text{ no}]$$

In (99), the chain consisting of the empty operator and its trace is properly interpreted as an operator-variable construction. Hence, this derivation converges.

If the scrambled phrase is not undone, we get (96). The following two chains are created:

$$(100) \quad \begin{array}{l} \text{a.} \quad \text{CH} = (Op, Op) \\ \text{b.} \quad \text{CH} = (\text{Mary-ga } Op \text{ itta to}, \text{Mary-ga } Op \text{ itta to}) \end{array}$$

Note that (100a) consists of  $Op$  in the Spec of  $C^{\max}$  and  $Op$  within the scrambled phrase. We delete the non-head positions of the chains, yielding the following representation:

$$(101) \quad [Op_i \text{ [[Mary-ga } t_i \text{ itta to] } [\text{John-ga } t_j \text{ omotte iru}]] \text{ no}]$$

In (101), the chain consisting of the empty operator and its trace within the scrambled complement is properly interpreted as an operator-variable construction. The chain created by scrambling is legitimate regardless of

whether it is interpreted as an A-chain or as an operator-variable construction. Hence, the derivation of (93) converges whether the scrambled phrase is undone or not. We can therefore correctly predict that if we extract an element from within a scrambled phrase in terms of feature-driven movement, the result is acceptable.

#### **4.5 Focus Scrambling and the "Domain Barriers"**

In section 4.2, I have argued that the lack of the "domain barrier" effects with scrambling straightforwardly follows from our theory of phrase structure. It is not the case, however, that scrambling is always devoid of the "domain barrier" effects. In this section, I will investigate scrambling in what Kuroda (1972, 1979) calls generic sentences. It is first pointed out that scrambling in generic sentences exhibits the "domain barrier" effects. I will then argue that the scrambled phrases in generic sentences are forced to have focus readings. In other words, scrambling in generic sentences counts as an operation triggered by a focus feature. I will argue that the "domain barrier" effects with scrambling in generic sentences straightforwardly follows from our theory of phrase structure, which lends further empirical support for our analysis of the "domain barriers."

##### **4.5.1 Locality on Scrambling in Generic Sentences**

In section 4.1, it was shown that scrambling is not subject to the "domain barrier" effects. As evidence in support of this contention, I have shown that scrambling out of the adjunct with an empty subject is acceptable. In what Kuroda (1972, 1979) calls generic sentences,

however, scrambling out of adjuncts with an empty subject is deviant, as exemplified below:

- (102) a. daremoj-ga [e<sub>j</sub> sono hana-ni kizuka-zu]  
 everyone-Nom that flower-Dat notice-without  
 itumo toorisugiru (koto)  
 always go-by (fact)  
 'everyone goes by without noticing that flower'
- b. \*?**sono hana-ni**<sub>i</sub> [daremoj-ga [e<sub>j</sub> **t<sub>i</sub>** kizuka-zu] itumo  
 toorisugiru] (koto)
- (103) a. dareka;ga [e<sub>j</sub> sono isu-ni suwari nagara]  
 someone-Nom that chair-Dat sit while  
 itumo hon-o yomu (koto)  
 always book-Acc read (fact)  
 'someone always reads a book while sitting on that  
 chair'
- b. \*?**sono isu-ni**<sub>i</sub> [dareka;ga [e<sub>j</sub> **t<sub>i</sub>** suwari nagara] itumo  
 hon-o yomu] (koto)
- (104) a. daremoj-ga [e<sub>j</sub> John-no ibiki-ni odorosite] itumo  
 everyone-Nom -Gen snore-Dat surprised always  
 me-o samasu (koto)  
 wake-up (fact)  
 'everyone always wakes up, surprised with John's  
 snore'
- b. \*?**John-no ibiki-ni**<sub>i</sub> [daremoj-ga [e<sub>j</sub> **t<sub>i</sub>** odorosite] itumo  
 me-o samasu] (koto)

Kuroda (1972, 1979) calls a sentence generic if the sentence makes a statement about a general, habitual, or constant state of affairs. In (102-

104), the matrix clauses count as generic, since they make statements about a habitual state of affairs. As shown in the (b) examples of (102-104), if we extract a phrase from within the adjunct with an empty subject through the application of scrambling at the level of the matrix generic clause, the result is deviant.

It was also shown in the preceding discussion that when a phrase is scrambled from within the adjunct with an overt subject or the complex NP, the result is not as severely deviant as the normal "domain barrier" violation induced by feature-driven movement. I have argued that this should count as evidence to suggest that those cases of scrambling do not exhibit the "domain barrier" effects but the effects induced by the A-over-A condition at PF. In generic sentences, however, scrambling out of the adjunct with an overt subject or the complex NP is as severely deviant as the normal "domain barrier" violation, as exemplified below (cf. Matsuda (1996)):

## (105) Scrambling out of the Adjunct with an Overt Subject

- a. \*?**eki-ni** [Mary-ga [John-ga *t* tuite kara]  
 station-Dat -Nom -Nom arrive after  
 taitei mukae-ni dekakeru] (koto)  
 usually leave home to meet him (fact)  
 'Mary usually leaves home to meet him after John  
 arrives at the station'
- b. \*?**sono hana-ni** [John-ga [Mary-ga *t* mizu-o  
 that flower-Dat -Nom -Nom water-Acc  
 yaru node] itumo tigau hana-ni mizu-o  
 give because always different flower-Dat water-Acc  
 yaru] (koto)  
 give (fact)  
 'because Mary waters that flower, John always waters  
 a different one'
- c. \*?**oziisan-ni** [Mary-ga [John-ga *t* aitagatte iru  
 grandfather-Dat -Nom -Nom want-to-see  
 noni] itumo musisuru] (koto)  
 although always ignore (fact)  
 'although John wants to see his grandfather, Mary  
 always ignores that fact'

## (106) Complex NP Constraint

- a.    \*?**tonari-no**   **ie-ni**    [John-ga    [[*t* sundeiru]  
           next-door-Gen house-Da       -Nom     reside  
           hito]-o    maiasa        mikakeru] (koto)  
           person-Acc every morning see        (fact)  
           'John sees the person who lives in the next house every  
           morning'
- b.    \*?**sooko-ni**    [John-ga [[*t* hozonsite iru] yasai]-o  
           storage-Dat       -Nom    keep        vegetable-Acc  
           mainiti    kensa suru] (koto)  
           everyday inspec        (fact)  
           'everyday John inspects the vegetables which are kept  
           in the storage'

Based on these observations, I argue that unlike scrambling in non-generic sentences, scrambling in generic sentences induces the "domain barrier" effects. I will argue that such a contrast between generic and non-generic sentences regarding the "domain barrier" effects with scrambling straightforwardly follows from the ICP together with the EP. Before we come to that, let us consider focus readings in generic sentences.

## 4.5.2 The "Domain Barrier" Effects with Focus Scrambling

### 4.5.2.1 Focus *Ga* in Japanese

As extensively discussed by Kuno (1973) and Kuroda (1972, 1979), Japanese nominative phrases in generic sentences can only be interpreted as having focus readings.<sup>20</sup> Let us consider the following examples:

- (107) a.   **inu-ga**   neko-o   oikakeru (koto)  
           dog-Nom  cat-Acc  chase   (fact)  
           'dogs chase cats'  
           (adopted from Kuroda 1979:16)
- b.   **saru-ga**   ningen-no senzo   desu  
           monkey-Nom man-Gen  ancestor be  
           'the monkey is the ancestor of man'  
           (Kuno 1973: 51)
- c.   **John-ga** mainiti gakkoo-ni iku (koto)  
                   -Nom everyday school-Dat go   (fact)  
           'John goes to school everyday'
- d.   **John-ga** mainiti hana-ni mizu-o yaru (koto)  
                   -Nom everyday flower-Dat water-Acc give (fact)  
           'John waters a flower everyday'

The examples in (107) are all generic in that they make a statement about a general, habitual, or constant state of affairs. The nominative phrases must be interpreted as having focus readings. The more precise translations of the examples in (107) are therefore as follows:

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<sup>20</sup>Kuno (1973) calls such focus *ga* exhaustive listing *ga*. See Matsuda (1996) for an analysis of focus *ga*, where generic sentences are treated on a par with the cleft construction. See Ogihara (1987) for a semantic analysis of this construction.

- (108) a. It is dogs that chase cats; (Of all the animals we are talking about) dogs and only dogs chase cats.
- b. It is the monkey that is the ancestor of man; (Of all the animals we are talking about) the monkey and only the monkey is the ancestor of man.
- c. It is John who goes to school everyday; (Of all the people we are talking about) John and only John goes to school everyday.
- d. It is John who waters a flower everyday; (Of all the people we are talking about) John and only John waters a flower everyday.

As observed by Kuno and Kuroda, examples like (107) are awkward, if not ungrammatical, as independent sentences without any contexts due to the obligatory focus readings of the nominative phrases unless the nominative phrases contain numericals or quantifiers. They become natural in contexts which solicit the focus readings of the nominative phrases. For example, (107a-d) are natural when they are given as answers to the following generic questions:

- (109) a. **nani-ga** neko-o oikakeru no  
 what-Nom cat-Acc chase Q  
 'what chases cats'
- b. **nani-ga** ningen-no senzo desu ka  
 what-Nom man-Gen ancestor be Q  
 'what is the ancestor of man'
- c. **dare-ga** mainiti gakkoo-ni iku no  
 who-Nom everyday school-Dat go Q  
 'who goes to school everyday'

- d. **dare-ga** mainiti hana-ni mizu-o yaru no  
 who-Nom everyday flower-Dat water-Acc give Q  
 'who waters a flower everyday'

There are several points where generic sentences differ from non-generic sentences. First, as Kuroda (1972, 1979) points out, nominative phrases behave differently from non-nominative phrases in generic questions but not in non-generic questions. As shown in (109), the generic questions which require nominative phrases as answers are natural. The generic questions which requires non-nominative phrases as answers, on the other hand, are unnatural, as shown below:

- (110) a. ?inu-ga **nani-o** oikakeru no  
 dog-Nom what-Acc chase Q  
 'what do dogs chase'
- b. ?saru-ga **nani-no** senzo desu ka  
 monkey-Nom what-Gen ancestor be Q  
 Lit: 'the monkey is the ancestor of what'
- c. ?John-ga mainiti **doko-ni** iku no  
 -Nom everyday where go Q  
 'where does John go everyday'
- d. ?John-ga mainiti **nani-ni** mizu-o yaru no  
 -Nom everyday what-Dat water-Acc give Q  
 'what does John water everyday'

More natural are questions of the form where the nominative phrases are replaced by topic phrases:

- (111) a. **inu-wa nani-o** oikakeru no  
 dog-Top what-Acc chas Q  
 'what do dogs chase'
- b. **saru-wa nani-no** senzo desu ka  
 monkey-Top what-Gen ancestor be Q  
 Lit: 'the monkey is the ancestor of what'
- c. **John-wa** mainiti **doko-ni** iku no  
 -Top everyday where go Q  
 'where does John go everyday'
- d. **John-wa** mainiti **nani-ni** mizu-o yaru no  
 -Top everyday what-Dat water-Acc give Q  
 'what does John water everyday'

This is in contrast with non-generic sentences, which make statements about a specific event. In non-generic sentences, no phrases are forced to have focus readings. Not only the non-generic questions soliciting nominative phrases as answers like the (b) examples of (112-113) but also those soliciting non-nominative phrases as answers like the (c) examples of (112-113) are natural:

- (112) a. **inu-ga neko-o** oikaketeiru (koto)  
 dog-Nom cat-Acc be-chasing (fact)  
 'the dog is chasing the cat'
- b. **nani-ga** neko-o oikaketeiru no  
 what-Nom cat-Acc be-chasing Q  
 'what is chasing the cat'
- c. **inu-ga nani-o** oikaketeiru no  
 dog-Nom what-Acc be-chasing Q  
 'what is the dog chasing'

- (113) a. John-ga kinoo gakkoo-ni itta (koto)  
 -Nom yesterday school-Dat went (fact)  
 'John went to school yesterday'
- b. **dare-ga** kinoo gakkoo-ni itta no  
 who-Nom yesterday school-Dat went Q  
 'who went to school yesterday'
- c. John-ga kinoo **doko-ni** itta no  
 -Nom yesterday where went Q  
 'where did John go yesterday'

Although it is not entirely clear at this point why generic questions like (110), which solicit non-nominative phrases as answers, are unnatural, let us assume following Kuroda (1972, 1979) that the following descriptive generalization is correct:

- (114) The generic questions which solicit non-focalized phrases as answers are unnatural.

In generic questions (110), where the nominative phrases are focalized, the non-nominative phrases, which are not focalized, are questioned. Hence, they are unnatural.

Second, Kuno (1973) observes the following generalization:

- (115) In generic sentences, no other elements than focalized phrases can get focus readings through stress assignment.

Let us consider the following examples (the judgments are mine):<sup>21</sup>

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<sup>21</sup>Stressed elements are represented by bold capitals here and in the relevant examples to follow.

- (116) a. John-ga mainiti gakkoo-ni iku (koto)  
 -Nom everyday school-Dat go (fact)  
 'John (and only John) goes to school everyday'
- b. ?John-ga mainiti **GAKKOO-NI** iku (koto)  
 'It is to school that John (and only John) goes everyday'
- (adapted from Kuno 1973:64)

In (116b), the non-nominative phrase *gakkoo-ni* 'school-Dat' is intended to be focalized through stress assignment; the result is unnatural. It is widely accepted that only one constituent in a given sentence can receive a focus reading. We have observed that the nominative phrases in generic sentences obligatorily receive focus readings. It then follows that (116b) is unnatural. This is because (116b) has more than one focalized constituents within a sentence, i.e., the nominative phrase *John-ga* 'John-Nom' and the stressed element *gakkoo-ni* 'school-Dat'.

This is in contrast with non-generic sentences:

- (117) a. **JOHN-GA** Mary-ni okane-o ageta  
 -Nom -Dat money-Acc gave  
 'It was John who gave the money to Mary'
- b. John-ga **MARY-NI** okane-o ageta  
 'It was to Mary that John gave the money'
- c. John-ga Mary-ni **OKANE-O** ageta  
 'It was the money that John gave to Mary'

As shown in (117), in a non-generic sentence, any constituent may have a focus reading through stress assignment as far as no other constituent gets stressed within the sentence.



- (119) a. **dare-no ie-ni<sub>i</sub>** yuubin haitatu-ga mainiti *t<sub>i</sub>* kuru  
 whose house-Dat mailman-Nom everyday come  
 no  
 Q  
 'whose house does a mailman come to everyday'
- b. ?John-no ie-ni<sub>i</sub> **dare-ga** mainiti *t<sub>i</sub>* kuru no  
 John's house-Dat who-Nom everyday come Q  
 'who comes to John's house everyday'
- (120) a. **dono eki-ni<sub>i</sub>** sihatu densya-ga *t<sub>i</sub>* itumo  
 which station-Dat first-train-Nom always  
 teisya suru no  
 stop Q  
 'which station does the first train always stop at'
- b. ?kono eki-ni<sub>i</sub> **dono densya-ga** *t<sub>i</sub>* itumo  
 this station-Dat which train-Nom always  
 teisya suru no  
 stop Q  
 'which train always stops at this station'

The generic scrambled questions soliciting scrambled phrases as answers like (119-120a) are natural. On the other hand, the generic scrambled questions soliciting non-scrambled nominative phrases as answers like (119-120b) are unnatural.

Although the judgments on (119-120b) are subtle, they are clearly less natural than their corresponding non-generic questions:

- (121) a. John-no ie-ni **dare-ga** kinoo *t* kita no  
 John's house-Dat who-Nom yesterday came Q  
 'who came to John's house yesterday'
- b. kono eki-ni **dono densya-ga** *t* kesa  
 this station-Dat which train-Nom this morning  
 teisya sita no  
 stopped Q  
 'which train stopped at this station this morning'

Furthermore, (119-120b) become natural if we topicalize the dative phrases *John-no ie-ni* 'John's house-Dat' and *kono eki-ni* 'this station-Dat':

- (122) a. **John-no ie-ni-wa** dare-ga mainiti *t* kuru no  
 John's house-Dat-Top who-Nom everyday come Q  
 'who comes to John's house everyday'
- b. **kono eki-ni-wa** dono densya-ga *t* itumo  
 this station-Dat-Top which train-Nom always  
 teisya suru no  
 stop Q  
 'which train always stops at this station'

On the assumption that the generic questions soliciting non-focused phrases as answers are unnatural, these facts suggest that in generic sentences, scrambled phrases obligatorily have focus readings while the focus readings of nominative phrases are neutralized.

Further support for the obligatory focus readings of scrambled phrases in generic sentences comes from the fact that no elements other than the scrambled phrases can get focus readings through receiving stress:

- (123) a. ?John-no ie-ni **YUUBIN HAITATU-GA** mainiti  
 John's house-Dat mailman-Nom everyday  
 kuru (koto)  
 come (fact)  
 'It is the mailman who comes to John's house (and only  
 to John's house) everyday'
- b. ?kono eki-ni **SIHATU DENSYA-GA** itumo  
 this station-Dat first-train-Nom always  
 teisya suru (koto)  
 stop (fact)  
 'It is the first train that always stops at this station  
 (and only at this station)'

I must admit that the judgments are subtle. It is clear, however, that the examples in (123) are less natural than their corresponding non-generic sentences:

- (124) a. John-no ie-ni **YUUBIN HAITATU-GA** kinoo  
 John's house-Dat mailman-Nom yesterday  
 kita (koto)  
 came (fact)  
 'It is the mailman who came to John's house (and only  
 to John's house) yesterday'





- (128) **kono-eki-ni-wa** [dare-ga [sihatsu densya-ga  
 this station-Dat who-Nom first-train-Nom  
 teisya subekida to] itumo syuchoo suru] no  
 should stop Comp always claim Q  
 'who always claims that the first train should stop at this  
 station'

Another support for the obligatory focus reading of the scrambled phrase in (125b) comes from the unnaturalness of the following example, where the other element than the scrambled phrase receives a stress:

- (129) ?kono-eki-ni<sub>i</sub> [**JOHN-GA** [sihatu densya-ga *t<sub>i</sub>*  
 this house-Dat -Nom first-train-Nom  
 teisya subekida to] itumo syuchoo suru] (koto)  
 should stop Comp always cla (fact)  
 'It is John who always claims that the first train should stop  
 at this this station (only at this station)'

This is in contrast with its non-generic counterpart, which is natural:

- (130) kono-eki-ni<sub>i</sub> [**JOHN-GA** [sihatu densya-ga *t<sub>i</sub>*  
 this house-Dat -Nom first-train-Nom  
 teisya subekida to] kinoo-no kaigi-de syuchoo sita  
 should stop Comp yesterday's meeting-at claimed  
 (koto)  
 (fact)

'It is John who claimed at yesterday's meeting that the first  
 train should stop at this this station (only at this station)'

This fact also indicates that the scrambled phrase in (125b) obligatorily receives a focus reading.

Let us next consider the following examples:

- (131) a. John-ga [Mary-ga gakkoo-ni mainiti iku to]  
 -Nom -Nom school-Dat everyday go Comp  
 omotteiru (koto)  
 think (fact)  
 'John thinks that Mary goes to school everyday'
- b. **gakkoo-ni** [John-ga [Mary-ga *t* mainiti iku to]  
 omotteiru] (koto)
- (132) a. **doko-ni** [John-ga [Mary-ga *t* mainiti iku to]  
 where -Nom -Nom everyday go Comp  
 omotteiru] no  
 think Q  
 'where does John think that Mary goes everyday'
- b. gakkoo-ni [**dare-ga** [Mary-ga *t* mainiti iku] to  
 school-Dat who-Nom -Nom everyday go Comp  
 omotteiru] no  
 think Q  
 'who thinks that Mary goes to school everyday'

In (131a), while the embedded clause is generic, the matrix clause is non-generic. When we scramble the P<sup>max</sup> *gakkoo-ni* 'school-Dat' out of the complement as in (131b), the scrambled phrase is not forced to have a focus reading. This is supported by the fact that the question soliciting the scrambled phrase (132a) and the one soliciting the nominative phrase (132b) are both natural. Hence, we can conclude from the above observations that in the case of long-distance scrambling, scrambled phrases are only forced to have focus readings when the landing-site clauses, i.e., the matrix clauses in the above examples, are generic.

In the next subsection, I will argue that on the assumption that the scrambled phrases at generic clauses obligatorily have focus readings, the "domain barrier" effects with scrambling in generic sentences straightforwardly follow from our theory of phrase structure.

#### 4.5.2.3 An Account

It was shown in section 4.5.1 that scrambling in generic sentences, which obligatorily induces a focus reading of the scrambled phrase, exhibits the "domain barrier" effects. This is in contrast with scrambling in non-generic sentences, which is not subject to the "domain barriers." I will argue that the asymmetry between scrambling in generic and non-generic sentences with respect to the "domain barrier" effects, which cannot be given any principled account under the previous locality theories, can be accounted for by our analysis.

Recall that no "domain barrier" effects with scrambling in non-generic sentences follow from the fact that scrambling in non-generic sentences is not driven by any formal feature. Since scrambling in non-generic sentences does not involve any feature-checking, scrambling is required to apply postcyclically. Crucially, scrambling in a non-generic sentence may apply after merger of the "domain barrier" with the main structure. It then follows that no "domain barrier" effects emerge with scrambling in non-generic sentences.

As shown in the last subsection, however, the scrambled phrases in generic sentences obligatorily have focus readings. It is plausible to assume that unlike scrambling in non-generic sentences, scrambling in generic sentences is driven by a strong [FOCUS] feature. If this is on the right track, the "domain barrier" effects with scrambling in generic

sentences follow from our theory of phrase structure exactly like those with overt *wh*-movement and empty operator movement.

Let us consider the adjunct condition effects with scrambling in generic sentences, taking (102b) (repeated here as (133)) as an example:

- (133) \*?**sono hana-ni** [daremoj-ga [e; **t** kizuka-zu]  
           that flower-Dat everyone-Nom notice-without  
           itumo toorisugiru] (koto)  
           always go-by (fact)  
           'everyone always goes by without noticing that flower'

In (133), *sono hana-ni* 'the flower-Dat' is scrambled out of the adjunct clause; the result is deviant. Concerning the adjunct clause *sono hana-ni kizuka-zu* 'without noticing that flower', it is constructed by checking the UFFs of the selected items in conformity with the ICP and the EP.

Let us next consider how to construct the main structure of (133), i.e., *daremo-ga itumo toorisugiru* 'everyone always goes by'. We first select *toorisugiru* 'go by'. The uninterpretable selectional restriction feature of the verb *toorisugiru* 'go by' is checked by selecting *daremo-ga* 'everyone-Nom' and combining the former with the latter. We yield the following structure:

- (134) [daremo-ga toorisugiru]  
           everyone-Nom go-by

Let us assume that focalization is triggered by a strong [FOCUS] feature under a functional category F, which selects a clause like (134) as its complement. Although the adjunct clause *sono hana-ni kizuka-zu* 'without noticing that flower' should be merged with the main clause (134) for its proper interpretation at LF, they cannot be combined with each other at this stage of the derivation due to the EP. The EP requires that

the next step should be to select F rather than to combine the adjunct with the main structure.

When F is selected, the ICP requires that the next step should be to check its selectional restriction through combining F with (134). This yields (135):

- (135) [F[FOCUS] [daremo-ga toorisugiru]]  
 everyone-Nom go-by

The ICP requires that the strong [FOCUS] feature of F, being uninterpretable, should be checked immediately by the application of focus scrambling. The candidate for focus scrambling, i.e., *sono hana-ni* 'the flower-Dat', however, is within the adjunct clause which has not been merged with the main structure. Since F does not c-command *sono hana-ni* 'the flower-Dat,' there is no way of checking the strong [FOCUS] feature of F at this stage. The ICP is violated; this derivation is canceled. We can therefore correctly predict that scrambling of *sono hana-ni* 'the flower-Dat' out of the adjunct clause in (133) is not allowed. The other "domain barrier" effects with scrambling in generic sentences can be accounted for in a similar fashion.

It is crucial in this analysis that unlike scrambling in non-generic sentences, scrambling in generic sentences is driven by a formal feature. There is empirical evidence to suggest that this is on the right track. The first evidence comes from "radical reconstruction" facts. Recall that unlike overt wh-movement and topicalization in English, scrambling in non-generic sentences is subject to "radical reconstruction." Scrambling in generic sentences, on the other hand, is not subject to "radical reconstruction":

- (136) a. John-ga [seito-ga asa gohan-ni nani-o  
 -Nom student-Nom breakfast-Dat what-Acc  
 tabeta ka] itumo siraberu (koto)  
 ate Q always investigate (fact)  
 'John always investigates what the students ate  
 at breakfast'
- b. \*?**nani-o** [John-ga [seito-ga asagohan-ni *t* tabeta ka]  
 itumo siraberu] (koto)
- (137) a. John-ga [Bill-ga dare-to atteita ka] okusan-ni  
 -Nom -Nom who-with met Q wife-Dat  
 itumo hookokusuru (koto)  
 always inform (fact)  
 'John always informs his wife who Bill has met'
- b. \*?**dare-to** [John-ga [Bill-ga *t* atteita ka] okusan-ni  
 itumo hookokusuru] (koto)

In (136-137b), the *wh*-phrases *nani-o* 'what-Acc' and *dare-to* 'who-with' are scrambled out of the embedded interrogative complements; the results are deviant.

(136-137b) may not be as deviant as expected, but they are clearly worse than their non-generic counterparts:

- (138) a. ?**nani-o** [John-ga [seito-ga asagohan-ni *t*  
 what-Acc -Nom students-Nom breakfast-Dat  
 tabeta ka] itumo siritagatteiru] (koto)  
 ate Q always want-to-know (fact)  
 'John always wants to know what the students ate at  
 breakfast'

- b. ?**dare-to** [John-ga [Bill-ga *t* atteita ka] itumo  
 who-Dat -Nom -Nom met Q always  
 okusan-ni hookoku siteiru] (koto)  
 wife-Dat inform (fact)  
 'John has always informed his wife who Bill has met'

Recall that while non-feature-driven movement is subject to "radical reconstruction," feature-driven movement is not. The contrast in acceptability between (136-137b) and (138a-b) suggests that unlike scrambling in non-generic sentences, scrambling in generic sentences is feature-driven.

Second, unlike scrambling in non-generic sentences, scrambling in generic sentences exhibits the relativized minimality effects, though I must admit that the judgments are subtle:

- (139) a. John-ga [musume-ga maiasa  
 -Nom daughter-Nom every morning  
 sono hana-ni mizu-o wasurezuni yaru to]  
 that flower-Dat water-Acc not-forget give Comp  
 itumo zimangeni hanasu (koto)  
 always boastfully say (fact)  
 'John always says boastfully that his daughter waters  
 a flower everyday without forgetting'
- b. ??**mizu-o<sub>j</sub>** [John-ga [[**sono hana-ni<sub>i</sub>** [musume-ga  
 maiasa *t<sub>j</sub> t<sub>i</sub>* wasurezuni yaru]] to] itumo zimangeni  
 hanasu] (koto)

- (140) a. sono mise-ga [syuzin mizukara-ga maiasa  
 that shop-Nom boss self-Nom every morning  
 itiba-kara sakana-o siireru to] itumo  
 market-from fish-ACC buy Comp always  
 sendensuru (koto)  
 advertise (fact)  
 'that shop always advertises that the boss himself buys  
 fish from the market every morning'
- b. ??**sakana-o<sub>j</sub>** [sono mise-ga [[**itiba-kara<sub>i</sub>** [syuzin  
 mizukara-ga maiasa *t<sub>j</sub> t<sub>i</sub>* siireru]] to] itumo  
 sendensuru] (koto)

Recall that feature-driven movement is subject to the MLC. Then, the deviancy of multiple scrambling as in (139-140b) can be accounted for if we assume that like overt wh-movement and empty operator movement, scrambling in generic sentences is feature-driven.

If this analysis is correct, we should expect that the relativized minimality effects disappear when either the matrix or embedded clause is non-generic. This is because according to the MLC, the relativized minimality effects only emerge if more than one instances of feature-driven movement of the same type interact. If either the matrix or embedded clause is non-generic, then feature-driven scrambling interacts with non-feature-driven scrambling. Hence, the relativized minimality effects should not emerge in such cases. This prediction is borne out:

- (141) a. **mizu-o<sub>j</sub>** [John-ga [[**sono hana-ni<sub>i</sub>**] [musume-ga  
 water-Acc -Nom that flower-Dat daughter-Nom  
 maiasa ***t<sub>j</sub> t<sub>i</sub>*** wasurezuni yaru]] to] omotteiru]  
 every morning not-forget give Comp think  
 (koto)  
 (fact)  
 'John thinks that his daughter waters a flower every  
 morning without forgetting'
- b. **mizu-o<sub>j</sub>** [John-ga [[**sono hana-ni<sub>i</sub>**] [musume-ga  
 water-Acc -Nom that flower-Dat daughter-Nom  
***t<sub>j</sub> t<sub>i</sub>*** wasurezuni yatte ita monoda]] to] itumo  
 not-forget used-to-give Comp always  
 zimangeni hanasu] (koto)  
 boastfully say (fact)  
 'John says boastfully that his daughter used to water a  
 flower without forgetting'
- (142) a. **sakana-o<sub>j</sub>** [sono mise-ga [[**itiba-kara<sub>i</sub>**] [syuzin  
 fish-Acc that shop-Nom market-from boss  
 mizukara-ga maiasa ***t<sub>j</sub> t<sub>i</sub>*** siireru]] to]  
 self-Nom every morning buy Comp  
 sendensite iru] (koto)  
 be advertising (fact)  
 'that shop is advertising that the boss himself buys fish  
 from the market every morning'

- b. **sakana-o**<sub>j</sub> [sono mise-ga [[**itiba-kara**<sub>i</sub> [syuzin  
 fish-Acc that shop-Nom market-from boss  
 mizukara-ga *t<sub>j</sub> t<sub>i</sub>* naganen siireteiru]] to]  
 self-Nom many years has bought Comp  
 itumo sendensuru] (koto)  
 always advertise (fact)  
 'that shop always advertises that the boss himself has  
 bought fish from the market many years'

In (141-142a), the matrix clause is generic while the embedded clause is non-generic. In (141-142b), on the other hand, the matrix clause is non-generic while the embedded clause is generic. In either case, the relativized minimality effects cannot be observed.

I have shown in the above discussion that scrambling in generic sentences is always triggered by a focus feature, exhibiting the "domain barrier" effects as expected by our theory of phrase structure. This analysis is further supported by the fact that scrambling in a non-generic sentence exhibits the "domain barrier" effects if the scrambled phrase gets stressed and thus has an obligatory focus reading, as shown below:<sup>23</sup>

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<sup>23</sup>If the focused scrambled phrase is NP-*o* 'NP-Acc', the result is acceptable, as shown below:

- (i) **SONO HON-O**, John-ga [[*t* katta] hito]-o sitte iru (koto)  
 that book-Acc -Nom bought person-Acc know (fact)  
 'John knows the person who bought that book'

It seems, however, that NP-*o* 'NP-Acc' can function as a kind of topic especially when it gets focalized:

- (ii) **?AMERIKA(-NO-KOTO)-O<sub>i</sub>**, John-ga [sono<sub>i</sub> rekisi]-ni kuwasii (koto)  
 America(-Gen-fact)-Acc -Nom its history-Dat familiar (fact)  
 'John is familiar with the history of America'

Hence, it is plausible to claim that in (i), *sono hon-o* 'that book-Acc' is not scrambled but base-generated in its surface position as a topic. Hence, the empty category within the relative clause should not count as a trace but as an empty pronominal, as represented below:

## (143) Complex NP Constraint

- a. \*?**SONO-MURA-NI**, John-ga [[*t* *sunde iru*]  
 that village-Dat -Nom reside  
 hito]-o sagasiteiru (koto)  
 person-Acc look for (fact)  
 'John is looking for a person who lives in that village'
- b. \*?**HOTERU-KARA**, John-ga [[*t* *dekakeru*]  
 hotel-f -Nom come out  
 hito]-o matibuse site iru (koto)  
 person-Acc lie in wait for (fact)  
 'John is lying in wait for people who come out from the  
 hotel'

## (144) Adjunct Condition

- a. \*?**SONO HANA-NI**, daremo-ga [*t* *mizu-o*  
 that flower-Dat everyone-Nom water-Acc  
 yara-zu] dekakete itta (koto)  
 give-without went-out (fact)  
 'everyone went out without watering that flower'
- b. \*?**SONO ISU-NI**, dareka-ga [*t* *suwari nagara*]  
 that chair-Dat someone-Nom sit while  
 hon-o yondeita (koto)  
 book-Acc was reading (fact)  
 'someone was reading a book while sitting on that  
 chair'

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(iii) **SONO HON-O<sub>i</sub>**, John-ga [[*pro<sub>i</sub>* *katta*] hito]-o sitte iru (koto)  
 that book-Acc -Nom bought person-Acc know (fact)  
 'John knows the person who bought that book'

- c. ??SIAI-NO KEKKA-NI, daremo-ga [t totemo  
 game-Gen result-Dat everyone-Nom very  
 gakkarisite] kyuujuu-o atonisita (koto)  
 disappointed ball park-Acc left (fact)  
 'everyone left the ball park, disappointed about the  
 result of the game'

These examples are deviant especially when we pronounce them with a pause after the scrambled phrases. It is plausible to assume that in such cases like (143-144), scrambling is triggered by a focus feature. It then follows from our analysis that just like scrambling in generic sentences, scrambling with stressed scrambled phrases like (143-144) is subject to the "domain barriers."

#### 4.6 Concluding Remarks

To summarize this chapter, it was first pointed out that unlike English overt wh-movement and topicalization, scrambling is not subject to the "domain barriers." I have argued that exactly like merger of adjuncts, scrambling, which is not driven by any formal feature, is required to apply postcyclically by our theory of phrase structure. Scrambling therefore may apply after the "domain barrier" is merged with the main structure. The lack of the "domain barrier" effects with scrambling follows. I have also argued that the apparent "domain barrier" effects with scrambling is due to the A-over-A condition at PF. Scrambling, however, is not always devoid of the "domain barrier" effects. It was shown that scrambling in generic sentences exhibits the "domain barrier" effects, so does scrambling in non-generic sentences where scrambled phrases get stressed. I have argued that scrambling is only

subject to the "domain barriers" if it has a focus reading and thus a focus feature as its trigger. This is exactly what is expected under our analysis of the "domain barriers," which claims that feature-driven movement, but not non-feature-driven movement, is subject to the "domain barriers." The presence/absence of the "domain barrier" effects with scrambling therefore lends strong empirical support for our theory of the composition of phrase structure.