"Anti-Scrambling"*

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1. Introduction:

Saito and Hoji (1983), Hoji (1985) and Saito (1985) attempt to establish that the so-called free word order in Japanese is made possible by the application of scrambling, an instance of A'-movement. In their approaches, which we will collectively refer to as the "Scrambling Approach," it is also claimed that, as an instance of Move α, scrambling can freely apply within a clause, as in (1b) and (1c) below, or across a clause boundary, as in (1d), and hence there is no need to assume more than one distinct types of preposing rules:

(1)

a. Unmarked Order: [$_{IP}$ John-ga [$_{VP}$ Mary-ni key-o watasita]]
nom dat acc handed

'John handed the key to Mary.'

b. Marked Order: [$_{IP}$ Key$_1$-o [$_{IP}$ John-ga [$_{VP}$ Mary-ni t_1 watasita]]]
↑ acc nom dat |
|_____|

c. Marked Order: [$_{IP}$ John-ga [$_{VP}$ key$_1$-o [$_{VP}$ Mary-ni t_1 watasita]]]
nom ↑ acc dat |

d. Marked Order across a Clause Boundary:

[$_{IP}$ Key$_1$-o [$_{IP}$ boku-ga [$_{IP}$ John-ga Mary-ni t_1 watasita to]
↑ acc I-nom nom dat | handed comp

omotta]] wake
thought reason

'the reason why I thought that John handed the key to Mary.'

As we will see directly below, however, their impressive array of arguments supporting the Scrambling Approach seem to be somewhat undermined, leaving variety of facts unaccounted for. In this paper, I will attempt to defend the Scrambling Approach to the free word order, arguing that those unexplained facts follow from the hypothesis that

the free word order in Japanese is made possible not only by the application of scrambling as A'-movement but also by the application of what I will call "anti-scrambling," which also is an instance of Move α, but applying in the LF component rather than in overt syntax.

In Section 2, we will point out and analyze what seems to be problematic to the Scrambling Approach. In Section 3, we will offer a solution to those problems, which incorporates "anti-scrambling" as a possible option in the grammar. In that section, we will also spell out the theoretical background essential to our proposal. In Section 4, we will provide further motivations to the proposed approach. Finally, in Section 5, we will discuss the theoretical implications of the proposed approach, especially in regard to the Projection Principle (Chomsky (1981)).

2. Problems:

2.1. Quantifier scope:

We now turn to what seems to be left unaccounted for in the Scrambling Approach. The first problem concerns the scope interpretation of quantified expressions. Kuroda (1970) and Hoji (1985) compare the sentences with an unmarked word order as in (2) below with those with a marked word order as in (3), and report that quantified arguments may exhibit scope ambiguity only in (3): ($Q_1 > Q_2$ indicates that Q_1 has scope over Q_2.)

(2) Unmarked Word Order:

a. **Dareka-ga daremo-o** aisiteiru (E>∀/??∀>E)
someone-nom everyone-acc love

'Someone loves everyone.'

b. Taroo-ga [$_{VP}$ **dareka-ni** **dono-himitu-mo** utiaketa] (E>∀/??∀>E)
nom someone-dat every=secret confided

'Taro confided someone every secret.'

c. **[Taroo ka Ziroo (no dotiraka)]-ga** **dono-nimotu-mo**
or (one=of=the=two)-nom every=parcel

sirabeta (OR>∀/??∀>OR)
checked

'Taro or Jiro checked every parcel.'

(3) Marked Word Order:

a. **Dareka-o** **daremo-ga** aisiteiru (ambiguous)
someone-acc everyone-nom

b. Taroo-ga [$_{VP}$ **donohimitu-mo** **dareka-ni** utiaketa] (ambiguous)
every=secret someone-dat

c. **Dono-nimotu-mo** **[Taroo ka Ziroo (no dotiraka)]-ga**
every=parcel or (one=of=the=two)-nom

sirabeta (ambiguous)
checked

Elaborating on Kuroda's original claim, Hoji ascribes this contrast to the application of scrambling in (3) and its absence in (2). In his analysis, the representations of (2a) after Quantifier Rule (QR) applies at LF will be either (4a) or (4b) below, while LF representations of (3a) will be (5a) or (5b):

(4) Unmarked Word Order:

a. LF: [$_{IP}$ dareka$_1$**-ga** [$_{IP}$ daremo$_2$-o [$_{IP}$ t_1 t_2 V]]] (E>∀)
someone-nom everyone-acc

b. LF: [$_{IP}$ daremo$_2$**-o** [$_{IP}$ dareka$_1$-ga [$_{IP}$ t_1 t_2 V]]] (*∀>E)
everyone-acc someone-nom

(5) Marked Word Order:

a. LF: [$_{IP}$ dareka$_1$-ga [$_{IP}$ daremo$_2$-o [$_{IP}$ t_2 t_1 ***t***$_2$ V]]] (E>∀)
someone-nom everyone-acc

b. LF: [$_{IP}$ daremo$_2$-o [$_{IP}$ dareka$_1$-ga [$_{IP}$ t_2 t_1 t_2 V]]] (∀>E)
everyone-acc someone-nom

These LF representations, then, are assumed to be subject to the scope condition as described in (6), whose essence has been inherited from a similar condition proposed by Reinhart (1983) and Huang (1982):[1]

(6) Scope Condition:

LF: [Q_1 [Q_2 [... t_2 ... [... t_1 ...]]]] ==> *Q_1 > Q_2

This condition can be regarded as representing the descriptive generalization such that two quantifiers in the same sentence can provide a scope interpretation relative to each other if and only if their c-command relation is identical to the c-command relation of their traces. It, then, correctly rules out the LF representation (4b), while permiting all others. Note that, in (5a), a crucial appeal is made to the presence of the rightmost trace left behind by scrambling to account for the scope ambiguity in sentence (3a).[2]

Unfortunately, however, the crucial facts here do not seem to be as clear-cut as the argument itself. While the sentences with the marked word order as in (3) exhibit rather clear scope ambiguity to all, the scope interpretation in the sentences with an unmarked word order as in (2) is somewhat obscured --- some at least weakly, and in fact only weakly, detect scope ambiguity while others do not. At least to some speakers, therefore, the contrast between (2) and (3) exists not in the absence versus presence of scope ambiguity, but in the

presence of weak versus strong scope ambiguity. What is left to be accounted for in the Scrambling Approach, therefore, is: (i) how this variation among speakers arises, especially why some speakers detect scope ambiguity even in the sentences with unmarked word order,[3] and (ii) why this scope ambiguity must be weak in contrast to the strong ambiguity detected in the sentences with marked word order.[4]

2.2. Long-distance vs. Short-distance Scrambling:

The second problem concerns the distinction between long-distance scrambling and short-distance scrambling. As Saito (1985) acknowledges, the long-distance (LD-) scrambling and short-distance (SD-) scrambling exhibit a rather clear contrast in some different respects.

First, as illustrated in (7) below, native speakers' judgments become quite obscured and varient when short-distance scrambling causes an instance of crossover involving pronominal coreference, while, let us point out, similar pronominal coreference seems to become much easier when long-distance scrambling is involved, as in (8):

(7) Pronominal Coreference with SD-Scrambling:

a. ?*[John$_1$-no titioya]$_2$-o kare$_1$-ga sahodo t_2
gen father-acc he-nom that=much

sonkeisiteinai (koto)
does=not=respect

'He doesn't respect John's father that much.'

b. ?*[John$_1$-no hahaoya]$_2$-o kare$_1$-ga t_2 aisite-iru (koto)
gen mother-acc he-nom love

'He loves John's mother.' (Saito (1985, 47-8))

c.??/?*[John$_1$-no sensei]$_2$-o kare$_1$-ga (zibun-de) t$_2$
gen teacher-acc he-nom (by-self)

syookaisita (koto)
introduced

'He introduced John's teacher.' (Saito (Ibid.))

d. ?*Hanako-ga [Taroo$_1$-no sensei]$_2$-o kare$_1$-ni t$_2$
nom gen teacher-acc he-dat

syookaisita (koto)
introduced

'Hanako introduced Taro's teacher to him.'

(8) Pronominal Coreference with LD-Scrambling:

a. [John$_1$-no titioya]$_2$-o, boku-ga [kare$_1$-ga sahodo t$_2$
gen father-acc I-nom he-nom not=very

sonkeisiteinai to] handansita konkyo
does=not=respect comp judged basis

'(the reason that) I judged that he doesn't respect John's father that much.'

b. [John$_1$-no sensei]$_2$-o, boku-ga [kare$_1$-ga (zibun-de) t$_2$
gen teacher-acc I-nom he-nom (by-self)

syookaisita koto]-o yoku oboeteiru riyuu
introduced fact-acc well remember reason

'(the reason why) I remember well that he introduced John's teacher by himself.'

c. [Taroo$_1$-no sensei]$_2$-o, boku-ga [Hanako-ga kare$_1$-ni t$_2$
gen teacher-acc I-nom nom he-dat

syookaisita koto]-o yoku oboeteiru riyuu
introduced fact-acc well remember reason

'(the reason that) I remember well that Hanako introduced Taro's teacher to him.'

Second, it seems to be the case that the preposed phrase in long-distance scrambling necessarily constitutes an independent prosodic phrase, rather naturally stressed and followed by a pause, while such

may or may not be the case with short-distance scrambling. Thus, as illustrated in (9) and (10), the sentences with short-distance scrambling may or may not be uttered with a stress followed by a pause, while those with long-distance scrambling seem to obligatorily involve them, as illustrated in (11): (Capitalization and accent marks (' and `) indicate stress, and // indicates a pause.)

(9) a. [**KÉY**$_1$**-O** // John-ga Mary-ni $\underline{t}_1$ watasita]
acc nom dat handed

b. [Key$_1$-o John-ga Mary-ni $\underline{t}_1$ watasita (koto)]

(10) a. [John-ga **KÉY**$_1$**-O** // Mary-ni $\underline{t}_1$ watasita]

b. [John-ga key$_1$-o Mary-ni $\underline{t}_1$ watasita (koto)]

(11) [$_{IP}$ **KÉY**$_1$**-O** // boku-ga [$_{IP}$ John-ga Mary-ni $\underline{t}_1$ watasita to]
comp
omotta] wake
thought reason

Third, long-distance scrambling seems to inevitably involve clear focus interpretation on the preposed phrase, while such may or may not be the case with short-distance scrambling.

Thus, a non-trivial task left to be fulfilled in the Scrambling Approach is to systematically capture the clear and consistent contrasts between long-distance scrambling and short-distance scrambling. If such contrasts are left unaccounted for, they will significantly undermine the claim that a single rule of Move α is responsible for both the long-distance and short-distance marked word order.

2.3. Stress:

The third problem concerns stressing. A rather surprising fact is that the placing of an emphatic stress on certain phrases, which is also rather naturally followed by a brief pause, seems to drastically change grammatical judgments involved in many different constructions.

For instance, Saito (1985) reports that the pronominal coreference involving the crossover caused by short-distance scrambling as in (7) suddenly becomes easier when the preposed phrase is stressed, as in (12):

(12) a. **[JOHN$_1$-NO TITIOYA]$_2$-O** // kare$_1$-ga t$_2$ sahodo sonkeisiteinai (koto

b. **[JOHN$_1$-NO HAHAOYA$_2$]-O** // kare$_1$-ga t$_2$ aisite iru (koto)

c. Hanako-ga **[TAROO$_1$-NO SENSEI]$_2$-O** // kare$_1$-ni t$_2$ syookaisita (koto

Second, even the sentence with the unmarked word order as in (2a) and (2b) comes to exhibit a quite clear scope ambiguity when the quantified subject is stressed, as in (13):

(13) a. **DA-REKA-GA** // *daremo-o* aisiteiru (ambiguous)
someone-nom everyone-acc love

'Someone loves everyone.'

b. Taroo-ga [$_{VP}$ **DA-REKA-NI** // *donohimitu-mo* morasita] (ambiguous)
nom someone-dat every=secret confided

'Taro let every secret out to someone.'

c. **[TAROO KA ZIROO (NO DOTIRAKA)]-GA** // *dono-nimotu-mo*
or (one=of=the=two)-nom every=parcel

sirabeta (ambiguous)
checked

'Taro or Jiro checked every parcel.'

In the Scrambling Approach, it is claimed that quantified expressions in Japanese exhibit scope ambiguity when and only when the application of Move α creates the marked word order. The scope ambiguity detected in the sentences in (13), therefore, will be problematic to this approach, since the two quantified arguments retain their unmarked order in these sentences. One obvious way to solve this problem is to assume that scrambling has actually applied in (13). This option, however, is explicitly denied in the Scrambling Approach, with the assumption as in (14):[5]

(14) A syntactic adjunction operation cannot apply if it does not change the order of the overt lexical string.

(Hoji (1985))

This condition is considered to be necessary to ensure the alleged lack of scope ambiguity in the sentences with unmarked word order, as in (2) above. Without such a condition, the double application of scrambling as in (15) would permit scope ambiguity:

(15) a. D-str: Q_1-ga Q_2-o V == scrambling ==>

b. Q_2-***o*** Q_1-ga t_2 V == scrambling ==>
↑_____|

c. S-str: Q_1-***ga*** Q_2-o t_1 t_2 V
↑_____|

Thus, in order for the Scrambling Approach to scope ambiguity to be maintained, not only the variation among speakers' judgments mentioned in 2.1. above but also the effect of stressing as in (13) must be systematically captured.

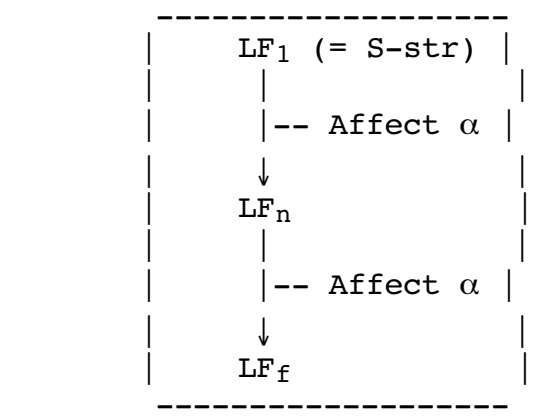
3. Solution:

3.1. Theoretical Background:

Befor we turn to our proposals, let us spell out some of the theoretical assumptions.

To begin with, we will clearly distinguish the notions "component of grammar" and "representations in a component" in such a way that, for instance, the initial representation within the LF component (LF_1), which is equivalent to the final representation of the overt syntax component (S-structure), is mapped onto the final representation within the LF component (LF_f) by one or more applications of Affect α, as illustrated in (16):[6]

(16) LF Component



I will also assume that rules and principles within a single component need not be extrincically ordered, and hence LF licensing of various syntactic entities may take place at any stage of derivation within this component(, while there may exist certain conditions that must be satisfied on the final representation of the component). We will

elaborate on this later in Section 5. We then will adopt the following specific working hypotheses.

First, we will adopt one version of the Internal Subject Hypothesis proposed and argued for by Kitagawa (1986) and Kuroda (1988), in which certain type of sentences in Japanese and English are analyzed as distinct from each other with respect to the location of the subject of a sentence **at LF**, as schematically illustrated in (17):

(17) a. Internal Subject Hypothesis (Japanese):

LF: $[_{IP}\ [_{VP}$ Subject Object Verb $]]$

b. Internal Subject hypothesis (English):

LF: $[_{IP}$ Subject$_1$ $[_{VP}$ t_1 Verb Object $]]$

Under this hypothesis, the base-generated VP-internal subject in an English sentence typically undergoes movement in overt syntax, leaving a trace behind, due to the Case Filter and/or the obligatory agreement required by INFL at S-structure, as in (17b). In a sentence in Japanese, on the other hand, the base-generated VP-internal subject typically remains to be located within the VP, as in (17a).[7]

The Internal Subject Hypothesis sketched out here provides us with at least two desirable consequences. First, it provides us with a means to simplify the θ-theory, at the same time capturing the traditional semantic notion of predicate-argument relation in syntax. Subjects and objects can now be uniformly θ-marked under government (in its simplest definition) within the maximal phrase of the predicate. There is no need to treat the θ-marking of subjects in any different way from that of objects.[8] Second, we can now explain, without any stipulation, why English does, but Japanese does not

exhibit an ECP violation when a subject is extracted at LF out of an island (Lasnik and Saito (1984), cf. Huang (1982)).

Note that, under the Internal Subject Hypothesis, we need not maintain the notion "potential argument position," since the "SPEC of INFL" now is a completely θ-less position. In a sense, then, we also lose our motivation to maintain the substitution status of NP-movement. Reflecting this theoretical consequence, I assume that the subject has been adjoined to IP in (17b) rather than that it has been moved into a base-generated empty subject position. Note that this assumption allows us to eliminate the notion "empty place holders (Δ)" entirely from grammar. Given the unclear status of such place holders in the theory, and given the plausibility of the selection-driven theory of phrase structures (Chomsky (1981), Stowell (1981)), this, I believe, is not an unreasonable move to take. A crucial distinction between what has been recognized as A-bar movement and A-movement, then, should be captured in terms of the operator versus the non-operator status of the moved items.[9]

Second, I will adopt (18) below as one of the guidelines of UG:

(18) Isomorphy Constraint: (Kitagawa (1986))

Representations at distinct syntactic levels are isomorphic unless principles of grammar require otherwise.

This constraint has an effect of prohibiting any superfluous applicatin of Move α. It can be regarded as a more generalized version of the Last Resort Principle (Chomsky (1986)), or a more restricted version of the Least Effort Principle (Chomsky (1989)).

Finally, we will adopt and elaborate on the system of Case proposed by Saito (1985), which can be identified as a type of Case

checking theory proposed by Jeaggli (1982). The major claim of this approach is that there exist two distinct sets of Case particles in Japanese, each of which is licensed in its own way. In particular, the accusative Case particle -*o* is claimed to be "lexically" licensed by abstract accusative Case assigned by a predicate, while the nominative Case particle -*ga* is "contextually" licensed under IP, and the failure of either type of licensing will lead a sentence to ungrammaticality.

The dichotomy between lexical Case and contextual Case in Japanese is empirically well-motivated. For example, as noted by Mikami (1972), the nominative particle -*ga* may be converted into the genitive particle -*no* under a nominal projection as in (19b), while the accusative particle -*o* may never undergo such conversion, as illustrated in (19a-b):

(19) Case Conversion:

a. [$_{IP}$ kodomo-ga e-o kaita]
child-nom picture-acc drew

'A child drew a picture.'

b. [$_{NP}$ [$_{IP}$ kodomo-**no** pro_1 kaita] e_1]
child-gen drew picture

'a picture drawn by a child'

c. [$_{NP}$ [$_{IP}$ pro_1 e-***no*** kaita kodomo]]
picture-gen drew child
↑__ACC___|

As Saito (Ibid.) points out, the contrast here follows from the assumption that lexical Case involves abstract Case assignment by a lexical head, while contextual Case does not. Thus, as illustrated in (19c), when the accusative particle -*o* undergoes Case conversion, a conflict arises between the genitive particle -*no* and the abstract

accusative Case lexically assigned by the verb. On the other hand, when the nominative particle -*ga* undergoes Case conversion, as in (19b), no such conflict arises since no abstract Case assignment is involved.

Contextual Case also crucially differs from lexical Case in that it may appear on indefinitely many NPs. Thus, the nominative-marked NPs may be indefinitely stacked (Kuno (1973)) under IP (Saito (Ibid.), Takezawa (1987)) as long as the sentence is interpretable:[10]

(20) a. [$_{IP}$ Suisu-**ga** [$_{IP}$ kokumin-**ga** [$_{IP}$ sankakokugo-**ga**
Switzerland-nom people-nom three=languages-nom

wakaru]]]
can=comprehend

'It is Switzerland where people can comprehend three languges.'

a. [$_{NP}$ Suisu-**no** [$_{N"}$ kokumin-**no** [$_{N'}$ sankakokugo-**no**
Switzerland-gen people-gen three=languages-gen

rikai]]
comprehension

'the comprehension of three languages by the people in Switzerland'

Obviously, some predicates are lexically specified to assign abstract Case while others are not. We will capture this by assuming that the lexical Case assigning property of each predicate is represented in the lexicon in the form of Case-grid along with its θ-grid (Stowell (1981)), as exemplified in (21):[11]

(21) *kak* 'to draw':

Theta-grid: [AGENT [THEME __]]

Case-grid: [[ACC __]]

Then, combining Case-grids with another LF principle as in (22), we can formally capture the facts we saw in (19b-c) that the accusative particle -*o* cannot undergo Case conversion:

(22) Obligatory Case Discharge: (LF)

Each abstract Case represented in the Case-grid of a lexically-inserted predicate must be uniquely discharged.

In (19c) for instance, the principle (22) requires that the internal argument be marked with the particle -*o*, since, as shown in (21), the Case-grid of the predicate *kak* 'to draw' is specified in such a way that this predicate assigns abstract accusative Case to its most internal argument position.[12]

With these theoretical assumptions, we now turn to the main proposal.

3.2. Proposals: The Anti-Scrambling Approach

First, we characterize scrambling as an instance of Move α which has moved and adjoined a focuse operator to some higher node dominating its original position. As is well-known, a focused item is often, if not always, accompanied by some kind of emphatic intonation wherever in a sentence it may be located. We, thus, expect that the phrase preposed by scrambling is interperted as a focus, and is at least mildly stressed and followed by a brief pause, whether scrambling applies within a clause or across a clause boundary.

When scrambling is long-distance, this exhausts the possible analysis, and the preposed phrase is necessarily followed by a pause, and is unmistakably interpreted as a focus with at least a mild stress (cf. Haig's (1976) "emphatic fronting"). When we obtain marked word

order within a single clause, on the other hand, I claim that the sentence can be structurally ambiguous. In particular, as schematized in (23a) below, it may involve scrambling in overt syntax, just as in the cases involving long-distance preposing, or, as in (23b), it may simply involve base-generated marked order (cf. Hale (1980), Farmer (1980)):

(23) a. S-str: $[_{IP}$ **NP**$_1$**-O** // $[_{IP}$ NP-ga t_1 V]] (SD-scrambled)

b. S-str: $[_{IP}$ NP-o NP-ga V] (Base-generated)

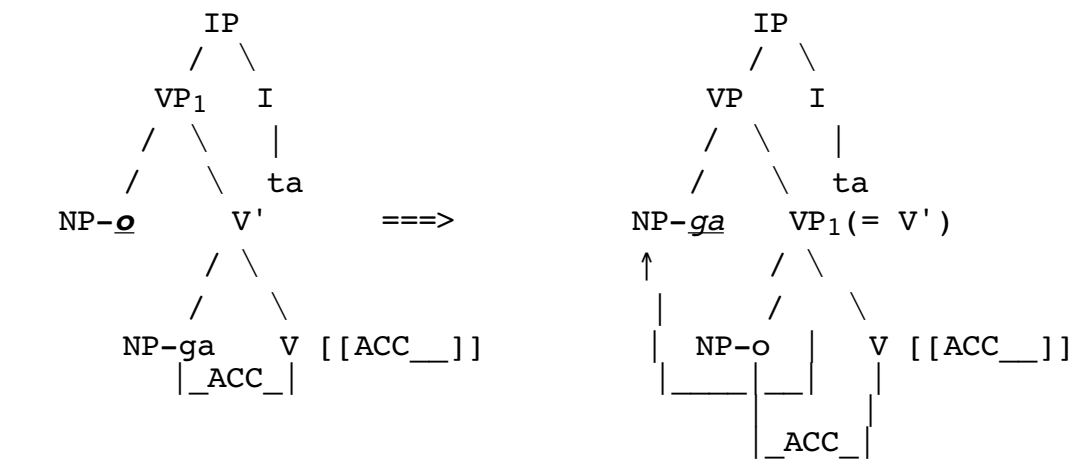
The phrases dislocated within a single clause, therefore, are sometimes stressed and followed by a pause, interpreted as a focus, and sometimes not. In this way, we can capture the contrast between long-distance scrambling and short-distance scrambling with respect to focus interpretation and prosodic phrasing.

Suppose now that the verb in (23) has the property to assign abstract accusative Case. When the derived marked word order in (23a) reaches the LF component, the particle -*o* on the dislocated NP can be lexically licensed by the abstract accusative Case in its syntactic chain. The derived marked word order in (23a), in other words, can be treated on a par with the unmarked word order with respect to Case-marking due to the presence of the trace in the internal argument position. The base-generated marked word order in (23b), on the other hand, would give rise to a Case conflict between the nominative Case particle and abstract accusative Case obligatorily assigned by the verb at LF, since, as illustrated in (24a) below, the Case particle -*o* is base-generated in the position where the accusative abstract Case

of the predicate cannot be assigned in accordance with its Case-grid ([[ACC__]]):

(24) Antiscrambling:

a. LF_1: b. LF_2:



Move α, therefore, is triggered to alter the hierarchical order of the arguments, or in our terms to "anti-scramble" the arguments, as in (24b). Application of anti-scrambling, in other words, can be characterized as "Case-driven."

Crucially, we are assuming here that anti-scrambling does not leave a trace behind, following Pesetsky (1982) and Lasnik and Saito (1984), who hypothesize that Move α leaves a trace behind if and only if principles of grammar require its presence. Note, in particular, that the θ-Criterion does not require the presence of a trace in the output of anti-scrambling. Note also that the "anti-scrambled" *ga*-phrase in (24b) can be successfully θ-marked under government in accordance with the Internal Subject Hypothesis.

Thus, in the approach incorporating both scrambling and anti-scrambling, a sentence involving long-distance preposing is assigned

only one structural representation at S-structure as in (25) below, while that involving short-distance preposing can be assigned two, as in (26):

(25) LD-scrambling:

[$_{IP}$ [John$_1$-no titioya]$_2$-o boku-ga [$_{CP}$ [$_{IP}$ kare$_1$-ga sahodo t_2
gen father-acc I-nom he-nom that=much |
↑_____|

sonkeisiteinai] to] handansita konkyo
does=not=respect COMP judged basis

(26)

a. SD-scrambling:

[$_{IP}$ [John$_1$-no titioya]$_2$-o [$_{IP}$ kare$_1$-ga sahodo t_2 sonkeisiteinai]]
gen father-acc he-nom that=much | does=not=respect
↑_____|

b. Base-generated:

[$_{IP}$ [John$_1$-no titioya]-o kare$_1$-ga sahodo sonkeisiteinai]

With these analyses, let us now turn to the problems concerning pronominal coreference, which we have looked at in 2.2. and 2.3. above.

Both in (25) and (26a), where scrambling is involved, the intended pronominal coreference does not violate the Condition C/D of the Binding Theory (Chomsky (1981), Lasnik (1989)), and yield a well-formed representation. Note that neither of the coindexed items c-commands the other in these representations.

When (26b) reaches the LF component, on the other hand, anti-scrambling is obligatorily triggered by the potential conflict between the abstract accusative Case to be discharged by the verb *sonkeis*

'respect' and the Case particle -*ga*. (cf. (22)) The arguments, thus, come to be reordered as in (27):

(27) LF: [$_{VP}$ kare$_1$-ga [John$_1$-no titioya]-o __ sahodo sonkeisi]-teinai
↑_____|

The resulting LF representation, however, must be ruled out since it violates the Condition C/D. Note that *kare* 'he' comes to c-comand the name *John* in (27).

We then may capture the contrast between long-distance scrambling and short-distance scrambling concerning pronominal coreference in the following way. First, long-distance preposing makes the pronominal coreference in (25) completely licit, since it will not yield any c-command relation between *John* and *kare* 'he' in the resulting LF representation. On the other hand, native speakers' judgments concerning pronominal coreference become varied and/or obscured in the cases involving short-distance preposing, due to the existence of a potential structural ambiguity caused by scrambling and anti-scrambling, as in (26).[13,14]

We also predict that stressing the preposed phrase makes the coreferential reading in question much more acceptable even in the cases involving short-distance preposing, as in (28) below, since it has an effect of eliminating the potential structural ambiguity, enforcing the scrambling analysis of the sentence as in (26a):

(28)(?)[$_{IP}$ [$_2$ **JOHN**$_1$**-NO TITIOYA**]**-O** // [$_{IP}$ kare$_1$-ga t$_2$ sahodo
gen father-acc he-nom that=much
sonkeisiteinai]] (koto)
does=not=respect (fact)

Thus, supplementing the Scrambling Approach with anti-scrambling, we can provide a systematic account of the otherwise puzzling contrasts between long-distance and short-distance preposing concerning focus interpretation, prosodic phrasing, and pronominal coreference.[15]

The extreme difficulty of the intended coreference in the example in (29) below also suggests that our approach is on the right track:

(29) *[John$_1$-no titioya]-o kare$_1$-ga **NANTO NAGUTTESIMATTA** sooda
gen father-acc he-nom surprisingly punched I=heard

'To my surprise, I heard that he punched John's father.'

In this example, a clear focus is placed on the predicate, which makes it difficult to interpret the dislocated *o*-marked phrase as a focus. Presumably, this has an effect of eiminating the possibility of analyzing this sentence as involving scrambling of the preposed phrase as in (26a), and, as a result, the indicated pronominal coreference becomes totally impossible as expected in our approach. This sentence, in other words, must be analyzed to involve anti-scrambling at LF, and yields the representation as in (27) above. It therefore necessarily parallels the base-generated representation in (30) below, in which the indicated pronominal coreference is totally inhibited, presumably due to the Condition C/D:

(30) D/S/L: ***Kare**$_1$-ga [**John**$_1$-no titioya-o] sahodo
he-nom gen father-acc that=much

sonkeisiteinai (koto)
does=not=respect (fact)

'He does not respect John's father that much.'

In our approach, which incorporates anti-scrambling in addition to scrambling (henceforth, simply the "Anti-scrambling Approach"), we also predict that potential structural ambiguity exists even when a sentence involves unmarked word order. Suppose first that marked word order is base-generated as in (31a), and then scrambling preposes the *ga*-marked NP in overt syntax, as in (31b). What we see at surface in this sentence, therefore, is unmarked word order. When this representation reaches the LF component, however, the trace left behind in the most internal argument position must move out so that the abstract accusative Case of the transitive verb can be correctly dicharged. It therefore necessarily undergoes anti-scrambling in the LF component, as in (31c):

(31) a. D-str: NP-o NP-ga Vt (Base-generated)

b. S-str/LF_1: NP_3-***ga*** NP-o ***t***$_3$ Vt (Scrambled)
↑_____|

c. LF_2: NP_3-ga ***t***$_3$ NP-o __ Vt (Anti-Scrambled)
↑_____|

In this analysis, then, a sentence with unmarked word order at surface may involve two distinct derivations: the derivation as in (31) as well as the derivation in which the base-generated unmarked word order is retained all the way through to the final representation in the LF component, as in (32):[16]

(32) D-str/S-str/LF: NP-ga NP-o V

With such ambiguity involved in a sentence with unmarked surface order in mind, let us now turn to the problems of quantifier scope

mentioned in 2.1. above. In accordance with the analyses in (31) and (32) above, the sentence in (33) below now can be ambiguously analyzed to have a derivation up to S-structure as schematically illustrated in (34) or one in (35):

(33) Dareka-ga daremo-o aisiteiru (E>∀/??∀>E)
someone-nom everyone-acc love
'Someone loves everyone.'

(34) Surface Unmarked Word Order (Base-generated):

D-str = S-str: E-ga ∀-o V

(35) Surface Unmarked Word Order (Scrambled and To be Anti-Scrambled):

a. D-str: ∀-o E-ga V === Scrambling ==>

b. S-str: **E**$_1$**-ga** ∀-o **t**$_1$ V
↑_____|

When the S-structures in (34) and (35b) reach the LF component, the quantified expressions in these representations are subject to the licensing condition as in (36) below, and come to acquire their scope in accordance with the definition of scope in (37):

(36) Licensing Condition for Quantified Expressions:

A quantified expression has scope.

(Higginbotham (1983))

(37) Scope of Quantified Expressions:

A quantified expression has scope over its c-command domain containing a variable it binds.

(cf. May (1977))

In (34), for instance, each quantified expression will undergo Quantifier Rule (QR), an instance of Move α, in order to satisfy (36), and yields two LF representations as in (38):

(38) QR only:

a. S-str/LF_1: E-ga ∀-o V

b. LF_{f-a}: $\underline{\forall}_2$-o $\underline{E}_1$-ga $\underline{t}_1$ $\underline{t}_2$ V (*∀ > E)

c. LF_{f-b}: $\underline{E}_1$-ga $\underline{\forall}_2$-o $\underline{t}_1$ $\underline{t}_2$ V (E > ∀)

Here, we can inherit Hoji's account and conclude that (38c) does, but (38b) does not, yield a possible scope interpretation due to the Scope Condition (6) (repeated here as (39) below):

(39) Scope Condition: (=(6))

LF: $[\underline{Q}_1\ [Q_2\ [\ \ldots\ \underline{t}_2\ \ldots\ [\ldots\ \underline{t}_1\ \ldots]]]]$ ==> *Q_1 > Q_2

When the representation (38b) reaches the LF component, on the other hand, it may be mapped onto the final representation LF_f either as in (40) or as in (41) below, since the application of anti-scrambling and QR is not extrincically ordered:

(40) Anti-Scrambling < QR:

a. S-str = LF_1: E_1-ga ∀-o t_1 V

=== Anti-Scrambling ==>

b. LF_2: E_1-ga t_1 ∀-o __ V
↑_____|

=== QR ==>

c. LF_{f-a}: $\underline{E_1\text{-ga}}$ $\underline{\forall_2\text{-o}}$ t_1 $\underline{t}_1$ $\underline{t}_2$ V (E > ∀)

c'. LF_{f-b}: $\underline{\forall_2\text{-o}}$ $\underline{E_1\text{-ga}}$ t_1 $\underline{t}_1$ $\underline{t}_2$ V (*∀ > E)

(41) QR < Anti-Scrambling:

a. S-str = LF_1: E_1-ga $\forall$-o t_1 V

=== QR ==>

b. $LF_{2\text{-}a}$: $\underline{E}_1$-ga $\underline{\underline{\forall}}_2$-o $\underline{t}_1$ $\underline{\underline{t}}_2$ t_1 V (E > $\forall$)

b'. $LF_{2\text{-}b}$: $\underline{\underline{\forall}}_2$-o $\underline{E}_1$-ga t_1 $\underline{\underline{t}}_2$ $\underline{t}_1$ V ($\forall$ > E)

=== Anti-Scrambling ==>

c. $LF_{f\text{-}a}$: E_1-ga $\forall_2$-o t_1 t_1 t_2 __ V
↑_____|

c'. $LF_{f\text{-}b}$: $\forall_2$-o E_1-ga t_1 t_1 t_2 __ V
↑_____|

Assuming that LF-licensing of syntactic entities may take place at any stage of derivation within the component,[17] we can now consider that the licensing of quantifiers (cf. (36)) and its concomitant scope determination (cf. (37)) may be successfully achieved in the LF representation (41 b') before anti-scrambling applies, which makes the higher scope reading of the universal quantifier in (33) available.

Recall here that we pointed out in Sections 2.1 and 2.3 above that the following questions remain unanswered in the Scrambling Approach to quantifier scope: (i) why some speakers detect scope ambiguity even in the sentences with unmarked word order, (ii) why this scope ambiguity must be weak in contrast to the strong ambiguity detected in the sentences with marked word order, and (iii) why stressing has an effect of making clear scope ambiguity available in (42):

(42) a. **DA-REKA⌈-GA** // *daremo-o* aisiteiru (ambiguous)
someone-nom everyone-acc love

'Someone loves everyone.'

b. Taroo-ga [$_{VP}$ **DA-REKA⌈-NI** // *donohimitu-mo* morasita] (ambiguous)
nom someone-dat every=secret confided

'Taro let every secret out to someone.'

c. **[TAROO KA′ ZIROO (NO DOTIRAKA′)]-GA** // *dono-nimotu-mo*
or (gen one=of=the=two)-nom every=parcel

sirabeta (ambiguous)
checked

'Taro or Jiro checked every parcel.'

Let us also point out here that applying long-distance preposing as in (43) below produces a similar effect of permitting clear scope ambiguity:[18]

(43) a. **DAREKA-GA** // boku-wa [*daremo-o* aisiteiru to]
someone-nom I-top everyone-acc love comp

sinzi-tai
believe-desirous

'I would like to believe that someone loves everyone.'

b. **DAREKA-NI** // watasi-wa [Taroo-ga *donohimitu-mo* morasita to]
someone-dat I-top nom every=secret confided comp

kiita
heard

'I heard that Taro had let every secret out to someone.'

c. [**TAROO KA′ ZIROO (NO DOTIRAKA′)**]**-GA** //
or (gen one of the two)-nom

boku-no kioku-de-wa [*dono-nimotu-mo* sirabeta] hazudesu
I-gen memory-with-top every=parcel checked ought=to=be

'If I remember correctly, Taro or Jiro checked every parcel.'

With the anti-scrambling Approach, we can now provide tentative answers to these questions. First, the scope ambiguity in (33) can arise because this sentence may be ambiguously analyzed as having the S-structure in (34) or that in (35b), and hence may involve the LF derivation in (41) in addition to those in (38) and (40).

We now also have a clue to capture the weakness of the scope ambiguity in sentences like (33). More likely than not, when we attempt to detect a higher scope reading of the universal quantifier in (33), our mind unconsciously attempts to associate the surface string of this sentence with an LF derivation that permits such an interpretation. While grammar does in fact permit such an LF derivation of (33), i.e., that in ((41)), this LF derivation must be associated with a PF representation which lacks the phonetic information to support it. Note that the subject NP in the PF representation of (33) is not accompanied by any focus intonation, and hence does not indicate that scrambling has actually applied in this sentence. This mismatch between LF and PF, we claim, enhances the markedness of the scope ambiguity in (33). We also tentatively claim that whether speakers may detect weak scope ambiguity in (33) or not depends on whether this marked option is permitted in their grammar or not.[19]

If this account is on the right track, we can also predict the effect of focus intonation and long-distance preposing in scope interpretation. When we place emphatic stress or apply long-distance preposing as in (42) and (43) above, it will force us to unmistakably analyze these sentences to involve scrambling, and hence to involve

the LF derivation identical or similar to (41). A clear scope ambiguity therefore is expected to arise.

On the other hand, as illustrated by the contrast in (44) below, when we make it difficult to interpret the subject to be a focus by focalizing the predicate, the sentence seems to become clearly unambiguous with respect to a scope interpretation, presumably because the sentence now is forced to involve the LF derivation as in (38):

(44) a. Dareka-ga daremo-o sibattesimatta (E > ∀/??∀ > E)
someone-nom everyone-acc roped

'Someone roped everyone.'

b. Dareka-ga Daremo-o **NANTO SIBATTESIMATTA** (E > ∀/*∀ > E)
surprisingly roped

This, again, points toward the correctness of our approach to ascribe the detected scope ambiguity and its markedness in (33) to the potential ambiguity of this sentence. Note also that the Isomorphy Constraint (18) prohibits the superfluous application of anti-scrambling to the arguments in (44b).

To sum up, we have argued that, by incorporating an option of applying anti-scrambling at LF, we can strengthen the Scrambling Approach to the free word order, systematically capturing the otherwise puzzling contrasts between long-distance and short-distance scrambling, the variation/fuzziness of native judgments, and the effects of stressing.[20]

4. Further Motivations:

4.1. Weak Crossover

At least two other grammatical phenomena seem to motivate the proposed approach in a similar way.

First, speakers' judgments concerning a Weak Crossover violation in the sentences like (45) below seems to involve certain amount of variation and fuzziness.[21] While all seem to agree that the bound variable interpretation of the empty pronouns in these sentences is rather difficult, they do not necessarily agree upon the degree of difficulty --- some find it at least marginally acceptable, while others completely reject it. Note crucially that the sentences in (45) have unmarked word order:

(45) a.??/*[$\underline{pro}_1$ hahaoya]-ga $\underline{daremo}_1$-o kokoro-kara aisiteiru (koto)
mother-nom everyone-acc sincerely love

'His/her mother sincerely loves everyone.'

b. ??/*[pro_1 $\underline{pro}_2$ aisiteiru $hito_1$]-ga $\underline{daremo}_2$-o
loves person-nom $\underline{everyone}$-acc

tuneni kabau to-wa kagiranai.
always try=to=protect COMP-top not=necessarily=the=case

'It's not necessarily the case that the one who loves him/her always tries to protect him/her.'

When we place focus intonation on the subject NP as in (46) below, on the other hand, the bound variable interpretation in question seems to suddenly become much easier to obtain:

(46) a. [$\underline{pro}_1$ **HAHAOYA**]**-GA** // $\underline{daremo}_1$-o kokoro-kara aisiteiru
mother-nom everyone-acc sincerely love

b. [pro$_1$ pro$_2$ **AISITEIRU HITO**$_1$]**-GA** // daremo$_2$-o
love person-nom everyone-acc

tuneni kabau to-wa kagiranai.

Here again, the Anti-Scrambling Approach will provide us with an account of the variation/fazziness of judgment we see in (45) as well as the effect of focus intonation in (46).

Observe first that sentences involving marked word order as in (47) below do not exhibit a Weak Crossover violation even if the linear and hierarchical order of the relevant items at surface is identical to that in (45a-b), as pointed out by Hoji (1985, 119-120):

(47) a. [pro$_1$ hahaoya]-**o** daremo$_1$-**ga** kokoro-kara aisiteiru (koto)
mother-acc everyone-nom sincerely loves

b. [pro$_1$ pro$_2$ aisiteiru hito$_2$]-**o** daremo$_1$-**ga**
loves person-acc everyone-nom

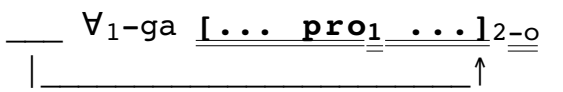
tuneni kabau to-wa kagiranai.

Suppose that scrambling has applied in these sentences, as schematically illustrated in (48):

(48) [... pro$_1$ ...]$_2$-o $\forall_1$-ga **t**$_2$ V
↑_____|

Then, as Hoji also points out, the lack of a Weak Crossover violation in (47a-b) can be regarded as a type of reconstruction phenomenon. We may assume, in other words, that the quantified expressions come to legitimately bind and license the empty pronouns in these sentences by virtue of actual LF-reconstruction as in (49) below or chain binding (Barss (1986)) mediated by the trace t_2 in (48):[22]

(49) LF-reconstruction:



When we incorporate this analysis into the Anti-Scrambling Approach, we may have an account for the facts pointed out for the examples (45a-b) above, since these sentences can now be ambiguously analyzed as involving the derivation in (50) or that in (51):

(50) Base-generated Unmarked Word Order:

a. D-str/S-str/PF/LF_1: [... pro ...]-ga ∀-o V

=== QR ==>

b. LF_f: ∀1-o [... pro ...]-ga t1 V

(51) Base-generated Marked Word Order (Scrambled and Anti-Scrambled):

a. D-str: ∀-o [... pro ...]-ga V

=== Scrambling ==>

b. $S\text{-str}/LF_1$: [... pro ...]2-ga ∀-o t2 V

=== QR ==>

c. LF_2: ∀3-o [... pro ...]2-ga t3 t2 V

=== Anti-Scrambled ==>

d. LF_f: ∀3-o [... pro ...]2-ga t2 t3 __ V

If the derivation in (50) is involved and *pro* in (50b) were to be bound and licensed by the c-commanding quantified expression, the

sentence would come to have a clear Weak Crossover violation. When the sentence involves the derivation in (51), on ther other hand, such licensing may take place at the stage of (51c) by way of reconstruction or chain binding due to the presence of the trace t_2.

Note, however, that, in order to avoid a Weak Crossover violation in the way just described, we must associate the derivation involving scrambling as in (51) with the surface strings as in (45a-b), which are not accompanied by any focus intonation to mark the application of scrambling. We claim again that this discrepancy enhances the markedness of the bound variable interpretation in the examples in (45). Thus, even if some speakers permit such a marked option, the bound variable interpretation in question is marginal at best.

When the same sentences are accompanied by focus intonation, as in (46), on the other hand, they can be analyzed as involving a derivation as in (51) without involving any markedness. The *pro* within the preposed *ga*-marked phrase thus can be legitimately licensed as a variable bound by the *o*-marked quantified expression at the stage of (51d) by virtue of LF-reconstruction or chain binding without causing any marginality.

Application of long-distance preposing also seems to make it possible to avoid a Weak Crossover violation, as illustrated in (52a-b) below:

(52) a. **[pro$_1$ hahaoya]-ga,** boku-wa [daremo$_1$-o kokoro-kara
mother-nom I-top everyone-acc sincerely

aisiteiru to] sinzi-tai.
love comp believe-desirous

'I would like to believe that his/her mother sincerely loves everyone.'

b. **[pro**$_1$ **pro**$_2$ **aisiteiru hito**$_1$**]-ga,** boku-wa [daremo$_2$-o
loves person-nom I-top everyone-acc

tuneni kabau to-wa kagiranai
always try=to=protect COMP-top not=necessarily=the=case

to] omou
comp think

'It's not necessarily the case that the one who loves him/her always tries to protect him/her.'

We can provide exactly the same account for this effect, since these sentences can be analyzed as involving a derivation similar to (51) as an unmarked option.

4.2. Quantifier Float

The Anti-Scrambling Approach will provide us with a similar account of the following paradigm involving quantifier float:[23]

(53) a. Local Q-float:

(Ano mise-kara kyoo itiniti-de)
(that store-from today one=day=in)

kodomo-ga [**biidama-o**], **gozyuk-ko** katta
children-nom marble-acc 50-pieces bought

'In one day today, children bought 50 marbles from that store.'

b. Non-local Q-float with Marked Word Order:

(Ano mise-kara kyoo itiniti-de)
(that store-from today one=day=in)

biidama-o [kodomo-ga], **gozyuk-ko** katta
50-pieces children-nom marble-acc bought

(54) Non-local Q-float with Unmarked Word Order:

a. (Ano mise-kara kyoo itiniti-de)
(that store-from today one=day=in)

??/***kodomo-ga*** [biidama-o], ***hutari*** katta
child-nom marble-acc 2=people bought

'In one day today, two children bought marbels from that store.'

b. ??/*Barentain-dei-ni ***Dansi-gakusei-ga*** [chocolate-o], ***san-nin***
On=Valentine's=day male=student-nom acc 3=people

kuremasita-yo
gave=me

'On Valentine's Day, three male students gave me chocolate.'

c. ??/*Korede ***gakusei-ga*** [syukudai-o], ***san-nin***
With=this student-nom home=work-acc three-people

teisyutusita-kotoninaru
submitted

'Counting this one, three students have handed in their home work.'

Pointing out that non-local quantifier float is possible only when marked word order is involved as in (53b), Haig (1980) and Kuroda (1980, 1983) argue for the movement analysis of free word order in Japanese. The essence of this argument goes as follows. If we assume that the sentence (53b) involves movement as schematically illustrated in (55) below, we may consider that the floating quantifier and the associated NP can be locally related to each other at one point of derivation in both (53a) and (53b), which makes quantifier float in these sentences possible:

(55) a. D-str: NP-ga ***NP-o*** ***Q*** V

b. S-str: ***NP***$_1$***-o*** NP-ga ***t***$_1$ ***Q*** V
↑_____|

In the sentence (54a-c), on the other hand, no such local relation can be assumed to exist at any stage of derivation. Non-local quantifier float, therefore, is prohibited in these sentences.

The speakers' judgments concerning quantifier float, however, also seem to involve certain amount of variation and fuzziness in a way quite similar to the judgments concerning a Weak Crossover violation. Some speakers actually report that they find non-local quantifier float marginally, and in fact only marginally, possible even in sentences like (54a-c). This fact, again, remains to be unaccounted for in the Scrambling Approach to quantifier float.

In the Anti-Scrambling Approach, on the other hand, we can solve this problem by analyzing sentences in (54) as involving either the derivation as in (56) or that in (57):

(56) Base-generated Unmarked Word Order:

D-str/S-str/PF/LF: **NP-ga** NP-o **Q** V

(57) Base-generated Marked Word Order (Scrambled and Anti-Scrambled):

a. D-str: NP-o NP-ga Q V

=== Scrambling ==>

b. S-str/LF_1: NP_1-ga NP-o **t**$_1$ **Q** V

↑_____|

=== Anti-scrambling ==>

c. LF_n: NP_1-ga t_1 NP-o __ Q V

↑_____|

Following essentially Haig/Kuroda's original claim, let us here assume that each floating quantifier is licensed in the LF component when it is locally associated with a proper type of NP.[24] We then may consider

that, while the floating quantifier in (56) does not have a chance to be licensed at any stage of derivation, that in (57) can be licensed at the stage of (57b). We can also ascribe the markedness of quantifier float in (54a-c) to the mismatch between their PF and LF representations with respect to the information concerning the existence of focusing in these sentences.

If this line of account is basically correct, we should again predict that the markedness of non-local quantifier float will disappear with the stressing and long-distance preposing of the subject NPs in (54a-c), and this indeed seems to be the case. When the sentences involve clear focusing as in (58a-c) below or long-distance preposing as in (59a-c), non-local quantifier floating seems to become much easier even with unmarked word order:

(58) a. (Kodomo-zyanakute) **OTONA-GA** // [biidama-o], **hutari**
(Not=kids=but) adult-nom mable-nom 2=people

kaimasita-yo
bought

'Not two kids, but two adults bought marbles.'

b. (Zyosigakusei-zyanakute) **DANSIGAKUSEI-GA** // [chocolate-o],
(Not=female=students=but) male-student-nom acc

san-nin kuremasita-yo
3=people gave=me

'Not three female students, but three male students gave me chocolate.'

c. Korede **BENKYOO-GIRAI-DE YUUMEINA KO-GA** // [syukudai-o],
With=this study=dislike=with famous child=nom homework=acc

san-nin teisyutusita-kotoninaru
submitted

'Counting this one, three notoriously lazy students have handed in their home work.'

(59) a. Anohi-wa (Kodomo-zyanakute) **Otona-ga,** watasi-wa
that=day-top (Not=kids=but) adult-nom I-top

[[biidama-o], **hutari** katta to] kiokusiteimasu
mable-nom 2=people bought comp remember

'I remember that (Not two kids, but) two adults bought marbles on that day.'

b. (Zyosigakusei-zyanakute) **Dansigakusei-ga,** Yamada-sensei-wa
(Not=female=students=but) male-student-nom top

[[chocolate-o], **san-nin** kureta to] itte-imasita
acc 3=people gave=me comp was=saying

'Prof. Yamada told me that, (not three female students, but) three male students had given him chocolate.'

c. **Benkyoo-girai-de yuumeina ko-ga,** watasi-wa
study=dislike=with famous child=nom I-top

[[syukudai-o], **san-nin** teisyutusita to] kiokusiteimasu
homework=acc three-people submitted comp remember

'I remember that three notoriously lazy students handed in their home work.'

Here, we may assume that the clear focus stressing allows us to anaylyze these sentences as involving a derivation as in (57) without any PF-LF mismatch in question. The non-local quantifier float in (58a-c) and (59a-c), therefore, can be licensed without any problem.

To sum up the section so far, we have seen two other cases in which the Scrambling Approach leaves certain facts unaccounted for. We have argued that those facts can be also accounted for by supplementing the Scrambling Approach with the notion "anti-scrambling."

4.3. Pronominal Coreference Revisited:

We now are ready to discuss pronominal coreference further into details. As discussed in 3.2. above, one of the basic facts we must cope with is that the pronominal coreference in (60c) and (61c) below causes variation and fuzziness in speakers' judgments (cf. Saito (1985)). When we compare it with more or less perfect pronominal coreference in (60a) and (61a) and quite intolerable pronominal coreference in (60b) and (61b), we can confirm that it stands somewhere between these two extremes:

(60) a. $^{(?)/ok}$[John$_1$-no titioya]-ga aete kare$_1$-o semeta (koto
gen father-nom intentionally he-acc blamed (fact)

'John's father intentionally blamed him.'

b. *Kare$_1$-ga [John$_1$-no titioya]-o aete semeta (koto)
he-nom gen father-acc

'He intentianally blamed John's father.'

c. $^{??/?*}$[John$_1$-no titioya]-o kare$_1$-ga aete semeta (koto)

'He intentianally blamed John's father.'

(61) a. $^{(?)/ok}$[pro$_2$ John$_1$-o kiratteiru otoko$_2$]-ga kare$_1$-o nagutta (koto)
acc hate man-nom he-acc punched (fact)

'The man who hates John punched him.'

b. *Kare$_1$-ga [pro$_2$ John$_1$-o kiratteiru otoko$_2$]-o nagutta (koto)
he-nom acc hate man-acc punched (fact)

'He punched the man who hates John.'

c. $^{??/?*}$[pro$_2$ John$_1$-o kiratteiru otoko$_2$]-o kare$_1$-ga nagutta (koto)
acc hate man-acc he-nom pinched (fact)

'He punched the man who hates John.'

If we assume that scrambling is the only source for the unmarked word order in (60c) and (61c), and that this word order is retained all the way through the final representations at LF, the pronominal coreference in these sentences is predicted to be straightforwardly possible, since the hierarchical as well as linear order of *kare* 'he' and *John* in the resulting S-structure is parallel to that in (60a) and (61a).[25]

One possible extension of the Scrambling Approach to account for this puzzling fact is to assume that the (hierarchical) word order in (60c) and (61c) in fact does get altered at LF due to reconstruction, as illustrated in (62) below, and that the Condition C/D violation in the resulting representation somehow contributes to the less-than perfect status of (60c) and (61c):

(62) ___ kare$_1$-ga [... John$_1$ ...]-o V
|_____↑

One problem of this analysis, however, is that the application of LF-reconstruction in a sentence involving scrambling cannot be regarded as obligatory. This point can be shown by the lack of a Weak Crossover violation in (63a-b):

(63) a. **Daremo**$_1$**-o** [pro$_1$ hahaoya]-ga **t**$_1$ kokoro-kara aisiteiru
everyone-acc mother-nom heart-from love

'His/her mother sincerely loves everyone.'

b. **Daremo**$_1$**-o** [pro$_2$ pro$_1$ aisiteiru hito$_2$]-ga **t**$_1$ tuneni
everyone-acc love person-nom always

kabau to-wa kagiranai
protect comp-top limit-neg

'It's not necessarily the case that the person who loves him/her always protects him/her.'

Note that, if the LF-reconstruction were obligatory in these sentences, a Weak Crossover violation should necessarily arise, which clearly is not the case.

Furthermore, it is generally the case that a sentence can be perfectly grammatical as long as one of its possible derivations is well-formed. The existence of a potentially ill-formed derivation, in other words, should not alter the grammatical status of a sentence which has a well-formed derivation. For instance, the sentence (64) below could have been incorrectly mapped onto the LF representation in (65a) rather than (65b), yet the sentence is still perfectly grammatical:

(64) Naze anata-wa [boku-ga doko-e ikoo-to-siteiruno ka]
why you-top I-nom where-to be=about=to=go comp

sonna-ni siritagarunodesu ka?
so=much want=to=know comp

'Why do you want to know where I am going so badly?'

(65) a. LF: *[$_{CP}$ **doko**$_2$**-e** naze$_1$ [$_{IP}$ t$_1$ anata-wa [$_{CP}$ [$_{IP}$ boku-ga **t**$_2$
ikoo-to-siteiru-no] ka] sonna-ni siritagarunodesu] ka]

b. LF: [$_{CP}$ naze$_1$ [$_{IP}$ t$_1$ anata-wa [$_{CP}$ **doko**$_2$**-e** [$_{IP}$ boku-ga **t**$_2$
ikoo-to-siteiru-no] ka] sonna-ni siritagarunodesu] ka]

Another possibile extension of the Scrambling Approach is to assume that, in (60c) and (61c), pronominal coreference is indirectly established through chain binding and violates Condition C/D, as indicated by the arrows in (66) below, and this "indirect" violation of Condition C/D somehow contributes to the awkwardness of these

sentences, despite the grammatical status of the pronominal coreference directly established between *kare* 'he' and *John*:

(66) LF: [... **John**$_1$ ...]$_2$ **kare**$_1$ **t**$_2$ V

Note that, unlike in the case of actual LF-reconstruction, the indirect violation of Condition C/D through chain binding in (60c) and (61c) may be regarded as unavoidable.

This approach, however, leaves unaccounted for the effect of long-distance preposing and focus intonation in pronominal coreference, as illustrated in (67) below (See 2.2 and 2.3 above):

(67) a. ??/?*[John$_1$-no titioya]-o kare$_1$-ga aete semeta (koto)
(= ((60c))

b. (?)/ok**[John$_1$-no titioya]$_2$-o,** boku-wa [kare$_1$-ga **t**$_2$ semeru to]-wa omowanakatta

c. (?)/ok**[JOHN$_1$-NO TITIOYA]-O** // kare$_1$-ga aete semeta (koto)

(68) a. ??/?*[pro$_2$ John$_1$-o kiratteiru otoko$_2$]-o kare$_1$-ga nagutta (koto)
(= (61c))

b. (?)/ok**[pro$_2$ John$_1$-o kiratteiru otoko$_2$]$_3$-o,** boku-wa [kare$_1$-ga **t**$_3$ nagutta]-to kiita

c. (?)/ok**[pro$_2$ JOHN$_1$-O KIRATTEIRU OTOKO$_2$]-O** // kare$_1$-ga nagutta (koto)

Thus, it seems implausible to assume that pronominal coreference in (60c) and (61c) is basically grammatical but is somehow deteriorated

by Condition C/D violation which may arise in LF-reconstruction or does actually arise in chain binding.

If, on the other hand, the unmarked derivation of (60c) and (61c) involves the application of anti-scrambling, as we have suggested above, the arguments in these sentences are reordered at LF. This necessarily gives rise to Condition C/D violation. We also suggested, however, that these basically ungrammatical sentences may also have an option of being associated with a derivation involving the application of scrambling. In this derivation, arguments in (60c) and (61c) do not have to be reordered, and Condition C/D violation can be avoided. This option, however, is made possible only at the cost of suppressing the discrepancy between PF and LF as to the information leading to the focus interpretation, and its markedness precludes (60c) and (61c) from being completely grammatical. Thus, with an appeal to the markedness consideration, the moderately offending status of the pronominal coreference in these sentences can be captured.

There remains at least one problem, however. In this approach, we have assumed that those speakers who reject the ambiguous interpertation of quantifier scope in a sentence with unmarked word order do not permit the marked option in question. The same speakers, therefore, are expected to totally disallow pronominal coreference in ($60c) and ($61c) as well.[26] This, however, is not necessarily the case, and I do not have any satisfactory account for this discrepancy.[27]

In the rest of this section, however, let us set aside this problem, and further pursue the approach to ascribe the fuzziness of

the pronominal coreference in (67a) (= (60c)) and (68a) (= (61c) above to the availability of the marked option in question.

Let us now pay our attention to the so-called "backward" pronominalization. To being with, backward pronominalization involving *kare* 'he' in general is far from being perfect in Japanese even in a sentence with unmarked word order, as illustrated in (69):

(69) a. ??/?*[**Kare**$_1$-no titioya]-ga **John**$_1$-o aete
he-gen father-nom acc intentionally

semeta (koto)
blamed (fact)

'His father intentionally blamed John.'

b. ??/?*[pro$_2$ **kare**$_1$-o kiratteiru otoko$_2$]-ga **John**$_1$-o
he-acc dislike man-nom acc

nagutta (koto)
punched (fact)

'The man who dislikes him punched John.'

When such backward pronominalization further involves Condition C/D violation as in (70) below, the sentences necessarily become completely unacceptable, as we have already seen:

(70) a. *__Kare__$_1$-ga [__John__$_1$-no titioya]-o aete semeta (koto)
he-nom gen father-acc intentionally blamed (fact)

b. *__Kare__$_1$-ga [pro$_2$ __John__$_1$-o kiratteiru otoko$_2$]-o nagutta (koto)
he-nom acc dislike man-acc punched (fact)

Given these facts, what is surprising is that pronominal coreference in (71a-b) below is not so intolerable when these sentences are read without any stress or pause indicating the focused status of the object NP. In fact, the pronominal coreference in (71a-

b) seems to be as awkward and marginally acceptable as the simple cases of backward pronominalization in (69) above:

(71) a. ??/?*Kare$_1$-o [John$_1$-no titioya]-ga aete semeta (koto)
he-acc gen father-nom intentionally blamed (fact)

'John's father intentionally blamed him.'

b. ??/?*Kare$_1$-o [John$_1$-no titioya]-ga wazato
he-acc gen father-nom intentionally

nagusamenakatta riyuu
did=not=console reason

'the reason why John's father intentionally didn't console him.

c. ??/?*Kare$_1$-o [John$_1$-no titioya]-ga aete senzyoo-e
he-acc gen father-nom intentionally battlefield-to

okuridasita (koto)
sent=off (fact)

'John's father intentionally sent him off to]
the battlefield.'

d. ??/?*Kare$_1$-o [pro$_2$ John$_1$-o kiratteiru otoko$_2$]-ga nagutta (koto)
he-acc acc dislike man-nom punched (fact)

'The man who dislikes John punched him.'

e. ??/?*Kare$_1$-o [John$_1$-ga pro$_2$ kawaigatteiru otoko$_2$]-ga
him-acc nom looking=after man-nom

uragitta (koto)
betrayed

'The man whom John had been looking after betrayed him.'

Furthermore, the marginal status of (71a-e) contrasts with the clear ungrammaticality of the pronominal coreference in the sentences involving long-distance scrambling ((72a-b)) and that in the sentences involving short-distance scrambling with clear focus intonation ((73a-b)):

(72) a. *Kare$_1$-o, boku-wa [[John$_1$-no titioya]-ga t$_1$ semeru to]-wa omowanakatta
'I never thought that John's father would blame him.'

b. *Kare$_1$-o, boku-wa [[pro$_2$ John$_1$-o kiratteiru otoko$_2$]-ga t$_1$ naguru no]-o mokugekisita
'I witnessed the man who dislikes John punch him.'

(73) a. *KARE$_1$-O // [John$_1$-no titioya]-ga aete semeta (koto)

b. *KARE$_1$-O // [pro$_2$ John$_1$-o kiratteiru otoko$_2$]-ga nagutta (koto)

In our approach, these otherwise puzzling facts can be accounted for straightforwardly. First, it can be clearly recognized that scrambling as a focus movement rule has applied in (72a-b) and (73a-b). What this means is that the possibility of reordering the arguments in these sentences by the LF-application of anti-scrambling is eliminated. Pronominal coreference in (72a-b) and (73a-b), therefore, necessarily gives rise to Condition C/D violation.

The unmarked analysis of the sentences (71a-e), on the other hand, is to associate them with the derivations involving anti-scrambling at LF, as ilustrated in (74) below, due to the lack of any focus intonation:

(74) LF: [... John$_1$ ...]-ga kare$_1$-o ___ V
↑_____|

The pronominal coreference, then, can be legitimately established in (74).

The marked option of associating (71a-e) with a derivation involving scrambling presumably is not adopted here, since, first, the sentences can be given legitimate pronominal coreference in (74) without a recourse to such a marked option, and second, it will have no effect on salvation of the sentences even if this option is taken.[28]

What is left to be accounted for, then, is the less-than perfect status of the pronominal coreference in (71a-e). Note, however, that backward pronominalization of *kare* in general is rather awkward to begin with, and as we have pointed out above, the pronominal coreference in (71a-e) seems no less or no more offending than that in (69). We are suggesting here, in other words, that sentences in (71) can be regarded as basically grammatical when we abstract away the awkwardness of backward pronominalization.[29] The Anti-Scrambling Approach, therefore, seems to provide us with an account of otherwise puzzling facts involving backward pronominalization.[30]

4.4. Thematic Interpretation

We can further argue for the Anti-Scrambling Approach by examining thematic interpretation in the so-called double nominative construction. More specifically, we can further motivate the Case-driven nature of anti-scrambling as well as our characterization of scrambling strictly as focus movement.

Let us first examine the sentence in (75):

(75) Taroo-**ga** Hanako-**ga** kiraina riyuu
nom nom dislike reason

'The reason why Taro dislikes Hanako.'
or
'??The reason why Hanako dislikes Taro.'

As indicated in the translation, a much preferred thematic interpretation of this sentence involves characterizing *Taroo* as Experiencer and *Hanako* as Theme. The opposite interpretation, in which *Taroo* is understood as Theme and *Hanako* as Experiencer seems to be rather awkward --- some even reject it. What we observe here, in other words, is again a type of "weak" ambiguity, in which the interpretation directly reflecting the surface order of arguments is straightforwardly available but the interpretation which should be associated with distinct word order is only marginally available.

Suppose now that we attempt to capture these facts in the Scrambling Approach, in which reordering of arguments by scrambling is assumed to freely apply even without any external force to trigger it. Since Case marking in (75) does not provide us with any clue to determine whether the sentence represents unmarked order or not, it is not at all clear whether scrambling has applied in this sentence or not. Different versions of the Scrambling Approach, in fact, seem to suggest different analyses.

Saito (1985), for example, explicitly prohibits movement of all *ga*-marked NPs with the condition like (76):

(76) Variables must have Case. (Chomsky (1981))

Since the nominative Case particle *ga* is not "lexically" licensed with any abstract Case (see 3.1.), application of scrambling (= A'-movement) to any *ga*-marked NP would necessarily leave a Case-less trace behind, which would be ruled out by the condition (76).

The possibility of *ga*-*no* conversion as illustrated in (77) below suggests that neither of the double nominative Case in (75) is lexically licensed. This means that neither NP in (75) may undergo scrambling according to the condition on variables in (76) above:[31]

(77) Boku-no katteni soozoo-sita Taroo-**no** Hanako-**no** kiraina riyuu
I-gen freely guessed gen gen disliked reason
'The reason why Taroo dislikes Hanako, which I have guessed.'

Hoji (1985), on the other hand, prohibits movement of *ga*-marked NPs only when it applies string-vacuously, with the convention in (78):

(78) A syntactic adjunction operation cannot apply if it does not change the order of the overt lexical string. (= (14))

This approach, therefore, should permit *Taroo* in (75) above to be analyzed ambiguously as external argument (Experiencer) located in its base-generated position or as an internal argument (Theme) preposed by the application of scrambling.

Note, then, that the former approach leaves it unaccounted for why the sentence in (75) exhibits ambiguity at all. In the second approach, on the other hand, it remains mysterious why (75) is not clearly ambiguous.

Furthermore, we can observe the by-now familiar effects of focus intonation as well as long-distance preposing with respect to thematic interpretation as well. Thus, the marked thematic interpretation in (75) above seems to be much more clearly available in (79a-b):

(79) a. (Ziroo zya-nakute) **TAROO-GA** // Hanako-ga kiraina riyuu
(Jiro not) nom nom dislike reason

'The reason why Taro (rather than Jiro) dislikes Hanako.'

or

'The reason why Hanako dislikes Taro (rather than Jiro).'

b. (Ziroo zya-nakute) **Taroo-ga,** boku-wa [Hanako-ga kiraida
(Jiro not) nom I-top nom dislike

to]-wa siranakatta-yo
comp-top did=not=know

'I didn't know that Taro (rather than Jiro) dislikes Hanako.'

or

'I didn't know that Hanako dislikes Taro (rather than Jiro).'

In the Anti-Scrambling Approach, all these facts follow straightforwardly. First, the sentence (79a) is unmistakably analyzed as involving scrambling due to the focus intonation. Moreover, since application of scrambling to *ga*-marked NPs is not restricted in any special way, and since both external and internal arguments are *ga*-marked in a double nominative construction, this sentence may be ambiguously analyzed as having an LF-representation as schematically illustrated in (80a) or (80b):

(80) a. S-str/LF: **NP**$_2$**-ga** NP$_1$-ga **t**$_2$ V
↑_____|

b. S-str/LF: **NP**$_1$**-ga** **t**$_1$ NP$_2$-ga V
↑___|

The same is true with the sentences in (79b), which may be ambiguously analyzed as in (81):

(81) a. S-str/LF: **NP$_2$-ga** ... [NP$_1$-ga **t**$_2$ V]
↑_____|

b. S-str/LF: **NP$_1$-ga** ... [**t**$_1$ NP$_2$-ga V]
↑_____|

Second, when the sentence is not accompanied by any overt sign of focalization, as in (75) above, its unmarked analysis is to regard it as maintaining the base-generated word order, which straightforwardly provides us with an Experiencer interpretation of *Taroo*.

The same sentence, however, also has a marked option of being analyzed as having an LF representation in (80a). It, therefore, may also provide a Theme interpretation of *Taroo*. Because of the markedness of this analysis (arising from the discrepancy between PF and LF representations), however, this thematic interpretation is rather awkward.

One might wonder if it is possible to analyze (75) as involving Experiencer and Theme arguments base-generated in the order as in (82a) below, and to assume that anti-scrambling may reverse their order at LF as in (82b). This analysis should successfully yield a Theme interpretation of *Taroo* in (75):

(82) a. D-str/S-str/PF/LF$_1$: **Taroo**-ga **Hanako**-ga kiraina riyuu
Theme Experiencer

=== Anti-Scrambling ==>

b. LF$_f$: **Hanako**-ga **Taroo**-ga ____ kiraina riyuu
Experiencer Theme |
↑_____|

Even the Anti-Scrambling Approach, in other words, might appear to incorrectly predict the existence of clear thematic ambiguity in (75).

The derivation as in (82), however, is in fact prohibited in the Anti-Scrambling Approach. Recall that anti-scrambling is triggered only when potential Case conflict exists at LF between a Case particle and abstract Case assigned by a predicate, and that the Isomorphy Constraint ((18) above) prohibits any unmotivated rule application. In a double nominative construction, no such potential Case conflict arises, since predicates involved in this construction must lack any abstract Case marking property, according to the Obligatory Case Discharge ((22) above).[32]

Thus, by assuming that anti-scrambling is Case-driven and that scrambling is nothing but focus movement, we can capture otherwise puzzling facts concerning the thematic interpretation in a double nominative construction.

4.5. Further Predictions:

When we re-examine quantifier scope, Weak Crossover, quantifier float and pronominal coreference in a double nominative construction, paying our attention to the thematic interpretation involved there, we make certain specific predictions, which will lead us to confirm that the approach we have taken in this paper is on the right track.

4.5.1. Quantifier Scope and Thematic Interpretation

First, when we examine the quantifier scope interpretation in a double nominative construction as in (83) below, we notice that certain scope interpretation is more readily available when it is combined with one thematic interpretation than the other, as indicated in (84):

(83) (Kono-naka-no) **dareka-ga** **daremo-ga** kiraida
(this-among-gen) someone-nom everyone-nom dislike

'Someone among these people dislikes everyone.'

(84) a. ∃ (Experiencer) > ∀ (= Theme)

b. ??∃ (Theme) > ∀ (= Experiencer)

c. ??∀ (= Experiencer) > ∃ (Theme)

d. *∀ (= Theme) > ∃ (Experiencer)

If the analysis of thematic interpretation in a double nominative construction we just sketched out above is correct, this otherwise puzzling gradation of judgments in (84) in fact is exactly what we predict.

First, both scope and thematic interpretations in (84a) are straightforwardly made available with the base-generation analysis of the word order in (83). The interpretations in (84b) and (84c), on the other hand, are possible only with the scrambling analysis of the word order in (83), whose markedness contributes to the awkwardness of these interpretations.[33] Finally, the combination of scope and thematic interpretations as in (84d) is completely ruled out because grammar does not permit any derivation which will have an effect of reordering the arguments in (83) --- anti-scrambling is inapplicable, and only the scrambling analysis as in (80b) above, but not in (80a), can be adopted as a marked option. Thus, the gradation of judgments in (84) naturally follows in our analyses.

Recall here the effect of placing focus intonation and applying long-distance preposing in an accusative construction in (85a) below -

-- that the marked scope interpretation in this sentence suddenly becomes much easier to obtain as illustrated in (85b-c):[34]

(85) a. Dareka-ga daremo-o aisiteiru
someone-nom everyone-acc love

'Someone loves everyone.'

(∃ (Experiencer) > ∀ (= Theme))
(??∀ (= Theme) > ∃ (Experiencer))

a. **DA-REKA⌈-GA** // daremo-o aisiteiru
someone-nom everyone-acc love

(∃ (Experiencer) > ∀ (= Theme))
(∀ (= Theme) > ∃ (Experiencer))

b. **Da-reka⌈-ga,** boku-wa [daremo-o aisiteiru to]
someone-nom I-top everyone-acc love comp

sinzi-tai
believe-desirous

'I would like to believe that someone loves everyone.'

(∃ (Experiencer) > ∀ (= Theme))
(∀ (= Theme) > ∃ (Experiencer))

Here, our approach makes another interesting prediction: that we should still obtain such an effect of focus intonation and long-distance scrambling in a double nominative construction in (83) when we seek the interpretations in (84b) and (84c), but we do not obtain it when we seek the interpretation in (84d). We are led to such a prediction in the following way. First, we assume that, when a sentence is accompanied by focus intonation as in (86a) below or long-distance preposing as in (86b), scrambling has applied in this sentence, in accordance with our characterization of scrambling as focus movement:

(86) a. (Kono-naka-no) **DAREKA-GA** // daremo-ga kiraida
(this-among-gen) someone-nom everyone-nom dislike

'Someone among these people dislikes everyone.'

(∃ (Experiencer) > ∀ (= Theme))
(∃ (Theme) > ∀ (= Experiencer))
(∀ (= Experiencer) > ∃ (Theme))
(*∀ (= Theme) > ∃ (Experiencer))

b. (Kono-naka-no) **da⌐reka⌈-ga,** boku-ga [daremo-ga kiraida
(this-among-gen) someone-nom I-nom everyone-nom dislike

to] dangensuru konkyo
comp assert basis

'the basis on which I assert that someone among these people dislikes everyone.'

(∃ (Experiencer) > ∀ (= Theme))
(∃ (Theme) > ∀ (= Experiencer))
(∀ (= Experiencer) > ∃ (Theme))
(*∀ (= Theme) > ∃ (Experiencer))

Then, if we try to assign the thematic interpretation as in (84b) and (84c) to these sentences, we are forced to assume that they have an LF representation as in (87a) below (rather than (87b)), and in fact, this representation will also yield the scope interpretation in (84b) and (84c) successfully, involving the reordering of arguments:

(87) a. S-str/LF: **Dareka**$_1$**-ga** ... daremo-ga t_1 V
Theme ↑ Experiencer |
|_____|

b. S-str/LF: *__Dareka__$_1$__-ga__ ... t_1 daremo-ga V
Theme ↑ | Experiencer
|_____|

If we try to assign the thematic interpretation in (84d) to the same sentences, on the other hand, we must assume that they have an LF representation as in (88a) rather than (88b). (Again, anti-scrambling cannot apply to (88b) since there exists no potential Case conflict):

(88) a. S-str/LF: **Dareka**$_1$**-ga** ... $\underline{t}_1$ daremo-ga V
Experiencer | Theme
↑_____|

b. S-str/LF: *__Dareka__$_1$__-ga__ ... daremo-ga $\underline{t}_1$ V
Experiencer Theme |
↑_____|

Note, then, that the universal quantifier does not have a chance to have wider scope, since scrambling has not reordered the arguments in (88a). As indicated in (86a-b), our prediction here seems to be borned out.

4.5.2. Weak Crossover and Thematic Interpretation

When we examine Weak Crossover phenomena and thematic interpretation of the sentence at the same time, we again encounter quite puzzling facts.

Compare, first, the sentences in (89) below with those in (90):

(89) a. ??/*[pro$_1$ hahaoya]-ga daremo$_1$__-o__ kokoro-kara aisiteiru
mother-nom everyone-acc sincerely love

to-wa kagir-anai
comp-top limit-neg

'It is not necessarily the case that his/her mother sincerely loves everyone.'

b. ??/*[pro$_2$ pro$_1$ tumetaku asirau { zyosei$_2$ / dansei$_2$ } female / male]-ga daremo$_1$**-o**
coldly treat nom everyone-acc

kiratteiru to-wa kagir-anai
dislike comp-top limit-neg

'It is not necessarily the case that the woman/man who gives the cold shoulder to everyone hates him/her.'

(90) a. [pro$_1$ hahaoya]-ga daremo$_1$**-ga** kokoro-kara sukida
mother-nom everyone-acc sincerely love

to-wa kagir-anai
comp-top limit-neg

'It is not necessarily the case that his/her mother sincerely loves everyone.'

or

'It is not necessarily the case that everyone sincerely loves his/her mother.'

b. [pro$_2$ pro$_1$ tumetaku asirau { zyosei$_2$ / dansei$_2$ } female / male]-ga daremo$_1$**-ga**
coldly treat nom everyone-nom

kiraida to-wa kagir-anai
dislike comp-top limit-neg

'It is not necessarily the case that the woman/man who gives the cold shoulder to him/her hates everyone.'

or

'It is not necessarily the case that everyone hates the woman/man who gives the cold shoulder to him/her.'

As we reported in 4.1. above, some speakers find the bound variable interpretation of the empty pronominals in (89a-b) at least marginally possible. On the other hand, even for the same speakers,

the same bound variable interpretation seems to be completely prohibited in the sentences (90a-b) when the thematic interpretations involved there are as in (91a) below, while such a bound variable interpretation again becomes marginally acceptable with the thematic interpretations as in (91b):

(91) a. (Mother = Experiencer, ∀ = Theme) ==> *WCO
(Female/Male = Eperiencer, ∀ = Theme) ==> *WCO

b. (Mother = Theme, ∀ = Experiencer) ==> ??WCO
(Female/Male = Theme, ∀ = Experiencer) ==> ??WCO

The state of affairs here again is exactly what we predict. Recall first that, in 4.1. above, we ascribed the availability of the bound variable interpretation in (89a-b) to the reconstruction effect induced by the scrambling of *ga*-marked NPs from the internal argument position (which is followed by the application of anti-scrambling). We also ascribed the marginality of such an interpretation to the markedness of the derivation involved there. Exactly the same account can be provided for the interpretations in (91b) (except that anti-scrambling is not involved). The sentences in (90), in other words, may be associated with an LF-representation as in (92) below, in which a "reconstruction" effect is induced by the presence of a trace left behind by scrambling:

(92) S-str/LF: [... pro_1 ... $]_2$-ga daremo-ga $\underline{t}_2$ V
↑_____|

Due to the markedness of adopting this option, however, marginality of the sentences arises.

When the sentences (90a-b) have a thematic interpretations as in (91a), on the other hand, no derivation is available, even as a marked option, which involves the reordering of arguments --- scrambling may apply but only string-vacuously, and anti-scrambling is inapplicable due to the lack of potential Case conflict. A Weak Crossover violation, thus, is inevitable in (90a-b) with the interpretations in (91a).

There is another set of interesting facts. First, recall that we can completely eliminate a Weak Crossover violation from an accusative construction in (89a-b) above by placing focus intonation and applying long-distance preposing as in (93) and (94) below:[35]

(93) a. [pro$_1$ **HAHAOYA**]-**GA** // daremo$_1$-**o** kokoro-kara aisiteiru
mother-nom everyone-acc sincerely love

to-wa kagir-anai
comp-top limit-neg

b. ??/*[pro$_2$ pro$_1$ **TUMETAKU ASIRAU** { **ZYOSEI**$_2$ (female) / **DANSEI**$_2$ (male) }]-**GA** // daremo$_1$-**o**
coldly treat nom everyone-acc

kiratteiru to-wa kagir-anai
dislike comp-top limit-neg

'It is not necessarily the case that the woman/man who gives the cold shoulder to everyone hates him/her.'

(94) a. **[pro**$_1$ **hahaoya]-ga,** boku-wa [[daremo$_1$-**o** kokoro-kara
mother-nom I-top everyone-acc sincerely

aisiteiru to]-wa kagiranai to] omou
love comp-top think-neg comp think

'I don't think it is necessarily the case that his/her mother sincerely loves everyone.'

b. **[pro**$_2$ **pro**$_1$ **tumetaku asirau {** **zyosei**$_2$ female **dansei**$_2$ male **}]-ga,** boku-wa
coldly terat nom I-top

[[daremo$_1$**-o** everyone-acc kiratteiru to]-wa dislike comp-top kagir-anai to] limit-neg omou comp think

'I don't think it is necessarily the case that the woman/man who gives the cold shoulder to everyone hates him/her.'

Curiously, we fail to retain the same effect of focus intonation and long-distance preposing in a double nominative construction in (95) and (96) below when these sentences involve thematic interpretations as in (91a), while we still have such an effect when the same sentences are interpreted as in (91b):

(95) a. [pro$_1$ **HAHAOYA**]**-GA** // daremo$_1$**-ga** kokoro-kara sukida
mother-nom everyone-acc sincerely love

to-wa kagir-anai
comp-top limit-neg

b. [pro$_2$ pro$_1$ **TUMETAKU ASIRAU** { **ZYOSEI**$_2$ female **DANSEI**$_2$ male }]-**GA** // daremo$_1$**-ga**
coldly treat nom everyone-nom

kiraida to-wa kagir-anai
dislike comp-top limit-neg

(96) a. **[pro$_1$ hahaoya]-ga,** boku-wa [[daremo$_1$**-ga** kokoro-kara
mother-nom I-top everyone-nom sincerely

sukida to]-wa kagir-anai to] omou
love comp-top limit-neg comp think

'I don't think it is necessarily the case that his/her mother sincerely loves everyone.'
or
'I don't think it is necessarily the case that everyone sincerely loves his/her mother.'

b. [pro$_2$ pro$_1$ **tumetaku asirau** {**zyosei**$_2$ (female), **dansei**$_2$ (male)}]-**ga,** boku-wa
coldly treat nom I-top

[[daremo$_1$-**ga** kiraida to]-wa kagir-anai to] omou
everyone-nom dislike comp-top tlimit-neg comp think

'I don't think it's necessarily the case that the woman/man who gives the cold shoulder to him/her hates everyone.'

or

'I don't think it's necessarily the case that everyone hates the woman/man who gives the cold shoulder to him/her.'

We can again provide a straightforward account for these facts. First, the thematic interpretations in (91b) is possible only when scrambling has applied, and hence only in an LF-representation as in (97b) below. The trace in the internal argument position, then, can induce a "reconstruction" effect, and eliminates a Weak Crossover violation. The thematic interpretations in (91a) above, on the other hand, are possible only in the LF-representation like (97a) below, given the inapplicability of anti-scrambling in a double nominative construction. Even with focus intonation and long-distance preposing, therfore, we cannot eliminate a Weak Crossover violation:

(97) a. S-str/LF: [... pro$_1$ ...]$_2$-ga **t**$_2$ ∀-ga V
↑____|

b. S-str/LF: [... pro$_1$ ...]$_2$-ga ∀-ga **t**$_2$ V
↑_____|

4.5.3. Quantifier Float and Thematic Interpretation

The following range of facts involving quantifier float can be also accounted for along the same line of arguments.

Recall first that, for some speakers, non-local quantifier float in an accusative construction as indicated by the indexing in (98) below is marginally possible:[36]

(98) Iinkai-no kitei ni-yoruto, **Nihon-no gakusya**$_1$**-ga**
committee-gen regulation according=to Japan-gen scholar-nom

[America-no gakusya**-o**], **zyuu-nin**$_1$ erande-yoi koto ni-natteiru
gen scholar-acc ten-people selected-fine fact has=become

'According to the committee's regulation, Japanese scholars may select ten American scholars.'

or

'??/*According to the committee's regulation, ten Japanese scholars may select American scholars.'

Even for the same speakers, on the other hand, such non-local quantifier float seems to be completely prohibited in a double nominative construction in (99) below when the sentence is assigned a thematic interpretation as in (100a), while it becomes marginally possible again when the sentence is interpreted as in (100b):

(99) Iinkai-no kitei ni-yoruto, **Nihon-no gakusya**$_1$**-ga**
committee-gen regulation according=to Japan-gen scholar-nom

[America-no gakusya**-ga**], **zyuu-nin**$_1$ erab-e-ru koto ni-natteiru
gen scholar-nom ten-people select-can-pres fact has=become

'According to the committee's regulation, Japanese scholars may select ten American scholars.'

or

'According to the committee's regulation, ten Japanese scholars may select American scholars.'

(100) a. (Japanese scholars = Agent, American scholars = Theme)

b. (Japanese scholars = Theme, American scholars = Agent)

Again, these facts are straightforward in our approach, since the thematic interpretation in (100a) requires a derivation in which no reordering of arguments is possible, while the thematic interpretation in (100b) requires a marked derivation in which scrambling has applied.

Furthermore, as we saw in 4.2. above, focus intonation and long-distance preposing in an accusative construction as in (101a-b) below makes non-local quantifier float much more easily licensed:

(101) a. Iinkai-no kitei ni-yoruto,
committee-gen regulation according=to
,
NIHON-NO GAKUSYA$_1$**-GA** // [America-no gakusya-**o**],
Japan-gen scholar-nom gen scholar-acc

zyuu-nin$_1$ erande-yoi koto ni-natteiru
ten-people select-all=right fact has=become

'According to the committee's regulation,
Japanese scholars may select ten American scholars.'

or

'According to the committee's regulation,
ten Japanese scholars may select American scholars.'

,
b. **Nihon-no gakusya**$_1$**-ga**, iinkai-wa [[America-no gakusya-o],
Japan-gen scholar-nom committee-top gen scholar-acc

zyuu$_1$**-nin** eranda to] happyoosita
ten-people selected comp announced

'The committee announced that Japanese scholars selected ten American scholars.'

or

'The committee announced that ten Japanese scholars selected American scholars.'

Such an effect of focus intonation and long-distance preposing, however, seems to totally disappear in a double nominative construction in (102) below, when we try to interprete the sentences as in (100a), while we can still obtain it with the interpretation in (100b):

(102) a. Iinkai-no kitei ni-yoruto,
committee-gen regulation according=to
,
NIHON-NO GAKUSYA$_1$**-GA** // [America-no gakusya**-ga**],
Japan-gen scholar-nom gen scholar-nom

zyuu-nin$_1$ erab-e-ru koto ni-natteiru
ten-people select-can-pres fact has=become

'According to the committee's regulation,
Japanese scholars may select ten American scholars.'

or

'According to the committee's regulation,
ten American scholars may select Japanese scholars.'

or

'In accordance with the committee's regulation,
American scholars may select ten Japanese scholars.'

b. **Nihon-no gakusya**$_1$**-ga,** iinkai-wa [[America-no gakusya**-ga**],
Japan-gen scholar-nom committee-top gen scholar-nom

zyuu$_1$**-nin** eranb-e-ru to] happyoosita
ten-people select-can-pres comp announced

'The committee announced that Japanese scholars may select
ten American scholars.'

or

'The committee announced that ten American scholars can select
Japanese scholars.'

or

'The committee announced that American scholars can select
ten Japanese scholars.'

This result is again expected in our approach, since the thematic interpretation in (100a) requires the sentences in (102) to have an LF-representation as in (103a) below, while the interpretation in (100b) requres them to have (103b):

(103) a. S-str/LF: **NP**$_1$-ga ... t_1 NP-ga **Q** V
↑_____|

b. S-str/LF: **NP**$_1$-ga ... NP-ga **t**$_1$ **Q** V
↑_____|

Note that, only in (103b), can the floating quantifier be locally licensed by NP_1, due to the presence of the trace.[37]

4.5.4. Pronominal Coreference and Thematic Interpretation

Finally, for the sake of completeness of the arguments, let us also examine the interaction of pronominal coreference and thematic interpretation.

First, in 4.3. above, we have reported the following contrast in an accusative construction:

(104) a. $^{(?)/ok}$[John$_1$-no titioya]-ga aete kare$_1$-o semeta (koto)
gen father-nom intentionally he-acc blamed (fact)
'John's father intentionally blamed him.'

b. *Kare$_1$-ga [John$_1$-no titioya]-o aete semeta (koto)
he-nom gen father-acc
'He intentianally blamed John's father.'

c. $^{??/?*}$[John$_1$-no titioya]-o kare$_1$-ga aete semeta (koto)
'He intentianally blamed John's father.'

(105) a. (?)/ok[pro$_2$ John$_1$-o kiratteiru otoko$_2$]-ga kare$_1$-o nagutta (koto)
acc hate man-nom he-acc punched (fact)

'The man who hates John punched him.'

b. *Kare$_1$-ga [pro$_2$ John$_1$-o kiratteiru otoko$_2$]-o nagutta (koto)
he-nom acc hate man-acc punched (fact)

'He punched the man who hates John.'

c. ??/?*[pro$_2$ John$_1$-o kiratteiru otoko$_2$]-o kare$_1$-ga nagutta (koto)
acc hate man-acc he-nom pinched (fact)

'He punched the man who hates John.'

We argued that the sentences in (104c) and (105c) may be ambiguously analyzed as involving LF-application of anti-scrambling to the base-generated marked word order, or as involving scrambling in overt syntax, and that, while the former analysis totally prohibits the pronomial coreference in (104c) and (105c), the latter makes it possible, but only marginally, because of the markedness of this analysis.

We also pointed out that focus intonation and long-distance preposing make such pronominal coreference much easier to obtain, as in (106) and (107), making the scrambling analysis available as an unmarked option:

(106) a. (?)/ok**[JOHN**$_1$**-NO TITIOYA]-O** // kare$_1$-ga aete semeta (koto)

b. (?)/ok**[John**$_1$**-no titioya]**$_2$**-o,** boku-wa [kare$_1$-ga **t**$_2$ semeru to]-wa omowanakatta

(107) a.(?)/ok[pro$_2$ **JOHN**$_1$**-O KIRATTEIRU OTOKO**$_2$]**-O** // kare$_1$-ga nagutta (koto)

b.(?)/ok**[pro**$_2$ **John**$_1$**-o kiratteiru otoko**$_2$**]**$_3$**-o,** boku-wa [kare$_1$-ga **t**$_3$ nagutta]-to kiita

Let us now examine a double nominative construction as in (108a-b):

(108) a. [John$_1$-no titioya]-ga kare$_1$-**ga** annanimo kiraina wake
gen father-nom he-nom that=much dislike reason

'the reason why John's father dislikes him that much.'

or

'the reason why he dislikes John's father that much.'

b. [Ima pro$_2$ John$_1$-no sugu yoko-ni suwatteiru otoko$_2$]-ga
now gen right next-at sitting man-nom

kare$_1$-**ga** kiraina wake
he-nom dislike reason

'the reason why the man who is sitting right next to John dislikes him'

or

'the reason why he dislikes the man who is sitting right next to John'

These sentences are perfect or at least near perfect when they involve thematic interpretations as in (109a) below, but it is rather awkward when the interpretations in (109b) are involved:

(109) a. (Father = Experiencer, John = Theme)

(Man = Experiencer, John = Theme)

b. (Father = Theme, John = Experiencer)

(Man = Theme, John = Experiencer)

Note that, as far as pronominal coreference is concerned, both (108a-b) should be fine, since anti-scrambling is inapplicable in a double nominative construction, and hence nothing forces the R-expression

John to be c-commanded by *kare* 'he' in these sentences. However, since the thematic interpretation in (109b) per se requires the scrambling analysis as a marked option, we may consider that the awkwardness in question arises from this markedness.

On the other hand, when we make the scrambling analysis available as an unmarked option by placing focus intonation or apply long-distance preposing as in (110) and (111) below, the awkwardness of the sentences seems to disappear, as we predict. These sentences, thus, permit pronominal coreference even with the thematic interpretations in (109b):

(110) a. **[John$_1$-no TITIOYA]-GA** // kare$_1$-**ga** annanimo kiraina wake
gen father-nom he-nom that=much dislike reason

'the reason why John's father dislikes him that much.'

or

'the reason why he dislikes John's father that much.'

b. **[IMA pro$_2$ JOHN$_1$-NO SUGU YOKO-NI SUWATTEIRU OTOKO$_2$]-GA** //
now gen right next-at sitting man-nom

kare$_1$-**ga** kiraina wake
he-nom dislike reason

'the reason why the man who is sitting right next to John dislikes him'
or
'the reason why he dislikes the man who is sitting right next to John'

(111) a. **[John$_1$-no titioya]-ga,** boku-wa [kare$_1$-**ga** annanimo
gen father-nom I-top he-nom that=much

kiraida to]-wa siranakatta
dislike comp-top didn't=know

'I didn't know that John's father dislikes him that much.'
or
'I didn't know that he dislikes John's father that much.'

b. **[Ima pro$_2$ John$_1$-no sugu yoko-ni suwatteiru otoko$_2$]-ga, //**
now gen right next-at sitting man-nom

boku-wa [kare$_1$**-ga** kiraida to]-wa siranakatta
I-top he-nom dislike comp-top didn't=know

'I didn't know that the man who is sitting right next to John dislikes him'

or

'I didn't know that he dislikes the man who is sitting right next to John'

This concludes our "markedness" arguments for the approach which incorporates both scrambling and anti-scrambling into the grammar.

4.6. Superiority Effects:

5. Theoretical Implications:

If our proposal is basically correct, and we can assume that anti-scrambling is a possible option in the grammar, we necessarily reach the conclusion that the Projection Principle as a universal principle (Chomsky (1981)) cannot be maintained in its present form. Recall that this principle requires that the θ-marking of arguments be uniform at all syntactic levels, but anti-scrambling has an effect of reversing the base-generated order of arguments when they reach the LF component. If we must assume that the Projection Principle is absolutely inviolable, on the other hand, we must discard our analyses and leave most, if not all, of the problems we pointed out above unsolved, perhaps giving up even the Scrambling Approach to the free word order.

One possibility is to revise the Projection Principle in such a way that it requires only the uniformity of the number of arguments selected by a predicate throughout the derivation rather than the uniformity of actual content of θ-marking. Note that the application of anti-scrambling still satisfies this requirement, since it does not alter the number of arguments. In the rest of this paper, however, I will pursue a different approach, briefly re-examining the theoretical and empirical validity of the Projection Principle.

As is well-known, the Projection Principle has three distinct components, as stated in (136):

(136) Projection Principle: (Chomsky (Ibid., 38))

a. If β is an immediate constituent of γ in (137) at L_i, and γ = α', then α θ-marks β in γ.

b. If α selects β in γ as a lexical property, then α selects β in γ at L_i.

c. If α selects β in γ at L_i, then α selects β in γ at L_j.

(α selects β if α directly or indirectly θ-marks β.)

(137) a. [$_\gamma$ ... α ... β ...]

b. [$_\gamma$ ... β ... α ...]

Roughly speaking, the first component of this principle, (136a), stipulates that strict-subcategorization in the traditional sense entails θ-marking, but not vice versa. This component is intended to capture the fact that object of a predicate is always θ-marked, while subject of a sentence, which is not strictly-subcategorized by a

predicate, may be θ-marked as an argument or it may end up being non-θ-marked as a pleonastic or expletive element. Note, however, that the stipulation in (136a) becomes totally superfluous under the Internal Subject Hypothesis we have adopted, since all arguments including subjects are now θ-marked within the predicate phrase under government, and all pleonastic or expletive subjects are base-generated under IP. We, thus, no longer have to stipulate (136a). Let us consider therefore that the component (136a) can be eliminated from the Projection Principle.

The second component, (136b), requires that the θ-marking property of a lexical head ('predicate') must be projected at some syntactic level, and the third component, (136c), requires that the θ-marking of a predicate must be uniform at all syntactic levels.

Chomsky points out that the inter-componential requirement as in (136b) can significantly reduce the base-component, eliminating the redundancy between the lexicon and the phrase structure rules with respect to categorial specification. It also provides a partial explanation for ease of first language acquisition in general. In this regard, the requirement in (136b) seems to be indispensable. Notice, however,
that the component (136b) becomes almost entirely redundant, once we postulate the θ-Criterion (Chomsky (1981)) as in (138) below as an LF principle, since the latter half of the θ-Criterion guarantees that each θ-role of a predicate is uniquely assigned to an argument at LF, one of the syntactic levels:

(138) <u>The Theta-Criterion</u>: (Chomsky (1982, 6))

(i) Each term of LF that requires a θ-role (each 'argument') is assigned a θ-role uniquely, and

(ii) Each θ-role determined by lexical properties of a head is uniquely assigned to an argument.

It also seems to be the case, therefore, that we do not have to independently stipulate the component (136b), and hence can eliminate it from the Projection Principle.

What is left, then, is the component (136c). It is not at all clear, however, whether such a strong requirement is indeed necessary. It seems to be the case that there does not exist any empirical fact whose account requires actual θ-marking of arguments at the level of D-structure and/or S-structure in addition to LF.

On the contrary, there exist at least two independent empirical phenomena, in addition to those we have examined in the previous sections of this paper, whose proper treatment suggests that this "uniform θ-marking requirement" imposed by (136c) cannot be maintained.

The first case involves VP Ellipsis in English, as exemplified in (139):

(139) John blamed his son and Bill did __, too.

In the approach incorporating the θ-Criterion, we necessarily analyze this sentence as involving a fully represented VP at the ellipsis site, as in (140a) below (or as in (140b) if the λ-notation must be adopted, as claimed by Sag (1977) and Williams (1977)), since the subject of the second clause *Bill* is required to be θ-marked at LF (and *blame* is a two-place predicate):[46]

(140) a. LF: John blamed his son, and Bill did [$_{VP}$ **blame his son**], too.

b. LF: John [$_{VP}$ λx(x blame x's son)], and

Bill [$_{VP}$ **λy(y blame y's son)**], too.

Notice, then, that, if we must maintain the uniform θ-marking requirement in (136c) in addition to the θ-Criterion, we necessarily have to adopt the deletion approach to VP ellipsis over the interpretive approach. This point can be easily seen when we compare the syntactic derivation of the sentence (139) above in these two different approaches as summarized in (141) and (142) below. Note that, in the interpretive approach in (141), the subject of the second conjunct *Bill* lacks its θ-marker at D- and S-structures, while in the deletion approach in (142), such θ-marker exists all through the syntactic derivation:

(141) Interpretive Approach: (Williams (1977))

a. **D/S**: John [$_{VP}$ blamed his son], and **Bill** did **[$_{VP}$ e e]**, too.

b. == Derived VP Rule ==>

John [$_{VP}$ λx(x blame his son)], and Bill did [$_{VP}$ e e], too.

c. == Reflexivization (= Variable Rewriting Rule) ==>

John [$_{VP}$ λx(x blame x)], and Bill did [$_{VP}$ e e], too.

d. == VP Rule (= VP-Copy) ==>

LF: John [$_{VP}$ λx(x blame x's son)], and

Bill did **[$_{VP}$ λx(x blame x's son)]**, too.

(142) Deletion Approach: (Sag (1977))

I. S-structure - LF Mapping: (simplified)

a. **D/S**: John$_1$ [$_{VP}$ blamed his son], and **Bill**$_2$ **[$_{VP}$ blamed his son]**, too

b. == Derived VP Rule ==>

John$_1$ [$_{VP}$ λx(x blame his son)], and
Bill$_2$ [$_{VP}$ λy(y blame his son)], too.

c. == Indexing ==>

John$_1$ [$_{VP}$ λx(x blame his$_1$ son)], and

Bill$_2$ [$_{VP}$ λy(y blame his$_2$ son)], too.

d. == PRO -> BV (= Variable Rewriting Rule) ==>

LF: John$_1$ [$_{VP}$ λx(x blame x's son)], and

Bill$_2$ **[$_{VP}$ λy(y blame y's son)]**, too.

II. S-structure - PF Mapping: (simplified)

a. D/S: John [$_{VP}$ blamed his son], and Bill TNS [$_{VP}$ blame his son] too

b. == VP-deletion ==>

John [$_{VP}$ blamed his son], and Bill TNS ___, too.

c. == *Do*-support ==>

PF: John [$_{VP}$ blamed his son], and Bill **did** ___, too.

If, therefore, it turns out to be the case that the deletion approach cannot be maintained, VP Ellipsis in English will constitute a piece of empirical evidence against the uniform θ-marking requirement imposed by the Projection Principle. This indeed seems to be the case.

As Sag (Ibid.) painstakingly shows, the major difficulty involved in various deletion approaches proposed in the literature is that they often fail to define the notion of 'identity' between two syntactic

entities to ensure the recoverability of deletion in any empirically adequate way. He then argues that the logical relation of 'alphabetic varience' as defined in (143) below holding between λ-expressions at the level of LF is the best candidate for the key notion to determine "identity" for licensing deletion:

(143) For two λ-expressions, λx(A) and λy(B), to be alphabetic variants,

a. Every occurrence of x in (A) must have a corresponding occurrence of y in (B), and vice versa.

eg) λx(**x is happy**) = λy(**y is happy**)
λx(**x is happy**) ≠ λy(**y is sad**)

("=" indicates that the two λ-expressions are alphabetic variants.)

b. Any quantifier in A that binds variables (in A) must have a corresponding (identical) quantifier in B that binds variables in all the corresponding positions (in B).

eg) λw((**∀y**)[w likes **y**]) = λz((**∀q**)[z likes **q**])
λw((**∀y**)[w loves **y**]) ≠ λz(z loves **Mary**)

c. If there are any variables in A that are bound by some quantifier outside of λx (A), then the corresponding variable in λx(B) must be bound by the same operator in order for alphabetic variance to obtain. (Sag (Ibid., 72-73))

eg) (**∀y**)[John, λx(x loves **y**) -> Bill, λz(z loves **y**)]
|_____ = _____|

(**∃y**)[John, λx(x likes **y**) & (**∀z**)[Bill, λw(w likes **z**)]
|_____ ≠ _____|

John, **λy**(y said [Mary, λx(x likes **y**)]) &
|_____

Bill, **λz**(z said [Mary, λw(w likes **z**)])
_____ ≠ _____|

The examples in (144)-(146) below, however, suggest that even the deletion approach fortified with this logical identity theory fails:

(144) a. John$_1$ wants to ask Betsy to date him$_1$, before Bill$_2$ asks her to Ø.

[Ø = date him$_2$]

b. LF: John$_1$,**λx**(x wants [PRO$_1$,λy(y ask Betsy$_3$ [PRO$_3$,λw(w date **x**)])])

before Bill,**λz**(z asks her$_3$ [PRO$_3$, λv(v date **z**)])

(145) a. Sam$_1$ wants John to advertise his$_1$ daughter before Bill$_2$ does Ø.

[Ø = advertise his$_2$ daughter]

b. LF: Sam, **λx**(x wants [John, λy(y advertise **x's** daughter)])

before Bill, **λw**(w advertise [**w's** daughter])

(146) a. Sam$_1$ wants Mary to ask John to advertise him$_1$ before Bill$_2$ does Ø.

[Ø = ask John to advertise him$_2$]

b. LF: Sam, **λx**(x wants Mary$_3$

[PRO$_3$, λy(y ask [John, λw(w advertise **x**)])]) before

Bill,**λv**(v ask [John, λu(u advertise **v**)])

For instance, the sentence (144a) may exhibit a type of sloppy identity, and is interpreted as "John$_1$ wants to ask Betsy$_3$ to date him$_1$, before Bill$_2$ asks her$_3$ to date him$_2$," which must be represented at LF as in (144b). Notice, however, that the two λ-expressions in this representation are not alphabetic variants according to the definition (143c): the variable *x* is bound from outside of the minimal λ-expression containing it (λ_1w(w date x)), but the corresponding

variable *z* in another λ-expression (λ_2v(v date z)) is not bound by the same operator (= λ_1). The deletion approach, therefore, predicts that the sentence (144a) may not involve VP Ellipsis, which is clearly false. The same is true with the examples in (145) and (146).

It seems to be the case, in other words, that the deletion approach to VP Ellipsis is significantly undermined with the absence of any empirically adequate definition of the notion "identity." We, thus, conclude that the deletion approach cannot be maintained, which also leads us to conclude that part of the uniform θ-marking requirement (136c) of the Projection Principle is empirically inadequate.[47]

Pointing out the above and further inadequacy of the deletion approach to VP Ellipsis, Kitagawa (to appear), on the other hand, proposes a version of interpretive approach as summarized below.

First, as illustrated in (147)-(150) below, VP Ellipsis in English involves copying of an antecedent VP (henceforth VP-Copy) applying in the LF component (cf. Williams (1977)):

(147) a. D/S: John blamed himself, and Bill did [$_{VP}$ e], too.

b. LF: John$_1$ blamed himself$_1$, and

[$_{BC}$ Bill$_2$ did **[$_{VP}$ blame himself$_{2/*1}$]**], too.

(148) a. D/S: John blamed his son, and Bill did [$_{VP}$ e], too.

b. LF: John$_1$ blamed his$_1$ son, and

[$_{BC}$ Bill$_2$ did **[$_{VP}$ blame his$_{1/2}$ son]**], too.

(149) a. Sam wants John to advertise him before Bill does.

b. LF: Sam$_1$ wants [$_{BC}$ John to advertise him$_1$]

before [$_{BC}$ Bill$_3$ does **[$_{VP}$ advertise him$_{*3}$]**]

(150) a. S: John was [$_{VP}$ hit t], and Bill was [$_{VP}$ e], too.

b. LF: John$_1$ was [$_{VP}$ hit t$_1$], and

[$_{BC}$ Bill$_2$ was **[$_{VP}$ hit t$_{2/*1}$]**], too.

Second, the licensing and its concomitant indexing of anaphors and pronominals, which is constrained by the Conditions A and B of the Binding Theory, may take place either before or after the application of the VP-Copy, or more precisely, anywhere in the LF component. Note then that the binding of anaphors and pronominals copied into the second clause is also constrained by the Conditions A and B in the resulting LF representation. (The binding category for each anaphor and pronominal in the second clause is indicated by "BC" in the LF-representations (147b)-(150b).)

This approach allows us to account for the following facts, among others, without having recourse to the Derived VP Rule (Partee (1973)) applying in the post-S-structure syntax: (i) why the pronominal in (148a) permits both sloppy and strict identity interpretations, while the anaphor in (147a), for many speakers,[48] permits only a sloppy interpretation (Williams (Ibid.)), (ii) why the pronominal in (149a) does not permit a sloppy identity interpretation, and (iii) why VP Ellipsis involving passive permits only a sloppy identity interpretation.[49] The interpretation of the sentences (144)-(146) above, which was problematic to the deletion approach, also follows straightforwardly. The sentence (144), for example, can be represented at LF as in (151) below, satisfying the Condition B:

(151) LF: John$_1$ wants to ask Betsy$_3$ to date him$_1$,
before [$_{BC}$ **Bill**$_2$ asks her$_3$ to [$_{VP}$ date **him**$_2$]]

Returning now to the main line of the argument, we can present another case, which suggests that the uniform θ-marking requirement imposed by the Projection Principle is too strong.

Let us first take a look at the following paradigm from Japanese:

(152) Regular Complementation:

		mizukara$_{2/*1}$				
		self				
John$_1$-ga [$_{CP}$ Bill$_2$-ga	{		}-o	hihansuru	to]-wa	
nom	nom	**pro**$_{1/*2}$	acc	criticize	comp-top	

omowanakatta (koto)
didn't think (fact)

'John didn't think that Bill would criticize	{	himself	}.'
		him	

(153) Causative:

			mizukara$_{2/1}$				
John$_1$-ga Bill$_2$-ni (aete)		{	self	}-o	hihans-**ase**-ta		
nom	dat intentionally		**pro**$_{1/*2}$	acc	criticize-cause-past		

(koto)
(fact)

'John (intentionally) had Bill criticize	{	himself	}.'
		him	

When we examine the binding properties of the reflexive anaphor *mizukara* 'self' and the empty pronoun in an embedded context like (152), we learn that the former must be bound within the complement clause, while the latter must not. They, in other words, seem to straightforwardly obey the Conditions A and B of the Binding Theory,

respectively. Let us assume that these facts represent the basic binding properties of these pro-forms in Japanese.[50]

The behaviors these pro-forms exhibit in the causative sentence (153), then, will force us to reach very peculiar, contradictory analyses of causative sentences. First, the anaphor *mizukara* is allowed to be bound by the causer NP_1-*ga* (in addition to the causee NP_2-*ni*). Second, the empty pronominal may be bound by the causer NP_1-*ga* but not by the causee NP_2-*ni*. Note, then, that the behavior of the pronominal in (153) suggests the presence of complementation as in (154b) below, while that of the anaphor leaves its absense as in (154a), given that they are subject to the Conditions A and B, respectively:[51]

(154) a. [NP_1-ga NP_2-ni **mizukara**$_{1/2}$-o V-sase]
nom dat self acc cause

b. [NP_1-ga [NP_2-ni **pro**$_{1/*2}$ V] sase]
nom dat cause

Kitagawa (1986, in preparation a) attempts to account for these peculiar facts with the following analysis. Causative in Japanese involves **lexical** derivation of a morphologically complex predicate as illustrated in (155a) below, which is lexically inserted into a D-structure as the head of an IP, as illustrated in (155b):[52]

(155) a. [$_I$ [$_V$ V-sase]-ta]
cause-past

b. D-str/S-str/PF/LF_1: [$_{IP}$ NP-ga NP-ni NP-o [$_I$ V-sase-ta]]
nom dat acc cause-past

This **simplex** syntactic structure reaches PF and LF components as is, presumably no principle of grammar requiring any alteration of this

structure in the overt syntax. In the output of PF, therefore, the complex predicate maintains its word status, and is pronounced accordingly. When the same syntactic structure reaches the LF component, on the other hand, each morpheme constituting the complex predicate undergoes "Affix Raising," an instance of Move-α, in order to satisfy its own θ-selectional and/or c-selectional properties. As a result, the simplex syntactic structure will be mapped onto the **complex** syntactic structure as in (156):

(156) LF_f: [$_{IP}$ [$_{VP}$ NP-ga [$_{VP}$ NP-ni NP-o V] sase] ta]
nom dat acc cause past

The crucial claim here is that the complex syntactic structure (156) is derived from the simplex syntactic structure (155b) **within the LF component**.[53]

Suppose now that we continue to pursue our hypothesis that the LF-licensing of any stntactic entity including anaphors and pronominals may take place anywhere within the component, which played an impotant role in many different arguments above. The binding facts in (153) above then will follow quite straightforwardly. First, the anaphor *mizukara* may be licensed in a simplex syntactic structure as in (155b) before Affix Raising applies. This permits *mizukara* in (154a) to be bound by the causer NP_1-*ga*. The same anaphor may of course undergo licensing in a complex syntactic structure as in (156) after Affix Raising has applied. The result will be its binding by the causee NP_2-*ni*, which is also permited in (153).[54] Although the Condition B completely prohibits the empty pronominal in (153) from being licensed in the simplex structure in (155b), the same pronominal

may still be licensed in the complex syntactic structure (156) after Affix Raising has applied. The only possible licensor, however, is the causer NP_1-*ga*, and not the causee NP_2-*ni* in this structure due to the Condition B. In a sense, then, the LF Affix Raising Approach permits us to provide both analyses of causative sentences in (154), which are necessarily implied by the binding facts in (153), without any contradiction.

Note, however, that the Affix Raising analysis does not observe the uniform θ-marking requirement of the Projection Principle, since θ-marking at D-structure and S-structure as in (155b), if it is ever required, must be radically different from that in the LF-representation like (156), the output of Affix Raising. Therefore, if the Affix Raising Approach to the binding facts in (153) above turns out to be correct, we must reject the uniform θ-marking requirement of the Projection Principle.

Suppose, alternatively, that we adopt an analysis designed to be compatible with the Projection Principle, and assume that a complex predicate is derived in the overt syntax by the application of Incorporation (Baker (1988)), as illustrated in (157):[55]

(157) a. D-str: $[_{IP}$ NP-ga [NP-ni NP-o V] sase ta]
nom dat acc cause past

=== Incorporation ==>

b. S-str/PF/LF: $[_{IP}$ NP-ga [NP-ni NP-o $\underline{t}_1$] $\underline{\mathbf{V}}_1$-sase ta]
nom dat acc |____↑ cause past

Crucially, the sentence starts out as, and remains to be, syntactically complex throughout the derivation, which is compatible with the Projection Principle. It is claimed in the Incorporation

Approach, however, that due to (158) below, the derived complex predicate (V_1-*sase*) comes to govern the object NP (NP-*o*) in (157b):[56]

(158) The Government Transparency Corollary: (Baker (Ibid., 64)

> A lexical category which has an item incorporated into it governs everything which the incorporated item governed in its original structural position.

Such "government transparency" is claimed to be responsible for: (i) the contrast between (159a) and (159b) below, causing a Condition B violation only in (159b), and (ii) the fact that "the only grammatical way to express referential identity between the matrix subject and the thematic possessor of the incorporated object in Mohawk is to use an anaphoric contruction, based on the reflexive form of the verb (see (159c)), rather than a pronominal construction" (Baker (Ibid, 101-102)):

(159) Condition B Violation in Mohawk Possessor Raising Construction:

a. **I?i** k-ohres [ne **i?i** wak-nuhs-a?].
   I washed DET I house

   'I washed my house.'

b. *__**I?I**__ k-*nuhs*$_1$-ohres [ne __**i?I**__ t_1].
   I house-washed DET I
   | ↑
   |__Government__|

   'I washed my house.'

c. __**I?i**__ k-**atat**-nuhs-ohres.
   I self-house-washed

   'I washed my own house.'

Note that licensing of anaphors and pronominals is crucially assumed in this approach to take place in the output representation of

Incorporation rather than in its input representation (which resembles (159a) structurally).

Licensing of an anaphor and a pronominal in a causative sentence like (153) above, therefore, should take place in a representation as in (160) below, where an arrow indicates government relation, and "BC" indicates binding category:

(160) S/LF: [**BC** NP_1-ga [NP_2-ni { mizukara$_{2/*1}$ ↑ pro$_{*1/*2}$ }-o t_3] V_3-sase ta]

This approach, then, will leave it unaccounted for that the empty pronominal may be bound by the causer NP_1-ga in (153), and that *mizukara* may be bound by the causee NP_2-ni, if this reflexive anaphor turns out to be subject-oriented.

We, thus, have seen that there exist at least two empirical phenomena, other than those we have examined earlier in this paper, which cast doubt on (universality of) the uniform θ-marking requirement of the Project Principle. We have seen, in other words, that all three components of the Projection Principle in (136) above need not and in fact should not be independently stipulated in the grammar.

One concern which may arise is that, without the uniform θ-marking requirement, we will not be able to prohibit movement from a θ-position to a non-θ-position as in the case of raising to object. This concern, however, need not arise, since we have already decided to eliminate an option of substitution movement involving a base-generated empty place holder under the Internal Subject Hypothesis. We

can also eliminate unconstrained insertion of items in the course of syntactic derivation by restricting the insertion of any lexical item strictly to D-structure. Uncounstrained deletion can be also prohibited by the recoverability condition on deletion.

It should also be noted that, the elimination of the Projection Principle proposed here leads us to conclude that, if something like the Uniform Theta Assignment Hypothesis as in (161) below is indeed necessary, it should be regarded as a principle at LF rather than at D-structure:

(161) Uniform Theta Assignment Hypothesis (UTAH): (Baker (Ibid., 46))

> Identical thematic relationships between items are represented by identical structural relationships between those items **at the level of D-structure**. [Emphasis by Y.K.]

Given the trace theory and the assumption that the θ-Criterion is an LF principle, this, in fact, seems to be a quite natural move to take.

Appendix 1: Subject Movement

As we saw in 2.1. above, it is claimed in the Scrambling Approach that quantified expressions in Japanese exhibit scope ambiguity when and only when the application of Move α creates marked word order. As Hoji (1985) points out, however, this result cannot be ensured unless double application of scrambling as in (162) below is somehow prohibited, for example by a convention as in (163):

(162) a. D-str: Q_1-ga Q_2-o V == scrambling ==>

b. Q_2-***o*** Q_1-ga t_2 V == scrambling ==>

↑_____|

c. S-str: Q_1-***ga*** Q_2-o t_1 t_2 V
↑_____|

(163) A syntactic adjunction operation cannot apply if it does not change the order of the overt lexical string. (= (14))

Saito (1985), on the other hand, proposes that this task can be fulfilled by prohibiting movement of all *ga*-marked NPs with the condition like (164):

(164) Variables must have Case. (Chomsky (1981))

Since the nominative Case particle *ga* is not "lexically" licensed with any abstract Case (see 3.1.), application of scrambling (= A'-movement) to any *ga*-marked NP would necessarily leave a Case-less trace behind, which would be ruled out by the condition (164).

In order to substantiate this claim, he compares the examples in (165) with those in (166), and points out that multiple long-distance scrambling becomes illicit only when it involves movement of *ga*-marked NPs. (The judgments are his.):

(165) a. Bill$_1$-ni sono hon$_2$-o Mary-ga [John-ga t_1 t_2 watasita to]
dat that book-acc nom nom handed comp

omotteiru (koto)
think

'Mary thinks that John gave that book to Bill.'

b. Sono hon$_2$-o Bill$_1$-ni Mary-ga [John-ga t_1 t_2 watasita to]
that book-acc dat nom nom
omotteiru (koto)

c. Asita$_1$ gakkoo$_2$-ni John-ga [Mary-ga t_1 t_2 kuru daroo to]
tomorrow school-dat nom nom come perhaps comp

omotteiru (koto)
think

'John thinks that Mary will come to school tomorrow.'

d. Bill$_1$-ni sono hon$_2$-o Mary$_3$-ga [pro$_3$ t$_1$ t$_2$ yomasetai to]
dat that book-acc nom

omotteiru (koto)
think

'Mary thinks she wants to make Bill read that book.'

(166) a. *Mary$_2$-ni Bill$_1$-ga John-wa [t$_1$ gakkoo-de t$_2$ kisusita koto]-o
dat nom top school-at kissed fact-acc

Jane-ni osieta.
to told

'John told Jane that Bill kissed Mary at school.'

b. *John$_2$-ni sono hon$_1$-ga Mary-ga [t$_1$ t$_2$ akueikyoo-o
dat that book-nom nom bad.influence-acc

ataeta to]] omotteiru (koto)
gave comp think

'Mary thinks that that book gave a bad influence to John.'

c. *Sono okasi$_1$-ga John-ga [t$_1$ oisii to] omotteiru (koto)
that sweets-nom nom delicious comp think

'John thinks that that sweet stuff is delicious.'

d. *Sono hon$_1$-ga John-ga [t$_1$ yoku ureteiru to] omotteiru (koto)
that book-nom nom well sell comp think (fact)

'John thinks that that book selling well.'

(Saito (Ibid., 182-183))

Examples in (167) below are claimed to be only apparent conterexamples to this hypothesis, with the assumption that *wa*-marked phrases can be used parenthetically:

(167) a. Kono giron-ga boku-**wa** itiban settokuteki-da to omou
this argument-nom I-top most convincing comp think

'I think this argument is most convincing.'

(Harada (1977, 100), as cited by Saito (Ibid.))

b. ?Ano hito-ga watasi-**wa** Tookyoo-ni itta to iu koto-o
that person-nom I-top Tokyo-dat went comp say fact-acc

kiita 'I heard people say that that person went to Tokyo.'
heard

(Haig (1976, 370), as cited by Saito (Ibid.))

c.??Bill-ga **John-wa** gakkoo-de Mary-ni kisusita koto-o Jane-ni
nom top school-at to kissed fact-acc dat

osieta.
told

'John told Jane that Bill kissed Mary at school.'

(Saito (Ibid., 188))

Some other counterexamples like (168a) below are claimed to involve a base-generated major subject. The motivation for this analysis is that a resumptive pronoun is marginally allowed in the embedded clause, as illustrated in (168b):

(168) a. ??Kono giron$_1$-**ga** John-ga [e$_1$ itiban settokuteki-da to]
this argument-nom nom most convincing comp

omotteiru
think

'John thinks that this argument is most convinsing.'

b. ??Kono giron$_1$-**ga** John-ga [**sore**$_1$-ga itiban settokuteki-da to]
that

omotteiru

(Saito (Ibid., 220,222))

While the arguments here proceed logically and flawlessly, there seem to exist some facts that fall outside of the empirical coverage of the peoposed analyses. For example, there are sentences like (169a) and (170a) below, which permit a *ga*-marked NP belonging to the embedded clause to be followed by a matrix item other than *wa*-marked

NPs, yet disallow a resumptive pronoun in the embedded clause, as illustrated in (169b) and (170b):

(169) a. Kanzyasan$_1$-ga, Sensei-ni [t_1 san-nin mieta to] otutae
patients-nom Doctor-to 3=people showed=up comp tell

-negaemasuka
can=I=request

'Would you tell the doctor that three patients have showed up?'

b.*Kanzyasan$_1$-ga, Sensei-ni [**karera/sono hito-tati**$_1$-ga sannin
they/those people

mieta to] otutae-negaemasuka

(170) a. Omae$_1$-ga, daremo(-*wa) [t_1 nusuminado-hataraku to]-wa
you-nom nobody(-top) steal comp-top

omottya-inai-yo
not=thinking

'Nobody thinks that you do anything like stealing.'

b. *Omae$_1$-ga, daremo [**soitu/omae**-ga nusuminado-hataraku to]-wa
you-nom nobody that=brat/you-nom steal comp-top

omottya-inai-yo
not=thinking

Note also that example (166a) above, in fact, has a *wa*-phrase following a *ga*-phrase, hence should be acceptable according to the parenthetical *wa* account.

In fact, the examples in (166) above, which were claimed to involve illicit movement seem to significantly improve when we treat each preposed phrase as an independent prosodic phrase and assign a clear focus interpretation and intonation, as in (171) below, although some of the sentences are still somewhat difficult to interpret perhaps due to the multiple foci, as pointed out by Saito (Ibid., 261):[57]

(171) a. ?**MÁRY**$_2$**-NI // BÍLL**$_1$**-GA //** John-wa [$\underline{t}_1$ gakkoo-de $\underline{t}_2$ kisusita koto]-o Jane-ni osieta.

b. ?**JÓHN**$_2$**-NI // SONÓ HON**$_1$**-GA //** Mary-ga [$\underline{t}_1$ $\underline{t}_2$ akueikyoo-o ataeta to] omotteiru (koto)

c. **SONÓ OKASI**$_1$**-GA //** John-ga [$\underline{t}_1$ oisii to] omotteiru (koto)

d. **SONÓ HON**$_1$**-GA //** John-ga [t_1 yoku ureteiru to] omotteiru (koto)

It, thus, seems to be the case that movement of *ga*-marked NPs is in fact possible.

Appendix 2: Scope of Adverbial Quantifiers

Extending Huang's (1982) observation from Chinese to Japanese, Hoji (1985) claims that a sentence containing two quantified expressions, one or both of which are adverbial, does not exhibit scope ambiguity irrespective of the word order. In (172)-(174) below are some relevant examples :

(172) Adv NP-ga/NP-ga Adv:

a. **Ituka daremo-ga** sinu (E>∀ /?? ∀>E)
sometime everyone-nom die

'At some time, everyone will die.'

(Hoji (1985), cf. Huang (1982))

b. Asoko-no uti-de-wa **dareka-ga itumo**
that-gen house-at-top someone-nom always

terebi-o miteiru (E>∀ /?? ∀>E)
TV-acc watching

'In that house, someone is always wathcing TV.'

(173) Adv NP-o/NP-o Adv:

a. Imani-mitero **ituka** [omaera-no **daremo**]-**o**
Before=long sometime you-gen everyone-acc

ore-to-onaziyoona-me-ni awaseteyaru (E>∀ /?? ∀>E)
same=hardship=as=mine-dat let=meet

'Sometime, I'll make every one of you suffer just as I did.'

b. FBI-ga [konokaisya-no **dareka**]-**o** **itumo** mihatteiru (E>∀ /?? ∀>E)
nom this=company-gen someone-acc always stake=out

'FBI is always staking out someone in this company.'

(174) Adv Adv:

a. [Itigatu **ka** nigatu]-**ni** [sekai-zyuu-no **arayuru-tokoro**]-**de**
January or February-in all=over=the=world-gen every-place-at

zisin-ga okoru to-yuu yogen (OR > ∀ /?? ∀ > OR)
earthquake-nom occur such=that prophecy

'a prophecy such that en earth quake will hit all over the world in January or February.'

b. Aitu-wa [kono-mati-no **dokoka**]-**de** **maiban** (E>∀ /?? ∀>E)
that=brat-top this-town-gen somewhere every=night

yusuri-o-hataraiteiru rasii
extorting I=heard

'I heard that that brat is extorting money from people somewhere in this town every night.'

Based upon this observation, Hoji concludes that either scrambling does not apply to adverbial expressions or it must be stipulated that scrambling does not leave a trace when it moves an adverbial expression.

As in the case involving quantified expressions which are all arguments, however, some speakers find these sentences to exhibit at least weak scope ambiguity, while all seem to agree that there is

clear preference for the scope relation reflecting the word order. In fact, it seems possible to make the marked scope interpretation more easily available by imposing rather strong pragmatic pressure on each examples, as in (175):[58]

(175) a. **Osokare-hayakare Ituka daremo-ga** sinu (∀>E)
sooner=or=later sometime everyone-nom die

'Sooner or later, everyone will die at some time.'

b. **Dare-ga mihar-are-teiru ka-wa sono-hi-ni-yotte**
who-nom stake=out=passive compe-top depending=on=the=day

tigau yooda-ga,
differ seem-but

FBI-ga [konokaisya-no **dareka**]**-o itumo** mihatteiru (∀>E)
nom this=company-gen someone-acc always stake=out

'FBI is always staking out someone in this company, though who is being staked out differs from day to day.'

c. **Basyo-ni-yotte dotira-no tuki ni-naru ka-wa**
place-depending=on which-gen month become comp-top

wakaranai-ga [Itigatu **ka** nigatu (no dotiraka)]**-ni**
not=known-but January or February gen one=of=the=two-in

[sekai-zyuu-no **arayuru-tokoro**]**-de** zisin-ga okoru
all=over=the=world-gen every-place-at earthquake-nom occur

(∀ > OR)

'Although in which month it will happen varies depending on the place, an earth quake will hit all over the world in January or February'

It also seems to be the case that the placing of focus intonation as well as the application of long-distance preposing as in (176) and (177) below yields clear scope ambiguity:

(176) a. **ITUKA //** daremo-ga sinundesu (E>∀/∀>E)
sometime everyone-nom die

b. Asoko-no uti-de-wa **DAREKA⌈-ga** // itumo
that-gen house-at-top someone-nom always

terebi-o miteiru (E>∀/∀>E)
TV-acc watching

c. Imani-mitero **ITUKA⌈** // [omaera-no daremo]-o
Before=long sometime you-gen everyone-acc

ore-to-onaziyoona-me-ni awaseteyaru (E>∀/∀>E)
same=hardship=as=mine-dat let=meet

'Sometime, I'll make every one of you suffer just as I did.'

d. FBI-ga **[KONO-KAISYA-NO DAREKA⌈]-O** // itumo
nom this=company-gen someone-acc always

mihateiru (E>∀/∀>E)
staking=out

e. **[ITIGATU KA′ NIGATU (NO DOTIRAKA′)]-NI** // [sekai-zyuu-no
January or February (gen one=of=the=two)-in all=over=the=world-ge

arayuru-tokoro]-de zisin-ga okoru (OR > ∀/∀ > OR)
every-place-at earthquake-nom occur

f. Aitu-wa **[KONO-MATI-NO DOKOKA⌈]-DE** // maiban
that=brat-top this-town-gen somewhere every=night

yusuri-o-hataraiteiru rasii (E>>∀/∀>E)
extorting I=heard

(177) a. **Ituka⌈,** boku-wa [daremo-ga rippana syakaizin ninat-te
sometime I-top everyone-nom fine adult become-and

koko-e modottekuru to] sinziteiru (E>>∀/∀>E)
here-to return comp believe

'I believe that everyone will return here someday
as a fine adult.'

b. **San-nin-no keibiin-noutino da-reka⌈-ga,**
three-people-gen guard-among someone-nom

sono-keibigaisya-wa [iriguti-o
that-security=company-top entrance-acc

tune-ni kansisi-teita to] syutyoosita (E>∀/∀>E)
that-gen house-at-top someone-nom always

'The security company insisted that one of the three guards was always watching the entrance.'

c. **Ituka⌈,** watasi-wa [sono-otoko-ga daremo-o
someday I-top that-guy-nom everyone-acc

sagasiatetesimau daroo to] omou (E>>∀/∀>E)
find=out probably comp think

'I'm afraid that he will probably find out where everyone is someday.'

d. **[Konokaisya-no dareka⌈]-o,** watasi-wa [FBI-ga itumo
this=company-gen someone-acc I-top nom always

mihatteiru to] sirasareta (E>∀/∀>E)
stakin=out comp told

'I hewas told that FBI is always staking out someone in this company.'

e. **[Itigatu ka nigatu (no dotiraka)]-ni,** sono-otoko-wa
January or February (gen one=of=the=two)-in that-man-top

[sekai-zyuu-no **arayuru-tokoro**]**-de**
all=over=the=world-gen every-place-at

zisin-ga okoru to] yogensita (OR > ∀/∀ > OR)
earthquake-nom occur comp prophesied

'That man prophesied that en earth quake will hit all over the world in January or February.'

f. [Kono-mati-no **dokoka⌈**]**-de,** watasi-wa [Aitu-ga
this-town-gen somewhere-at I-top that=brat-top

maiban yusuri-o-hataraiteiru to] kiita (E>∀/∀>E)
every=night extorting comp heard

'I heard that he is extorting money from people somewhere in this town every night.'

Thus, quantified adverbials seem to exhibit completely parallel behaviors with quantified arguments concerning scope interpretation, except that the change in their word order does not yield any clearer scope ambiguity. If we assume, however: (i) that adverbs in Japanese may be base-generated either to the left or to the right of any argument, and (ii) that scrambling as focus movement may apply to them and leaves their trace, this exceptional behavior of quantified adverbials will also follow naturally in the general framework we have adopted. This will allow us to account for all the facts observed in (172)-(177) above without necessitating any stipulative treatment of adverbials.

First, the sentences in (176) exhibit clear scope ambiguity because they may be ambiguously analyzed as having an LF-representation either as in (178a) or (178b) below, due to the application of scrambling:

(178) a. S-str/LF: [**Adv-Q**$_2$ Q$_1$ **t**$_2$ V]
↑_____|

b. S-str/LF: [**Adv-Q**$_1$ **t**$_1$ Q$_2$ V]
↑_____|

The same is true with the sentences in (177), which may be ambiguously analyzed as in (179):

(179) a. S-str/LF: **Adv-Q**$_2$ ... [... Q$_1$ **t**$_2$ V]
↑_____|

b. S-str/LF: **Adv-Q**$_1$ ... [... **t**$_1$ Q$_2$ V]
↑_____|

Second, when the sentences are not accompanied by any overt sign of focalization, as in (176), their unmarked analysis is to regard them as maintaining the base-generated word order, which leads us to an unambiguous scope interpretation. Note that, since abstract Case assignment in Japanese generally does not require adjacency between the assigner and assignee, the sentences are not subject to anti-scrambling, either, in accordance with its Case-driven nature as well as the Isomprphy Constraint (18).

The same sentences, however, are also subject to a marked analysis such that they have LF representations as in (178). (Recall that the markedness of this analysis arises from the discrepancy between the representations at PF and LF.) This explains the markedness of the "weaker" scope interpretation.

Thus, we conclude that quantified adverbials do not require any special treatment.

Notes

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1 To be precise, Hoji formulates (6) as a condition on LF representations per se, as in (i) below, noting its potential problems (Footnote 25, 298-299):

(i) at LF *QP_1 QP_2 t_2 t_1 where each member c-commands the member to its right.

(Hoji (Ibid., 248))

It is obvious that Reinhart's (1983) and Huang's (1982) versions of this condition as in (ii) and (iii) below, respectively, are insufficient to deal with the scope ambiguity involved in (3a-c), since, if Hoji's account is essentially correct, S-structure positions are irrelevant in yielding the scope reading represented in (5a):

(ii) A logical structure in which a quantifier binding a variable *x* has wide scope over a quantifier binding a (distinct) variable *y* is a possible interpretation for a given structure S only if in the surface structure of S the quantified expression (QE) corresponding to *y* is in the [c-command: Y.K.] domain of the QE corresponding to *x*.

(Reinhart (1983, 188))

(iii) Suppose A and B are both QPs or both Q-NPs or Q-expressions, then if A c-commands B at SS, A also c-commands B at LF.

(Huang (1982, 220))

I will regard what is at stake as a descriptive generalization concerning the scope interaction of quantified expressions in languages like Japanese and Chinese, as stated in (6).

[2] In Hoji (Ibid., 251), it is assumed that the intermediate trace t_2 in (5-a) does not count for the condition (6), since it is only optionally present, its presence not required by any principles of grammar (Pesetsky (1982), Lasnik and Saito (1984)).

[3] It is not at all clear, however, whether we are really dealing here with qualitative variation rather than quantative variation among the speakers. In fact, in my limited investigation, even if his or her first impression was that unmarked word order can never yield scope ambiguity, every speaker could detect weak ambiguity in the end when the examples were altered in one way or another with different type of predicates, predicates forms and/or pragmatic contexts. This makes contrast, for instance, with the absolute prohibition against the lower scope interpretation of *dareka* 'someone' as in (i), which seem to be unreversible with any tinkering of the example:

(i) **Dareka**-ga [John-ga **daremo**-o bakani-siteiru to] omotteiru.
someone-nom nom everyone-acc despise comp think

'Someone thinks that John despises everyone.' (*∀>E)

It also seems possible to impose a strong pragmatic pressure toward the scope interpretation in question (E/OR>∀), and obtain perfect sentences as in (ii):

(ii) a. Zizen-ni soodansite zynguri-ni **dareka-ga** **daremo-o**
beforehand discussed in=turn someone-nom everyone-acc

homeru-yooni-sita.
praised

'As it was agreed upon beforehand, someone praised everyone in turn.'

b. Kono-kiroku ni-yoru-to [Taroo **ka** Ziroo (-no ditiraka)-ga
this-record according=to or (-gen one=of=the=two)-nom

dono-nimotu-mo sirabeta] koto ni-natteimasu
every=parcel checked fact has=become

'According to this record, Taro or Jiro checked every parcel.'

[4] We will also discuss adverbial quantifiers in Appendix 1 below.

[5] Saito (1985) also argues that this option is not available, but on different grounds. We will examine his arguments in Appendix 2 below.

[6] For ease of expostion, however, we will continue to use the expression "at LF" rather loosely to refer to LF either as a representation or as a component when the distinction between the two is not necessary, or is clear from the context.

[7] Kitagawa (1986, 1989) argues that the highlighted portions in (i a-b) below are the VP-internal subjects surfaced "in-situ," with the hypothesis that English has an underlying VOS order:

(i) a. It is unlikely **that he will come back in time**.

b. There walks into the room **an old man from Oklahoma City**.

See also Fukui (1986) and Koopman and Sportiche (1986) for an analysis similar to ((17b).

[8] If it turns out that subjects are indeed "compositionally" θ-marked by the verb and object, as claimed by Aoun and Sportiche (1983), Chomsky (1981) and Marantz (1981), we can still assume that V' as the head of VP θ-marks subject under government.

[9] Defining "maximal projection" (or a phrasal node) as the top-most node of a categorial projection, I will regard the higher rather than the lower X node in the adjunction structure (i) below as the maximal projection:

(i) [x Y_1 [x .... t_1 ...
↑_____|

We thus obtain a representation like (ii) below after the internal subject is adjoined to the original IP node, which now is a "medial" node (I'):

(ii) $[_{IP}\ Y_1\ [_{I'}\ \ldots\ t_1\ \ldots$
↑_____|

[10] Takezawa considers, however, that nominative Case is actually assigned by INFL in Japanese.

[11] See Baker (1988) for a similar idea.

[12] Kitagawa (in preparation a) further discusses and argues for the licensing theory of Case for Japanese.

[13] We will further discuss this issue in 4.3. below.

[14] Ascribing the example to Susumu Kuno, Saito (1985,40) reports that the indicated pronominal coreference in (i) below is perfectly grammatical:

(i) $[_{NP}\ [_{IP}$ Mary-ga **John**$_1$-ni okutta] tegami]-o **kare**$_1$-ga mada
nom dat sent letter-acc he-nom yet

yondeinai (koto)
haven't=read (fact)

'He has not yet read the letter that Mary sent to John.'

I agree that the pronominal coreference in this example is much easier than those in (7) (cf. (26)) even without focusing. I do not have any explanation for this judgment except for the observation that there exists strong pressure for the coreferential reading in (i) from pragmatics: it requres some extra efforts to imagine a situation in which some third (male) person is expected to read a letter which Mary sent to John. As can be seen in (ii) below, however, the presence of such pragmatic pressure alone obviously is not enough to save the totally ungrammatical pronominal coreference:

(ii) *__Kare__$_1$-ga $[_{NP}\ [_{IP}$ Mary-ga __John__$_1$-ni okutta] tegami]-o mada
he-nom nom dat sent letter-acc yet

yondeinai (koto)
haven't=read (fact)

'He has not yet read the letter that Mary sent to John.'

It may, on the other hand, be able to somehow lessen the markedness of the derivation required to permit the pronominal coreference in (i). In fact, the intended coreference in similar examples becomes somewhat more difficult again when such pragmatic pressure is eliminated, as in (iii):

(iii) a. ??[$_{NP}$ [$_{IP}$ **John**$_1$-ga e$_2$ kaita] tegami$_2$]-o **kare**$_1$-ga mada
-nom wrote letter-acc he-nom yet

tookansiteinai (koto)
not=mailed (fact)

'He hasn't mailed the letter John wrote.'

b.??[$_{NP}$ [$_{IP}$ e$_2$ **John**$_1$-o nagutta] otoko$_2$]-o **kare**$_1$-ga
acc punched man-acc he-nom

ekimaede mikaketa (koto)
in=front=of=the=station saw (fact)

'In front of the station, he saw the man who hit John.'

While Saito (Ibid., 48-49) suggests that the pronominal coreference in (i) is possible because the antecedent there is embedded "deeply enough," and hence is immune to "crossover" effect, the examples in (iii) suggest that such "deepness" cannot be a decisive factor.

[15] We predict, on the other hand, that the example in (i) below still involves the violation of the Condition C/D even with the derivation as in (ii):

(i) *'**KARE**$_1$**-GA** // [John$_1$-no titioya]-o sahodo sonkeisiteinai (koto)
he-nom gen father-acc not=very does=not=respect (fact)

'He does not respect John's father that much.'

(ii) D-str: [John-no titioya]-o kare-ga sahodo sonkeisiteinai

=== Scrambling ===>

S-str/LF$_1$: **KARE**$_1$**-GA** [John$_1$-no titioya]-o t$_1$ sahodo sonkeisiteinai
↑_____|

=== Anti-Scrambling ===>

LF$_2$: **KARE**$_1$**-GA** **t**$_1$ [John$_1$-no titioya]-o __ sahodo sonkeisiteinai
↑_____|

Note that the hierarchical order of *kare* 'he' and *John* stays consistant throughout the derivation in the LF component, violating the Condition C/D

[16] There actually is another possible derivation, which involves string-vacuous application of scrambling to the subject NP as in (i):

(i) NP$_1$-'**GA** // **t**$_1$ NP-o V
↑_____|

In this case, however, scrambling does not alter the hierarchical order of arguments. Anti-scrambling is not applicable, either, in accordance with the Isomorphy Constraint ((18)). As a result, scrambling here is expected to have no interesting effect on pronominal coreference or quantifier scope. We will therefore disregard this derivation. See Appendix 1 for discussion on the applicability of scrambling to subject in general.

[17] We will see independent motivation for this assumption in Section 5 below.

[18] Again, we can even force the lower scope interpretation of *dareka* 'someone' and obtain a perfect sentence as in (i):

(i) [**TAROO KA ZIROO (NO DOTIRAKA)**]**-GA** //
or (gen one of the two)-nom

kono-kiroku ni-yoru-to [*dono-nimotu-mo* sirabeta]
this-record according=to every=parcel checked

koto ni-natteimasu
fact has=become

'According to this record, Taro or Jiro checked every parcel.'

[19] Alternatively, we may consider that speakers have different degrees of markedness for this option, which gives rise to variation in question. See footnote 3 above. See also 4.3. below.

[20] Webelhuth (1989), Mahajan (1989, 1990) and Saito (1990) also discuss the heterogenious properties of short-distance scrambling in different languages, characterizing it in terms of the notions A-movement and A'-movement. Mahajan, in particular, claims that scrambling can be either A'-movement or A-movement, the latter of which is "Case-driven." This approach and ours obviously share the conceptual core. I must leave the comparison of these different approaches, however, to another occasion.

[21] A Weak Crossover phenomenon in Japanese was first discussed by Saito and Hoji (1983). See also Hoji (1985) and Saito (1985, 1987).

The relevant level of representation here, of course, is LF, which is obtained after QR applies in (45a-b), as schematically illustrated in (i):

(i) LF: *$\forall_1$-o [... pro$_1$ ...]-ga t_1 V
↑_____|

[22] If the examples in (47) involve base-generation of unmarked word order and the applicatin of anti-scrambling at LF, as

schematically illustrated in (i) below, we also predict the lack of a Weak Crossover violation, since the quantified expression legitimately comes to c-command and bind the empty pronoun at LF:

(i) a. D-str/S-str/PF/LF_1: [... pro_1 ...]$_2$-o $\forall_1$-ga V

b. LF_f: $\forall_1$-ga [... pro_1 ...]$_2$-o __ V
↑_____|

[23] We must be careful, in (53b) and (54a) for instance, not to force ourselves to associate a floating quantifier with an immediately preceding NP, pronouncing them as if they make a constituent, as in (i) below, since this will make the sentence awkward independent of the licensing of floating quantifiers:

(i) a. [kodomo-ga gozyuk-ko] (for (53b))
child-nom fifty-piece

b. [biidama-o hutari] (for (54a))
marble-acc two-people

Throughout this paper, I will use a square bracket followed by a comma as in (ii) below, in order to remind ourselves of this warning:

(ii) a. [kodomo-ga], gozyuk-ko
child-nom fifty-peices

b. [biidama-o], hutari
marble-acc two-people

[24] We do not concern ourselves here with what exactly constitutes such a licensing condition. See Miyagawa (1988, 1989) for relevant discussion.

[25] But see Saito (Ibid.,47-51) for the argument that the awkwardness of (60c) and (61c) is due to "crossover" effect. As we saw in footnote 14 above, however, "deepness condition," which is the basis of this argument seems rather unreal. See also Lebeaux (1988) for the irrelevance of deepness condition in reconstruction phenomena.

[26] See, however, footnote 3.

[27] See also footnote 14.

[28] A crucial assumtion here is that the language users try to maximally utilize the options available in the grammar in order to provide a felicitous interpretation to sentences, while they do not make the same kind of efforts to rule out sentences.

[29] We should naturally make a claim that the awkwardness of backward pronominalization in (69) arises from some extra-syntactic factor, since we are assuming that the pronominal coreference in (71a-e) is in fact established in a forward fashion in the LF representation like (74).

[30] Note that LF-reconstruction or chain binding fulfills the task equally well in this case.

[31] We will further examine this analysis in Appendix 1.

[32] This story is oversimplified. See Kitagawa (in prepartation), Kuno (1973), Sugioka (1984) and references cited there for relevant discussion on this matter.

[33] Some speakers reported to me that they find the interpretations in (84c) slightly harder than those in (84b). Note that only the thematic interpretation requires a marked option in (84b), whereas both thematic interpretation and scope interpretation require it in (84c). This possibly is the source for the contrast between these two different combinations of interpretations, if it is real.

[34] See 2.1. and 3.2. above.

[35] See 4.1. above.

[36] Again, we should be careful not to unconsciously force ourselves to associate the floating quantifier here with the immediately preceding NP, pronouncing them as if they were to make up a constituent, as in (i):

(i) [America-no gakusya-o zyuu-nin]
gen scholar-acc ten-people

[37] The complex predicate headed by -*e* 'can' permits its internal argument to be marked either by -*ga* (nominative) or -*o* (accusative) when the non-head predicate has an accusative assigning property. Accordingly, the sentences in (99) and (102) may have an accusative construction as in (i)-(ii) below:

(i) Iinkai-no kitei ni-yoruto, **Nihon-no gakusya**$_1$**-ga**
committee-gen regulation according=to Japan-gen scholar-nom

[America-no gakusya**-o**], **zyuu-nin**$_1$ erab-e-ru koto ni-natteiru
gen scholar-nom ten-people select-can-pres fact has=become

'According to the committee's regulation, Japanese scholars may select ten American scholars.'

or

'According to the committee's regulation, ten Japanese scholars may select American scholars.'

(ii) a. Iinkai-no kitei ni-yoruto,
committee-gen regulation according=to

, **NIHON-NO GAKUSYA$_1$-GA** // [America-no gakusya-**o**],
Japan-gen scholar-nom gen scholar-acc

zyuu-nin$_1$ erab-e-ru koto ni-natteiru
ten-people select-can-pres fact has=become

'According to the committee's regulation,
Japanese scholars may select ten American scholars.'

or

'According to the committee's regulation,
ten American scholars may select Japanese scholars.'

or

'In accordance with the committee's regulation,
American scholars may select ten Japanese scholars.'

b. , **Nihon-no gakusya$_1$-ga,** iinkai-wa [[America-no gakusya-**o**],
Japan-gen scholar-nom committee-top gen scholar-acc

zyuu$_1$-nin erab-e-ru to] happyoosita
ten-people select-can-pres comp announced

'The committee announced that Japanese scholars may select
ten American scholars.'

or

'The committee announced that ten Japanese scholars may select
American scholars.'

As expected, quantifier float in (i) is only marginally allowed, while that in (ii) is perfect.

I assume here that assignment of abstract accusative Case is done after the head morpheme *-e* is raised out of the complex predicate *erab-e* at LF, as illustrated in (iii):

(iii) a. LF_1: [$_{VP}$ NP_1-ga pro_1 NP-o [$_V$ [$_V$ erab]-e]]
select-can

b. LF_2: [$_{VP}$ NP_1-ga [$_{VP}$ pro_1 NP-o [$_V$ erab ___]] [$_V$ e]]
select | can
| ↑
|_____|

While such abstract Case assignment is obligatory when the internal argument is marked by -*o*, it does not have to take place when the internal argument is marked by -*ga*, since the Obligatory Case Discharge (22) (repreated here as (iv)) concerns only the abstract Case of a "lexically inserted predicate" rather than that of individual morpheme:

(iv) Obligatory Case Discharge: (LF)

Each abstract Case represented in the Case-grid of a lexically-inserted predicate must be uniquely discharged.

See Kitagawa (1986, in preparation a) for the details of the LF-Affix Raising Approach. (There is a brief introduction in Section 5 below.) See also Kuno (1973), Sugioka (1984), Takezawa (1987), and references cited there for relevant discussion on Case alternation.

[38] See Pesetsky (1987) and references cited there for discussion on the exceptions to superiority effects. See also footnote 39 below.

[39] As Greg Carlson pointed out to me, *hell*-phrases in English must undergo wh-movement in the overt syntax even in echo questions:

(i) *You saw **what' the hell**?

Lasnik and Saito (1984, 240, footnote 7) also point out that superiority effects disappear in the example like (i) below, which is fully acceptable as an echo question:

(i) What did **who'** see?

Based upon this fact, they suggest that focus *wh*'s in echo questions do not undergo LF-movement. Note, on the other hand, that, when an echo question involves a *hell*-phrase, the sentence becomes ungrammatical again presumably due to the requirement for obligatory movement imposed on the *hell*-phrase, as in (ii):

(ii) *What did **who' the hell** see?

[40] *Ittai* in Japanese seems to crucially differ from *the hell* in English, however, in its degree of agressiveness in forcing the "non-discourse-linked" interpretation of a *wh*-phrase it is associated with (Pesetsky (1987, 111)). Compare (ia) with (ib):

(i) a. *which the hell

b. (hutatu-no uti-no) ittai dotira
(between=the=two) on=earth which=alternative

'which on earth of the two alternatives'

[41] As can be seen in (i) below, echo questions seem to allow focalization of only one of the multi-wh-phrases:

(i) a. **WHO**, bought what?

b. Who bought **WHAT**,?

Note, however, that their interpretations involve only one person and one item. See also footnote 39 (= Lasnik-Saito) above.

[42] Special caution must be used to avoid focusing only one of the *wh*-phrases, which will alter the acceptability of the sentences as we will see lator. A slight accent on both *wh*-phrases without any pause between them seems to help to ensure the pair-wise interpretation of the two *wh*-phrases.

We have added the pre-nomial modifier *ano-naka-no* 'among those' to the *ittai*-phrases in (121a) and (122a), as structurally illustrated in (i) below, in order to eliminate the possibility of analyzing *ittai* as something other than the modifier of the *wh*-phrase itself:

(i) [$_{NP}$ ano-naka-no [ittai wh]]
among=those on=earth

[43] See Pesetsky (1987) for discussion on possible Subjacency violations involved in these sentences.

[44] As Pesetsky (Ibid.) points out, either linear or hierarchical version of the crossing constraint seems to be capable of properly treating superiority effects. See Kuno and Robinson (1972) and Pesetsky (1982), and the references cited there for discussion on crossing constraint in general.

[45] The only complication is that the pair-wise interpretation seems to be consistently harder when bare *wh*-phrases rather than *ittai*-phrases are preposed. One possible explanation for this contrast is that the more offending sentences involve the crossing variable binding relations in addition to the incompatibility between the paired question and focalization.

[46] Here, we disregard the strict identity interpretation involved in this sentence for simplicity. We will briefly discuss it directly below.

[47] See Kitagawa (to appear) for further discussion on the inadequacy of the deletion approach.

[48] As Sag (Ibid.) points out, many other speakers find strict identity in this sentence also possible. See Kitagawa (Ibid.) for a proposal to deal with this and other variation among speakers.

[49] Note also that, if the licensing/indexing of the NP trace in the first clause of (150b) took place before VP-Copy applies, the subject of the second clause *Bill*$_2$ would fail to be a member of the chain involving the object position, and violate the θ-Criterion.

[50] As is well-known, more widely examined *zibun* self' and *kare* 'he' exhibit quite different binding properties from these items. Kitagawa (1990, in preparation b) examines various nominal pro-forms in Japanese and English, and attempts to provide a systematic account of their binding properties that are unexpected under the theories of binding currently available in the literatures. See also Hoji (to appear) for much relevant discussion.

[51] If *mizukara* 'self' has subject-orientation, which is not at all clear, the fact that it may be bound either by NP$_1$-*ga* or NP$_2$-*ni* in (153) suggests both presence and absence of complementation --- a truly contradictory implication. See Kitagawa (in preparation a) for discussion.

Whether the dative-marked NP itself should be analyzed to be located within the complement or not in (154b) is controversial, though it does not affect the argument here. See Kitagawa (1986) for an argument for the analysis as in (154b) (cf. (156) below). See also Kuroda (1965) and Kuno (1973) for discussion.

[52] Kitagawa (Ibid.) points out that various phonological facts suggest the correctness of such lexical derivation of complex predicates in Japanese including passive and desiderative.

[53] See Kitagawa (Ibid.) for details and further motivation for this analysis.

[54] If it turns out that *mizukara* is not subject-oriented, it may be licensed by the causee NP$_2$-*ni* in the simplex syntactic structure (155b) as well.

[55] The Incorporation Approach is an extension of the analysis as in (i) below, argued for by Kuroda (1965), Kuno (1973), Shibatani (1973), Aissen (1974) and others, in which a syntactically simplex S-structure is derived from a syntactically complex D-structure:

(i) a. D-str: [$_{IP}$ NP-ga [NP-ni NP-o V] sase ta]
nom dat acc cause past

b. S-str/PF/LF: [$_{IP}$ NP-ga NP-ni NP-o V-sase ta]
nom dat acc cause past

Note, however, that this analysis is also incompatible with the Uniform θ-marking requirement of the Projection Principle.

[56] "The Government Transparency Corollary" in (158) is claimed to follow from a series of assumptions in (i)-(iii) (Baker (Ibid., 56,57,64)):

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

(a) C is not selected, or
(b) the head of C is distinct from the head of D and selects some WP equal to or containing B.

(ii) A selects B if and only if:

(a) A assigns a theta role to B, or
(b) A is of category C and B is its IP, or
(c) A is of category I and B is its VP.

(iii) X is distinct from Y only if no part of Y is a member of a (movement) chain containing X.

[57] It seems to me that some performance factor is involved in the awkwardness of the examples in (166). See Kuno (1980) and Saito (Ibid.) for relevant discussion.

It also seems to me that the examples (171a-b) further improve if we treat both preposed phrases as constituting a single focused item both in terms of interpretation and intonation, as in (i a-b):

(i) a. [**MARY**$_2$**-NI** **BILL**$_1$**-GA**] // John-wa [t_1 gakkoo-de t_2 kisusita koto]-o Jane-ni osieta.

b. [**JOHN**$_2$**-NI** **SONO HON**$_1$**-GA**] // Mary-ga [t_1 t_2 akueikyoo-o ataeta to] omotteiru (koto)

I have no analysis nor explanation for this intuition.

[58] See footnote 14 above for discussion on the role of such pragmatic pressure.

References

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

Aoun, J. and D. Sportiche (1983) "On the Formal Theory of Governmnet," *The Linguistic Review* 2.3., 211-236.

Baker, M. (1988) *Incorporation*, The University of Chicago Press.

Barss, A. (1986) *Chains and Anaphoric Dependence*, Doctoral dissertation, Massachusetts Institute of Technology.

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

Chomsky, N. (1982) *Some Concepts and Consequences of the Theory of Government and Binding*, MIT Press, Cambridge, Massachusetts.

Chomsky, N. (1986) *Knowledge of Language -- Its Nature, Origin, and Use*, Praeger, New York.

Chomsky, N. (1989) "Some Notes on Economy of Derivation and Representation," Laka, I. and A. Mahajan eds., *MIT Working Papers in Linguistics 10: Functional Heads and Clause Structure*.

Farmer, A. (1980) *On the Interaction of Morphology and Syntax*, Doctoral dissertation, Massachusetts Institute of Technology.

Fukui, N. (1986) *A Theory of Category Projections and Its Applications*, Doctoral dissertation, Massachusetts Institute of Technology.

Haig, J. H. (1976) "Shadow Pronoun Deletion in Japanese," *Linguistic Inquiry* 7.2., 363-371.

Haig, J. H. (1980) "Some Observations on Quantifier Floating in Japanese," *Linguistics* 18.

Hale, K. (1980) "Remarks on Japanese Phrase Structure: Comments on the Papers on Japanese Syntax," in Y. Otsu and A. Farmer eds., *MIT Working Papers in Linguistics: Theoretical Issues in Japanese Linguistics*, Massachusetts Institute of Technology.

Harada, S. I. (1977) "Nihongo ni Henkei wa Hituyoo da," *Gengo* 6, 11-12.

Higginbotham, J. (1983) "Logical Form, Binding, and Nominals," *Linguistic Inquiry* 14.3., 395-420.

Hoji, H. (1985) *Logical Form Constraints and Configurational Structures in Japanese*, Doctoral dissertation, University of Washington.

Huang, C.-T. J. (1982) *Logical Relations in Chinese and the Theory of Grammar*, Doctoral dissertation, Massachusetts Institute of Technology.

Jeaggli, O. (1982) *On Some Phonologically Null Elements in Syntax*, Foris, Dordrecht.

Kayne, R. (1981) "ECP Extensions," *Linguistic Inquiry* 12.1, 93-133.

Kitagawa, Y. (1986) *Subjects in Japanese and English*, Doctoral dissertation, University of Massachusetts at Amherst.

Kitagawa, Y. (1989) "Internal External Arguments," Paper Presented at Workshop on External Arguments, MIT, December 1989.

Kitagawa, Y. (1990) "De-pronominalization," Paper Presented at the Workshop on Japanese Syntax and Universal Grammar, The Ohio State University, May 1990.

Kitagawa, Y. (to appear) "Copying Identity," *Natural Language and Lingustic Theory* 9.

Kitagawa, Y. (in preparation a) *Complex Predicates in Japanese: Toward the Theory of Affix Raising*, Kluwer.

Kitagawa, Y. (in preparation b) "Affect α for Coreference."

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

Kuno, S. and J.J. Robinson (1972) "Multiple WH-Questions," *Linguistic Inquiry* 3, 463-487.

Kuno, S. (1980) "A (Further) Note on Tonoike's Intra-subjectivization Hypothesis," in Y. Otsu and A. Farmer eds., *MIT Working Papers in Linguistics: Theoretical Issues in Japanese Linguistics*, Massachusetts Institute of Technology.

Kuroda, S.-Y. (1965) *Generative Grammatical Studies in the Japanese Language*, Doctoral dissertation, Massachusetts Institute of Technology.

Kuroda, S.-Y. (1970) "Remarks on the Notion of Subject with Reference to Words like *Also*, *Even*, or *Only*, Illustating Certain Manners in Which Formal Systems Are Employed as Auxiliary Devices in Linguistic Descriptions Part 2," *Annual Bulletin* 4, Reserach Institute of Logopedics and Phoniatrics, University of Tokyo.

Kuroda, S.-Y. (1980) "Bunpookoozoo-no Hikaku," in T. Kunihiro ed., *Nitieigo Hikaku-kooza 2: Bunpoo*, Taisyukan, Tokyo.

Kuroda, S.-Y. (1983) "What Can Japanese Say about Government and Binding?," in Barlow, M. et al., eds., *WCCFL* 2.

Kuroda, S.-Y. (1988) "Whether We Agree or Not:

A Comparative Syntax of English and Japanese," *Linguisticae Investigationes* 12.1, 1-47.

Lasnik, H. (1989) *Essays on Anaphora*, Kluwer, Dordrecht.

Lasnik, H. and M. Saito (1984) "On the Nature of Proper Government," *Linguistic Inquiry* 15.2., 235-289.

Lebeaux, D. (1988) *Language Acquisition and The Form of The Grammar*, Doctoral dissertation, University of Massachusetts at Amherst.

Mahajan, A. (1989) "On the A/A-bar Distinction," ms., MIT.

Marantz, A. (1981) *On the Nature of Grammatical Relations*, Doctoral dissertation, Massachesetts Institute of Technology.

May, R. (1977) *The Grammar of Quantification*, Doctoral dissertation, Massachusetts Institute of Technology.

Mikami, A. (1972) *Zoku: Gendai Gohoo Zyosetu*, Kuroshio, Tokyo.

Miyagawa, S. (1988) Predication and Numeral Quantifier," Poser, W. ed., *Papers from the Second International Workshop on Japanese Syntax*, Center for the Study of Language and Information, Stanford University.

Miyagawa, S. (1989) *Structure and Case Marking in Japanese*, Syntax and Semantics 22, Academic Press.

Partee, B. (1973) "Some Transformational Extensions of Montague Grammar," *Journal of Philosophical Logic* 2, 509-534.

Pesetsky, D. (1982) *Paths and Categories*, Doctoral dissertation, Massachusetts Institute of Technology.

Pesetsky, D. (1987) "Wh-in-Situ: Movement and Unselective Binding," in Reuland E.J., and A. G. B. ter Meulen eds., *The Representation of (In)definiteness*, MIT Press.

Reinhart, T. (1983) *Anaphora and Semantic Interpretation*, The University of Chicago Press.

Sag, I. (1976) *Deletion and Logical Form*. Doctoral dissertation, Massachesetts Institute of Technology.

Saito, M. (1985) *Some Asymmetries in Japanese and Their Theoretical Implications*, Doctoral dissertation, Massachusetts Institute of Technology.

Saito, M. (1990) "Long Distance Scrambling in Japanese," ms., University of Connecticut.

Saito, M. and H. Hoji (1983) "Weak Crossover and Move-alpha in Japanese," *Natural Language and Linguistic Theory* 1.2., 245-259.

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

Stowell, T. (1981) *Origins of Phrase Structure*, Doctoral dissertation, Massachusetts Institute of Technology.

Sugioka, Y. (1984) *Interaction of Derivational Morphology and Syntax in Japanese and English*, Doctoral dissertation, University of Chicago.

Takezawa, K. (1987) *A Configurational Approach to Case-Marking in Japanese*, Doctoral dissertation, University of Washington.

Webelhuth, G. (1989) *Syntactic Saturation Phenomena and the Modern Germanic Languages*, Doctoral dissertation, University of Massachusetts at Amherst.

Williams, E. (1977) "Discourse and Logical Form," *Linguistic Inquiry* 8.1, 101-139.