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On the Role of Formal and Semantic Features in the Formation and Interpretation of Syntactic Chains

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学術論文

[1] Saito, Mamoru (2005) "Further Notes on the Interpretation of Scrambling Chains." Joachim Sabel and Mamoru Saito, eds., *The Free Word Order Phenomenon: Its Syntactic Sources and Diversity*, Berlin: Mouton de Gruyter, 335-376.

[2] Saito, Mamoru (2006) "Expletive Replacement Reconsidered: Evidence from Expletive Verbs in Japanese." Patrick Brandt and Eric Fuss, eds., *Form, Structure, and Grammar: A Festschrift Presented to Günther Grewendorf on Occasion of His 60th Birthday*, Berlin: Akademie Verlag, 255-273.

[3] Saito, Mamoru (2006) "Subjects of Complex Predicates: A Preliminary Study." *Stony Brook Occasional Papers in Linguistics* 1, Department of Linguistics, Stony Brook University, 172-188.

[4] Saito, Mamoru (2007) "Notes on East Asian Argument Ellipsis." *Language Research* 43: 203-227.

[5] Saito, Mamoru, T.-H. Jonah Lin, and Keiko Murasugi (in press) "N'-Ellipsis and the Structure of Noun Phrases in Chinese and Japanese." *Toronto Working Papers in Linguistics*, Department of Linguistics, University of Toronto.

[6] Saito, Mamoru (in press) "Optional A-Scrambling." *Japanese/Korean Linguistics* 16, Stanford: CSLI Publications.

[7] Saito, Mamoru (in press) "Argument Ellipsis, Radical Pro-Drop, and (the Absence of) Agreement." 「言語研究の現在：形式と意味のインターフェース」、開拓社、東京.

学会発表（招聘による主なもの）

[1] Saito, Mamoru (2005) "Expletive Verbs: A Note of Comparison with Expletive Arguments." The 5th GLOW in Asia Conference, October 5-8, 2005, Jawaharlal Nehru University, India. (Invited Speaker)

[2] Saito, Mamoru (2006) "Optional A-Scrambling." The 16th Japanese/Korean Linguistic Conference, October 7-9, 2006, Kyoto University, Japan. (Invited Speaker)

[3] Saito, Mamoru, T.-H. Jonah Lin, and Keiko Murasugi (2006) "N'-Ellipsis and the Structure of Noun Phrases in Chinese and Japanese." International Conference on East Asian Linguistics, November 10-12, 2006, University of Toronto, Canada. (Invited Speaker)

[4] Saito, Mamoru (2007) "Radical Reconstruction and the First-Position Effects." 2007 International Conference on Linguistics in Korea (The Linguistic Society of Korea), January 19-21, 2007, Seoul National University, Korea. (Invited Speaker)

[5] Saito, Mamoru (2007) "Discourse and Semantic Interpretation of the Japanese Left Periphery." The Sound Patterns of Syntax Workshop, June 11-13, 2007, Ben-Gurion University, Israel. (Invited Speaker)

[6] Saito, Mamoru (2007) "Semantic and Discourse Effects of Scrambling." The 7th Conference of the Nordic Association of Japanese and Korean Studies, August 24-26, 2007, University of Copenhagen, Denmark. (Keynote Speaker)

[7] Saito, Mamoru (2007) "Argument Ellipsis and (the Absence of) Agreement." The 6th GLOW in Asia Conference, December 27-29, 2007, Chinese University of Hong Kong, Hong Kong. (Invited Speaker)

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収録研究論文目次

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Further Notes on the Interpretation of Scrambling Chains*

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1. Introduction

The precise semantic effect of Japanese (and Korean) scrambling has been a matter of controversy in the recent years. In Saito 1989, I discussed examples like (1b) and proposed that scrambling can be literally "undone" in the LF component.[1]

(1) a. [$_{TP}$ Taroo-ga [$_{CP}$ [$_{TP}$ Hanako-ga dono hon -o yonda] ka] siritagatte iru]
-NOM -NOM which book-ACC read Q eager-to-find out is
(koto)
fact
'Taroo is eager to find out which book Hanako read'

b. ?[$_{TP}$ Dono hon -o$_i$ [Taroo-ga [$_{CP}$ [$_{TP}$ Hanako-ga t_i yonda] ka] siritagatte iru]]
which book-ACC -NOM -NOM read Q eager-to-find out is
(koto)
fact
'Taroo is eager to find out which book Hanako read'

(1b), which is only slightly deviant, is derived from (1a) by scrambling the Wh-phrase *dono hon-o* 'which book-ACC' from the embedded object position to the initial position of the matrix clause. The surface position of the Wh-phrase, as a result, is outside the embedded question CP. Yet, the Wh-phrase is interpreted as part of this CP. This suggests that it is placed back to a position within this CP at LF. This kind of "undoing" has been called radical reconstruction so that it can be distinguished from the standard kind of reconstruction often assumed to explain, for example, connectivity with binding.

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[1] *Koto* 'the fact that' is added at the end of some examples to avoid the unnaturalness resulting from the lack of topic in a matrix declarative sentence.

In later works, I have tried to provide an explanation for the radical reconstruction effects by making the mechanism of chain interpretation precise. The most recent attempt was made in Saito 2003.[2] If the copy and deletion analysis of movement is adopted, (2a) can be represented as in (2b).

(2) a. Who$_i$ did John see t_i

b. [$_{CP}$ Who [$_{C'}$ did [$_{TP}$ John see who]]]
{π, O, ~~arg~~} {~~π~~, ~~O~~, arg}

The Wh-phrase in the object position is copied at CP Spec. A Wh-phrase is nothing but a bundle of features, including phonetic features (π), a Wh-operator feature (O), and a feature, say, argument-feature (arg), that is closely tied with the referential properties of the phrase and participates in binding relations.[3] Then, deletion may apply to these features to yield the proper interpretation of the movement chain as indicated in (2b). The phonetic features are retained at the head position of the chain. This is the defining property of overt movement. On the other hand, the Wh-operator feature and the arg-feature are interpreted at the CP Spec and at the object position respectively. This suggests that formal/semantic features are retained at the positions where they are selected. Thus, the consideration of a simple example like (2) leads us to the initial hypothesis in (3) for the mechanism of chain interpretation.

(3) Initial hypothesis:
a. Deletion applies so that every feature is retained at exactly one position.
b. The π-features are retained at the head of the chain.
c. Other features are retained at the positions where they are selected.

The application of (3) to scrambling automatically yields its " undoing" property. Let us consider (4).

(4) a. [$_{TP}$ Sono hon -o$_i$ [Yamada-ga t_i yonda]] (koto)
that book-ACC -NOM read fact
'Yamada read that book'

b. [$_{TP}$ Sono hon-o [... sono hon-o ...]]
{π, ~~arg~~} {~~π~~, arg}

As scrambling is not operator movement, the preposed phrase lacks an operator feature. Thus, only

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[2] See also Lee 1994 and Kawamura 2001, which pursue similar ideas.

[3] I assume that in the case of a Wh-phrase, its arg-feature yields the interpretation of its trace as a variable. In Saito 2003, the name 'D-feature' was used instead of 'arg-feature'. This was misleading because categorial features are plausibly represented at every position of a chain.

phonetic features are retained at the head position of the chain. In this particular case, then, scrambling is indistinguishable from PF movement. One purpose of Saito 2003 was to show that this analysis of scrambling accounts for the well-known A/A' properties of scrambling discussed in detail in Mahajan 1990, Tada 1993, and Nemoto 1993.

The aim of the present paper is to extend this analysis by examining the distributions and the interpretations of other formal/semantic features, specifically, those that are not selected by a lexical head or an interrogative C. In particular, I will discuss the effects of scrambling on quantifier scope and the licensing of negative polarity items (NPIs). The discussion will be speculative and the proposals tentative since the analysis is still controversial even for the basic examples of quantifier scope interaction and NPI licensing. Nevertheless, I will suggest that 'selection' in (3c) should be generalized to 'licensing' so that it covers the quantificational feature (q-feature) and the NPI-feature as well. Further, I will propose that every formal/semantic feature that participates in compositional semantics must be licensed internal to a phase, or more precisely, within the information unit that syntax transfers to semantics upon the completion of a phase. This amounts to saying that each derivational phase is subject to Full Interpretation (FI) in the sense of Chomsky 1986.

In the following section, I will briefly go over the analysis of the A/A' properties of scrambling proposed in Saito 2003. Section 3 concerns the scope of quantified NPs. I will first present a preliminary analysis for the scope rigidity phenomenon observed with quantifiers in Japanese. Then, I will discuss and analyze the fact that only clause-internal scrambling (as opposed to scrambling across a CP boundary) can affect quantifier scope. The analysis is based on the proposal that a quantified NP is licensed by virtue of binding a variable within its chain. In Section 4, I will discuss the so called *sika* ... *nai* construction, a representative example of negative polarity constructions in Japanese. It will be argued that when scrambled, NPIs exhibit patterns of radical reconstruction quite similar to those observed with quantified NPs and hence, should be analyzed in basically the same way. Finally, in Section 5, I will briefly speculate on the ways syntax sends various kinds of information to semantics.

2. The A/A' Problem

The investigation of the A/A' properties of its landing site has been one of the central issues in the analysis of scrambling since Webelhuth 1989 and Mahajan 1990. The typical paradigms obtain in Japanese as well, as discussed in detail in Tada 1993 and Nemoto 1993. I will start the discussion in this section by considering examples that contain *otagai* 'each other'.

(5) shows that *otagai* 'each other' requires a c-commanding antecedent.

(5) a. [$_{TP}$ Karera-ga [otagai -no sensei]-o hihansita] (koto)
they -NOM each other-GEN teacher-ACC criticized fact
'They criticized each other's teachers'

b.?*[$_{TP}$ [Otagai -no sensei]-ga karera-o hihansita] (koto)
each other-GEN teacher-NOM they -ACC criticized fact
'*Lit.* Each other's teachers criticized them'

The ungrammatical (5b) dramatically improves when the antecedent *karera* 'they' is preposed to the sentence-initial position by scrambling, as shown in (6).

(6) ?[$_{TP}$ Karera-o$_i$ [[otagai -no sensei]-ga t_i hihansita]] (koto)
they -ACC each other-GEN teacher-NOM criticized fact

This is not surprising because *karera* c-commands *otagai* in this example. It also shows that scrambling affects interpretation at least in some cases, and is to be distinguished from PF movement.

But (7) indicates that the same kind of improvement is not observed with long scrambling out of a CP. That is, (7b) is ungrammatical despite the fact that *karera* 'they' is scrambled to a position that c-commands *otagai* 'each other'.

(7) a. *[$_{TP}$ [Otagai -no sensei]-ga [$_{CP}$ [$_{TP}$ Tanaka-ga karera-o hihansita] to] itta]
each other-GEN teacher-NOM -NOM they -ACC criticized that said
(koto)
fact
'*Lit.* [Each other's teachers] said that Tanaka criticized them'

b. *[$_{TP}$ Karera-o$_i$ [[otagai -no sensei]-ga [$_{CP}$ [$_{TP}$ Tanaka-ga t_i hihansita] to] itta]]
they -ACC each other-GEN teacher-NOM -NOM criticized that said
(koto)
fact

Based on a similar distinction in Hindi between clause-internal scrambling and long scrambling, Mahajan (1990) argues that the former can be A-movement while the latter is necessarily A'-movement. Then, if *otagai* is an anaphor and requires A-binding, the contrast between (6) and (7b) readily follows.

I suggested in Saito 2003, however, that this is not the only possible conclusion that can be drawn from the contrast between (6) and (7b), and that there is a way to maintain a uniform analysis of

scrambling in Japanese. Let us first consider how the chain interpretation mechanism briefly introduced in the preceding section applies in the case of successive-cyclic movement.[4]

(8) $[_{CP}$ Who$_i$ $[_{C'}$ do $[_{TP}$ you think $[_{CP}$ t_i' $[_{TP}$ John saw t_i]]]]]

The first step of the movement in (8) is illustrated in (9).

(9) $[_{CP}$ Who $[_{TP}$ John saw who]]
{π, O, ~~arg~~} {~~π~~, ~~Θ~~, arg}

All features of the Wh-phrase are copied at the embedded CP Spec. Further, the deletion of features must apply at this point if cyclic interpretation in the sense of Chomsky 1998 is assumed. Suppose that Transfer Operation sends information to PF and semantics at the completion of each phrase. The TP is the complete unit subject to this transfer in the case of (9) because the edge of the CP participates in operations in the higher phase: the C head satisfies the selectional requirement of the higher V and the Wh-phrase in CP Spec undergoes further movement. Then, the TP must be in a form accessible to PF and semantics upon the completion of the derivation of the CP phase in (9). This requires the deletion of the phonetic features and the operator feature in the object position. Otherwise, the Wh-phrase would be pronounced there and the object would have to be interpreted as an operator.

As the matrix CP is constructed, the Wh-phrase moves on to the matrix CP Spec as in (10).

(10) $[_{CP}$ Who $[_{C'}$ do $[_{TP}$ you think $[_{CP}$ who $[_{TP}$ ...]]]]]
{π, O} {~~π~~, ~~Θ~~}

The phonetic features and the operator feature are copied at the matrix CP Spec and then, are deleted at the embedded CP Spec in accordance with (3). The deletion of the features at the embedded CP Spec is equivalent to the deletion of the intermediate trace in an operator-variable chain.

Let us suppose that scrambling chains are interpreted in roughly the same way. The clause-internal scrambling in (6) takes place as in (11).

(11) $[_{TP}$ Karera-o [... otagai ... karera-o ...]]
{π, ~~arg~~} {~~π~~, arg}

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[4] I put aside the *v**P phase here for ease of exposition. In the case of scrambling, the initial movement to the edge of *v**P is known to have properties quite distinct from the subsequent steps, and is considered an operation similar to object shift. (See Tada 1993, Nemoto 1993 and Saito 2003, for example.) I will simply assume in this paper that scrambling starts from the edge of *v**P in the relevant cases.

On the other hand, the derivation of (7b) is more involved. First, the following chain is formed in the embedded CP:

(12) $[_{CP}$ Karera-o $[_{TP}$ ... karera-o ...]]
{π, ~~arg~~} {π, arg}

Then, the matrix clause is constructed as in (13).

(13) $[_{TP}$ Karera-o [... otagai ... $[_{CP}$ karera-o $[_{TP}$ ...]]]]
{π} {~~π~~}

Note that there is a clear difference between (11) and (13). In the latter, the movement that places *karera* 'they' in a position c-commanding *otagai* 'each other' carries only the phonetic features, and is literally PF-movement. Hence, the arg-feature of *karera* never c-commands *otagai* in this derivation. On the other hand, the arg-feature of *karera* is in a position c-commanding *otagai* prior to the application of deletion in the case of (11). Thus, if the licensing condition on *otagai* is an anywhere condition, the contrast between (6) and (7b) is accounted for.

It has been controversial whether *otagai* is an anaphor and hence is subject to Condition (A), or contains a hidden pronoun that is subject to the licensing condition on bound pronouns.[5] But it has been argued that both of these conditions are anywhere conditions. (See, for example, Belletti and Rizzi 1988, Lebeaux 1988, Epstein, et al. 1998, and Sabel 2002.) Presenting further arguments for this hypothesis, I argued for the copy and deletion analysis just illustrated of the contrast between (6) and (7b) in Saito 2003. According to this analysis, there are no A- and A'- scramblings as proposed in Mahajan 1990 and argued for in many subsequent works including Saito 1992, 1994. The landing site of scrambling is uniformly a position from where the licensing of *otagai* 'each other' is possible, i.e., an A-position in traditional terminology. Long scrambling fails to license this element because it only copies phonetic features at the landing site.

This analysis of (6) and (7b) straightforwardly extends to the similar contrast between (14b) and (15b), also discussed by Tada 1993 and Nemoto 1993.

(14) a. ?*$[_{TP}$ [Sono$_i$ tyosya]-ga dono hon -ni-mo$_i$ keti-o tuketa]
its author -NOM which book-to-also gave-criticism
'*Lit.* Its$_i$ author criticized every book$_i$'

b. $[_{TP}$ Dono hon -ni-mo$_i$ [[sono$_i$ tyosya]-ga t_i keti-o tuketa]]
which book-to-also its author -NOM gave-criticism

[5] See, for example, Yang 1983, Nakamura 1996, and Hoji 1997 for discussion.

(15) a. *[$_{TP}$ [Sono$_i$ tyosya]-ga [$_{CP}$ [$_{TP}$ Hanako-ga dono hon -ni-mo$_i$ keti-o tuketa] to]
its author -NOM -NOM which book-to-also gave-criticism that
itta]]
said
'*Lit.* Its$_i$ author said that Hanako criticized every book$_i$'

b.?*[$_{TP}$ Dono hon -ni-mo$_i$ [[sono$_i$ tyosya]-ga [$_{CP}$ [$_{TP}$ Hanako-ga t_i keti-o tuketa] to]
which book-to-also its author -NOM -NOM gave-criticism that
itta]]]
said

(14a) is a typical example of weak crossover. As shown in (14b), clause-internal scrambling of the quantified phrase remedies the violation. (15b), in contrast, indicates that this effect is not observed with long scrambling.

The derivation of (14b) is illustrated in (16).

(16) [$_{TP}$ Dono hon-ni-mo [[sono tyosya]-ga dono hon-ni-mo keti-o tuketa]]
{π, ~~arg~~} {~~π~~, arg}

Since the arg-feature of the quantified phrase appears at a position c-commanding *sono* 'its' at one point of the derivation, the latter is licensed as a bound pronoun. (15b), on the other hand, is derived as in (17).

(17) a. [$_{CP}$ Dono hon-ni-mo [$_{TP}$ Hanako-ga dono hon-ni-mo keti-o tuketa] to]
{π, ~~arg~~} {~~π~~, arg}

b. [$_{TP}$ Dono hon-ni-mo [[sono tyosya]-ga [$_{CP}$ dono hon-ni-mo [$_{TP}$ ...] to] itta]]
{π} {~~π~~}

Dono hon-ni-mo 'to every book' first moves to the edge of the embedded CP phase as shown in (17a). Chain interpretation applies at this point and the arg-feature is deleted from the landing site. The quantified phrase, then, moves on to the initial position of the matrix clause as in (17b), but only the phonetic features are copied at the landing site. Hence, the arg-feature of the quantified phrase is never in a position c-commanding the pronoun *sono* 'its', and the ungrammaticality of (15b) is correctly accounted for.

One consequence of the analysis illustrated above is that Condition (C) is an "LF condition" or more precisely, that it applies after chains are interpreted by deletion of features. It has been known that

examples of clause-internal scrambling such as (18a, b) are grammatical.

(18) a. [$_{TP}$ Zibunzisin-o$_i$ [Taroo-ga t_i semeta]] (koto)
self -ACC -NOM blamed fact
'Taroo blamed himself'

b. [$_{TP}$ Otagai -o$_i$ [Taroo-to Hanako-ga t_i semeta]] (koto)
each other-ACC -and -NOM blamed fact
'Taroo and Hanako blamed each other'

(18a), for example, is derived as in (19).

(19) [$_{TP}$ Zibunzisin-o [Taroo-ga zibunzisin-o semeta]]
{π, ~~arg~~} {~~π~~, arg}

If Condition (C) is an everywhere condition, as argued, for example, in Lebeaux 1998, (19) would violate this condition because the arg-feature of *zibunzisin* 'self' c-commands *Taroo* at the point the scrambled phrase is copied at the landing site. This problem does not arise if the condition applies after the arg-feature is deleted from this position. I will come back to the status of Condition (C) in Section 5, where I briefly discuss the general picture of the way syntax sends information to semantics.

3. Scrambling and the Scope of Quantified Phrases

The formal/semantic features discussed in the preceding section, the operator feature and the arg-feature, are selected and licensed at specific positions by the appropriate heads. But there are features that do not have this property. In this section, I will discuss one clear case, that is, the quantificational feature (q-feature) of quantified phrases. I will suggest that it is licensed by virtue of binding a variable within its chain, and hence, can be retained in a position that establishes this binding relation. In Section 3.1, I will discuss the scope rigidity phenomenon observed in Japanese and at the same time, lay out the preliminary assumptions that are adopted in this paper for the analysis of quantifier scope. Then, in Section 3.2, I will examine the effects of scrambling on scope interaction.

3.1. Scope Rigidity and Preliminary Assumptions on Quantifier Raising

Japanese is considered one of the typical languages with scope rigidity. Thus, the existential *dareka* 'someone' takes scope over the universal *daremo* 'everyone' in (20).

(20) Dareka -ga daremo -o aisite iru
someone-NOM everyone-ACC love
'Someone loves everyone' (∃ > ∀)

It is not clear whether this scope rigidity should be considered an absolute condition or even a property that is parameterized for a language. First, it specifies the strongly preferred reading but only the strongly preferred reading for speakers like me. Thus, the wide scope interpretation of *daremo* 'everyone' is much less preferred but is still possible in (20), and it is easier in this example than in (21), where the two quantified NPs are separated by a CP boundary.

(21) Dareka -ga [$_{CP}$ daremo -ga Taroo-o aisite iru to] omotte iru
someone-NOM everyone-NOM -ACC love that think
'Someone thinks that everyone loves Taroo' (∃ > ∀)

Further, the condition is clearly relaxed when an indefinite NP is substituted for the existential quantifier. Responding to a claim in Lasnik and Saito 1992 that scope rigidity obtains in English as well, Chierchia (1992) presents examples such as the following as uncontroversial cases where the condition fails:

(22) a. A soldier was standing in front of every entrance
b. An expert has inspected every plane

In (22a), for example, the inverse reading is not only possible but is the normal interpretation of the sentence. However, when the subject position is occupied by an indefinite NP and the VP-internal universal quantifier is a complex expression as in (22), rigidity is not observed in Japanese either as (23) shows.[6]

(23) a. Heetai -ga dono mon-no mae -ni-mo tatte ita
soldier-NOM which gate -GEN front-at-also standing was
'A soldier was standing in front of every gate'

b. Gisi -ga dono hikooki-mo tenkensita
mechanic-NOM which plane -also inspected
'A mechanic inspected every plane'

The normal interpretation of (23a), for example, is the one with the distributive reading of 'every gate', and not the one that says there was a soldier who was standing in front of every gate.

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[6] Universal quantifiers in Japanese are constructed from a Wh-expression and the particle *mo* 'also'. Thus, *daremo* 'everyone' in (20) is *dare* 'who' + *mo*.

Nevertheless, it remains a fact that the strongly preferred reading for examples like (20) is the one that observes scope rigidity. Hence, I will assume the generalization and confine the discussion to the scope interaction of *dareka* 'someone' and *daremo* 'everyone'. I will assume further that scope rigidity is explained by a constraint on the application or output of quantifier raising (QR), as suggested in Huang 1982, Hoji 1985, and Lasnik and Saito 1992. But before a concrete mechanism for scope rigidity is presented, some remarks on the status of QR are in order.

In classical works on QR, such as May 1977, the movement is assumed to apply in the mapping from S-structure to LF. The derivation of (24) is, then, as in (25).

(24) John wonders who$_i$ t_i saw everyone

(25) D-structure: [$_{TP}$ John wonders [$_{CP}$ Δ [$_{TP}$ who saw everyone]]]
S-structure: [$_{TP}$ John wonders [$_{CP}$ who$_i$ [$_{TP}$ t_i saw everyone]]] (by Wh-movement)
LF: [$_{TP}$ John wonders [$_{CP}$ who$_i$ [$_{TP}$ everyone$_j$ [$_{TP}$ t_i saw t_j]]]] (by QR)

Here, QR adjoins the quantified NP *everyone* to TP (or alternatively to *v*P/VP) in the LF component. However, once cyclic interpretation is assumed, there cannot be an independent component for covert movement. Let us consider the embedded CP phase of (24) to illustrate the point.

(26) [$_{CP}$ who [$_{TP}$ who saw everyone]]
{π, O, ~~arg~~} {~~π~~, ~~O~~, arg} {π, q, arg}

When the CP is constructed as in (26), the shaded TP is transferred to semantics. But this implies that QR must have applied to the quantified NP *everyone* by then. In other words, QR must raise *everyone* as the embedded CP is constructed, before the derivation moves on to the matrix clause. The application of covert movement, then, must be interwoven with that of overt movement.

This interwoven application of overt and covert movements has been suggested in the literature together with concrete mechanisms to make it technically possible. For example, Bobaljik (1995), among others, suggests that there is no distinction between overt and covert movements except that the phonetic features are retained at the initial site in the case of the latter. Then, the derivation of the embedded CP in (24) proceeds as in (27) with overt Wh-movement and covert QR applying in a single cycle.

(27) [$_{CP}$ who [$_{TP}$ everyone [$_{TP}$ who saw everyone]]]
{π, O, ~~arg~~} {~~π~~, q, ~~arg~~} {~~π~~, ~~O~~, arg} {π, ~~q~~, arg}

Another possibility proposed in Nissenbaum 2000 is that covert movement applies within each phase

after Spell-Out but before information is sent to semantics. This theory states in essence that there are overt and covert "components" within each phase. I will adopt Bobaljik's analysis here, but at the same time, will assume for ease of exposition that QR is feature movement in the sense of Chomsky 1995 and raises only the q-feature. The derivation of the embedded CP in (24) is then as in (28).[7, 8]

(28) $[_{CP}$ who $[_{TP}$ everyone $[_{TP}$ who saw everyone]]]
{π, O, ~~arg~~} {q} {π, ~~O~~, arg} {π, ~~q~~, arg}

Let us now return to the rigidity effects. The relevant example (20) is repeated below in (29).

(29) Dareka -ga daremo -o aisite iru
someone-NOM everyone-ACC love
'Someone loves everyone' (∃ > ∀)

I will assume tentatively that scope rigidity results from the following minimality constraint on the application of QR:

(30) QR does not raise a q-feature across another q-feature.

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[7] There is evidence for the feature movement hypothesis if the landing site of QR is identical to that of scrambling. Suppose that QR copies every feature at the landing site. Then, (14a), repeated below as (i), would be derived as in (ii).

(i) ?*$[_{TP}$ [Sono$_i$ tyosya]-ga dono hon -ni-mo$_i$ keti-o tuketa]
its author -NOM which book-to-also gave-criticism
'*Lit.* Its$_i$ author criticized every book$_i$'

(ii) $[_{TP}$ dono-hon-ni-mo $[_{TP}$ [Sono tyosya]-ga dono hon-ni-mo keti-o tuketa]]
{~~π~~, q, ~~arg~~} {π, ~~q~~, arg}

As can be seen in (ii), the arg-feature of the quantified phrase c-commands the pronoun *sono* 'its' at one point of the derivation, and hence, it is predicted incorrectly that the example is grammatical exactly like (14b). This problem does not arise if QR only raises the q-feature and does not copy the arg-feature at the landing site. This argument is not affected even if the relevant landing site of QR is *v*P/VP because examples like (iii), as opposed to those like (iv), exhibit weak crossover effects as well, as pointed out in Hoji 1985.

(iii) ?*Taroo-ga $[_{vP}$ [sono$_i$ tyosya]-ni dono hon -mo$_i$ okuri kaesita] (koto)
-NOM its author -to which book-also sent-back fact
'Taro sent back every book to its author'

(iv) Taroo-ga $[_{vP}$ dono hon -mo$_i$ $[_{vP}$ [sono$_i$ tyosya]-ni t_i okuri kaesita]] (koto)
-NOM which book-also its author -to sent-back fact

[8] It is not clear to me whether feature movement should be treated as a kind of head-movement as proposed in Chomsky 1995. The issue, as far as I can see, is related to the analysis of categorial features and their status in covert movement. I will simply assume that it need not be because the issue is orthogonal to the concerns here.

This allows the two derivations in (31) for (29).

(31) a. $[_{TP}$ Dareka-ga $[_{TP}$ daremo-o $[_{TP}$ dareka-ga $[_{vP}$ daremo-o aisite iru]]]]
{q} {q} {π, ɸ, arg} {π, ɸ, arg}

b. $[_{TP}$ Dareka-ga $[_{TP}$ dareka-ga $[_{vP}$ daremo-o $[_{vP}$ daremo-o aisite iru]]]]
{q} {π, ɸ, arg} {q} {π, ɸ, arg}

(31a) is allowed if " tucking-in" in the sense of Richards 2001 is possible. The q-feature of *dareka* 'someone' can be raised first with the deletion of the feature in the subject position. Then, QR can raise the q-feature of *daremo* 'everyone' beneath that of *dareka*. (31b) is more straightforward. QR adjoins the q-features of *dareka* and *daremo* to TP and *v*P respectively. Neither application of QR is in violation of (30). What (30) excludes is the derivation in (32), which yields the wide scope interpretation of *daremo*.

(32) $[_{TP}$ Daremo-o $[_{TP}$ dareka-ga $[_{TP}$ dareka-o $[_{vP}$ daremo-o aisiteiru]]]]
{q} {q} {π, ɸ, arg} {π, ɸ, arg}

Thus, (30) successfully describes scope rigidity.

3.2. The Effects of Scrambling on Quantifier Scope

With the preliminary assumptions introduced in the preceding section, I will now examine the effects of scrambling on quantifier scope and their implications for the interpretation of scrambling chains. It was shown above that Japanese exhibits scope rigidity. However, as originally pointed out by Kuroda (1971), the application of scrambling yields counter-examples to this generalization.[9, 10] Thus, the distributive reading of *daremo* 'everyone' is readily available in both (33a) and (33b).

(33) a. Daremo -o_i dareka -ga t_i aisite iru
everyone-ACC someone-NOM love
'Someone loves everyone' (∀ > ∃, ∃ > ∀)

---

[9] Or more precisely, counter-examples to rigidity if the condition states that the scope relation of two quantified phrases reflects their surface c-command relation. It will be shown below that the relevant examples are consistent with rigidity as formulated in (30).

[10] Kuroda (1971) actually discusses the interpretation of scope bearing elements with particles such as *-mo* 'also', *-sae* 'even', and *-dake* 'only', and argues against scope rigidity stated in terms of linear precedence, which was widely assumed to be a universal principle at the time.

b. Dareka -o_i daremo -ga t_i aisite iru
someone-ACC everyone-NOM love
'Everyone loves someone' ($\forall > \exists$, $\exists > \forall$)

This shows that scrambling can affect quantifier scope and its application yields scope ambiguity.

On the other hand, it has been pointed out by Oka (1990), Tada (1993), and Abe (1993), among others, that only clause-internal scrambling induces the scope ambiguity just described. (34), which is derived by long scrambling, is unambiguous and does not allow the wide scope construal of *daremo*, in distinction with (33a).[11]

(34) Daremo -o_i dareka -ga [$_{CP}$ [$_{TP}$ Taroo-ga t_i aisiteiru] to] itta (koto)
everyone-ACC someone-NOM -NOM love that said fact
'Someone said that Taroo loves everyone' ($\exists > \forall$)

The semantic effect of scrambling in (33) as well as its absence in (34) calls for an explanation.

Let us first consider the examples in (33). The ambiguity of these examples indicates that the q-feature of the scrambled phrase can be retained either at the landing site or at the initial position, as illustrated in (35).

(35) a. [$_{TP}$ NP_1 [NP_2 ... [$_{vP}$ ... NP_1 ...]]]
{π, q, ~~arg~~} {π, q, arg} {π, q, arg}

---

[11] Here, it is important that the preposed quantified phrase contains a Case marker or a postposition. Bare NPs with particles such as the topic marker *-wa* and those mentioned in the preceding footnote can apparently be "base-generated" at the sentence-initial position and hence, can easily take wide scope. Compare, for example, (i) and (ii).

(i) Dono sensisya -mo_i Taroo-wa [e_i atta koto-ga aru hito] -ni intabyuu -o sita
which war-victim-also -TOP met fact -NOM have person-to interview-ACC did
'For every war victim, Taroo interviewed a person who had met her/him'

(ii)??Dono sensisya -ni-mo_i Taroo-wa [t_i atta koto-ga aru hito] -ni intabyuu -o sita
which war-victim-to-also -TOP met fact -NOM have person-to interview-ACC did
'Taroo interviewed a person who had met every war victim'

The only surface difference between (i) and (ii) is whether or not the quantificational phrase in the sentence-initial position contains the postposition *-ni* 'to'. But (i) is grammatical despite the fact that the phrase binds a gap within a relative clause. This already suggests that (i) need not be derived by scrambling. Further, the example allows the distributive reading of the quantified phrase: the person that Taroo interviewed can vary depending on the war victim. On the other hand, the only possible interpretation of (ii) is that Taroo interviewed someone who has met all the war victims. This shows that the scope of the quantified phrase is confined to the relative clause in this example. Thus, (ii) is consistent with the generalization that long scrambling does not affect quantifier scope. See Saito 1985 for a detailed discussion on a similar pattern observed with the topic marker *-wa*.

b. $[_{TP}NP_1$ $[\,NP_2$ $\ldots [_{vP} \ldots NP_1$ $\ldots]]]$
$\{\pi, \mathfrak{q}, \sout{arg}\}$ $\{\pi, q, arg\}$ $\{\sout{\pi}, q, arg\}$

If the purpose of QR is to assign scope to a quantified phrase and to establish a quantifier-variable relation, this is already achieved with scrambling in the case of NP_1 in (35a). The q-feature of this NP takes sentential scope and binds the arg-feature in the object position. Let us then say that QR applies only to NP_2 in this example to yield (36).

(36) $[_{TP}NP_1$ $[\,NP_2\,[\,NP_2$ $\ldots [_{vP} \ldots NP_1$ $\ldots]]]]$
$\{\pi, q, \sout{arg}\}$ $\{q\}$ $\{\pi, \mathfrak{q}, arg\}$ $\{\sout{\pi}, \mathfrak{q}, arg\}$

This is the only form that can be derived from (35a) by QR because (30) prohibits QR from raising a q-feature across another q-feature. The interpretation obtained is the one in which NP_1 takes wide scope over NP_2.

The fact that (33) allows the narrow scope construal of the scrambled object seems to indicate that the scrambling chain can be interpreted as in (35b) as well. However, (35b) is a little strange to say the least. If deletion of features applies to create a proper chain for interpretation, the q-feature must be retained at a position where it can take scope. This, in turn, implies that the q-feature of NP_1 should be retained at the landing site and not at the object position. But provided that covert movement need not follow overt movement, (35b) can be revised slightly to avoid this problem. That is, QR can apply to both NP_1 and NP_2 before NP_1 is scrambled to the sentence-initial position, as illustrated in (37).

(37) a. $[_{TP}NP_2\,[_{TP}NP_2$ $\ldots [_{vP}NP_1\,[_{vP} \ldots NP_1$ $\ldots]]]]$ (by QR)
$\{q\}$ $\{\pi, \mathfrak{q}, arg\}$ $\{q\}$ $\{\pi, \mathfrak{q}, arg\}$

b. $[_{TP}NP_1$ $[NP_2\,[_{TP}NP_2$ $\ldots [_{vP}NP_1\,[_{vP} \ldots NP_1$ $\ldots]]]]]$ (by scrambling)
$\{\pi, \sout{arg}\}$ $\{q\}$ $\{\pi, arg\}$ $\{q\}$ $\{\sout{\pi}, arg\}$

In (37a), both NP_1 and NP_2 are raised by QR in a way consistent with the rigidity condition in (30).[12] Then, in (37b), NP_1 in the object position, which now lacks the q-feature, is scrambled to the sentence-initial position. This derivation yields the narrow scope reading of NP_1 and hence, the ambiguity in (33) is correctly predicted.

The account for (33) presented above would predicts ambiguity in (34) as well. This is so because scrambling can carry the q-feature of the embedded object to the initial position of the matrix clause as in (38).

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[12] It makes no difference if the q-feature of NP_1 is adjoined instead to TP beneath the q-feature of NP_2.

(38) a. $[_{CP}$ Daremo-o $[_{TP}$ ... daremo-o ...]]
{π, q, ~~arg~~} {~~π~~, ~~q~~, arg}

b. $[_{TP}$ Daremo-o [dareka-ga [dareka-ga ... $[_{CP}$ daremo-o $[_{TP}$ ...]]]]]
{π, q} {q} {π, ~~q~~, arg} {~~π~~, ~~q~~}

Daremo-o 'everyone-ACC' is first moved to the edge of the embedded CP phase as in (38a). The embedded TP is transferred to semantics at this point. In the matrix clause shown in (38b), the quantified NP moves on to the sentence-initial position by scrambling and the q-feature of the matrix subject is raised by QR to take scope. As the information of the shaded part is sent to semantics, *daremo-o* is assigned scope over *dareka-ga* 'someone-NOM'. This derivation must be blocked somehow because (34) does not allow the wide scope reading of the scrambled embedded object.

Here, a comparison between the scrambling of quantified NPs and Wh-movement seems useful. With Wh-movement, a Wh-phrase can move out of a CP and take scope at the landing site.

(39) $[_{CP}$ Who_i does $[_{TP}$ John think $[_{CP}$ that $[_{TP}$ Mary saw t_i]]]]

What (34) shows is that scrambling does not allow a q-feature to take scope at the landing site in a similar situation. Another difference between the Wh-movement in (39) and the scrambling in (34) is that the Operator-feature of the Wh-phrase is selected and licensed by the C head at the landing site while the q-feature is not licensed by any specific head. Then, it is reasonable to assume that the q-feature must be licensed in some other way. Suppose then that a q-feature is licensed as a quantifier by virtue of binding a variable within its chain. The idea is that a phrase that is not licensed by a head either as an argument or as an operator will be construed as a modifier, e.g., as an adverbial phrase in this case, unless it binds a variable. And suppose further that when syntax transfers information to semantics, every element within the information unit must be properly licensed. The proposal is summarized in (40).

(40) a. When the derivation of a phase HP is completed, syntax transfers the complement of H to semantics. The transfer applies cyclically and in a non-redundant way: the information that was already transferred to semantics in previous cycles is excluded from the present transfer operation.

b. Every element in the structure that is transferred to semantics must be properly licensed within that structure. An arg-feature is licensed by a θ-role assigning (or agreement inducing) head, an Operator-feature is licensed by an operator-selecting C head, and a q-feature is licensed by virtue of binding a variable within its chain.

(40b) amounts to saying that Full Interpretation (FI) in the sense of Chomsky 1986 applies to each information unit that syntax sends to semantics.

The proposal above blocks the derivation in (38) as desired. When the derivation of the matrix clause is completed as in (38b), the shaded part is transferred to semantics. The q-feature of *dareka-ga* 'someone-NOM' is properly licensed as it binds the arg-feature in the subject position. However, that of *daremo-o* 'everyone-ACC' does not bind any arg-feature and hence, violates (40b). Note that (40) correctly allows the narrow scope reading of *daremo-o*. More specifically, the following derivation is possible:

(41) a. $[_{CP}$ Daremo-o $[_{TP}$ daremo-o $[_{TP}$ ... daremo-o ...]]]
{π, ~~arg~~} {q} {~~π~~, ~~q~~, arg}

b. $[_{TP}$ Daremo-o [dareka-ga [dareka-ga ... $[_{CP}$ daremo-o $[_{TP}$ ...]]]]]
{π} {q} {π, ~~q~~, arg} {~~π~~}

In the embedded CP, the q-feature of *daremo-o* 'everyone-ACC' is raised by QR and its remaining features are scrambled to the edge of the phase. The embedded TP is sent to semantics with the q-feature properly binding an arg-feature.[13] In the matrix CP, the q-feature of *dareka-ga* 'someone-NOM' is raised by QR and the phonetic features of *daremo-o* are scrambled to the sentence-initial position. All features are properly licensed in this phase as well. Thus, (34) is successfully derived with *daremo-o* taking embedded scope.

Before concluding this section, I will briefly discuss two implications of the analysis proposed above. First, QR, as conceived here, may tie some loose ends in the analysis of the examples with anaphors and bound pronouns discussed in Section 2. Let us consider again (5b) and (6), repeated below as (42a-b).

(42) a.?*$[_{TP}$ [Otagai -no sensei] -ga karera-o hihansita] (koto)
each other-GEN teacher-NOM they -ACC criticized fact
'*Lit.* Each other's teachers criticized them'

---

[13] Alternatively, the scrambling to the edge of the CP can take place successive-cyclically, as in (i), instead of the prior application of QR.

(i) $[_{CP}$ Daremo-o $[_{TP}$ daremo-o [... daremo-o ...]]]
{π, q, ~~arg~~} {~~π~~, q, ~~arg~~} {~~π~~, ~~q~~, arg}

Since nothing seems to prevent it, I assume that this derivation is also possible.

b. ?[$_{TP}$ Karera-o$_i$ [[otagai -no sensei] -ga t_i hihansita]] (koto)
they -ACC each other-GEN teacher-NOM criticized fact

The derivations of (42a-b) are shown in (43a-b) respectively.

(43) a. [$_{TP}$ [Otagai-no sensei]-ga karera-o hihansita]
{π, arg}

b. [$_{TP}$ Karera-o [[otagai-no sensei]-ga karera-o hihansita]]
{π, ~~arg~~} {~~π~~, arg}

The grammaticality of (42b) was attributed to the fact that the arg-feature of *karera* 'they' c-commands *otagai* 'each other' at one point of the derivation, as indicated in (43b).

But if the analysis ends here, then *otagai* is not bound in the structure transferred to semantics. This seems undesirable because reciprocal interpretation involves some sort of variable binding. The interpretation of (44a), for example, is as in (44b).

(44) a. John and Mary praised each other
b. [∀x: x ∈ {John, Mary}] [∀y: y ∈ {John, Mary}& y ≠ x] x praised y

This problem is inherent in any theory that hypothesizes that Condition (A) is an anywhere condition. But it is straightforwardly resolved if any NP is subject to QR as suggested in Reinhart 1991.[14] Then, the derivations in (43a-b) are more precisely as in (45a-b).

(45) a. [$_{TP}$ karera-o [$_{TP}$ [Otagai-no sensei]-ga karera-o hihansita]]
{q} {π, ~~q~~, arg}

b. [$_{TP}$ Karera-o [[otagai-no sensei]-ga karera-o hihansita]]
{π, q, ~~arg~~} {~~π~~, ~~q~~, arg}

In (45a), i.e. the derivation of (42a), the q-feature of *karera-o* 'they-ACC' is raised by QR. On the other hand, the q-feature is retained at the landing site of scrambling in the case of (45b). Thus, *otagai* 'each other' is bound in both cases. The difference, as proposed in Section 2, is that the reciprocal is licensed by the arg-feature of *karera-o* only in (45b).

According to this analysis, (7b), which shows that a phrase preposed by long scrambling cannot serve as an antecedent of *otagai*, is in violation of two conditions. The example is repeated in (46),

[14] Reinhart, accordingly, renames QR 'constituent raising'.

together with its derivation in (47).

(46) *[$_{TP}$ Karera-o$_i$ [[otagai -no sensei] -ga [$_{CP}$ [$_{TP}$ Tanaka-ga t_i hihansita] to] itta]]
they -ACC each other-GEN teacher-NOM -NOM criticized that said
(koto)
fact
'*Lit.* [Each other's teachers] said that Tanaka criticized them'

(47) a. [$_{CP}$ Karera-o [$_{TP}$ Tanaka-ga karera-o hihansita] to]
{π, q, ~~arg~~} {~~π~~, ~~q~~, arg}

b. [$_{TP}$ Karera-o [[otagai-no sensei]-ga [$_{CP}$ karera-o [$_{TP}$ ...] to] itta]]
{π, q} {~~π~~, ~~q~~}

The embedded CP phase is derived as in (47a), and the embedded TP is transferred to semantics at this point. Then, *karera-o* 'they-ACC' is scrambled to the sentence-initial position of the matrix clause as illustrated in (47b). Here, *otagai* 'each other' fails to be licensed by the arg-feature of *karera-o* as before. In addition, the q-feature of *karera-o* must be retained at the final landing site in order to bind *otagai*. But this results in a violation of (40b). The q-feature does not bind any arg-feature within its chain in (47b). This violation of (40b) can be avoided if the q-feature is raised by QR within the embedded TP and retained there, as shown in (48).

(48) [$_{CP}$ Karera-o [$_{TP}$ karera-o [$_{TP}$ Tanaka-ga karera-o hihansita] to]
{π, ~~arg~~} {q} {~~π~~, ~~q~~, arg}

But then it will fail to bind *otagai* in the matrix clause.

The second implication that I would like to mention is that (40b) derives the clause-boundedness of QR in the majority of relevant cases. It is generally assumed that *everyone* can take scope over *someone* in (49a) but not in (49b).

(49) a. Someone loves everyone
b. Someone thinks that John loves everyone

It seems then that a quantified NP in an embedded clause cannot have scope over elements in the matrix.

The same phenomenon is observed in Japanese. As mentioned earlier in this section, the wide scope reading of *dareka* 'someone' is strongly preferred in (50a), due to scope rigidity.

(50) a. Dareka -ga daremo -o aisite iru
someone-NOM everyone-ACC love
'Someone loves everyone'

b. Dareka -ga [$_{CP}$ Taroo-ga daremo -o aissiteiru to] omotte iru (koto)
someone-NOM -NOM everyone-ACC love that think fact
'Someone thinks that Taroo loves everyone'

However, there is still a distinction between (50a) and (50b). The wide scope reading of *daremo* 'everyone' is simply impossible in (50b). This suggests that there is a condition, independent of rigidity, that prevents *daremo* from taking matrix scope. The point comes out more clearly in (51).

(51) a. Heetai -ga dono mon-no mae -ni-mo tatte ita
soldier-NOM which gate -GEN front-at-also standing was
'A soldier was standing in front of every gate'

b. Heetai -ga [$_{CP}$ Taroo-ga dono mon-no mae -ni-mo tatte iru to] itta (koto)
soldier-NOM -NOM which gate -GEN front-at-also standing is that said fact
'A soldier said that Taroo was standing in front of every gate'

As noted above, (51a), which has an indefinite subject, is ambiguous. But (51b), in clear contrast, does not have the ambiguity. It can only mean that a soldier said something absurd, and cannot mean that 'for every gate, there was a soldier who said that Taroo was standing in front of it'.

These facts follow from (40b) straightforwardly. If *everyone* is to have wide scope in (49b), the example would have to have the following derivation:

(52) a. [$_{CP}$ everyone that [$_{TP}$ John loves everyone]]
{q} {π, ɋ, arg}

b. [$_{TP}$ everyone [$_{TP}$ someone [$_{TP}$ someone thinks [$_{CP}$ everyone that [$_{TP}$ ...]]]]]
{q} {q} {π, ɋ, arg} {ɋ}

In (52a), the q-feature of *everyone* is moved to the edge of the embedded CP and the embedded TP is transferred to semantics. Then, in (52b), QR adjoins both *everyone* and *someone* to the matrix TP. This would yield the wide scope interpretation of *everyone*, but (52b) is in violation of (40b). The q-feature of *everyone* does not bind any arg-feature in the structure sent to semantics and hence, is not properly licensed. This feature must be raised to the embedded TP by QR as in (53) in order to satisfy (40b).

(53) $[_{CP}$ that $[_{TP}$ everyone $[_{TP}$ John loves everyone]]
{q} {π, ~~q~~, arg}

But then, it must take embedded scope.

In this section, I have proposed an analysis for the effects of scrambling on quantifier scope. The main fact to be accounted for was that clause-internal scrambling, but not long scrambling, allows a preposed quantified phrase to take scope at the landing site. In order to explain this fact, I suggested that a q-feature is licensed by virtue of binding a variable within its chain, and that every feature that participates in compositional semantics must be licensed internal to the structure syntax transfers to semantics. This subsumes a large part of the initial hypothesis on chain interpretation presented in (3). Operator-features and arg-features are retained at positions where they are selected, because these are positions where they are licensed and can satisfy Full Interpretation. Suppose, for example, that an Operator-feature is deleted at CP Spec as in (54).

(54) $[_{CP}$ Who did $[_{TP}$ John see who]]
{π, ~~O~~, ~~arg~~} {~~π~~, O, arg}

Then, when the TP is sent to semantics, the Operator-feature in the object position can neither be licensed nor be interpreted.

I have argued further that the proposals made in this section enable us to refine the analysis of the A/A' properties of scrambling and to explain the clause-boundedness of QR in the representative cases. I will apply the account for the clause-boundedness of QR to negative polarity items in Japanese in the following section, where it will be shown that they exhibit basically the same distribution as quantified NPs.

4. Negative Polarity Licensing

I will now turn to negative polarity items in Japanese and discuss their distribution as well as their radical reconstruction patterns. The analysis of those negative polarity items is quite controversial and the judgments of the relevant examples are often unclear, as will be seen in the following pages.[15] But I will present a tentative analysis for them and explore its consequences because they provide important hints for the investigation of the precise nature of radical reconstruction and covert movement.

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[15] See, for example, Oyakawa 1975, Muraki 1978, Takahashi 1990, Kato 1994, Aoyagi and Ishii 1994, Tanaka 1997, and Watanabe 2004 for discussions on negative polarity items in Japanese. Lee 1994 and Sohn 1994 contain illuminating discussions on their Korean counterparts.

The particular negative polarity item that will be examined has the form *XP-sika*. Examples are provided in (55) and (56).[16]

(55) a. Taroo-sika soko-ni ik-ana-katta
-SIKA there-to go-not-past
'Only Taroo went there'

b. Taroo-ga soko-ni-sika ik-ana-katta (koto)
-NOM there-to-SIKA go-not-past fact
'Taroo only went there' (It is only there that Taroo went)

(56) a. Sono nimotu -sika Tookyoo-kara todok-ana-katta
that luggage-SIKA -from arrive-not-past
'Only that luggage arrived from Tokyo'

b. Nimotu-ga Tookyoo-kara -sika todok-ana-katta
luggage-NOM -from-SIKA arrive-not-past
'Luggage arrived only from Tokyo' (It is only from Tokyo that luggage arrived)

XP-sika, combined with sentential negation, yields the interpretation 'only XP', as illustrated in these examples. Thus, (55a), for example, means that only Taroo went there or that no one but Taroo went there.

XP-sika is considered a negative polarity item because it can only appear in a negative sentence. (55a-b), for example, are totally ungrammatical without the negation morpheme, as shown in (57).[17]

(57) a. *Taroo-sika soko-ni it-ta
-SIKA there-to go-past

b. *Taroo-ga soko-ni-sika it-ta (koto)
-NOM there-to-SIKA go-past fact

In the following subsection, I will go over the basic distribution of *XP-sika* in sentences with and without scrambling, and suggest an analysis. Then, in Section 4.2, I will discuss the blocking effect that negative polarity items have on Wh-construal, a phenomenon discussed in detail in Takahashi 1990, Kim 1991

[16] The predicates in the examples will be glossed morpheme by morpheme in this section because the precise position of negation is important for the discussion.

[17] Watanabe (2004) argues that what has been called 'negative polarity phenomenon' in Japanese should be analyzed as negative concord instead. As far as I can see, the choice does not affect the discussion in this paper.

and Beck and Kim 1997. It will be shown that the analysis predicts the presence/absence of the blocking effect correctly, confirming the approach to radical reconstruction proposed in this paper. Among the consequences of the analysis are that covert movement, as opposed to overt movement, is not subject to the extension condition, and that the requirement that Wh-phrases must be licensed by a [+Q] comp is an anywhere condition exactly like the licensing conditions on anaphors and bound pronouns.

4.1. The distribution of *XP-sika*

Although *XP-sika* has been treated as a negative polarity item, it has been known that its distribution is different from the English negative polarity *any*. For example, *XP-sika* can appear in the subject position of a negative sentence as shown in (55a) and (56a), but this is impossible with *any*.

(58) a. John did not see anyone
b. *Anyone did not see John

Further, *XP-sika* must be clause-mates with the licensing negation, as shown in (59) and (60).

(59) a. Hanako-ga [$_{CP}$ Taroo-ga soko-ni-sika ik -ana-katta to] Ziroo-ni itta (koto)
-NOM -NOM there-to-SIKA go-not-past that -to said fact
'Hanako said to Ziroo that it was only there that Taroo went'

b.?*Hanako-ga [$_{CP}$ Taroo-ga soko-ni-sika it -ta to] Ziroo-ni iw -ana-katta (koto)
-NOM -NOM there-to-SIKA go-past that -to say-not-past fact
'It is only there that Hanako said to Ziroo that Taroo went'

(60) a. Hanako-ga [$_{CP}$ nimotu -ga Tookyoo-kara -sika todok-ana-katta to] Ziroo-ni
-NOM luggage-NOM -from-SIKA arrive-not -past that -to
it -ta (koto)
say-past fact
'Hanako said to Ziroo that it was only from Tokyo that luggage arrived'

b.?*Hanako-ga [$_{CP}$ nimotu -ga Tookyoo-kara -sika todoi -ta to] Ziroo-ni
-NOM luggage-NOM -from-SIKA arrive-past that -to
iw -ana-katta (koto)
say-not -past fact
'It is only from Tokyo that Hanako said to Ziroo that luggage arrived'

In the ungrammatical (59b) and (60b), *XP-sika* is contained in the embedded CP while negation appears

in the matrix. This clause-mate condition is not observed with *any*, as (61) shows.

(61) John did not say that Mary saw anyone

(62a-b) show that the examples are even worse when negation is within the embedded CP and *XP-sika* is a matrix constituent.

(62) a. *Hanako-sika [$_{CP}$ Taroo-ga soko-ni ik-ana-katta to] Ziroo-ni it -ta (koto)
-SIKA -NOM there-to go-not-past that -to say-past fact

b. *Hanako-sika [$_{CP}$ nimotu -ga Tookyoo-kara todok-ana-katta to] Ziroo-ni
-SIKA luggage-NOM -from arrive-not-past that -to
it -ta (koto)
say-past fact

Thus, what is imposed on the relation between *XP-sika* and negation is literally a clause-mate condition.

The examples presented above clearly indicate that *XP-sika* can be interpreted only with negation. Putting aside the investigation of the precise structural relation required of *XP-sika* and Neg, I will assume that the former must be raised by QR and satisfy the following condition in order to receive proper interpretation:

(63) The NPI-feature of *XP-sika* must have a negative sentence as its scope.

Then, (55b), repeated in (64), is derived as in (65).

(64) Taroo-ga soko-ni-sika ik-ana-katta (koto)
-NOM there-to-SIKA go-not-past fact
'Taroo only went there' (It is only there that Taroo went)

(65) [$_{TP}$ sono-ni-sika [$_{TP}$ Taroo-ga soko-ni-sika ik-ana-katta]]
{NPI} {π, ~~NPI~~, r}

The ungrammaticality of (62a-b) follows straightforwardly because the NPI-feature must be lowered to the embedded TP in order to satisfy (63) in those example.

The remaining cases to be accounted for are (59b) and (60b), where *XP-sika* is in the embedded clause and Neg is in the matrix. The derivation of (59b) is shown in (66).

(66) a. [$_{CP}$ soko-ni-sika [$_{TP}$ Taroo-ga soko-ni-sika it-ta to]]
{NPI} {π, ~~NPI~~, arg}

b. [$_{TP}$ soko-ni-sika [$_{TP}$ Hanako-ga [$_{CP}$ soko-ni-sika [$_{TP}$ ...] to] Ziroo-ni iw-ana-katta]]
{NPI} {~~NPI~~}

The NPI-feature is first raised to the edge of the embedded CP as in (66a), and the embedded TP is transferred to semantics. Then, the feature is raised in the matrix clause so that it takes a negative sentence as its scope. Here, if an NPI-feature needs to bind a variable just like a q-feature, in addition to taking a negative sentence as its scope, then (66b) is excluded in exactly the same way as (52b). That is, when the shaded part of (66b) is transferred to semantics, the NPI-feature violates Full Interpretation since it is not fully licensed. Thus, the clause-mate condition on *XP-sika* is accounted for as an instance of the clause-boundedness of QR.

The unified treatment of *XP-sika* and quantified phrases receives support from the fact that the former exhibits radical reconstruction effects precisely as the latter. As discussed in detail in Tanaka 1997, examples like (67a-b), which apparently violate the clause-mate condition, are grammatical.

(67) a. [$_{TP}$ Soko-ni-sika$_i$ [Hanako-ga [$_{CP}$ Taroo-ga t_i ik -ana-katta to] Ziroo-ni it -ta]]
there-to-SIKA -NOM -NOM go-not-past that -to say-past
(koto)
fact
'Hanako said to Ziroo that it was only there that Taroo went'

b. [$_{TP}$ Tookyoo-kara -sika$_i$ [Hanako-ga [$_{CP}$ nimotu -ga t_i todok-ana-katta to] Ziroo-ni
-from-SIKA -NOM luggage-NOM arrive-not-past that -to
it -ta]] (koto)
say-past fact
'Hanako said to Ziroo that it was only from Tokyo that luggage arrived'

These examples can be analyzed in the same way as those with long scrambling of quantified phrases. Let us take (67a) to illustrate the point. In the embedded CP, the NPI-feature of *soko-ni-sika* can be raised covertly to TP and its remaining features can be copied at CP Spec, as shown in (68a). Or alternatively, *soko-ni-sika* can first scramble to TP and then to CP Spec as in (68a').

(68) a. [$_{CP}$ Soko-ni-sika [$_{TP}$ soko-ni-sika [$_{TP}$ Taroo-ga sono-ni-sika ik-ana-katta]] to]
{π, ~~arg~~} {NPI} {~~π~~, ~~NPI~~, arg}

a'. [$_{CP}$ Soko-ni-sika [$_{TP}$ soko-ni-sika [Taroo-ga sono-ni-sika ik-ana-katta]] to]
{π, ~~NPI~~, ~~arg~~} {~~π~~, NPI, ~~arg~~} {~~π~~, ~~NPI~~, arg}

b. [$_{TP}$ Soko-ni-sika [Hanako-ga [$_{CP}$ soko-ni-sika [$_{TP}$ ...] to] Ziroo-ni it-ta]]
{π} {~~π~~}

Either way, chain interpretation yields the same distribution of the features: the phonetic features are in CP Spec, the NPI-feature takes the negative TP as its scope, and the arg-feature remains in the object position. At this point, the embedded TP is ready to be transferred to semantics. In particular, the NPI-feature is in a position that satisfies (63) as well as Full Interpretation. Then, the phonetic features of the scrambled phrase move on to the matrix TP as in (68b) and the derivation is completed.

I argued above that *XP-sika* is to be analyzed in exactly the same way as quantified phrases and that the only difference between the two is that the former must satisfy (63) in addition so that it can be interpreted properly. Before I conclude this subsection, I would like to briefly discuss one pattern that is potentially problematic for the analysis just presented and suggest that the problem is only apparent.

It has been claimed in some works, such as Tanaka 1977, that the clause-mate condition on *XP-sika* and negation can be satisfied as a result of long scrambling. Thus, (69a-b) are indeed far better than their counterparts without scrambling, i.e., (59b) and (60b).

(69) a. ?[$_{TP}$ Soko-ni-sika$_i$ [Hanako-ga [$_{CP}$ Taroo-ga t_i it -ta to] Ziroo-ni iw -ana-katta]]
there -to-SIKA -NOM -NOM go-past that -to say-not-past
(koto)
fact
'It is only there that Hanako said to Ziroo that Taroo went'

b.??[$_{TP}$ Tookyoo-kara -sika$_i$ [Hanako-ga [$_{CP}$ nimotu -ga t_i todoi -ta to] Ziroo-ni
-from-SIKA -NOM luggage-NOM arrive-past that -to
iw -ana-katta]] (koto)
say-not -past fact
'It is only from Tokyo that Hanako said to Ziroo that luggage arrived'

This is totally unexpected under the analysis just presented. The NPI-feature must take matrix scope in these examples, and consequently, the derivation of (69a), for example, must proceed as in (70).

(70) a. [$_{CP}$ Soko-ni-sika [$_{TP}$ Taroo-ga sono-ni-sika it-ta] to]
{π, NPI, ~~arg~~} {~~π~~, ~~NPI~~, arg}

b. [$_{TP}$ Soko-ni-sika [Hanako-ga [$_{CP}$ soko-ni-sika [$_{TP}$ ...] to] Ziroo-ni iw-ana-katta]]
{π, NPI} {~~π~~, ~~NPI~~}

Soko-ni-sika first moves to the embedded CP Spec as shown in (70a). The NPI-feature is retained at the landing site so that it can move further to take the matrix negative TP as its scope as in (70b). But then, the NPI-feature does not bind a variable within the information unit transferred to semantics. Thus, it violates Full Interpretation and the example is predicted to be as ungrammatical as (59b), repeated below as (71).

(71) ?*Hanako-ga [$_{CP}$ Taroo-ga soko-ni-sika it -ta to] Ziroo-ni iw -ana-katta (koto)
-NOM -NOM there-to-SIKA go-past that -to say-not-past fact
'It is only there that Hanako said to Ziroo that Taroo went'

But there is evidence that the problem posed by examples like (69) may only be apparent. That is, examples such as (72) suggest that phrases of the form *XP-sika* can marginally be "base-generated" in a position adjoined to a negative sentence, at least in some cases.

(72) ??Yuukon-kara -sika$_i$ Taroo-ga [$_{NP}$ [$_{TP}$ e_i okur-arete ki -ta] hakaseronbun]-o
UConn -from-SIKA -NOM send-passive come-past dissertation -ACC
yom-ana-i (koto)
read-not -pres. fact
'Taroo reads only those dissertations that were sent from UConn'

In this example, the sentence-initial *XP-sika* is associated with a position within a relative clause. It is then tempting to attribute the marginality of the example to Subjacency. However, as far as I can tell, the example is better than its counterpart without *-sika* shown in (73).

(73) ?*Yuukon-kara$_i$ Taroo-ga [$_{NP}$ [$_{TP}$ t_i okur-arete ki -ta] hakaseronbun]-o
UConn -from -NOM send-passive come-past dissertation -ACC
yom-ana-i (koto)
read-not -pres. fact
'Taroo does not read those dissertations that were sent from UConn'

(73) is a clear case of a Subjacency violation. Hence, if the contrast between (72) and (73) is real, it suggests that the former need not be derived by scrambling. It seems then that *XP-sika* can be merged directly with a negative sentence, although with some marginality. And if this is the case, the option should be available for (69a-b) as well.

Examples like (72) are abundant. Thus, (74) is also better than expected.

(74) ??(Ahurika-no kuni -de-wa) Eziputo-ni-sika$_i$ Taroo-wa [$_{NP}$ [$_{TP}$ e_i it -ta koto-ga
Africa -GEN country-in -TOP -to-SIKA -TOP go-past fact -NOM
ar -u] hito] -ni at -ta koto-ga na -i
have-pres. person-to meet-past fact -NOM not-pres.
'*Lit.* (Among the African countries,) Egypt is the only place that Taroo has met someone who has been to'

I will hence tentatively conclude that cases like (69), where long scrambling appears to save a clause-mate condition violation, involves direct merger of *XP-sika* with a negative TP.[18]

4.2. Blocking Effects on Wh-construal

In this subsection, I will discuss the blocking effect that *XP-sika* has on Wh-construal.[19] The purpose of the discussion is two-fold. First, the relevant phenomenon will provide a good testing ground for the account of *XP-sika* proposed above. Secondly, examples of this blocking effect have sometimes been cited as evidence against the radical reconstruction of scrambling. It is therefore desirable to examine whether they are consistent with the analysis of scrambling proposed in this paper.

Typical examples of the blocking effect are shown in (75) and (76).

(75) a. Nani-ga Tookyoo-kara -sika todok-ana-katta no
what-NOM -from-SIKA arrive-not -past Q
'What arrived only from Tokyo'

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[18] Recall from Footnote 11 that phrases of the form 'NP-particle' can be "base-generated" at the sentence-initial position rather freely. The peculiarity of *XP-sika* is that this is marginally allowed even with PPs. I do not have an account at this point for this exceptional property of *XP-sika*. Aoyagi and Ishii (1994) point out that *XP-sika* behaves as an adverb rather than an argument. Thus, it can co-occur with an argument as shown in (i) and (ii).

(i) Taroo-wa ringo-sika kudamono-o tabe-na -katta
-TOP apple-SIKA fruit -ACC eat -not-past
'Taroo ate no fruits other than apples'

(ii) Taroo-wa Eziputo-ni-sika Ahurika-no kuni -ni it -ta koto-ga na -i
-TOP Egypt -to-SIKA Africa -GEN country-to go-past fact -NOM not-pres.
'Taroo has not been to any African country other than Egypt'

This adverbial nature of *XP-sika* may be related to its peculiarity in distribution.

[19] This blocking effect is induced by quantified phrases and other negative polarity items as well, although it seems to come out most clearly with *XP-sika*. There are diverse accounts suggested for the effect in the literature. The representative ones can be found in Hoji 1985, Takahashi 1990, Tanaka 1997, Beck and Kim 1997, Ko 2003, and Tomioka 2004.

b.?*Hon -sika doko -kara todok-ana-katta no
book-SIKA where-from arrive-not-past Q
'Where did only books arrived from'

(76) a. Dare-ga Taroo-ni-sika purezento-o okur-ana-katta no
who -NOM -to-SIKA gift -ACC send-not-past Q
'Who sent gifts only to Taroo'

b.?*Taroo-sika dare-ni purezento-o okur-ana-katta no
-SIKA who-to gift -ACC send-not-past Q
'Who did only Taroo send gifts to?

As can be seen in these examples, when *XP-sika* and a Wh-phrase cooccur, the former cannot precede the latter, as schematized in (77).

(77) *[$_{CP}$ [$_{TP}$ ... XP-sika ... [...Wh ...] ... NEG ...] Q]

I will assume here that in these cases the intervening NPI-feature of *XP-sika* blocks the association between the Q-morpheme in the [+Wh] C and the Wh-phrase.[20]

The general consensus in the literature is that whether the blocking effect obtains or not depends on the surface positions of the relevant items. Thus, (75b) and (76b) become grammatical when the Wh-phrase is scrambled to a position preceding *XP-sika*, as shown in (78).

(78) a. Doko-kara$_i$ hon -sika t_i todok-ana-katta no
where-from book-SIKA arrive-not-past Q

b. Dare-ni$_i$ Taroo-sika t_i purezento-o okur-ana-katta no
who -to -SIKA gift -ACC send-not-past Q

Similarly, (75a) and (76a) become degraded when *XP-sika* is scrambled to the sentence-initial

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[20] Discussing quantifiers and negative polarity items in Korean, Beck and Kim (1997) hypothesize that they block LF Wh-movement. This paper basically follows their formulation of the relevant constraint. On the other hand, Tanaka (1997) argues that (77) is excluded by a linear crossing constraint imposed on the association lines of Wh-Q and NPI-Neg as in (i).

(i) *[$_{CP}$ [$_{TP}$ ... XP-sika ... [...Wh ...] ... Neg ...] Q]

I will briefly comment on this analysis in Footnote 23.

position.[21]

(79) a.??Tookyoo-kara -sika$_i$ nani -ga t_i todok-ana-katta no
-from-SIKA what-NOM arrive-not -past Q

b.??Taroo-ni-sika$_i$ dare-ga t_i purezento-o okur-ana-katta no
-to-SIKA who-NOM gift -ACC send-not-past Q

As pointed out by Beck and Kim (1997) and others, examples like (79) pose a problem for the hypothesis that scrambling can be "undone" in LF. If scrambled phrases can be placed back in their initial positions at LF, these examples are indistinguishable from the perfectly grammatical (75a) and (76a) at that level. On the other hand, the analysis of scrambling and radical reconstruction presented in this paper correctly predicts the blocking effect in these examples. The derivation of (79a) is shown in (80).

(80) [$_{CP}$ [$_{TP}$ Tookyoo-kara-sika [nani-ga Tookyoo-kara-sika todok-ana-katta] no]
{π, NPI, ~~arg~~} {~~π~~, ~~NPI~~, arg}

Tookyoo-kara-sika is scrambled to the initial position as the TP is constructed. The NPI-feature is retained at the landing site because it is the position that allows the feature to take a negative sentence as its scope. After C merges with the TP, the Q-morpheme in C is associated with the Wh-phrase *nani-ga* 'what-NOM'. But the association is blocked by the intervening NPI-feature. Hence, scrambling causes the blocking effect in this case.

Given the analysis of *XP-sika* presented in this paper, the grammatical examples in (75a), (76a) and (78) have more interesting consequences. The derivation of (75a) is illustrated in (81).

(81) [$_{CP}$ [$_{TP}$ Tookyoo-kara-sika [$_{TP}$ nani-ga Tookyoo-kara-sika todok-ana-katta] no]
{NPI} {π, ~~NPI~~, arg}

In this case, the NPI-feature of *Tookyoo-kara-sika* is raised covertly to TP by QR so that it takes a negative sentence as its scope. The resulting configuration is similar to (80) with an NPI-feature intervening between the Q-morpheme and the Wh-phrase. At the same time, there is one important difference between (80) and (81). That is, the NPI-feature is raised to TP overtly in (80) but covertly in (81). Let us consider (80) first. Since overt movement is subject to the extension condition, the NPI-feature already intervenes between the Q-morpheme and the Wh-phrase when C and TP are merged. On the other hand, this is not necessarily the case in (81). If covert movement is not subject to the extension

[21] Aoyagi and Ishii (1994) note that examples of this kind are not as bad as typical cases of blocking. I agree with their judgment but will abstract away from this difference.

requirement, as seems reasonable, the NPI-feature can be raised by QR after the TP-C merger takes place. Then, there can be a point in the derivation when the Q-Wh association is possible without an intervener. Hence, the grammaticality of (75a) suggests (82a) as well as (82b).

(82) a. Q-Wh association can take place in the course of the derivation.
b. Covert movement, in distinction with overt movement, is not subject to the extension requirement.

(82a), in turn, suggests that the relation of a Wh-phrase to the associated Q-morpheme is similar to that of an anaphor/bound pronoun to its antecedent. It was argued in Section 2 that Condition (A), for example, is an anywhere condition. (82a) makes sense if Wh-phrases, like anaphors, are " antecedent seeking" elements and are licensed by binding (Q-Wh binding). Licensing of this kind is to be distinguished from that of quantified phrases and *XP-sika* discussed above. The latter two are " binders" and their failure to bind a variable results in vacuous quantification. In addition, they must bind a variable within the information unit transferred to semantics in order to satisfy Full Interpretation. On the other hand, although anaphors, bound pronouns and Wh-phrases are to be interpreted as bound variables, the required binding can take place across phase boundaries, as shown in (83).[22]

(83) a. [$_{TP}$ Karera-ga [$_{CP}$ [$_{TP}$ otagai -ga itiban yuusyuu-da] to] omotte i -ru] (koto)
they -NOM each other-NOM best smart -is that thinking be-pres. fact
'*Lit.* They think that each other are the smartest'

b. [$_{TP}$ Dono kaisya -mo$_i$ [$_{CP}$ [$_{TP}$ soko-ga$_i$ itiban-da] to] itte i -ru] (koto)
which company-also there-NOM best -is that saying be-pres. fact
'Every company is saying that it is the best'

c. Taroo-wa [$_{CP}$ [$_{TP}$ Hanako-ga nani -o katta] to] it -ta no
-TOP -NOM what-ACC bought that say-past Q
'What did Taroo say that Hanako bought'

This shows that they can satisfy Full Interpretation by virtue of being licensed as arguments and can be transferred to semantics as interpretable objects without being bound. Hence, their licensing requirements must be independent of Full Interpretation.

The hypothesis that variables need not be bound to satisfy Full Interpretation is necessary even for a simple case of Wh-movement like (84).

(84) What did John say Mary bought

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[22] Japanese and Korean lack NIC effects. See Yang 1983 and Nakamura 1996 for discussion.

When the embedded CP is completed, the embedded TP is transferred to semantics as shown in (85).

(85) [$_{CP}$ what [$_{TP}$ Mary bought what]]
{π, O, ~~arg~~} {~~π~~, ~~O~~, arg}

The arg-feature of *what* in the object position is interpreted as a variable but is not bound within the TP. I will come back briefly to this issue in the following section.

Returning to the blocking effect, it was shown above that the analysis of scrambling and NPI-licensing proposed in this paper predicts that the radical reconstruction does not evade the effect in examples like (79). However, this is not the prediction for all cases. The analysis in fact predicts that there are cases where the blocking effect is evaded. Let us consider the concrete examples in (86).

(86) a. [$_{TP}$ Soko-ni-sika$_i$ [dare-ga [$_{CP}$ Taroo-ga t_i ik-ana-katta to] Ziroo-ni it -ta]] no
there-to-SIKA who-NOM -NOM go-not-past that -to say-past Q
'Who said to Ziroo that it was only there that Taroo went'

b. [$_{TP}$ Tookyoo-kara-sika$_i$ [dare-ga [$_{CP}$ nimotu -ga t_i todok-ana-katta to] Ziroo-ni
-from-SIKA who-NOM luggage-NOM arrive-not-past that -to
it -ta]] no
say-past Q
'Who said to Ziroo that it was only from Tokyo that luggage arrived'

In these examples, *XP-sika* is scrambled out of an embedded negative TP across a Wh-phrase in the matrix clause. On the surface, *XP-sika* intervenes between the matrix Q-morpheme and the Wh-phase and hence, the configuration for the blocking effect obtains. Yet, the examples are far better than (87a-b), where negation is placed in the matrix TP.

(87) a.?*[$_{TP}$ Soko-ni-sika$_i$ [dare-ga [$_{CP}$ Taroo-ga e_i it -ta to] Ziroo-ni iw -ana-katta]] no
there-to-SIKA who-NOM -NOM go-past that -to say-not-past Q

b.?*[$_{TP}$ Tookyoo-kara-sika$_i$ [dare-ga [$_{CP}$ nimotu -ga e_i todoi -ta to] Ziroo-ni
-from-SIKA who-NOM luggage-NOM arrive-past that -to
iw -ana-katta]] no
say-not-past Q

This is exactly what is predicted by the analysis proposed in this paper. The derivation of (86a) is shown in (88).

(88) a. [$_{CP}$ Soko-ni-sika [$_{TP}$ soko-ni-sika [$_{TP}$ Taroo-ga soko-ni-sika ik-ana-katta]] to]
{π, ~~arg~~} {NPI} {~~π~~, ~~NPI~~, arg}

a'. [$_{CP}$ Soko-ni-sika [$_{TP}$ soko-ni-sika [Taroo-ga soko-ni-sika ik-ana-katta]] to]
{π, ~~NPI~~, ~~arg~~} {~~π~~, NPI, ~~arg~~} {~~π~~, ~~NPI~~, arg}

b. [$_{CP}$ [$_{TP}$ Soko-ni-sika [dare-ga [$_{CP}$ soko-ni-sika [$_{TP}$ ...] to] Ziroo-ni it -ta]] no]
{π} {~~π~~}

In the embedded CP phase, the NPI-feature of *XP-sika* can be raised to TP by QR and the rest of the features can scramble to CP Spec, as in (88a). Or alternatively, *XP-sika* can first scramble to TP and then to CP Spec, as in (88a'). Either way, the NPI-feature is retained at the position where it takes the negative TP as its scope and only the phonetic features appear in CP Spec. These phonetic features are further scrambled in the matrix clause across the Wh-phrase *dare-ga* 'who-NOM', as shown in (88b). Since there is no NPI-feature that intervenes between the matrix Q and the Wh-phrase in (88b), the example in (86a) should not exhibit the blocking effect despite the fact that it has the surface configuration in (77).[23]

(87a-b), on the other hand, should show the blocking effect, since the NPI-feature must be at the matrix TP in those examples. According to the analysis suggested above, *XP-sika* is directly merged with the matrix negative TP, as in (89).

(89) [$_{CP}$ [$_{TP}$ XP-sika [... Wh ... Neg]] Q]

Hence, the NPI clearly intervenes between the Q-morpheme and the Wh-phrase, and the examples constitute straightforward instances of the blocking effect, like (75b) and (76b).

In this section, I first assumed that Japanese NPIs must take a negative TP as its scope in order to be

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[23] Tanaka (1997) discusses the following example, which has the same configuration as (86a-b) in relevant respects, and marks it ungrammatical.

(i) LGB-sika$_i$ dare -ga [$_{CP}$ Hanako-ga t_i yom-ana-i to] it -ta no
-SIKA who-NOM -NOM read -not-pres. that say-past Q
'Who said that Hanako reads only LGB'

Based on this judgment, he goes on to argue that the example constitutes evidence for the account of the blocking effect in terms of the surface linear crossing constraint, mentioned in Footnote 20. Examples like (i) and (86a-b) are indeed complex, but to my ear (i) sounds far better than (ii), where negation appears in the matrix TP.

(ii) ?*LGB-sika$_i$ dare -ga [$_{CP}$ Hanako-ga t_i yom-u to] iw -ana-katta no
-SIKA who-NOM -NOM read -pres. that say-not-past Q

properly interpreted. This can be achieved by QR or by scrambling. Then, I argued that the distribution of the NPIs follows if they are subject to the same licensing condition as quantified phrases. That is, they must satisfy Full Interpretation within the information unit transferred to semantics by virtue of binding a variable in its chain. In particular, the clause-mate condition on an NPI and negation is explained in exactly the same way as the clause-boundedness of QR. I argued further that the proposed chain interpretation mechanism predicts correctly when a scrambled NPI exhibits the blocking effect on the association of a Q-morpheme and a Wh-phrase. This analysis also explains away those examples that are problematic to the simple-minded "undoing" conception of radical reconstruction.

5. Conclusion

The hypothesis entertained in this paper, (40), is repeated below as (90), with a slight modification to include the NPI-feature.

(90) a. When the derivation of a phase HP is completed, syntax transfers the complement of H to semantics. The transfer applies cyclically and in a non-redundant way: the information that was already transferred to semantics in a previous cycle is excluded from the present transfer operation.

b. Every element in a structure transferred to semantics must be properly licensed within that structure. An arg-feature is licensed by a θ-role assigning (or agreement inducing) head, an Operator-feature is licensed by an operator-selecting C head, and a q-feature and an NPI-feature are licensed by virtue of binding a variable within its chain.

The most important proposal is the part of (90b) that states that q-features and NPI-features are licensed by virtue of binding a variable within its chain. It should be emphasized here that this is not an interpretive mechanism but a licensing condition. The basic idea is that the precise compositional role of each element must be explicitly specified when a syntactic structure is transferred to semantics. Thus, arguments and operators must be licensed by the selecting heads, and quantifiers must be identified as such by virtue of variable binding. In this sense, the proposal is intended to be a cyclic version of Full Interpretation, which requires every element to be interpretable at the interface.

The conditions that concern the actual references of NPs, for example, those that dictate the anaphoric relations of NPs, are not part of (90). Thus, the embedded object of (91) is transferred to semantics as part of the embedded TP, being licensed as an argument.

(91) $[_{CP}$ What do $[_{TP}$ you think $[_{CP}$ what $[_{TP}$ John bought what]]]]
{π, O} {arg}

Since it is interpreted as a variable, it must be bound and be provided with a range. But the required binding takes place across a phase boundary and the whole structure must be taken into consideration in order to check whether the required binding obtains. Similarly, the anaphor *himself* in (92) is transferred to semantics as part of the embedded TP, being licensed as an argument.

(92) [$_{TP}$ John thought [$_{CP}$ that [$_{TP}$ pictures of himself would be on sale]]]

But its reference is fixed in a larger structure that contains it and its antecedent *John*.

Although anaphors and bound pronouns need not be bound within the information unit determined by phase, they must still be licensed by their antecedents. And this licensing requirement can be satisfied in the course of the derivation. Thus, (6), repeated below as (93), can be derived as in (94).

(93) ?[$_{TP}$ Karera-o$_i$ [[otagai -no sensei]-ga t_i hihansita]] (koto)
they -ACC each other-GEN teacher-NOM criticized fact
'*Lit*. Each other's teachers criticized them'

(94) [$_{TP}$ Karera-o [[otagai-no sensei]-ga karera-o hihansita]]
{π, q, ~~arg~~} {~~π~~, ~~q~~, arg}

As argued in Section 2, the example is grammatical because *otagai* 'each other' is bound by the arg-feature of *karera* 'they' at one point of the derivation.

It was also argued in Section 2 that Condition (C), which is another condition on the referential relations among NPs, applies to the " output" of the derivation. The crucial example (18) is repeated in (95), together with its derivation in (96).

(95) [$_{TP}$ Zibunzisin-o$_i$ [Taroo-ga t_i semeta]] (koto)
self -ACC -NOM blamed fact
'Taroo blamed himself'

(96) [$_{TP}$ Zibunzisin-o [Taroo-ga zibunzisin-o semeta]]
{π, ~~arg~~} {~~π~~, arg}

Condition (C) would exclude this example if it were an everywhere condition applying throughout the derivation.

The overall picture that emerges from this discussion, then, is as follows:

(97) a. Upon the completion of each phase, information on its complement is transferred to semantics. The information concerns the compositional semantic role of each element contained within the unit. Thus, each element must be licensed and identified within the information unit as an argument, a predicate, a modifier, an operator, or a quantifier.

b. Information on the antecedent/binder of an anaphoric element is sent to semantics at any point of the derivation. Anaphoric elements include anaphors, bound pronouns, variables, and Wh-phrases in situ.

c. Information on disjoint reference is sent to semantics upon the termination of the derivation.

(97a), as repeatedly noted, is a cyclic restatement of Full Interpretation, and (97b-c) concern anaphoric relations among NPs. The model is consistent with the proposal in Epstein, et al. 1998 and Chomsky 1998 that syntax transfers information to semantics throughout the derivation and that there is no LF representation. It simply states that different kinds of information are sent to semantics in different ways. The empirical claim of this paper is that this model enables us to provide a more refined analysis of the A/A' properties of scrambling, the effects of scrambling on quantifier scope, and the distribution of NPIs in Japanese.

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Expletive Replacement Reconsidered: Evidence from Expletive Verbs in Japanese*

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1. Introduction

It is argued in Hoshi 1995, and Saito and Hoshi 2000 that the Japanese expletive verb *su* shares the basic properties with the English expletive *there*. These works suggest further that its distribution can be accounted for by the expletive replacement analysis proposed in Chomsky 1986. The aim of this paper is rather modest: it is to confirm these conclusions by further developing the analysis of the Japanese expletive verb.

It has been known that the English existential construction, exemplified in (1), exhibits properties that indicate that the indefinite (associate) NP occupies the subject position in place of the expletive *there*.

(1) There were linguists in the room

Thus, the indefinite NP *linguists* participates in the subject-verb agreement exactly as in (2).

(2) Linguists$_i$ were t_i in the room

The parallelism between (1) and (2) goes further. For example, when NP-movement as in (2) is illicit, the corresponding existential sentence is ungrammatical. This is illustrated in (3) and (4).

(3) a. *Linguists$_i$ seem to t_i that Warlpiri is the most fascinating language
b. *There seem to linguists that Warlpiri is the most fascinating language

(4) a. *Linguists$_i$ seemed that it was likely t_i to be in the room
b. *There seemed that it was likely linguists to be in the room

Given these observations, Chomsky (1986) proposed that the indefinite NP moves to the subject position and replaces the expletive at LF. The failure of expletive replacement,

* The material in this paper is based on joint research with Hiroto Hoshi over the years. His contributions, which are evident in the pages to follow, are gratefully acknowledged.

according to him, results in a violation of Full Interpretation, which requires that every element receive interpretation at the interface levels, LF and PF. Since *there* is void of meaning, its presence at LF is illicit. The expletive replacement is itself NP-movement and hence, (4b) is ruled out as an instance of the SSC effect, precisely as (4a). Chomsky further proposed Last Resort in this context as a principle to exclude (3a) and (3b). The principle states that movement can take place only to satisfy a morphological requirement of the moved item. It prohibits the movement of *linguists* in (3a-b) since the NP is checked for Case at its base position and there is no need for this NP to move to the subject position. (3b), then, violates the Last Resort Principle if expletive replacement takes place, and if not, it is excluded by Full Interpretation.

The analysis just described played an important role in the development of the syntactic theory toward Minimalism. The Last Resort Principle provided the incentive to pursue the economy of derivation, and Full Interpretation is just another name for the economy of representation. However, as the Minimalist model was developed, the Last Resort Principle lost its place within the theory and was eliminated in favor of a more refined theory of feature-checking in Chomsky 1995. The purpose of this paper is neither to discuss this development nor to examine the analysis of the English existential construction. Instead, I will show that the analysis in terms of Last Resort and Full Interpretation successfully extends to expletive verbs in Japanese. This not only adds to the data to be considered in the analysis of expletives but also suggests that there is an insight behind expletive replacement that must be captured even in a more refined analysis.

The following section concerns the expletive verb *su* in the Japanese light verb construction. I will first go over the analysis of the construction presented in Saito and Hoshi 2000. Then, I will revise the analysis of one constraint imposed on the construction and argue that it is derived from the Last Resort Principle and Full Interpretation. In Section 3, I will discuss another construction in which this expletive verb appears, i.e., the one in which the topic marker *wa* or a focus particle like *sae* 'even' is attached to the regular verb. After updating Hoshi's (1995) analysis of the distribution of the expletive *su* in this construction, which is in fact in terms of the Last Resort Principle and Full Interpretation, I will show that it has further desirable empirical consequences. Section 4 contains a summary and a brief remark on a consequence of the proposed analysis within the derivational model of syntax.

2. Expletive Verbs in the Light Verb Construction

In Section 2.1, I will go over the properties of the verb *su* in Japanese and Sells' (1989) argument that it can function as an expletive verb. Then, in Section 2.2, I will present and develop the covert head movement analysis proposed in Saito and Hoshi 2000.

2.1. *Su* as an Expletive Verb

The verb *su* mentioned above appears in contexts such as those in (5).

(5) a. Hanako-ga yama -nobori -o sita (*sita* = *su* + *ta* (past))
-NOM mountain-climbing-ACC did
'Hanako did mountain-climbing'

b. Hanako-ga Taroo-ni toti -o zyooto-sita
-NOM -to land-ACC giving-did
'Hanako gave a piece of land to Taroo'

c. Hanako-ga Taroo-ni [$_{NP}$ toti -no zyooto]-o sita
-NOM -to land-GEN giving -ACC did
'Hanako gave a piece of land to Taroo'

In (5a), it is used as the main predicate, very much like the main verb *do* in English. (I will henceforth refer to this *su* as the main verb *su*.) In this case, it takes an agentive subject and an accusative object that typically refers to an act. It may optionally take other arguments such as the goal phrase in (6).

(6) Taroo-ni sore-o suru koto-wa yurus -are -nai (*suru* = *su* + *ru* (present))
-to it -ACC do fact -TOP permit-passive-not
'It is not permissible to do that to Taroo'

In (5b), *su* is a category-changing suffix that turns a noun into a verb. This *su* can attach to an unaccusative, unergative, or transitive noun to create the corresponding verb, as shown in (7).[1]

(7) a. Mizu-ga zyoohatu -sita (unaccusative)
water-NOM evaporation-did
'The water evaporated'

b. Taroo-ga sanpo -sita (unergative)
-NOM taking a walk-did
'Taroo took a walk'

c. Hanako-ga Taroo-o hihan -sita (transitive)
-NOM -ACC criticism-did
'Hanako criticized Taroo'

[1] See Miyagawa 1989 and Tsujimura 1990 for detailed discussion on the properties of this *su*.

(5c) is an example of what is called the 'Japanese light verb construction' and represents the case where *su* is used as an expletive verb. As discussed in detail in Grimshaw and Mester 1988, *su* can be void of meaning and the accusative noun *zyooto* 'giving' can serve as the predicate in this example. It is pointed out by Terada (1990) and others that *su* in examples of this kind can plausibly be analyzed as the main verb because the main verb *su* can sometimes take a goal argument as mentioned above. However, Sells (1988) persuasively argues that there is indeed an expletive *su* based on examples such (8).

(8) ??Hanako-ga Taroo-ni toti -o zyooto-o sita
-NOM -to land-ACC giving -ACC did
'Hanako gave a piece of land to Taroo'

This example is degraded because it violates the ban on multiple accusative phrases, known as the 'double-*o* constraint'. Here, it is shown in Harada 1973 and Shibatani 1973 that this constraint has two separate subtypes. When there are two accusative argument NPs in a simple sentence, the result is hopeless as in (9a).[2]

(9) a. *Hanako-ga Taroo-o sake-o nom -aseta
-NOM -ACC sake-ACC drink-made
'Hanako made Taroo drink sake'

b. ??Hanako-ga Taroo-o hamabe-o hasir-aseta
-NOM -ACC beach -ACC run -made
'Hanako made Taroo run on the beach'

On the other hand, the result is only marginal when one of the two accusative NPs is a non-argument. In (9b) *hamabe* 'beach' is a locative adverbial and hence, the example is much better than (9a). What Sells points out is that (8) has the grammatical status of (9b) and not of (9a). This implies that one of the accusative NPs in this example is a non-argument. If *su* is a main verb and assigns θ-roles to all arguments, then both of the accusative NPs would be arguments and hence, we would expect a strong violation as in (9a), contrary to the fact. On the other hand, if *su* is an expletive verb and *zyooto* 'giving' serves as the predicate of the sentence, the marginal status of the example is correctly predicted. In this case, the only accusative argument in the sentence is *toti* 'land'. Thus, examples like (8) indicate that *su* indeed can be an expletive verb. And if (8) contains an expletive *su*, we expect this expletive

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[2] In the Japanese causative construction, the causee can be marked either dative or accusative as shown in (i).

(i) Hanako-ga Taroo-ni /-o hasir-aseta
-NOM -DAT/-ACC run -made
'Hanako made Taroo run'

The examples in (9) are perfect if the causee 'Taroo' is marked dative instead of accusative.

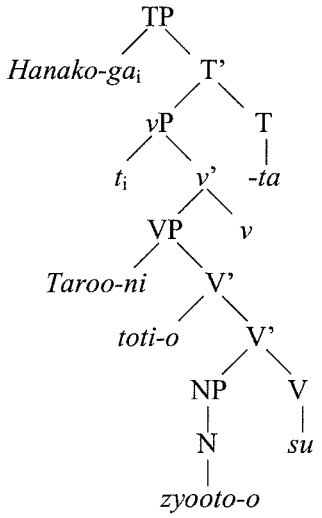
verb to be able to occur in (5c) as well.[3]

The remaining task, then, is to provide an analysis for the light verb construction. In particular, it must be shown how the nominal head *zyooto* 'giving' assigns θ-roles to the sentential arguments in (8) and (5c).

2.2. Expletive Verb Replacement in LF

Given this background, it was proposed in Saito and Hoshi 2000 that the θ-role assigning noun in the light verb construction covertly moves to the position of the expletive verb and discharges its θ-roles from that position. Let us consider the structure of (8), shown in (10).

(10)



According to this analysis, the noun *zyooto* 'giving' moves to the position of *su* in LF, and discharges its theme role to *toti* 'land' and its goal role to *Taroo*.[4] Note that the expletive verb is replaced (or adjoined to) as a result and does not appear in the LF representation. Although Saito and Hoshi did not consider this crucial, the analysis is thus consistent with Full Interpretation.

One piece of evidence for this analysis is that the θ-role assigning noun resists any kind of overt movement, a fact reported in Grimshaw and Mester 1988. The cleft sentences in (11) illustrate the generalization.

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[3] If Terada (1990) is correct, (5c) is ambiguous. That is, the verb *su* in this example may be a main verb or an expletive verb.

[4] Saito and Hoshi (2000) actually do not assume the *v*-projection and place the subject at the specifier position of VP. Hence, according to their analysis, the raised noun assigns the agent role to *Hanako* as well. I will come back to this point later in this section when the choice becomes relevant.

(11) a. [$_{CP}$ Op$_i$ [$_{IP}$ Mary-ga John-ni t_i zyooto-o sita] no] -wa toti -o$_i$ da
-NOM -to giving-ACC did COMP-TOP land-ACC is
'It is a piece of land that Mary gave to John'
(*Lit.* It is a piece of land that Mary did giving to John.)

b. *[$_{CP}$ Op$_i$ [$_{IP}$ Mary-ga John-ni toti -o t_i sita] no] -wa zyooto-o$_i$ da
-NOM -to land-ACC did COMP-TOP giving-ACC is
(*Lit.* It is giving that Mary did a piece of land to John.)

(11a-b) are based on the multiple accusative sentence (8). In (11a), the theme argument *toti-o* 'land-ACC' is focused. The example is better than (8) as one of the two accusative NPs is dislocated.[5] (11b), on the other hand, is derived by focusing the θ-role assigning noun *zyooto-o* 'giveng-ACC', and the result is hopeless. This readily follows from the covert head movement analysis. The θ-role assigning noun would have to move sideways in order to discharge its θ-roles in this example. Hence, the required θ-role assignment fails to take place.

Similarly, the scrambling of the θ-role assigning noun results in ungrammaticality, as shown in (12).

(12) a. *Hanako-ga zyooto-o$_i$ Taroo-ni toti -o t_i sita
-NOM giving-ACC -to land-ACC did
'Hanako gave a piece of land to Taroo'

b. *Zyooto-o$_i$ Hanako-ga Taroo-ni toti -o t_i sita
giving-ACC -NOM -to land-ACC did
'Hanako gave a piece of land to Taroo'

These examples can be explained in basically the same way as (11b).

This account of (12) is consistent with the (radical) reconstruction properties of scrambling. As shown in detail in Tada 1993 and Nemoto 1993, VP-internal scrambling exhibits strict A-properties and is not subject to LF reconstruction. Thus, (13b) contrasts sharply with (14b).

(13) a. Hanako-ga karera-ni otagai -o syookaisita
-NOM they -to each other-ACC introduced
'Hanako introduced them to each other'

b. *Hanako-ga otagai -o$_i$ karera-ni t_i syookaisita
-NOM each other-ACC they -to introduced

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[5] As noted in Harada 1973 and Shibatani 1973, this kind of improvement is observed with the weak type of "double-*o*" effect represented by (9b) but not with the strong type shown in (9a).

c. *Otagai -o_i Hanako-ga karera-ni t_i syookaisita
each other-ACC -NOM they -to introduced

(14) a. Karera-ga otagai -o semeta
they -NOM each other-ACC blamed
'They blamed each other'

b. Otagai -o_i karera-ga t_i semeta
each other-ACC they -NOM blamed

It was proposed in Saito 1989 on independent grounds that scrambled phrases can be placed back in their initial positions at LF. This offers a possible account for the grammaticality of (14b). But then, the ungrammaticality of (13b) shows that VP-internal scrambling (as opposed to scrambling across the subject) is not subject to this LF reconstruction. Similarly, the ungrammaticality of (13c) indicates that scrambling out of VP proceeds through the edge of VP (or *v*P), and reconstruction applies only to the movement originating from this position. Then, *zyooto-o* 'giving-ACC' in (12) is at the edge of VP (or *v*P) at LF, and hence, it must lower to the position of *su* in order to discharge its θ-roles.

I have so far introduced the covert head movement analysis of Saito and Hoshi 2000. There is another argument presented in favor of this analysis in the paper, and that is where refinement is necessary. I will now turn to this argument.

Grimshaw and Mester (1988) note the following as one of the peculiar properties of the Japanese light verb construction:

(15) At least one internal argument of the θ-role assigning noun must be realized outside the NP it projects.

The examples in (16) illustrate this generalization.

(16) a. Hanako-ga Taroo-to kekkon -o sita
-NOM -with marriage-ACC did
'Hanako married Taroo'

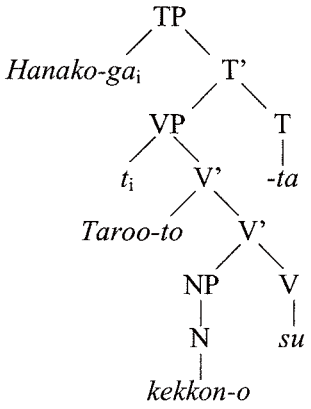
b. ?Hanako-ga [$_{NP}$ Taroo-to -no kekkon] -o sita
-NOM -with-GEN marriage-ACC did

(16a) can be a regular instance of the light verb construction with the expletive *su*. (16b), on the other hand, is marginally allowed but only with *su* interpreted as the main verb. It roughly means that there is a specific act of getting married with Taroo and Hanako did it. Grimshaw and Mester, then, concludes that (16b) is ungrammatical as an instance of the light verb construction. This example contradicts the generalization in (15) since only the external

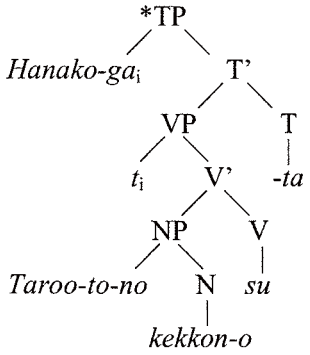
argument *Hanako* is realized outside the NP headed by *kekkon* 'marriage'.

Saito and Hoshi (2000) argued that this generalization follows from the Last Resort Principle. The structures they posit for (16a-b) are shown in (17a-b) respectively.

(17) a.



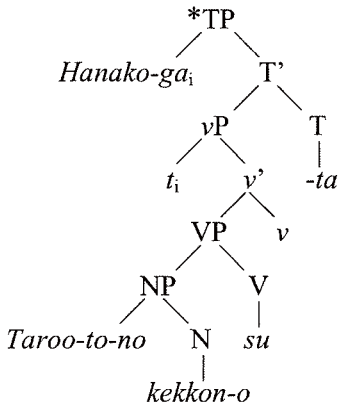
b.



It is assumed here that the subject *Hanako* is generated in VP Spec. In (17a), *kekkon* 'marriage' covertly moves to the position of the expletive verb and assigns θ-roles to *Taroo* as well as to *Hanako*. In (17b), on the other hand, *kekkon* discharges its internal θ-role to *Taroo* within the NP. In this case, there is no motivation for the θ-role assigning noun to move to the position of *su* because a noun, as opposed to a verb, only optionally assigns its external θ-role. Then, the movement is excluded by the Last Resort Principle and consequently, the subject *Hanako* fails to receive a θ-role.

This analysis, however, cannot be maintained under the hypothesis that *v* assigns the external θ-role. The structure of (16b) would then be as in (18).

(18)



In this structure, *Hanako* and *Taroo* receive θ-roles from *v* and *kekkon* 'marriage' respectively in their base positions, and hence, θ-role assignment takes place properly even in the absence of the covert movement of the θ-role assigning noun. In Saito 2001, I tentatively assumed that the θ-role assigning noun assigns the external θ-role together with *v*. Then, *kekkon* must and hence, can move to the position of *v* in order to discharge the external θ-role, but this movement violates the head movement constraint. However, this account begs the question

because it after all assumes that an external θ-role is assigned by a lexical head.

Here, there is an obvious, straightforward alternative analysis for the illicitness of (18). Since all arguments are successfully assigned θ-roles, there is nothing wrong with the θ-role assignment. But because the θ-role assigning noun discharges its θ-role at the base position, there is no reason for it to replace the expletive verb. Consequently, the expletive verb remains at LF in violation of Full Interpretation. According to this slightly modified analysis, (16b) is excluded as an instance of the light verb construction in precisely the same way as (3b), repeated below as (19), is as an existential sentence.

(19) *There seem to linguists that Warlpiri is the most fascinating language

Since the indefinite NP *linguists* is checked for Case at its base position, the Last Resort Principle prevents it from replacing the expletive *there*. In the case of (16b), since the θ-role assigning noun *kekkon* 'marriage' discharges its θ-role at its base position, again, the Last Resort Principle prohibits it from replacing the expletive verb *su*. As the result, both (19) and (16b) are excluded by Full interpretation.

The grammatical (16b) parallels (1), repeated in (20).

(20) There were linguists in the room

In this example, *linguists* must and hence, can move to the position of the expletive *there* in order to be checked for Case. Similarly, in (16a), *kekkon* must and hence, can move to the position of the expletive verb *su* in order to discharge its θ-role. Because of these independently motivated movements, the expletives are successfully replaced in both (20) and (16a).

If the slight revision of the analysis of (16b) presented above is correct, then the Japanese light verb construction offers evidence not only for the Last Resort Principle but also for the necessity of expletive replacement due to Full Interpretation. In the following section, I will consider another construction with the expletive *su* that points to the same conclusion.

3. Expletive Verbs in the VP Focus Construction

The verb *su* occurs also when the regular verb is followed by the topic marker *wa* or a focus particle like *mo* 'also' and *sae* 'even'. This is illustrated in (21b-d).

(21) a. Hanako-ga Taroo-o nagutta
-NOM -ACC hit
'Hanako hit Taroo'

b. Hanako-ga Taroo-o naguri-wa sita
-NOM -ACC hit -TOP did
'Hanako did hit Taroo'

c. Hanako-ga Taroo-o naguri-mo sita
-NOM -ACC hit -also did
'Hanako also hit Taroo'

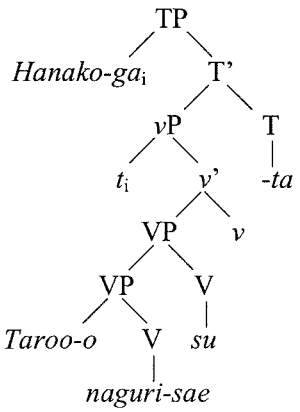
d. Hanako-ga Taroo-o naguri-sae sita
-NOM -ACC hit -even did
'Hanako even hit Taroo'

Kuroda (1965), who first discussed this phenomenon, postulated a rule of *si*-insertion, similar to *do*-support in English. Hoshi (1995), on the other hand, reconsiders the phenomenon based on the properties of the verb *su* discussed in the preceding section. He in fact proposes to explain the distribution of the expletive *su* in this construction in terms of the Last Resort Principle and Full Interpretation. In Section 3.1, I will discuss the basic properties of this construction, focusing on the particle *sae* 'even', and introduce Hoshi's analysis. Then, in Section 3.2, I will present independent evidence for the analysis and thereby confirm the conclusion that Last Resort and Full Interpretation both play crucial roles in the explanation of the phenomenon.

3.1. The Illicitness of VP-scrambling with Expletive *su*

Given that *su* can function as a main verb or an expletive verb, as was shown in the preceding section, it is tempting to analyze the occurrences of *su* in (21) as instances of these. The analysis in terms of the main verb *su* seems straightforward. (21d), for example, can have the following structure:

(22)



This is identical to the structure of the sentences with the main verb *su* discussed in the preceding section except that the complement of *su* is a VP instead of an NP.[6]

[6] The examples in (21b-d) are ungrammatical without the particles *wa*, *mo*, and *sae*. I assume that

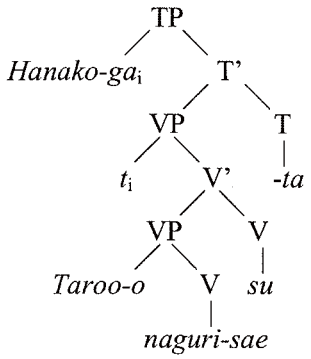
Examples such as (21b-d) have drawn much attention in part because they allow VP-scrambling. Thus, the VP headed by *naguri-sae* 'hit-even' in (21d) can be preposed as shown in (23).

(23) [$_{VP}$ Taroo-o naguri-sae] Hanako-ga t_{VP} sita
-ACC hit -even -NOM did
'Hanako even hit Taroo'

Nothing seems to prevent this VP-scrambling if (21d) has the structure in (22).

Hoshi (1995) argues that there is an additional possibility for examples like (21b-d), that is, that the *su* may be an expletive verb. Given that *su* can function as an expletive verb in the light verb construction, this would be the null hypothesis. More specifically, he hypothesizes that (21d) may have the structure in (24) with the expletive *su*.

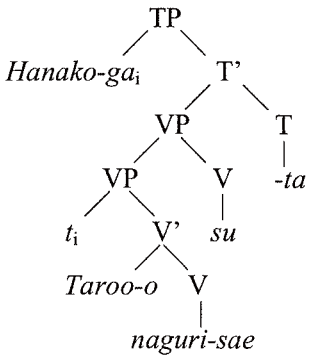
(24)



Hoshi (1995), like Saito and Hoshi (2000), assumes that external θ-roles are assigned by lexical heads and not by *v*. The verb *nagur* 'hit' assigns its theme role to *Taroo* in its base position and covertly moves the position of *su* in order to discharge its agent role to the trace of *Hanako*.

Hoshi specifically argues that (25) is not a possible structure.

(25)



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this is due to a property of *su* that it can only be merged with nominal categories and phrases with topic/focus particles. This suggests that those particles are nominal in some sense.

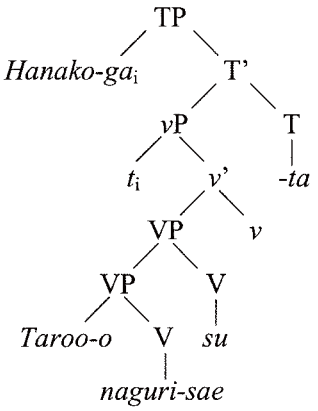
Since *nagur* 'hit' assigns all of its θ-roles in the base position, there is no reason for it to move to the position of the expletive *su*. Hence, the Last Resort Principle prohibits the movement, and the expletive *su* remains at LF. Consequently, the structure, according to Hoshi, is ruled out by Full Interpretation.

The analysis introduced above makes an interesting prediction, as Hoshi notes. If the structure in (25) were possible, VP-scrambling should be allowed even with the expletive *su*. On the other hand, if (24) is the only option, VP-scrambling is impossible when *su* is an expletive verb. This is so because VP-scrambling would force *naguri-sae* 'hit-even' to move sideways in order to discharge its external θ-role. The prediction, then, is that examples like (21d) are ambiguous between the main verb and the expletive verb interpretations of *su*, but once VP-scrambling applies, only the former interpretation obtains. Hoshi argues that this prediction is indeed borne out. That is, the main verb interpretation of *su* is forced in (23) but not in (21d).

Although Hoshi's analysis is complete, one drawback is that it is somewhat difficult to distinguish the main verb and the expletive verb interpretations of *su* in examples like (21d) and (23). It is therefore desirable to examine examples where the distinction comes out more clearly. In the following subsection, I will consider the illicit cases of VP-scrambling discussed in Hoji, Miyagawa and Tada 1989, and argue that they constitute evidence for Hoshi's analysis. But before I move on to this, I will briefly update the analysis assuming that *v* is the external θ-role assingner.

The required modification is straightforward. If *v* assigns the external θ-role, the structure in (24) would be as in (26).

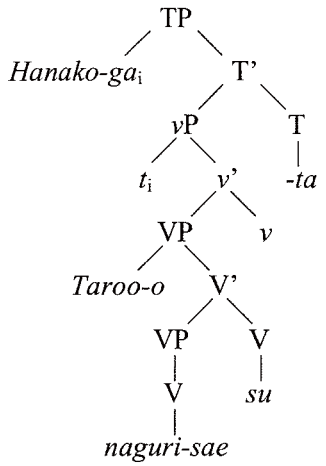
(26)



This is disallowed according to Hoshi's analysis. The verb *nagur* 'hit' discharges its theme role at its base position and hence, has no reason to move to the position of *su*. The expletive verb remains at LF and the structure is ruled out by Full Interpretation.

It is then necessary to place an internal argument within the projection of *su*, exactly as in the case of the light verb construction. The structure is shown in (27).

(27)



Here, the verb *nagur* 'hit' must and hence, can move to the position of *su* and the expletive verb is successfully replaced. The prediction that VP-scrambling is illicit remains the same. In the case of (27), the object *Taroo-o* and the verb *naguri-sae* 'hit-even' do not form a constituent. But since multiple scrambling is allowed in Japanese, the object NP and the VP dominating *naguri-sae* could scramble to the sentence-initial position separately. This is ruled out because *naguri-sae* would have to lower to the position of *su* in LF in order to discharge its theme role. Consequently, the object fails to receive a θ-role and the expletive verb fails to be replaced. Thus, VP-scrambling in this configuration is ruled out in exactly the same way as the scrambling of the θ-role assigning noun in the light verb construction. A parallel example of the light verb construction, (12b), is repeated below as (28).

(28) *Zyooto-o$_i$ Hanako-ga Taroo-ni toti -o t_i sita
giving -ACC -NOM -to land-ACC did
'Hanako gave a piece of land to Taroo'

3.2. VP-scrambling with Unaccusative and Passive Sentences

Clear evidence for Hoshi's analysis discussed above can be found in Hoji, Miyagawa and Tada 1989 (henceforth, Hoji, et al.). They discuss illicit cases of VP-scrambling such as those in (29)-(31) and propose to rule them out by the proper binding condition.

(29) a. Hanako-ga Taroo-o naguri-sae sita
-NOM -ACC hit -even did
'Hanako even hit Taroo'

b. *Naguri-sae$_i$ Hanako-ga Taroo-o t_i sita
hit -even -NOM -ACC did

(30) a. Ame-ga huri-sae sita
rain -NOM fall -even did
'It even rained'

b. *Huri-sae$_i$ ame-ga t_i sita
fall -even rain-NOM did

(31) a. Hanabi -ga utiage-rare -sae sita
firework-NOM set off-passive-even did
'They even set off fireworks'

b. *Utiage-rare -sae$_i$ hanabi -ga t_i sita
set off-passive-even firework-NOM did

It looks like the verbs are preposed by themselves in the ungrammatical examples in (29)-(31). But the examples can be derived by VP-scrambling, as Hoji, et al. point out. A possible derivation of (29b) is shown in (32).

(32) [$_{VP}$ t_j naguri-sae] [Hanako-ga [Taroo-o$_j$ t_{VP} sita]]
hit -even -NOM -ACC did

The object *Taroo-o* is first scrambled out of the VP headed by *naguri-sae*, and then, the remnant VP is scrambled to the sentence-initial position. Similarly, (30b) can be derived as in (33).

(33) [$_{VP}$ t_i huri-sae] [ame-ga$_i$ [t_{VP} sita]]
fall -even rain-NOM did

Since *hur* 'fall' is unaccusative, Hoji, et al. assume that the subject *ame* 'rain' originates in its complement position and moves to TP Spec. After this NP-movement applies, the VP headed by *huri-sae* is scrambled over the subject.

Although the ungrammatical examples in (29)-(31) can be derived by VP-scrambling, the preposed VPs contain unbound traces as can be seen in (32) and (33). The VP in (32) contains a trace of scrambling and that in (33) a trace of NP-movement. Hoji, et al. then argue that they are excluded by the proper binding condition, which requires that traces be bound. This account may be tenable in the case of (29) because it has been argued that traces of scrambling exhibit strict proper binding effect.[7] On the other hand, a question can be raised for this account of (30) and (31) since there is evidence that traces of NP-movement are not subject to the proper binding condition. If they were, examples of VP-preposing such as those in (34) would be incorrectly excluded.

(34) a. They said the ball might fall into a ditch, and fall into a ditch, it did

[7] See Saito 2003 for evidence that this condition constrains the instances of long scrambling out of control complements that target the edge of VP/*v*P.

b. Mary said she would be praised by the critics, and praised by the critics, she was

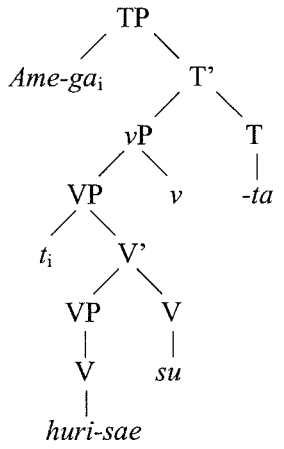
The structures of the second conjuncts of (34a-b) are shown in (35a-b) respectively.

(35) a. [$_{VP}$ fall t_i into a ditch] [it$_i$ did t_{VP}]
b. [$_{VP}$ praised t_i by the critics] [she$_i$ was t_{VP}]

Since *fall* is unaccusative, *it* in (35a) originates in the complement position of the verb and moves to TP Spec. Then, the preposed VP contains the trace of this NP-movement. Similar situation obtains in (35b), where a passive VP is preposed.[8]

It is clear at this point that an alternative analysis is required for (30b) and (31b). And Hoshi's analysis of the VP focus construction readily serves this purpose. Note first that the examples in (30) and (31) lack an agentive subject. Since the main verb *su* selects an agent, the *su*'s in these examples cannot be main verbs but must be instances of the expletive *su*. Then, the structure of (30a), for example, must be as in (36).

(36)



Here, it is crucial that *ame* 'rain' is merged at the spec position of the expletive *su*. Then, *huri-sae* 'fall-even' must and therefore, can move to the position of *su* in order to discharge its θ-role. As a result, the expletive verb is successfully replaced and there is no violation of Full Interpretation.

And if (36) is the structure for (30a), the ungrammaticality of (30b) follows. When the VP headed by *huri-sae* is scrambled, the verb can no longer move to the position of *su* in LF because this would require lowering. Consequently, *ame* 'rain' fails to receive a θ-role and the expletive *su* remains in violation of Full Interpretation. Note that this account for (30b) is

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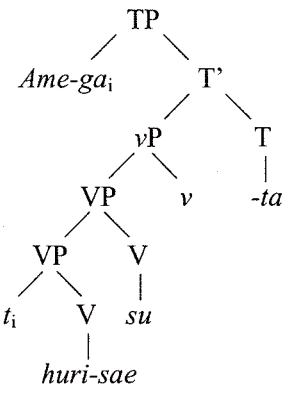
[8] NP-traces and Wh-traces exhibit different patterns in this respect. Thus, Maggie Browning (personal communication, 1986) points out that (ia) is clearly better than (ib), which is hopeless.

(i) a. ... ready to marry John, I wonder whether Mary is
b. ... ready to marry t_i, I wonder who$_i$ Mary is

possible because of Full Interpretation. If an LF representation could contain an expletive verb, the structure in (37) would be possible for (30a).

(37)



The verb *huri-sae* assigns its θ-role at the base position and hence, does not replace the expletive. But this, in relevant respects, is the structure assumed in Hoji, et al., and as we have seen, it predicts incorrectly that VP-scrambling is possible. Thus, Full Interpretation plays a crucial role in the explanation of (30b), in addition to the Last Resort Principle.

4. Summary and Another Consequence

In Section 2, I discussed the analysis of the Japanese light verb construction proposed in Saito and Hoshi 2000, and examined the distribution of the expletive verb *su* in this construction. One of the conclusions is that Grimshaw and Mester's (1988) constraint in (15), repeated below in (38), is to be explained not only by the Last Resort Principle but also by Full Interpretation applied to expletives.

(38) At least one internal argument of the θ-role assigning noun must be realized outside the NP it projects.

In Section 3, I updated Hoshi's (1995) analysis of the distribution of expletive verbs in the VP focus construction and presented further evidence for it. The theoretical consequence remains the same: both the Last Resort Principle and Full Interpretation play crucial roles in the analysis. Thus, the discussion in this paper provides strong support for the expletive replacement analysis proposed in Chomsky 1986. As stated at the outset of this paper, the purpose here is not to defend the expletive replacement analysis of the English existential construction against the recent, more refined analysis, say, in Chomsky 1995. It is rather to suggest that there is an insight in the analysis that needs to be reconsidered and reexamined in future research. I also hope that the conclusion of this paper will stimulate further research on Japanese expletive verbs to advance the theory.

Before I conclude this paper, I would like to briefly point out a consequence of the proposed analysis for the derivational model of syntax, put forward in Bobaljik 1995 and

Nissenbaum 2000, among many others. Based on the idea of cyclic interpretation and cyclic Spell-out, it is proposed in these works that covert movement can be interwoven with overt movement. For example, Bobaljik suggests that covert movement applies basically in the same way as overt movement except that the phonetic features are interpreted at the initial site instead of the landing site. If this conception of covert movement is adopted, then the analysis presented above for (30b), for example, must be slightly modified.

Let us consider (36), i.e., the structure of (30a), again. It was assumed above that overt movement precedes covert movement, and hence, VP-scrambling blocks the LF expletive replacement by the verb *huri-sae* 'fall-even'. But if covert movement can precede overt movement, another derivation must be considered. That is, *huri-sae* can first move to the position of the expletive verb, leaving behind its phonetic features. Then, the VP can be scrambled to the sentence-initial position. There is no obvious violation of the Last Resort Principle or Full Interpretation with this derivation.

I would like to suggest here that the derivation just described is excluded by the proper binding condition.[9] That is, the preposed VP contains the trace left by the covert movement *huri-sae* 'fall-even' and this trace violates the condition. This account is consistent with, and hence, provides support for the recent discussion in defense of the proper binding condition in Kuno 2001 and Saito 2003. As noted above, there is evidence that NP-traces are not subject to this condition. At the same time, it is suggested in Lasnik 1999, and Saito and Hoshi 2000, among others, that NP-movement does not leave a trace. The basic idea is that if θ-role assignment can take place in the course of the derivation, then there is no feature of the NP that must be represented at the initial site. This can probably be best illustrated with (36). The verb *huri-sae* 'fall-even' can first move covertly to the position of the expletive *su*, and assign the theme role to *ame* 'rain' in the Spec position. Then, *ame*, being already assigned a θ-role, can move to TP Spec overtly. There is evidently no need to postulate a trace in the initial position. And if there are no NP-traces, they could not be subject to the proper binding condition.

On the other hand, Wh-traces exhibit the proper binding effect as shown in (39).

(39) *[Which picture of t_i]$_j$ does John wonder who$_i$ Mary likes t_j

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[9] The condition is reformulated as a constraint on the application of Merge in Ausin 1998 and Saito 2003. The proposal in the latter work is that Merge applies only to 'complete constituents', which is defined as in (i).

(i) α is a *complete constituent* $=_{def}$ (1) α is a term, and
(2) if a position within α is a member of a chain γ, then every position
of γ is contained within α.

But I will keep referring to the proper binding condition as a condition on traces for ease of exposition.

In this example, *who* is extracted out of *which picture of whom* to the embedded CP Spec and then, the remnant *which picture of t* moves to the matrix CP Spec. The latter movement violates Subjacency, but the example is much worse than a normal Wh-island violation, which suggests that the unbound trace is the main source of ungrammaticality. This is again expected because a Wh-phrase needs to be represented both at the initial site and at the landing site. Its phonetic features and its operator feature are interpreted at the landing site. On the other hand, the initial site must have those features that make it possible to interpret the Wh-phrase (or its trace) as a variable. Thus, a trace is necessary in order for Wh-movement to create an operator-variable chain with a variable at its tail.

By the same logic, the covert movement of *huri-sae* 'fall-even' in (36) must form a chain. The verb must be represented at the landing site so that it can replace the expletive *su*. And it must also be at the initial site because that is where its phonetic features are interpreted. Hence, the movement must leave a copy (or a trace) behind, and we would expect the movement to be constrained by the proper binding condition. Note that the present analysis does not predict that head movement always exhibits the proper binding effect. It does when the head must be represented both at the initial site and at the landing site. If this approach is on the right track, the expletive verb replacement offers important data for the investigation of the proper binding effect as well.

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Subjects of Complex Predicates: A Preliminary Study*

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1. Introduction

The notion of 'subject' has played an important role in Japanese syntax. It is well-known, for example, that the Japanese reflexive pronoun *zibun* is subject-oriented. Thus, *Hanako* is the only possible antecedent for *zibun* in (1) and (2).

(1) Hanako-ga Taroo-ni zibun-no hon -o okut-ta
-NOM -DAT self -GEN book-ACC send-Past
(Hanako sent her book to Taroo.)

(2) Hanako-ga Taroo-o zibun-no ie -de sikat -ta
-NOM -ACC self -GEN house-at scold-Past
(Hanako scolded Taroo at her house.)

On the other hand, the definition of 'subject' in the relevant sense is yet to be made precise. The subject of a sentence has been defined as [NP, TP], that is, the NP immediately dominated by TP. But with the introduction of the predicate-internal subject hypothesis, there is another candidate, namely, [NP, *v*P]. In the structure of (1), shown in (3), the antecedent of *zibun* may be *Hanako* in TP Spec or its trace in *v*P Spec.

(3) $[_{TP}$ Hanako$_i$-ga $[_{vP}$ t$_i$ $[_{VP}$ Taroo-ni zibun$_i$-no hon-o okut-]] ta]

The main purpose of this paper is to examine 'subjecthood' in sentences with complex predicates, and thereby, to give a more precise characterization of possible antecedents for *zibun*. Causative sentences, for example, provide useful data in this respect because they contain two potential antecedents for *zibun*, the agent and the causee, despite the fact that they apparently have a simplex structure with a single complex predicate. This is illustrated in (4) and (5).

* The material in this paper was presented in syntax seminars at Nanzan University and University of Connecticut, and in colloquia at Keio University and Stony Brook University. I would like to thank the audience, especially Masumi Aono, Jonathan Bobaljik, Tomoko Kawamura, and Hisa Kitahara, as well as Hiroshi Aoyagi for helpful comments and suggestions.

(4) Hanako-ga Taroo-ni zibun-no hon -o sute -sase -ta
-NOM -DAT self -GEN book-ACC discard-make-Past
(Hanako made Taroo discard her/his book.)

(5) Hanako-ga Taroo-ni karera-ni zibun-no hon -o
-NOM -DAT they -DAT self -GEN book-ACC
okur-ase -ta
send-make-Past
(Hanako made Taroo send her/his book to them.)

I will pursue this topic in the following section and argue that the possible antecedents for *zibun* can be defined simply as phrases in *v*P Spec.

In Section 3, I will discuss the implications of this tentative conclusion for the analysis of scrambling. Kuroda (1988) has proposed that scrambling is move-ment to TP Spec. Similarly, Shigeru Miyagawa (2001, 2003, among others) has argued that what has been called A-scrambling is triggered by the EPP-feature of T. This analysis of scrambling is obviously inconsistent with the definition of 'subject' as TP Spec. A scrambled object does not qualify as the antecedent of *zibun*, as shown in (6).

(6) Taroo-o_i Hanako-ga t_i zibun-no ie -de sikat -ta
-ACC -NOM self -GEN house-at scold-Past
(Hanako scolded Taroo at her house.)

Thus, the claim mentioned above that *zibun* is bound from *v*P Spec rather than TP Spec appears to provide support for this analysis of scrambling. However, I will examine the relevant data and argue that they, instead, pose a problem for the EPP analysis of scrambling and point to the conclusion that A-scrambling has nothing to do with the EPP.

It will be shown in the course of the discussion in Section 3 that the non-thematic *v* that selects passive and unaccusative complements carries an EPP-feature, and attracts an NP to its Spec position. According to the analysis to be presented, it is by virtue of satisfying the EPP-feature of *v* that the subjects of passive and unaccusative sentences qualify as the antecedent of *zibun*. Based on this, I will suggest a refined definition of 'subject' as those phrases that satisfy the EPP requirement either of T or of *v*. Section 4 summarizes the conclusion of the paper and discuss further issues related to the EPP-feature of *v*.

2. Subject as *v*P Spec

2.1. Subjects of *v*P Complements

As shown in (3), the antecedent of *zibun* can be assumed to be either TP Spec or *v*P

Spec in a regular transitive sentence. On the other hand, when we consider passive and unaccusative sentences, it is tempting to define 'subject' as TP Spec. (7) and (8) show that the derived subjects in those sentences are possible antecedents for *zibun*.[1]

(7) Taroo-ga$_i$ karera-niyotte zibun-no ie -de t_i koros-are -ta
-NOM they -by self -GEN house-at kill -Passive-Past
(koto)
fact
(Taroo was killed by them at his house.)

(8) Taroo-ga$_i$ zibun-no ie -de t_i sin-da (koto)
-NOM self -GEN house-at die-Past fact
(Taroo died at his house.)

If *Taroo* moves from the object position to TP Spec in these examples, then it must be the TP Spec position that qualifies it as the antecedent of *zibun*.

However, the examination of sentences with complex predicates leads us to a different conclusion. Let us consider the causative sentences in (4) and (5), repeated below as (9) and (10).

(9) Hanako-ga Taroo-ni zibun-no hon -o sute -sase -ta
-NOM -DAT self -GEN book-ACC discard-make-Past
(Hanako made Taroo discard her/his book.)

(10) Hanako-ga Taroo-ni karera-ni zibun-no hon -o
-NOM -DAT they -DAT self -GEN book-ACC
okur-ase -ta
send-make-Past
(Hanako made Taroo send her/his book to them.)

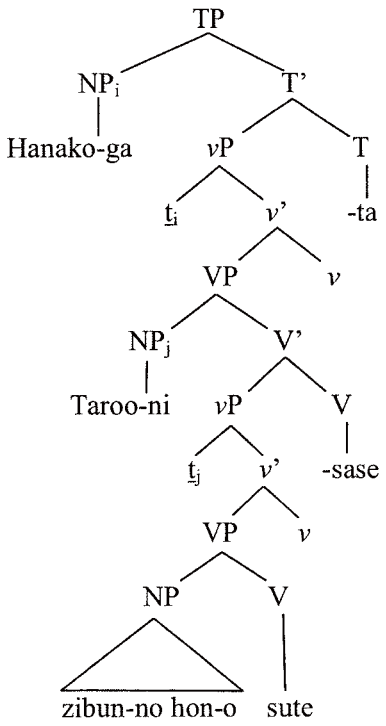
As mentioned above, *zibun* can refer to the causee *Taroo* in these examples. This implies that *Taroo* is a subject in the relevant sense, and that the examples have clausal embedding. Thus, it is assumed in Kuroda 1965 and Kuno 1973, among many others, that the causative morpheme *sase* selects for a sentential comple-ment.

At the same time, however, it is clear that the embedded clause lacks Tense and is similar in structure to small clauses. It is hence assumed in more recent works, such as Murasugi and Hashimoto 2005, that *sase* takes a *v*P complement. The structure of (9), for

[1] I sometimes place *koto* 'the fact that' at the end of an example sentence in order to avoid the unnaturalness resulting from the lack of a topic in a matrix clause. I will ignore it in the translation in parentheses.

example, will then be as in (11).[2]

(11)



Here, *Taroo*, a possible antecedent for *zibun*, never occupies a TP Spec position. Examples of this kind suggest that *v*P Spec is the subject position in the relevant sense.

The examination of what has been called 'indirect passive' points to the same conclusion. In addition to the regular (direct) passive illustrated in (7), Japanese has a construction with the same passive morpheme *rare* where there is no absorption of objective Case and the surface subject is interpreted as an affectee. This is illustrated in (12) and (13).

(12) Taroo-ga Hanako-ni (zibun-no heya -de) sawag -are -ta
-NOM -by self -GEN room-at make noise-Passive-Past
(Taroo was affected by Hanako making big noise (in his/her room).)

(13) Taroo-ga Hanako-ni heyazyuu -ni (zibun-no) yoohuku-o
-NOM -by all-over-the-room-in self -GEN clothes -ACC
baramak-are -ta
scatter -Passive-Past
(Taroo was affected by Hanako scattering (his/her) clothes all over the room.)

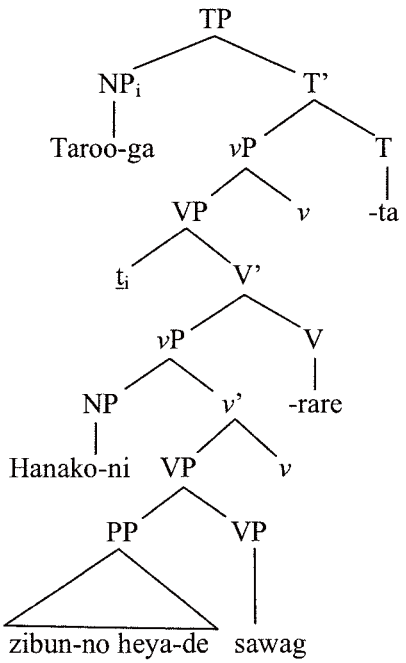
---

[2] In (11), the embedded subject *Taroo* moves and merges with a projection of the causative verb *sase* in order to receive the causee role. (See Saito 2001 for relevant discussion.) But this is not crucial for the discussion in this paper. The argument is unaffected even if *Taroo* stays in the embedded *v*P Spec, or it is merged directly in the matrix VP and controls PRO in the embedded *v*P Spec.

As can be seen in these examples, the affectee that appears in the surface subject position and the subject of the sentence that expresses the affecting event both qualify as the antecedent of *zibun*. Thus, this construction has been assumed to have clausal embedding, just like the causative construction.[3]

Again, as the embedded clause lacks tense, it seems to be a *v*P, as illustrated in the structure (14) for (12).[4]

(14)



Since *Hanako* is in *v*P Spec and qualifies as the antecedent of *zibun*, this example, too, suggests that the reflexive pronoun can take a phrase in *v*P Spec as its antecedent.

The discussion so far suggests that phrases in TP Spec as well as those in *v*P Spec can serve as the antecedent for *zibun*. A summary is given in (15).

(15) a. *Zibun* is subject-oriented.
b. Both TP Spec and *v*P Spec are subject positions in the relevant sense.

However, it was necessary to include TP Spec among the subject positions on the assumption that the internal argument moves directly to TP Spec in passive and unaccusative sentences. The relevant unaccusative example in (8) is repeated below as (16).

---

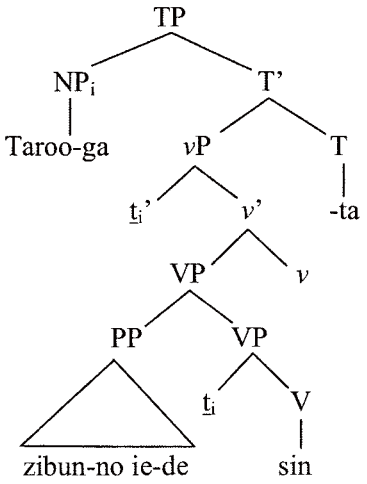
[3] Detailed discussion of Japanese passives can be found, for example, in Kuno 1973, Kuroda 1979, and Hoshi 1994.

[4] Following Belletti and Rizzi 1988, I assumed that affectee (= experiencer) is an internal θ-role, and hence, merged *Taroo* with a projection of *rare* in (14). (See Saito 2001 for relevant discus-sion.) This assumption, however, has no effect on the discussion in this paper.

(16) Taroo-ga$_i$ zibun-no ie -de t_i sin-da (koto)
-NOM self -GEN house-at die-Past fact
(Taroo died at his house.)

On the other hand, if *Taroo* moves through *v*P Spec, as illustrated in (17), then it becomes possible to simplify the definition of 'subject' position as *v*P Spec.

(17)



In the following subsection, I will argue that the movement indeed proceeds through *v*P Spec as in (17), drawing evidence, again, from examples with complex predicates.

2.2. *v*-Projection with Passive and Unaccusative Verbs

It was argued above that the embedded *v*P Spec qualifies as the 'subject' position in causative and indirect passive constructions. In all of the examples considered so far, the embedded verb was either unergative or transitive. So, it was only natural to assume that its external argument is merged at the embedded *v*P Spec position. And the proposal was that it is by virtue of being in *v*P Spec that it obtains 'subjecthood'. But then, what happens when the embedded verb is (direct) passive or unaccusative with no external argument?

Let us directly consider the relevant examples in (18) and (19).

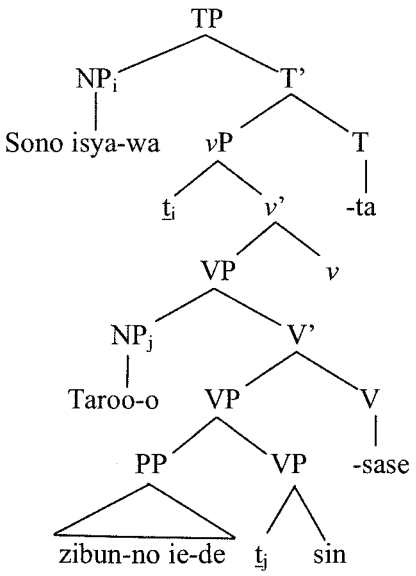
(18) Keisatu-wa yoogisya-ni zibun-no dokuboo-de sin-are-te simat-ta
police -TOP suspect -by self -GEN cell -in die-Passive have -Past
(The police has been affected by the suspect dying in his/her own cell.)

(19) Sono isya -wa Taroo-o zibun-no ie -de sin-ase-te
that doctor-TOP -ACC self -GEN house-in die-make
simat-ta
have -Past
(The doctor has let Taroo die in his own house.)

In (18), the unaccusative verb *sin* 'die' appears embedded in an indirect passive sentence. *Zibun* can refer to the theme argument *yoogisya* 'suspect' of this verb, indicating that this argument occupies a 'subject' position. The same verb appears embedded in a causative sentence in (19). The sentence is appropriate in the context where the doctor failed to hospitalize the patient *Taroo*, and indirectly caused his death by letting him stay at home. In this situation, *zibun* can clearly refer to the causee *Taroo*. It, then, must be in a 'subject' position in this sentence.

However, it is not obvious how *Taroo* comes to occupy a subject position in (18) and (19). Let us consider the causative sentence in (19). *Taroo* receives an internal theta-role from the unaccusative verb *sin*, and at the same time, is an in-ternal (causee) argument of the causative verb. Thus, (20) is a plausible structure for the sentence.[5]

(20)

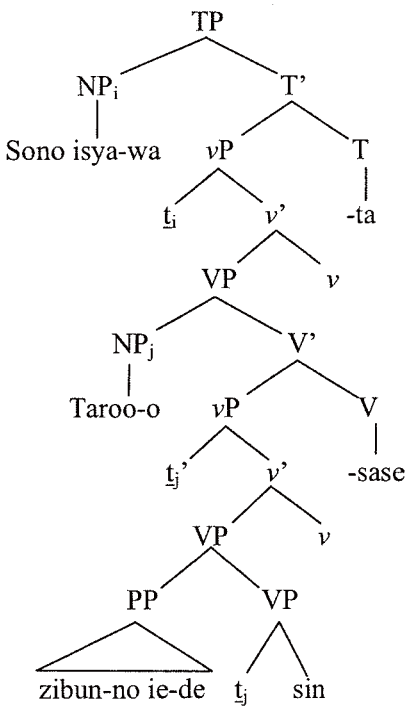


Here, *Taroo* simply moves from an internal position to another internal position, and never is in TP Spec or *v*P Spec.

The only way, as far as I can see, to qualify *Taroo* as the antecedent of *zibun* is to postulate a *v* projection above the unaccusative VP in (20) and to move the NP to the Spec position of this *v*P. This is illustrated in (21).

[5] The final verb *simat-ta* adds perfective meaning to the sentence. I will ignore it in the structure in (20).

(21)



As *Taroo* moves through the embedded *v*P Spec position, its subject property is correctly predicted with this structure.

If this account is on the right track, then unaccusative verbs must be selected by *v* and their internal arguments must be able to move though its Spec position. This in turn implies (16), repeated below as (22), is compatible with the definition of 'subject' as *v*P spec.

(22) Taroo-ga$_i$ zibun-no ie -de t$_i$ sin-da (koto)
-NOM self -GEN house-at die-Past fact
(Taroo died at his house.)

(19) shows that the sole argument of the unaccusative verb *sin* 'die' can pass through the Spec of the immediately dominating *v*-projection when it moves to a higher position. Then, the movement of *Taroo* in (22) should be able to proceed as in (17). It is, hence, unnecessary to include TP Spec among the 'subject positions' to accommodate unaccusative sentences such as (22).

Exactly the same conclusion can be reached for passives on the basis of examples like (23).

(23) Taroo-wa dai-sensei -o zibun-no gakusei-tati-niyotte
-TOP big-teacher-ACC self -GEN student-PL-by
suuhais -are -sase-te oi -ta
worship-Passive-make leave-Past
(Taroo kept letting the big professor be worshiped by his/her students.)

Here, a direct passive sentence is embedded under the causative verb *sase*, and *zibun* can refer to the causee *dai-sensei* 'big professor'. Since this NP is the theme argument of the embedded verb, *suuhais* 'worship', and the internal causee argument of the causative verb, the only way that it can obtain 'subject' status, it seems, is by moving through the embedded *v*P Spec. And if so, in simple passive sentences like (7), repeated below as (24), the surface subject must be able to qualify as the antecedent of *zibun* by moving through the *v*P Spec position.

(24) Taroo-ga$_i$ karera-niyotte zibun-no ie -de $\underline{t}_i$ koros-are -ta
-NOM they -by self -GEN house-at kill -Passive-Past
(koto)
fact
(Taroo was killed by them at his house.)

Hence, passives are also consistent with the definition of 'subject' as *v*P Spec.

It was argued in this section that possible antecedents for *zibun* can be defined as those phrases in *v*P Spec, and that there is no need to refer to TP Spec. The discussion only showed that it is possible to consider *v*P Spec as the 'subject' in the relevant sense, and did not provide positive reason to exclude TP Spec. Thus, all the data are consistent with the definition of 'subject' as either *v*P Spec or TP Spec. However, as noted at the outset of this paper, if one assumes the EPP analysis of A-scrambling, there is compelling reason to exclude TP Spec from the 'subject' positions. Hence, the discussion in this section suggests that it is possible to analyze the subject-orientation of *zibun* in a way consistent with this analysis of A-scrambling. In the following section, I will examine the relevant facts further and argue that on the contrary, the interpretation of *zibun* poses a serious problem for the EPP analysis of A-scrambling.

3. A-Scrambling and the EPP-feature on *v*

It was pointed out by Mahajan (1990) that a phrase preposed by clause-internal scrambling can serve as the antecedent for an anaphor. Thus, (25b) contrasts sharply with (25a).

(25) a. ?*[Otagai -no sensei -ga karera-o hihansi -ta] (koto)
each other-GEN teacher-NOM they -ACC criticize-Past fact
(They were criticized by each other's teachers.)

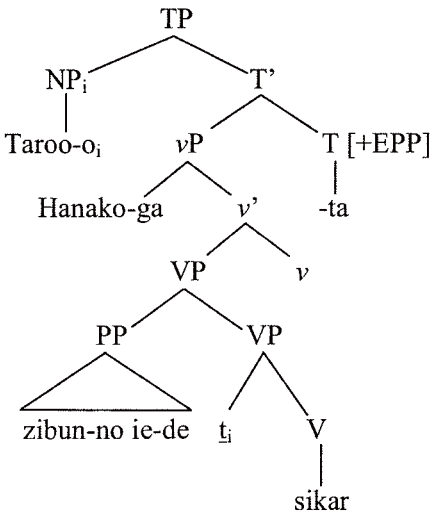
b. Karera-o$_i$ [otagai -no sensei -ga $\underline{t}_i$ hihansi -ta] (koto)
they -ACC each other-GEN teacher-NOM criticize-Past fact

This indicates that the landing site for this kind of scrambling (A-scrambling) is an A-position. Mahajan has proposed that it is the Spec position of an AGR head.

Shigeru Miyagawa, in a series of papers, has developed this analysis, and argued that A-scrambling is driven by the EPP-feature of T.[6] According to this analysis, the example in (6), repeated below as (26), can have the structure shown in (27).[7]

(26) Taroo-o$_i$ Hanako-ga $\underline{t}_i$ zibun-no ie -de sikat -ta
-ACC -NOM self -GEN room-at scold-Past
(Hanako scolded Taroo at her house.)

(27)



As *Hanako* is the only possible antecedent for *zibun* in (26), this analysis is clearly incompatible with the definition of 'subject' as TP Spec. On the other hand, if *v*P Spec is the 'subject' position in the relevant sense, the interpretation of (26) is correctly predicted by the structure in (27). Hence, the discussion in the preceding section seems to provide indirect support for the EPP analysis of A-scrambling.

However, the situation is a little more complicated because (26) is a tran-sitive sentence and hence, *v*P should constitute a phase.[8] This implies that the scrambling of *Taroo* in (27) should proceed via *v*P Spec as in (28).

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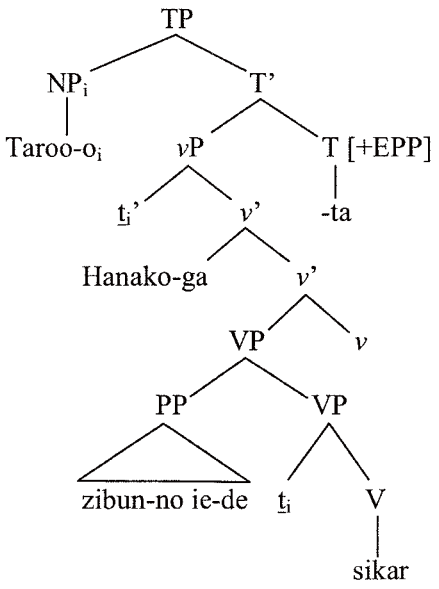
[6] See Miyagawa 2001, 2003, for example. Kuroda (1988) presents an analysis of scrambling as movement to TP Spec, but he considers it an optional operation.

[7] Miyagawa and Mahajan assume that there is another kind of scrambling, A'-scrambling. (27) is the structure for (26) when the object is preposed by A-scrambling.

[8] I will assume, following Chomsky 2000, for example, that C and transitive *v* (*v** in Chomsky's terms) project derivational phases.

(28)



But then, the scrambled object obtains 'subject' status after all by virtue of its intermediate *v*P Spec position.

The problem is clearer when examples with complex predicates are con-sidered. It is known that the embedded object in a causative sentence can be A-scrambled to the sentence initial position, as illustrated in (29).

(29) Karera-o$_i$ [otagai -no sensei -ga Taroo-ni t$_i$
they -ACC each other-GEN teacher-NOM -DAT
home-sase -ta] (koto)
praise-make-Past fact
(*Lit.* Each other's teachers made Taroo praise them.)

In this case, the scrambled object, *karera-o* 'they-ACC', must move through the embedded *v*P Spec as well as the matrix *v*P Spec. Yet, it does not qualify as the antecedent of *zibun*, as shown in (30).

(30) Hanako-o$_i$ [Ziroo-ga Taroo-ni zibun-no ie -de t$_i$
-ACC -NOM -DAT self -GEN house-at
nagur-ase -ta] (koto)
praise-make-Past fact
(Ziroo made Taroo hit Hanako at his house.)

Zibun in this example can refer to *Ziroo* or *Taroo*, but not to *Hanako*.

Examples like (26) and (30) are not only problematic for the EPP analysis of A-scrambling, but pose a general problem for the definition of 'subject'. It was shown in the preceding section that phrases in *v*P Spec qualify as the antecedent of *zibun*. Yet, when a scrambled phrase moves though this position, it does not obtain 'subjecthood' in the relevant

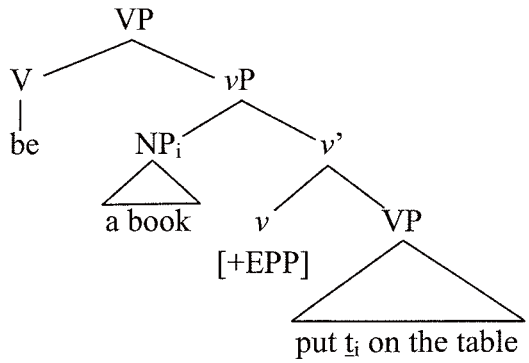
sense. It seems then necessary to distinguish the *v*P Spec position postulated in the preceding section and the *v*P Spec position that serves as an intermediate landing site for scrambling.

A proposal that could lead to a solution for this problem is found in Lasnik 1995. He considers the contrast in (31) and suggests that passive sentences contain a low functional head with an EPP-feature.

(31) a. There has been a book put on the table
b. *There has been put a book on the table

These examples show that a passive verb is allowed in the existential construction only when the object is preposed over the verb. Lasnik suggests then that there is a functional head over the passive verb that triggers this movement. The structure of the relevant part of (31a) will be as in (32) if the functional head in question is *v*.

(32)

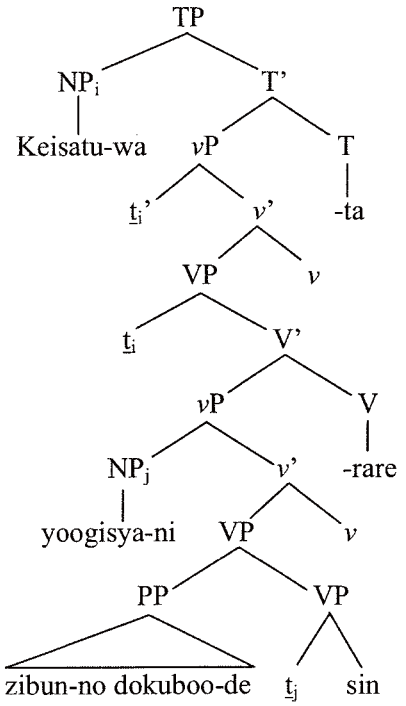


If we adapt this suggestion and assume that the *v* associated with passive and unaccusative verbs in Japanese is equipped with an EPP-feature as well, the analysis of the 'subject' property of passive and unaccusative subjects presented in the preceding section can be made more solid. Let us consider again (18), repeated below as (33).

(33) Keisatu-wa yoogisya-ni zibun-no dokuboo-de sin-are-te simat-ta
police -TOP suspect -by self -GEN cell -in die-Passive have -Past
(The police have been affected by the suspect dying in his/her own cell.)

According to the analysis in Section 2, this sentence has the structure in (34).

(34)



The intended antecedent of *zibun*, *yoogisya* 'suspect', not only obtains 'subject' status but also establishes a c-command relation with the reflexive pronoun by moving to the embedded *v*P Spec. If the embedded *v* has an EPP-feature, then there is clear reason for this movement.

Let us now return with this background to (26), repeated in (35).

(35) Taroo-o$_i$ Hanako-ga t$_i$ zibun-no heya-de sikat-ta
-ACC -NOM self -GEN room-at scold-Past
(Hanako scolded Taroo in her room.)

As noted above, the scrambling of *Taroo-o* must proceed through *v*P Spec be-cause the *v*P constitutes a derivational phase. If this initial movement is triggered by an EPP-feature on *v*, it is indistinguishable from the movement of *yoogisya* 'suspect' in (34). We would then incorrectly predict that *Taroo* is a possible antecedent for *zibun* in (35). On the other hand, if the movement is not triggered by the EPP, there is a way to distinguish the two cases. We may say that those phrases that satisfy the EPP requirement of *v* obtain the 'subject' status. This is the case for *yoogisya* 'suspect' in (34), and hence, it is a possible antecedent for *zibun*. In contrast, the movement of *Taroo-o* to *v*P Spec in (35) has nothing to do with the EPP, and it is correctly predicted that the NP does not qualify as the antecedent of the reflexive.

This proposal has implications for the definition of 'subject' as well as for the analysis of A-scrambling. The discussion in the preceding section was based on the assumption that 'subjecthood' is defined in terms of positions. Thus, the Spec positions of T and *v* were considered as candidates. But the analysis pro-posed in this section suggests that 'subjecthood' should be defined in terms of the EPP. That is, a phrase that checks an EPP-

feature, regardless of whether it is on *v* or T, qualifies as the 'subject'. If this is correct, *Taroo* obtains 'subjecthood' in two ways in the simple unaccusative sentence (16), repeated below as (36).

(36) Taroo-ga$_i$ zibun-no ie -de t_i sin-da (koto)
-NOM self -GEN house-at die-Past fact
(Taroo died at his house.)

It first moves to *v*P Spec to check the EPP-feature on *v* and then moves on to TP Spec in order to satisfy the EPP requirement of T.

Second, if the movement of *Taroo-o* to *v*P Spec in (35) is not triggered by an EPP-feature, as proposed here, then Japanese, after all, has local A-scrambling that is independent of the EPP. This raises serious doubts for the EPP analysis of A-scrambling to the sentence-initial position. If A-scrambling can prepose a phrase to the *v*P-initial position without an EPP-feature, it is not clear why it cannot do the same to the sentence-initial position. The definition of 'subject' proposed in the preceding paragraph in fact suggests a stronger conclusion. The 'subject' was defined as a phrase that satisfies the EPP requirement of a functional head, *v* or T. Since a phrase scrambled to the sentence-initial position does not qualify as a 'subject', it cannot be checking the EPP-feature of T. Thus, the analysis presented above implies that A-scrambling, whether it is to *v*P Spec or to TP Spec, freely applies without the EPP-feature, as proposed, for example, in Saito 1989, Saito and Fukui 1998, and Kawamura 2004.

4. Summary and Further Speculations on the Nature of *v*

I argued in this paper that the possible antecedents of *zibun* are those phrases that check the EPP-feature. The EPP-feature, in turn, is carried by T and by passive and unaccusative *v*. This simple definition of 'subject' accounts for the interpre-tation of *zibun* not only in simple sentences but also in sentences with complex predicates. It also captures the binding properties of phrases preposed by scram-bling, provided that A-scrambling is not triggered by the EPP-feature. Crucial in this discussion was the proposal that passive and unaccusative verbs are selected by *v* with an EPP-feature. I will briefly discuss some of the issues related to this proposal before concluding the paper.

The proposal was based on Lasnik's (1995) suggestion that passive verbs in English are selected by a functional head with an EPP-feature. His examples in (31) are shown again in (37).

(37) a. There has been a book put on the table
b. *There has been put a book on the table

Unaccusatives, however, exhibit different patterns. Thus, (38) contrasts with (37).

(38) a. *There someone arrived
b. There arrived someone

These examples show that the theme argument is not raised over an unaccusative verb. Furthermore, one of Lasnik's concerns was the contrast between (37a) and its grammatical Italian counterpart in (39), discussed in detail in Belletti 1988.

(39) È stato messo un libro sul tavolo
has been put a book on the table
(There has been a book put on the table.)

He tentatively suggests, noting some complications, that the NP feature of the passive functional head is weak in Italian. This is equivalent to saying that in Italian passives, either *v* is absent or it lacks the EPP-feature.

If all this is correct, we have the three-way contrast shown in (40).

(40)

	v [+EPP] with passives	*v* [+EPP] with unaccusatives
Italian	–	–
English	+	–
Japanese	+	+

This possibility must be examined against broader range of data. And if it is tenable, it would be desirable to deduce this variation from the morphological proper-ties of the verbs.

Another issue concerns the features of the *v* associated with unergative and transitive verbs. Does it carry an EPP-feature? One possibility is that it does and the feature is satisfied by the external argument. Another is that UG allows only non-thematic (i.e., purely functional) *v* to carry an EPP-feature. In the latter case, the definition of 'subject' must be relaxed to include external arguments in theta-relation with *v*. This is because of the examples of causative and indirect passive in (9)-(10) and (12)-(13), where the embedded external argument qualifies as the antecedent of *zibun*. I will leave the choice open.

On the other hand, the proposals in this paper have clearer implications for the feature of *v* that makes successive-cyclic operator movement possible. It is proposed in Chomsky 2000 and 2001, for example, that an EPP-feature can be assigned to an unergative/transitive *v* and this makes the initial step of the *Wh*-movement in (41) possible.

(41) $[_{CP}$ What$_i$ did $[_{TP}$ John $[_{vP}$ t_i' $[_{VP}$ buy $t_i]]]]$

The *v* in this example must carry some feature that triggers the movement of the *Wh*-phrase to

its Spec. However, if an EPP-feature can be freely assigned to *v* to ensure successive-cyclic operator movement, we would make false predictions for examples like (42).

(42) [$_{CP}$ Op$_i$ [$_{TP}$ Hanako-ga [$_{vP}$ t$_i$' [$_{VP}$ zibun-no ie -de sikat -ta]
-NOM self -GEN house-in scold-Past
no] -wa Taroo$_i$ (-o) dat-ta
COMP-TOP -ACC be -Past
(Taroo is the one who Hanako scolded at her house.)

As argued persuasively by Hoji (1989) and Murasugi (1991), cleft sentences in Japanese involve empty operator movement to CP Spec. In (42), the operator must move through the *v*P Spec position. And if it checks an EPP-feature of *v*, *Taroo* should be a possible antecedent for *zibun*, contrary to the fact.

(42), then, indicates that an EPP-feature cannot be assigned freely to a phase head for the purpose of successive-cyclic operator movement. In the case of Japanese, one might argue that no special feature needs to be assigned to *v* exactly because the language allows scrambling. However, some feature must trigger the movement of *what* to *v*P Spec in the English (41). I tentatively suggest that the P-feature, which Chomsky (2000) postulates for the intermediate movement to CP Spec, can be assigned not only to C but to any phase head, including *v*. This feature is distinguished from [+EPP] by its property to enter into Agree relation with an operator feature. That is, the P-feature is assigned to a phase head and attracts an operator feature, while the EPP-feature is inherent in some functional heads and targets a categorial feature.

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Notes on East Asian Argument Ellipsis*

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1. Introduction

It is argued in S.-W. Kim 1999 that argument ellipsis is one of the distinguished characteristics of East Asian languages. Oku (1998) proposed argument ellipsis for Japanese independently, presenting examples such as the following to substantiate his claim:

(1) a. Hanako-wa [zibun-no teian -ga saiyoosareru to] omotte iru
-TOP self -GEN proposal-NOM accepted-be that think
'Hanako thinks that her proposal will be accepted'

b. Taroo-mo [___ saiyoosareru to] omotte iru
-also accepted-be that think
'Taroo also thinks that her/his proposal will be accepted'

The missing embedded subject in (1b) can be construed either as *Hanako's proposal* (strict reading) or *Taroo's* (sloppy reading). The latter construal is unexpected if the position is occupied by a null pronoun, *pro*, which is also attested in East Asian languages. As shown in (2), pronouns do not allow sloppy interpretation.

(2) Taroo-mo [sore-ga saiyoosareru to] omotte iru
-also it -NOM accepted-be that think
'Taroo also thinks that her proposal will be accepted'

Oku (1998) concludes then that (1b) has a structure where *zibin-no teian* 'self's proposal' is elided in the embedded subject position and presents an LF copying analysis. Further arguments in support of this argument ellipsis hypothesis can be found, for example, in Saito 2004a and Takahashi 2006.

The main purpose of this paper is to explore the consequences of Oku's analysis. In particular, I will try to relate argument ellipsis with two other properties of East Asian

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languages; radical pro-drop and the absence of overt agreement. I will argue that the presence of DP argument ellipsis implies the absence of agreement, as conceived, for example, in Chomsky 2000. This conclusion, in turn, necessitates the reconsideration of Case licensing in East Asian languages, as it cannot be a reflex of agreement. I will also suggest that radical pro-drop is a kind of argument ellipsis. The basic idea is that argument ellipsis is possible in those languages because they allow LF copying of linguistics objects provided by the discourse, including *pro*.[1]

In the following section, I will briefly discuss Hoji's (1998) influential *pro* analysis of the relevant phenomenon, and show that we still have a strong case for argument ellipsis. In Section 3, I will consider Shinohara's (2006) supporting evidence for Oku's LF copying analysis. The main evidence is that a CP containing a trace of scrambling cannot be elided. I will present her data and an updated version of her analysis due to Kensuke Takita. Then, in Section 4, I will examine the mechanism of LF copying in more detail. I will argue that it introduces LF objects already constructed in the preceding discourse into the derivation of a new sentence, and hence, that the copied objects lack uninterpretable features. This implies that they cannot participate in agreement, given Chomsky's (2000) activation condition. It follows that LF copying of DP arguments is possible only in languages without forced agreement in the sense of Kuroda 1988. In Section 5, I will present a piece of suggestive evidence, based on the distribution of genitive subjects in Japanese, that radical pro-drop involves LF copying of discourse *pro*. This leads to a speculation that argument ellipsis and radical pro-drop arise from the same source. Section 6 concludes the paper.

2. Ellipsis or *pro*?

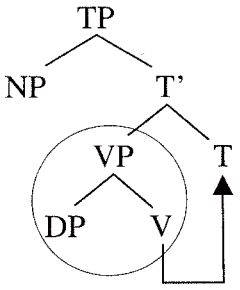
S.-W. Kim (1999) and Oku's (1998) argument ellipsis hypothesis developed out of Otani and Whitman's (1991) VP-deletion analysis of examples such as (3).

(3) Hanako-wa zibun-no koppu-o mitte kita; Taroo-mo ___ motte kita
-TOP self -GEN glass -ACC brought -also brought
'Hanako brought her glass, and Taroo also brought her/his glass'

They observe that the second sentence of (3) allows sloppy interpretation, and propose to explain this with a VP-deletion analysis illustrated in (4).

[1] I will consider Japanese data throughout this paper on the assumption that the analysis extends to other East Asian languages. It should be noted, however, that the argument ellipsis hypothesis is not quite established for Chinese. The generalization to all East Asian languages is, in this sense, still tentative. See Xu 1986 and Huang 1987 for relevant discussion on Chinese.

(4)



The verb raises to T by hypothesis, and consequently VP ellipsis yields the deletion only of the object DP.[2] S.-W. Kim and Oku both point out examples that are similar to (3) but cannot be analyzed in terms of VP-deletion, such as (1), and propose that DP arguments can be elided.

Hoji 1998 is a detailed critique of Otani and Whitman 1991. He first presents examples that do not allow sloppy interpretation, contrary to the predictions of the VP-deletion analysis. As far as I can see, the clearest is the one shown in (5).

(5) a. Subete-no nihonzin huuhu -ga betubetu-no gakusei-o suisensita
all -GEN Japanese couple-NOM different-GEN student -ACC recommended
'Every Japanese couple recommended different students'

b. Subete-no amerikazin huuhu -mo ___ suisensita
all -GEN American couple-also recommended
'Every American couple also recommended (them)'

(5a) allows the reading that (for each couple) the husband and wife recommended different students. However, this interpretation is difficult to obtain in (5b), where the object is missing. Note that the parallel English example with VP-deletion allows the relevant reading, as shown in (6).

(6) Every Japanese couple recommended different students; and every American Couple did ___, too

Thus, (5b) seems problematic for Otani and Whitman's VP-deletion analysis, as Hoji points out. This carries over to the argument ellipsis hypothesis because it also predicts the availability of the relevant reading for (5b).

Hoji (1998), then, suggests alternative accounts for what he calls the 'sloppy-like' readings observed with examples such as (3). His conclusion is that all the relevant examples involve *pro* and not ellipsis. For example, he suggests that an indefinite *pro* occupies the object position of (7b).

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[2] This analysis closely follows Huang's (1987) proposal for similar examples in Chinese.

(7) a. Subete-no itinensei$_i$ -ga soitu$_i$ -no booru-o ketta
all -GEN first-grader-NOM that guy-GEN ball -ACC kicked
'All first-graders kicked their own balls'

b. Subete-no ninensei -mo ___ ketta
all -GEN second-grader-also kicked
'All second-graders also kicked their own balls'

As indicated, sloppy reading is possible with (7b). Hoji points out that if *pro* can stand for an indefinite argument, then (7b) can be interpreted as (8) with an indefinite *pro*.

(8) Subete-no ninensei -mo booru-o ketta
all -GEN second-grader-also ball -ACC kicked
'All second-graders also kicked balls'

This sentence does not mean that 'all second-graders kicked their own balls', but is consistent with the situation. That is, one can truthfully say that 'all second-graders kicked balls' when each of them kicked his or her own ball. Hoji suggests then that (7b) appears to allow sloppy interpretation because it is an appropriate sentence to express the situation.

Hoji 1998 contains illuminating discussion, but as far as I can see, his arguments against the ellipsis analysis are not at all conclusive. First, the indefinite *pro* analysis of (7b) makes a wrong prediction as soon as the sentence is negated. Consider (9) for example.

(9) a. Sensei -wa subete-no itinensei$_i$ -ni zibun$_i$-no booru-o keraseta
teacher-TOP all -GEN first-grader-DAT self -GEN ball -ACC kick-made
'The teacher let all first-graders kick their own balls'

b. Demo, ninensei -ni -wa ___ kerasenakatta
but second-grader-DAT-TOP kick-make-did not
'But she/he did not let the second-graders kick their own balls'

Again, (9b) has sloppy interpretation, as indicated. That is, the sentence is appropriate in the situation where the teacher did let the second-graders kick balls but just did not allow them to use their own. In this situation, an indefinite *pro* fails to serve the purpose because (10) simply means that the teacher did not let the second-graders kick balls at all.

(10) Demo, ninensei -ni -wa booru-o kerasenakatta
but second-grader-DAT-TOP ball -ACC kick-make-did not
'But she/he did not let the second-graders kick balls'

It is thus dubious that the sloppy reading arises because of indefinite *pro* in examples like (7b) and (9b). The argument ellipsis hypothesis, on the other hand, predicts the sloppy interpre-

tation of (9b) as well as (7b) straightforwardly.

Aside from this problem, Hoji's (1998) approach raises an issue on how far we can stretch the possible interpretation of *pro*. It is already non-standard to assume that *pro* can be construed as indefinite. If *pro* is simply a pronoun without phonetic content, we would expect it to be definite in interpretation.[3] In addition, Shinohara (2004) presents examples such as (11) and (12), which seem difficult, if not impossible, to analyze with *pro*.

(11) Ano ryokan-wa iti -niti-ni okyaku-o san -kumi-izyoo tomeru ga,
that inn -TOP one-day-in guest -ACC three-group-more than let-stay though
kono ryokan-wa ___ tomenai
this inn -TOP let-stay-not
'That inn takes more than three groups of guests per day, but this inn does not'

(12) Sono toki, Taroo-wa nanika katta ga, Hanako-wa ___ kawanakatta
that time -TOP something bought though -TOP bought-not
'At that time, Taroo bought something, but Hanako did not (buy anything)'

If *pro* occupies the null object positions in these examples, it would have to stand for the quantified argument, *okyaku-o san-kumi-izyoo* 'more than three groups of guests', in (11) and for the negative polarity item, *nanimo* 'anything', in (12).[4] Given examples like these, it is difficult to reject argument ellipsis in favor of the *pro* analysis. As far as I know, there is no language that allows a pronoun in place of a quantified DP or a negative polarity item. In this case also, the argument ellipsis hypothesis accounts for the data without any stipulation.

The discussion above, I believe, has shown that the ellipsis analysis covers a wide range of data and has a firm empirical basis. Hoji's (1998) example in (5), repeated below as (13), remains problematic.

(13) a. Subete-no nihonzin huuhu -ga betubetu-no gakusei-o suisensita
all -GEN Japanese couple-NOM different-GEN student-ACC recommended
'Every Japanese couple recommended different students'

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[3] But see Jaeggli 1986 and Rizzi 1986 for limited cases where pronouns, overt or empty, receive 'arbitrary' interpretation.

[4] Note that (12) has implications for the analysis of negative polarity items. Similar examples are possible in English with VP-deletion.

(i) a. John bought something, but Mary did not (= Mary did not **buy anything**)
b. John did not buy anything, but Mary did (= Mary **bought something**)

Examples such as these indicate that *anything* is not a wide scope universal, but a morphological variant of the indefinite *something*. (12) shows that the same is true of its Japanese counterpart *nanimo*.

b. Subete-no amerikazin huuhu -mo ___ suisensita
all -GEN American couple-also recommended
'Every American couple also recommended (them)'

But I suspect that the unavailability of the relevant reading has to do with the quantificational or focal nature of the elided item *betubetu-no gakusei* 'different students'. The following illicit examples of gapping, indeed, indicate that verbs cannot be elided when they are focused:

(14) a. *John even threw the dishes, and Mary ___ the glasses
b. *John never ate pizza, and Mary ___ sushi

If (13) can be accounted for along this line, even this problem disappears.

3. The LF Copying Analysis of Argument Ellipsis

Having confirmed the plausibility of the argument ellipsis hypothesis, I would like to turn to the analysis. As noted at the outset of this paper, Oku (1998) proposes to analyze the phenomenon with LF copying, which he considers a covert application of Merge. According to this analysis, the embedded subject is absent in (14b) (= (1b)) in the overt syntax.

(14) a. Hanako-wa [zibun-no teian -ga saiyoosareru to] omotte iru
-TOP self -GEN proposal-NOM accepted-be that think
'Hanako thinks that her proposal will be accepted'

b. Taroo-mo [___ saiyoosareru to] omotte iru
-also accepted-be that think
'Taroo also thinks that her/his proposal will be accepted'

Then in LF, the antecedent *zibun-no teian* 'self's proposal' in (14a) (= (1a)) is merged with the embedded clause of (14b) and becomes the subject.[5] Shinohara (2006) examines this analysis and presents an argument for it based on the interaction of scrambling and argument ellipsis. In what follows, I will discuss her data and a modified version of her argument.

Shinohara first notes that argument ellipsis applies, as expected, to complement CPs. Thus, the embedded CPs in the second conjuncts of (15a-b) can be elided.

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[5] Note that this analysis is not necessarily inconsistent with the EPP requirement of T. If overt and covert operations are "interwoven," as proposed, for example, by Bobaljik (1995) and Nissenbaum (2000), then *zibun-no teian* 'self's proposal' can be merged covertly as the embedded TP/CP of (14b) is constructed, and check the EPP feature of the embedded T.

(15) a. Hanako-wa [$_{CP}$ zibun-no teian -ga saiyoosareru to] omotte iru ga,
-TOP self -GEN proposal-NOM accepted-be that think though
Taroo-wa _____ omotte inai
-TOP think not
'Hanako thinks that her proposal will be accepted, but Taroo does not think that her/his proposal will be accepted'

b. Taroo-ga [$_{CP}$ Hanako-ga hon -o katta to] itta si,
-NOM -NOM book-ACC bought that said and
Ziroo-mo _____ itta
-too said
'Taroo said that Hanako bought a book, and Ziroo also said that she bought a book'

Then, she observes that this type of CP ellipsis becomes illicit when a phrase is scrambled out of the relevant CP. This is shown in (16).

(16) *Hon -o$_i$ Taroo-wa [$_{CP}$ Hanako-ga t_i katta to] itta ga,
book-ACC -TOP -NOM bought that said though
zassi -o$_j$ Ziroo-wa _____ itta
magazine-ACC -TOP said
'Taroo said that Hanako bought a book, but Ziroo said that she bought a magazine'

(17) shows that examples of this kind remain ungrammatical even when the scrambled phrases are identical in the two conjuncts.

(17) *Sono hon -o$_i$ Taroo-wa [$_{CP}$ Hanako-ga t_i katta to] itta si,
that book-ACC -TOP -NOM bought that said and
sono hon -o$_j$ Ziroo-mo _____ itta
that book-ACC -also said
'Taroo said that Hanako bought that book, and Ziroo also said that she bought that book'

Shinohara argues that this state of affairs is unexpected if argument ellipsis is derived by PF deletion. First, the PF deletion operation would apply to a CP that is identical to its antecedent in both (16) and (17). (18) illustrates this for (17).

(18) *Sono hon -o$_i$ Taroo-wa [$_{CP}$ Hanako-ga t_i katta to] itta si,
that book-ACC -TOP -NOM bought that said and
sono hon -o$_j$ Ziroo-mo [$_{CP}$ ~~Hanako-ga t_j katta to~~] itta
that book-ACC -also -NOM bought that said
'Taroo said that Hanako bought that book, and Ziroo also said that she bought that book'

Further, the presence of a trace within the CP should not be the cause of the ungrammaticality because we know that constituents that contain traces can be elided. In fact, typical examples of sluicing involve ellipsis of TP with a *Wh*-trace, as in (19).

(19) He bought something, but I don't know what (= [$_{CP}$ what$_i$ [$_{TP}$ **he bought** t_i]])

Thus, the ungrammaticality of (16) and (17) is puzzling under the PF deletion analysis. On the other hand, it is predicted, Shinohara argues, if argument ellipsis involves LF copying.[6] I will present an updated version of the LF copying analysis of (16) and (17), due to Kensuke Takita, in the remainder of this section.

Suppose that the second conjuncts of (16) and (17) are interpreted by LF copying. Suppose further, as seems plausible, that what is copied at the ellipsis sites is an LF object, or more precisely, an object that syntax transfers to semantics. Given these, let us examine the antecedent clause in (17) more closely. Its spell-out form is as indicated and repeated in (20).

(20) Sono hon -o$_i$ Taroo-wa [$_{CP}$ Hanako-ga t_i katta to] itta
that book-ACC -TOP -NOM bought that said
'Taroo said that Hanako bought that book'

But what is its LF representation?

It is argued in Saito 1989 and Tada 1993 that scrambling need not affect interpretation and that a phrase preposed by scrambling is placed back at its initial site at LF.[7] One piece of evidence given in Saito 1989 is (21).

(21) a. [$_{TP}$ Taroo-ga [$_{CP}$ [$_{TP}$ Hanako-ga dono hon -o yonda] ka] siritagatte iru]
-NOM -NOM which book-ACC read Q know-want
(koto)
fact
'(the fact that) Taroo wants to know which book Hanako read'

b. [$_{TP}$ Dono hon -o$_i$ [Taroo-ga [$_{CP}$ [$_{TP}$ Hanako-ga t_i yonda] ka] siritagatte iru]]
which book-ACC -NOM -NOM read Q know-want
(koto)
fact

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[6] Shinohara's (2006) conclusion is that argument ellipsis involves LF copying while sluicing is derived by PF deletion as argued by Merchant (2000) and others. I will focus on argument ellipsis in this paper, and will not discuss whether Shinahara's argument provides indirect support for the LF copying analysis of other types of ellipsis.

[7] I will assume this simplified version of 'radical reconstruction' because the precise mechanism need not concern us here. See, for example, Saito 2005 for an analysis that assumes cyclic interpretation.

(21a) is a straightforward example that contains an embedded question. The *Wh*-phrase *dono hon* 'which book' is in the embedded object position and takes scope at the embedded CP. In (21b), on the other hand, the *Wh*-phrase is scrambled out of the embedded CP to the initial position of the matrix clause. If the Wh-phrase stays at its surface position at LF, we expect the example to be ungrammatical because it is known on independent grounds that a *Wh*-phrase must be contained within the CP where it takes scope. The generalization is illustrated by the ungrammatical example in (22).

(22) *[$_{TP}$ Dare-ga [$_{CP}$ [$_{TP}$ Hanako-ga sono hon -o yonda] ka] siritagatte iru]
-NOM -NOM that book-ACC read Q know-want
(koto)
fact
'*(the fact that) who wants to know Hanako read that book'

Yet, (21b) is grammatical. And the grammaticality can be accounted for if the scrambled *Wh*-phrase is placed back at its initial site in LF. According to this analysis, the LF representation of (21b) is identical to that of (21a).

If scrambling is subject to total reconstruction as illustrated above, the LF representation of (20) is as in (23) with the scrambled phrase back in the embedded object position.

(23) Taroo-wa [$_{CP}$ Hanako-ga sono hon -o katta to] itta
-TOP -NOM that book-ACC bought that said
'Taroo said that Hanako bought that book'

Then, when the embedded CP is copied into the ellipsis site of (17), the second conjunct will be as in (24).

(24) *Sono hon -o Ziroo-mo **[$_{CP}$ Hanako-ga sono hon -o katta to]** itta
that book-ACC -also -NOM that book-ACC bought that said
'Ziroo also said that Hanako bought that book'

This is clearly ungrammatical as it contains two instances of the embedded object. Similarly, the LF copying operation will yield the ungrammatical (25) for (16).

(25) *Zassi -o Ziroo-wa **[$_{CP}$ Hanako-ga hon -o katta to]** itta
magazine-ACC -TOP -NOM book-ACC bought that said
'Ziroo said that Hanako bought a magazine/a book'

The LF copying analysis, thus, predicts the ungrammaticality of (16) and (17) correctly.

The analysis also successfully accounts for another important piece of data discussed by Shinohara (2006). That is, (17) is grammatical without scrambling in the second conjunct, as

shown in (26).

(26) Sono hon -o_i Taroo-wa [$_{CP}$ Hanako-ga t_i katta to] itta si,
that book-ACC -TOP -NOM bought that said and
Ziroo-mo _____ itta
-also said
'Taroo said that Hanako bought that book, and Ziroo also said that she bought that book'

This may appear surprising because the elided CP does not seem identical to its antecedent on the surface. However, since the LF representation of the first conjunct is as in (23), we obtain proper interpretation by copying the embedded CP of this conjunct into the ellipsis site at LF, as shown in (27).

(27) Sono hon -o_i Taroo-wa [$_{CP}$ Hanako-ga t_i katta to] itta si,
that book-ACC -TOP -NOM bought that said and
Ziroo-mo **[$_{CP}$ Hanako-ga sono hon -o katta to]** itta
-also -NOM that book-ACC bought that said
'Taroo said that Hanako bought that book, and Ziroo also said that she bought that book'

It was shown in this section that examples such as (16)-(17) and (26) constitute evidence for the LF copying analysis of argument ellipsis. In the following section, I will argue that this analysis implies the absence of obligatory agreement. That is, LF copying of an argument DP is possible only in languages without agreement in the usual sense. This seems to capture a significant correlation as argument ellipsis is proposed for East Asian languages, which are known also for the total absence of overt agreement phenomenon.

4. Kuroda's (1988) Agreement Parameter and the Activation Condition on Agree

Kuroda (1988) proposes that one of the main differences between English and Japanese is the presence vs. absence of obligatory agreement. It is simply a fact that Japanese lacks overt agreement. But what Kuroda proposes is that although agreement relation is present in both languages, it is obligatory and 1-1 in English while it is optional and can be many-1 in Japanese. Among the phenomena in Japanese that he attempts to explain with this parameter are the multiple subject construction and A-scrambling, which he considers to be movement of the object to TP Spec. Without committing myself to Kuroda's specific analysis of these phenomena, I will argue in this section that the LF copying analysis of argument ellipsis provides support for his main idea that agreement is obligatory in English but not in Japanese.

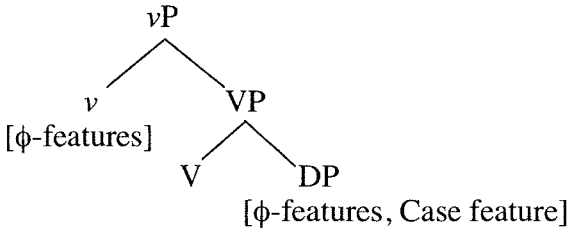
It is a widely accepted assumption that agreement is closely tied with Case. Chomsky

(2000), for example, maintains that agreement is a probe-goal relation roughly as in (28).[8]

(28) a. A set of uninterpretable ϕ-features on a functional head (= T or *v*) searches for a matching ϕ-set in its domain. (A probe searching for a goal.)
b. The operation is implemented by uninterpretable features. In particular, the goal must have an uninterpretable Case feature.
c. The matching of ϕ-feature sets is agreement, and it induces the deletion of the probe and the Case feature of the goal.

Let us consider the case of object agreement in (29) as an example.

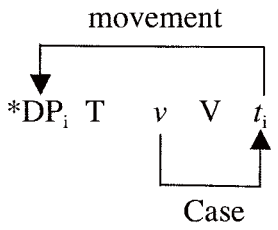
(29)



The ϕ-features of *v* are uninterpretable, and they agree with those of the object DP. The object qualifies as a goal because it has an uninterpretable Case feature though its ϕ-features are interpretable. The agreement relation results in the deletion of the uninterpretable ϕ-features on *v* and the uninterpretable Case feature of the DP.

(28b), called the 'activation condition', derives part of Burzio's (1986) generalization, which states that a verb assigns an external θ-role if and only if it assigns objective Case. A relevant case is the classical Last Resort violation as in (30).

(30)



If the Case feature of the DP is deleted in the object position through agreement with *v*, then its ϕ-features can no longer be the goal for those of T because of the activation condition. Consequently, the EPP-feature of T fails to raise the DP to its specifier position.

If the agreement operation illustrated above is obligatory, argument DP ellipsis should be impossible. Let us consider the concrete examples in (31) to illustrate this point.

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[8] The system of Chomsky 2000 is chosen here for the ease of exposition. The choice is not crucial, as far as I can see.

(31) a. John brought [$_{DP}$ his friend]
b. *But Bill did not bring ___

The object DP *his friend* of (31a) must be copied into the object position of (31b) at LF for the latter sentence to be properly interpreted. Suppose then that LF copying is an available option universally and can be applied in English as well. However, one of the crucial assumptions in the analysis of the Japanese (16)-(17) and (26) above was that only LF objects can be employed in LF copying. The ungrammaticality of (16)-(17) as well as the grammaticality of (26) in fact constitute strong evidence for this assumption. Then, *his friend* must be copied into (31b) from the LF representation of (31a). But, this DP has already agreed with its *v* in (31a) and hence, its uninterpretable Case feature is deleted. This implies that it does not qualify as a goal in the required agree relation in (31b). Consequently, *v* is left with its uninterpretable ϕ-features in (31b) and the derivation crashes.

The same conclusion should hold for Japanese if the agree operation in (28) applies in the language. But the Japanese counterpart of (31) is grammatical as shown in (32).

(32) a. Taroo-wa [$_{DP}$ zibun-no tomodati-o] turete kita
-TOP self -GEN friend -ACC brought
'Taroo brought his friend'

b. Demo Hanako-wa _____ turete konakatta
but -TOP brought-not
'But Hanako did not bring her friend'

The object DP *zibun-no tomodati* 'self's friend' in (32a) must lack uninterpretable features in the LF representation for otherwise the example should be ungrammatical. Hence, when it is copied into the object position in (32b) as in (33), it cannot participate in agreement as a goal and cause the deletion of the uninterpretable ϕ-features on *v*.

(33) Demo Hanako-wa **[$_{DP}$ zibun-no tomodati-o]** turete konakatta
but -TOP self -GEN friend -ACC brought-not
'But Hanako did not bring her friend'

Then, the grammaticality of (32b) indicates that the *v* in this example lacks uninterpretable ϕ-features to begin with. This implies that *v* in Japanese need not have ϕ-features, which amounts to saying that object agreement is not obligatory in the language. Thus, even if LF copying is an operation that is available in any language, Kuroda's (1988) agreement parameter correctly predicts the absence of argument DP ellipsis in English as well as its presence in Japanese.[9]

[9] Here, the discussion is confined to DP ellipsis. Whether this account in terms of the obligatoriness of agreement can be extended to CP and PP arguments remains to be seen. I will come back to this briefly in Section 6.

Before I conclude this section, I would like to present one piece of evidence that those DP arguments that are copied into ellipsis sites in Japanese indeed lack Case features that need to be deleted. As pointed out by Oku (1998), argument ellipsis does not require "Case matching" between the elided argument and its antecedent. Let us first consider the grammatical examples in (34).

(34) a. Taroo-wa [$_{DP}$ zibun-no hahaoya-o] tazune,
-TOP self -GEN mother -ACC visit
Hanako-wa ___ denwa-o sita
-TOP phone -ACC did
'Taroo visited his mother, and Hanako called her mother'

b. Taroo-wa [$_{DP}$ zibun-no hahaoya-ni] atta ga,
-TOP self -GEN mother -DAT met though
Hanako-wa ___ oikaesita
-TOP chased-away
'Taroo met his mother, but Hanako chased her mother away'

After LF copying, the second conjunct of (34a) will be as in (35).

(35) Hanako-wa **[$_{DP}$ zibun-no hahaoya-o]** denwa-o sita

However, dative but not accusative is licensed in the copied position as shown in (36).

(36) Hanako-wa zibun-no hahaoya-ni /*-o denwa-o sita
-TOP self -GEN mother -DAT -ACC phone-ACC did
'Hanako called her mother'

Similarly, LF copying yields (37) for (34b), which also shows "Case mismatch."

(37) Hanako-wa **[$_{DP}$ zibun-no hahaoya-ni]** oikaesita
-TOP self -GEN mother -DAT chased-away
'Hanako chased her mother away'

Dative Case is not licensed in the complement position of the verb *oikaes* 'chase away', as shown in (38).

(38) Hanako-wa zibun-no hahaoya-o /*-ni oikaesita
-TOP self -GEN mother -ACC -DAT chased-away
'Hanako chased her mother away'

The grammaticality of (34a-b) shows then that there is no need to license Case after a DP is copied into an ellipsis site. For example, if *zibun-no hahaoya-ni* 'self's mother-DAT' in (34b)

is introduced into the first conjunct with an uninterpretable dative Case feature, the feature must have already been checked and deleted by the time the DP is copied into the second conjunct in LF. Thus, the examples of "Case mismatch" in (34) indicate that copied DPs indeed lack uninterpretable Case features.

The fact noted above reinforces the earlier discussion where it was claimed that DPs that are copied at ellipsis sites cannot participate in agreement because of the activation condition. At the same time, it raises a question concerning the licensing of Case in Japanese. If Case is an uniterpretable feature in Japanese, as it seems to be, then how is it deleted in the derivation? The discussion so far indicates that even if overt DPs in Japanese are introduced into derivations with uninterpretable Case features, the main role of those features is not to accommodate agreement and further, that those features are not deleted through agreement. This is so because if Case is tied to agreement as in (28) and agreement is optional in Japanese, then the presence of Case should also be optional in this language. However, Case is a necessary feature of overt DPs in Japanese as much as it is in obligatory agreement languages. Case, then, must be serving quite a different role in Japanese.

Although it is beyond the scope of this paper to examine the Japanese Case system, I would like to note one possibility. First, nominative and genitive in Japanese may be contextual Cases as suggested in Saito 1982. Suppose that the nominative Case feature is checked and deleted when the DP is merged with a projection of T. Then, it is not surprising that the language allows multiple subjects as in the examples below from Kuno 1973.

(39) a. Yama -ga ki -ga kirei -da
mountain-NOM tree-NOM pretty-is
'It is in the mountains that trees are pretty'

b. Bunmeikoku -ga dansei-ga heikinzyumyoo -ga mizikai
Civilized country-NOM male -NOM average life span-NOM short
'It is in civilized countries that the male population has a short life-span'

Similarly, if genitive Case is checked and deleted within the (extended) projection of N, multiple genitive should also be possible as in (40).

(40) kyonen -no Hanako-no Taroo-no hihan
last year-GEN -GEN -GEN criticism
'Hanako's criticism of Taroo last year'

On the other hand, dative and accusative may be inherent Cases, closely tied with θ-role assignment, as suggested in Kikuchi and Takahashi 1991. Then, they are checked and deleted by lexical heads such as V.

The Case system just sketched is consistent with the discussion in this section as it is

independent of agreement. Needless to say, further research is required before it is concluded that this kind of Case system can be maintained for Japanese and other East Asian languages.

5. A Speculation on Radical Pro-drop

If the discussion in the preceding section is on the right track, then East Asian languages allow argument DP ellipsis at least in part because agreement is not obligatory (or possibly totally absent). As noted above, this is consistent with the fact that these languages lack overt agreement altogether. Another characteristic of these languages that is often tied with the absence of overt agreement is radical pro-drop. It is widely assumed that *pro* is licensed by rich agreement, for example, in the subject position of a finite clause in Italian and Spanish. At the same time, it has been observed that *pro* appears rather freely in argument positions in East Asian languages despite the fact that they lack overt agreement. The generalization then seems somewhat paradoxical: either rich or no agreement licenses *pro*.

If radical pro-drop is in fact possible because of the absence (or non-obligatoriness) of agreement, it is tempting to relate this phenomenon to argument ellipsis. One possibility is that *pro*, without Case feature, is always available for LF copying in any language. The analysis of argument ellipsis presented above relies on the idea that a derivation can use LF objects that are constructed in the preceding discourse. This implies that aside from objects in the numeration, taken from the Lexicon, there is a set of LF objects, given by the discourse, that can be employed in a derivation.[10] It is conceivable then that *pro*, being a typical discourse entity, is always included in this set. This discourse *pro* lacks an uninterpretable Case feature, and hence fails to take part in an agreement relation. Then, it can be copied into a DP argument position only in languages that do not require agreement.

The possibility just mentioned implies that *pro* in East Asian languages is quite different from its counterpart in Italian and Spanish, where agreement is obligatory. The latter is included in the numeration with an uninterpretable Case feature, and enters the derivation exactly like overt lexical items. The former, on the other hand, originates in the discourse and is introduced into the derivation by LF copying. Although this is still very much a speculation, there is some evidence indicating that it may not be far from the truth. First, the distribution of genitive subjects in Japanese shows that discourse *pro* need not have its Case licensed, and hence that it lacks an uninterpretable Case feature. Secondly, the distributions of argument ellipsis and radical pro-drop seem identical if we abstract away from the differences that arise from the properties of ellipsis and pronouns; the former requires a linguistic antecedent and allows sloppy interpretation whereas the latter received definite interpretation. I will discuss these in turn in the remainder of this section.

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[10] If covert operations are by definition those operations that do not involve the introduction or displacement of phonetic features, those LF objects are subject only to covert Merge (LF copying). See Footnote 5 above for relevant discussion.

It has been known that subjects in Japanese sentences can be marked genitive instead of nominative in limited environments, typically in prenominal sentential modifiers. Thus, a genitive subject is allowed in (41a), but not in (41b).

(41) a. [Taroo-ga /-no itta] tokoro
-NOM/-GEN went place
'the place where Taroo went'

b. Taroo-ga /*-no soko-e itta
-NOM/ -GEN there-to went
'Taro went there'

Interestingly, as discussed by Harada (1971), Watanabe (1996), and Hiraiwa (2000), among others, this genitive subject is impossible when an accusative object appears between the subject and the verb. (42) is ungrammatical despite the fact that the genitive subject appears in a prenominal sentential modifier.[11]

(42) *[Taroo-no hon -o katta] mise
-GEN book-ACC bought shop
'the shop where Taroo bought a book'

Hiraiwa (2000) argues that the genitive subject in examples like (41a) is licensed because the adnominal T, as opposed to its declarative counterpart, is capable of checking genitive as well as nominative Case. He then proposes (43) to account for the intervention effect induced by an accusative DP.[12]

(43) Spell-out of morphological accusative case by *v* triggers nominative Case checking on T in the next strong phase.

Slightly modifying this, I proposed in Saito 2001 that the genitive-licensing adnominal T blocks the checking of accusative Case on the object. Without going into the specifics of the proposal, I simply note here that it is consistent with the data in (44).

(44) a. [Taroo-no kinoo itta] tokoro
-GEN yesterday went place
'the place where Taroo went yesterday'

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[11] Harada (1971) notes that an idiolectal variation is observed here. According to him, some speakers accept (42) but others do not. As far as I know, the variation concerns the degree of ungrammaticality and is not as clear-cut as Harada suggests.

[12] It will be clear directly why Hiraiwa refers to 'spell-out of morphological accusative case' in (43).

b. [Taroo-no$_i$ t_i taihosareta] tokoro
-GEN arrested-was place
'the place where Taroo was arrested'

c. *[hon -o$_i$ Taroo-no t_i katta] mise
book-ACC -GEN bought shop
'the shop where Taroo bought a book'

If it is accusative Case that is prevented in a genitive subject sentence, we expect that non-accusative phrases, such as adverbs, can freely occur intervening between the genitive subject and the verb. This is confirmed by (44a). (44b) contains a passive sentence, and an NP-trace occupies the object position. Genitive subject is possible as expected since an NP-trace need not be checked for Case. Finally, a trace of scrambling appears in (44c), and a genitive subject is excluded in this example. This is, again, expected since traces of scrambling, as opposed to NP-traces, require Case licensing.

One case that is surprising in this context is the pattern *pro* exhibits. Hiraiwa (2000) and Miyazawa (2001) point out that there is no intervention effect with *pro* in the object position. The following examples from Miyazawa 2001 illustrate this point:

(45) Ziroo-ga hazimete Nagoya-ni kuru -node, minna-ga
-NOM for the first time -to come-since all -NOM
iroirona basyo-ni kare-o turete iku yotei-desu
various place -to he -ACC take plan -is
'Since Ziroo is coming to Nagoya for the first time, the plan is for everyone to take him to various places'

(46) a. *[Hanako-no kare-o turete iku] tokoro-wa Nagoya-zyoo -desu
-GEN he -ACC take place -TOP Nagoya Castle-is
'The place that Hanako is taking him is the Nagoya Castle.'

b. [Hanako-no *pro* turete iku] tokoro-wa Nagoya-zyoo -desu
-GEN take place -TOP Nagoya Castle-is

(45) sets up the context for (46). In (46a), the overt pronoun *kare* 'he' with accusative Case blocks the genitive subject as expected. But as (46b) shows, the substitution of *pro* for the overt pronoun makes the sentence grammatical. This goes against the widely accepted assumption that *pro* needs to be licensed for its Case.

The particular example in (46b), as noted in Saito 2004b, can be analyzed as an instance of argument ellipsis instead of postulating *pro* in the object position. The analysis would go as follows with the LF copying analysis discussed above. First, there is no *pro* and the object is missing in the overt syntax. In LF, *kare* 'he' is copied from the LF representation of (45) to

that of (46b). Since *kare* comes from an LF representation, it has no uninterpretable feature, in particular, no uninterpretable Case feature. Then, it need not be licensed for accusative Case in (46b), and the grammaticality of the example is correctly predicted.

However, there are cases where *pro* clearly fails to exhibit the intervention effect. It has been known since Harada 1971 that a gap in a relative clause does not block genitive subjects. Thus, (47) is perfectly grammatical.

(47) [Taroo-no [*e*] katta] hon
-GEN bought book
'the book that Taroo bought'

It is difficult to analyze (47) as an instance of argument ellipsis. Further, the standard analysis for the gap in Japanese relative clauses, due to Perlmutter (1972), has been that it is *pro*.[13] This analysis straightforwardly accounts for the fact, noted by Kuno (1973), that Japanese relativization is not subject to Subjacency. One of Kuno's celebrated examples is shown in (48).

(48) [[pro_i kite iru] yoohuku-ga] yogorete iru] $sinsi_i$
wearing-is suit -NOM dirty-is gentleman
'the gentleman who the suit that he is wearing is dirty'

It seems then that *pro* indeed does not exhibit the intervention effect on genitive subjects.

This goes quite well with the possibility discussed at the outset of this section that radical pro-drop involves the LF copying operation that is responsible for argument ellipsis. If *pro* is among those LF objects that can be copied into a structure, then it should be void of uninterpretable features. Hence, it should not require licensing of Case feature in particular. It follows then that it can be copied into the object position of a genitive subject sentence because it is not affected by the failure to license accusative Case. The intervention effect on genitive subjects, thus, provides a piece of suggestive evidence for the unified treatment of DP argument ellipsis and radical pro-drop: both involve LF coping of arguments, which in turn is possible only in languages that lack obligatory agreement.

Another suggestive evidence for the unified treatment of the two phenomena concerns their distributions. As discussed in detail in Murasugi 1991, *pro* can stand not only for argument DPs but also for locative and temporal PPs in Japanese. The following example shows that the relativization of locative PP is not subject to subjacency:

(49) [Hanako-ga [[pro_i sunde iru] hito -o] sitte iru] $mati_i$
-NOM live person-ACC know town
'the town that Hanako knows a person who lives in it'

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[13] See Murasugi 1991 for extensive discussion on this hypothesis.

This is predicted if there is a locative PP *pro*. On the other hand, Murasugi also notes that *pro* cannot be used for reason and manner adjuncts. (50) is ungrammatical with the intended interpretation.

(50) *[Hanako-ga [[pro_i kubi-ni natta] hito -o] sitte iru] $riyuu_i$
-NOM was-fired person-ACC know reason
'the reason that Hanako knows a person who was fired for it'

This example can only refer to the reason that Hanako knows the person, and not to the reason that the person was fired. This shows that *pro* cannot stand for a reason adjunct. Murasugi concludes that *pro* can occur only in argument positions, and locative and temporal PPs are arguments of the event predicate.

Interestingly, argument ellipsis exhibits the same distribution. Thus, locative PPs can be elided as shown in (51).

(51) a. Taroo-wa [zibun-no oya -no ie -ni] sunde iru
-TOP self -GEN parent-GEN house-in live
'Taroo lives in his parents' house'

b. Demo, Hanako-wa _____ sunde inai
but -TOP live-not
'But Hanako does not live in his/her parents' house'

(51b) allows sloppy interpretation as indicated, and this shows that locative PPs are subject to argument ellipsis. Note that if an overt pronoun appears at the ellipsis site, then the strict reading is forced.

(52) Demo, Hanako-wa soko-ni sunde inai
but -TOP there-in live-not
'But Hanako does not live in his parents' house'

On the other hand, reason and manner adjuncts cannot be elided. Let us consider the following example:

(53) a. (Watasi-wa) [Taroo-ga [zibun-no sippai -de] kubi-ni natta to] kiite iru
I -TOP -NOM self -GEN mistake-for was-fired that hear
'I hear that Taroo was fired because of his mistakes'

b. *Demo, [Hanako-ga _____ kubi-ni natta to] kiite inai
but -NOM was-fired that hear-not
'But I have not heard that Hanako was fired because of her mistakes'

(53b) cannot receive the intended sloppy interpretation; it can only mean that I have not heard that Hanako was fired. The intended interpretation obtains when *zibun-no sippai-de* 'for self's mitakes' appears overtly, as shown in (54).

(54) Demo, [Hanako-ga [zibun-no sippai -de] kubi-ni natta to] kiite inai
but -NOM self -GEN mistake-for was-fired that hear-not
'But I have not heard that Hanako was fired because of her mistakes'

This sentence is appropriate even when I have heard that Hanako was fired, but not because of her mistakes. Then, if *zibun-no sippai-de* 'for self's mitakes' in (53a) can be copied into (53b) at LF, sloppy interpretation should be available in (53b) as well. (53), thus, shows that reason adjuncts cannot be elided.[14]

This distributional similarity between radical pro-drop and argument ellipsis constitutes indirect, but suggestive evidence for their unified treatment. If the LF copying of discourse items is responsible for both of these phenomena, their distributional similarity is not at all surprising.

6. Conclusion

In this paper, I have tried to relate three properties of East Asian languages; argument ellipsis, radical pro-drop, and the absence of overt agreement. In Section 2, I argued that the argument ellipsis hypothesis is on firm empirical grounds. Then in Section 3, I discussed Shinohara's (2006) supporting evidence for Oku's (1998) LF copying analysis. In Williams' (1977) classical LF copying analysis of VP ellipsis, it is argued that what is copied at the ellipsis site is a logical form. I argued that this holds for argument ellipsis as well.

Based on this, I showed in Section 4 that argument DP ellipsis should be possible only in languages without obligatory agreement. Given this conclusion, it is tempting to attribute the presence/absence of argument ellipsis entirely to the optionality/obligatoriness of agreement, but I did not quite attain this result. In English, for example, not only DPs but also argument CPs and PPs cannot be elided. An illicit example of CP ellipsis is shown in (55).

(55) *John says [$_{CP}$ that she is a genius], but Bill doesn't think _____

If the absence of argument ellipsis is to be derived completely from obligatory agreement, then it must be shown that CPs and PPs (including locatives and temporals) also participate in agreement. This is conceivable as Rackowski and Richards (2005) argue on the basis of detailed examination of Tagalog that there is agreement between *v* and a complement CP. But

[14] It would be interesting to investigate why (argument) ellipsis is constrained in this way. But I do not have a clear hypothesis at the moment.

further research is necessary to find out whether this is the correct approach or an independent factor plays a role in the presence/absence of CP and PP ellipsis.

Finally, in Section 5, I suggested that radical pro-drop is a kind of argument ellipsis. Although the discussion was quite speculative, I believe that the suggestion has a desirable conceptual aspect. It seems clear that *pro* is required independently of argument ellipsis in East Asian languages. For example, in Japanese, a student can utter (56) without any relevant prior discourse when the teacher comes into the classroom.

(56) *pro* kita
came
'She/he came'

But the contexts for radical pro-drop and argument ellipsis show much overlap, as was shown in the preceding section, and it has been somewhat puzzling that both are attested in the same languages. In this situation, one would hope to reduce one to the other. If the suggestion made in this paper is on the right track, the mystery is resolved to a large extent. Those languages that have argument ellipsis can use LF objects provided by the discourse in the derivation of a new sentence, and radical pro-drop is an instance of this operation.

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