Syntactic Edges and Linearization

by

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ABSTRACT

In this thesis, I investigate the question of how the units of a linguistic expression are linearly ordered in syntax. In particular, I examine interactions between locality conditions on movement and the mapping between syntax and phonology. I show that Cyclic Linearization of syntactic structure and constraints on domain-internal movement of multiple specifiers predict unique ordering restrictions at the edges of syntactic domains. As a consequence of cyclic Spell-out and conditions on syntactic agreement, elements externally merged as a constituent at the edge of a Spell-out domain cannot be separated by a domain-internal element.

This proposal provides a unified account of a variety of types of ordering restrictions in scrambling — in particular, floating quantifier and possessor constructions in Korean and Japanese. Evidence is drawn from interactions among various factors, which include: scrambling, the scope and syntactic position of adverbs, depictive and resultative predicates, possessor constructions, and varieties of floating quantifiers, among others.

It is argued that the domain of cyclic Spell-out must include the edge as well as the complement of a Spell-out domain. This challenges the view that edges are designated escape hatches in syntax. Other results include arguments that scrambling is feature-driven movement, support for the view that syntactic agreement is feature sharing, as well as a particular repertoire of phases (including VP and well as vP).

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LIST OF ABBREVIATIONS

Acc	accusative
Appl	applicative
C	complementizer
Cl	classifier
Cop	copular
Dat	dative
Dec	declarative particle
Dep	depictive head
Fut	future tense
Gen	genitive
Hon	honorific
Instr	Instrumental
Neg	negation
Nom	nominative
NL	nominalizer
Obj	object
Pass	passive
Past	past tense
Pl	plural
Pres	present tense
Prog	progressive
Q	question particle
Rel	relativizer
Subj	subject
Top	topic

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Chapter 1. Introduction

In this thesis, I investigate the question of how the units of a linguistic expression are linearly ordered in syntax. In particular, I address this issue by examining interactions between locality conditions on movement and the mapping between syntax and phonology. In this chapter, I introduce the theoretical background that underlies the main proposals of the thesis. Specifically, I review an on-going debate concerning how to derive successive cyclic movement via cyclic Spell-out. Two competing perspectives on this issue are examined first: a phase-based approach proposed by Chomsky (2000, 2001) and a Cyclic Linearization approach proposed by Fox and Pesetsky (2003, 2005a). I then motivate the main proposals of the thesis from close inspections of diverging predictions of the two approaches.

1.1   The Debate: The Nature of Cyclic Spell-out

How successive cyclic movement is derived in the grammar has been at the center of intensive research. A large body of work has argued that particular syntactic domains are impenetrable domains, with the necessary consequence that successive cyclic movement through escape hatches needs to be postulated (Uriagereka 1999, Chomsky 2000, 2001, Nissenbaum 2000, among others). Recent work by Fox and Pesetsky (2003, 2005a), however, presents an alternative approach, which eliminates the notion of escape hatch and derives successive cyclicity effects from interface conditions on the mapping between syntax and phonology (Cyclic Linearization).

The two approaches share the basic assumption that syntactic structure undergoes cyclic Spell-out at certain points of derivation. However, they crucially diverge in their understanding

of the nature of cyclic Spell-out. This leads to different proposals concerning how successive cyclic movement should be derived.

Let us first consider the phase-based approach represented by Chomsky (2000, 2001). Chomsky argues that syntactic derivation creates syntactic units, called a **phase**. Chomsky, in particular, claims that phases are "propositional". Under this view, verbal phrases with full argument structure (*v**P) and CPs are considered "strong phases". TP, as well as "weak" verbal configurations (lacking external arguments) such as passive and unaccusative *v*Ps, do not constitute strong phrases.

Chomsky argues that Spell-out applies only to strong phases. Spell-out is viewed as an operation that transfers a syntactic object in each strong phase to phonology, with specifying instructions for pronunciation of the syntactic object. Assuming that the computational burden is reduced if the earlier stages of the cycle can be "forgotten" (inaccessible to further syntactic operations), Chomsky further proposes the **Phase Impenetrability Condition** (**PIC**):

(1)   **Phase Impenetrability Condition** (Chomsky 2001: 13)

For strong phase HP with head H, the domain of H is not accessible to operations outside HP. Only H and its *edge* are accessible to such operations. (The edge includes the elements outside H, the specifiers (Specs) of H and elements adjoined to HP.)

An important consequence of the PIC is that the domain of Spell-out is limited to the complement of the head of a strong phase. Consider, for instance, configurations like (2) where ZP and HP are strong phases. Once the strong phase HP is spelled-out, the complement YP is not accessible to operations at ZP, due to the PIC. Only the head H and its edge zone, namely its

Spec, are accessible to operations within the smallest strong ZP phase, but not beyond. In effect, this proposal amounts to arguing that H and its Spec α in (2) belong to the next higher phase ZP for the purpose of Spell-out. As Nissenbaum (2000) argues, this could follow from the proposal that when cyclic Spell-out applies to a strong phase, only the complement domain of the strong phase is spelled out and thus "handed over" to the phonological component. (See Nissenbaum 2000 for detailed discussions.)

(2)   [$_{ZP}$ Z   ...   [$_{HP}$ α [H   YP]]]

Strong phase: HP

Edge of HP

Spell-out domain of HP
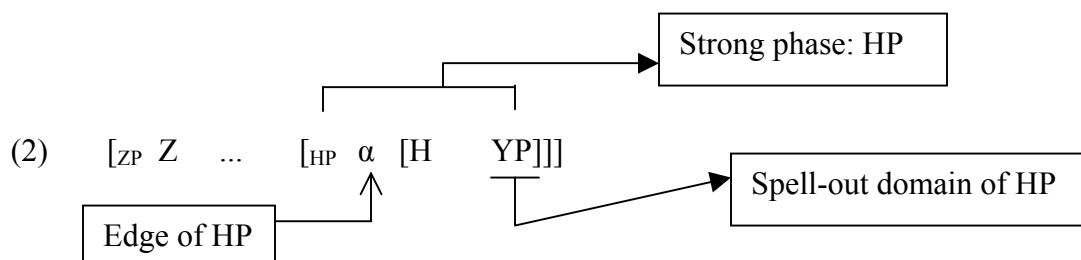
Another important consequence of the PIC is that "syntactic escape hatches" must be postulated at each strong phase. In particular, under the PIC, elements in the complement domain of a strong phase are inaccessible to the operations in the higher domains, and thus must be frozen in-situ (assuming that movement is triggered by a higher head). To explain the fact that a phrase merged in a complement domain may undergo long-distance movement across phase boundaries (e.g. *wh*-movement), it is necessary to assume that movement must occur through the edge of every strong phase in successive cyclic fashion. On this approach, successive cyclic movement is a necessary consequence of the claim that only the edges are escape hatches for movement out of strong phases.

Recent work by Fox and Pesetsky (2003, 2005a, F&P hereafter), however, suggests an alternative approach to deriving successive cyclic movement. In particular, F&P argue that the

notion of escape hatch is unnecessary. Instead, successive cyclic movement effects are derived from a syntax-phonology mapping procedure, called **Cyclic Linearization (CL)**. Cyclic Linearization establishes relative ordering of elements contained in a Spell-out domain via the Spell-out operation at each cycle. For convenience, I call Fox and Pesetsky's proposals the CL approach, and Chomsky's proposals the PIC approach.

The CL approach assumes with Chomsky (2000, 2001) that certain syntactic domains created in a derivation are Spell-out domains. The implementation and consequences of cyclic Spell-out under the CL approach, however, are significantly different from the PIC approach. Most importantly, the CL approach argues that Spell-out domains are the same as phase domains, as depicted in (3) (cf. the Spell-out domain in (2) under the PIC approach):

(3)   [$_{ZP}$ Z   ...   [$_{HP}$ α   [H   YP]]]

        ┌─────────────────→ | Spell-out domain of HP |
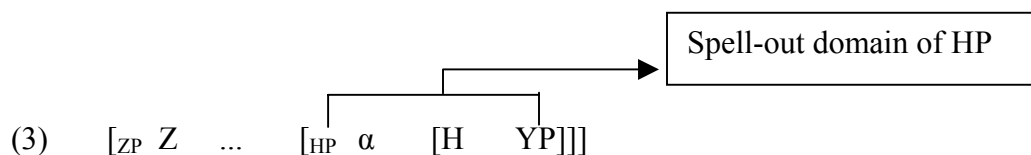
Specifically, the CL approach argues that Spec, head, and the complement of a phase are all handed over to PF and get linearized at Spell-out. In configurations like (3), not only the complement YP but also the head H and its Spec α get linearized when the HP is spelled-out. For convenience, I continue to call the Specs of a Spell-out domain the edges, as in Chomsky's phase system. It is important to note, however, that edges in the CL system are just derivative notions (i.e. non-complement positions) and have no special grammatical status as an escape hatch.

Contra the PIC approach, the CL approach argues that elements are free to move out of the "already spelled-out domain" as long as it does not violate interface conditions concerning linearization:

(4)   **Linearization Preservation** (Fox and Pesetsky 2003, 2005a):

The linear ordering of syntactic units is affected by Merge and Move within a Spell-out

Domain, but is fixed once and for all at the end of each Spell-out Domain.

F&P argue that Linearization Preservation (4) follows from a fundamental property of the

syntax-phonology mapping procedure: information about Cyclic Linearization of syntactic

structure may be added in the course of derivation, but it can never be deleted. Specifically, the

Spell-out operation may add new ordering statements but cannot erase or change ordering

statements established in the previous domain.[1] Given that ordering statements established in

each cycle must be preserved at PF, it follows that ordering information in an earlier domain

must be consistent with new ordering information added in the later domain, in order to avoid an

ordering contradiction. As F&P stress, Linearization Preservation is not an additional constraint

in syntax, but a consequence of cyclic Spell-out, which forces monotonicity of the syntactic

derivation.[2]

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[1] The CL approach argues that linearization information about a given structure is stored at PF
and not recomputed in the course of derivation. This is argued to have the effect of reducing the
computational burden.

[2] Noam Chomsky (p.c.) suggests that it can be a burden inherent to the CL system if ordering
statements must be compared at PF. It is fair to ask the question of how linearization information
is organized and evaluated at PF. It is not obvious, however, whether this concern can be a
reason to favor the PIC approach over the CL approach. First of all, it is not clear whether
comparison of ordering statements necessarily increases the computational burden. Evaluation of
possible orderings might be one of the major operations at PF. (At least, I have not seen evidence
to the contrary.) It would also be worth noting that evaluation matrices have been developed in
Optimality Theory to compare phonological derivations. Second, it must be noted that the PIC
system entertains certain types of complexity in the narrow syntax that the CL system does not
assume. Under the PIC system, it is necessary to assume that movement must occur through the
edge whenever movement occurs out of a strong phase. As we will see in section 1.2, this
assumption is unnecessary under the CL approach. It seems to me that it is (at least) a matter of
controversy whether positing successive cyclic movement through the escape hatch in every

F&P show that Linearization Preservation (4) may derive successive cyclic movement without postulating the PIC or stipulating escape hatches in the grammar. Consider first the derivation in (5), which illustrates how movement from the edge is allowed under Cyclic Linearization. An ordering statement of the form α<β is understood by PF as meaning that the last element of α precedes the first element of β, with the exclusion of traces.[3]

Movement out of edge zone:

(5) a. [$_{\alpha P}$ X Y]: **X<Y**

   b. [$_{\beta P}$ X$_1$ Z [$_{\alpha P}$ t$_1$ Y]]: X<Z<αP => **X<Z<Y**

Suppose that αP and βP are Spell-out domains. In (5a), X precedes Y in the αP domain. Once αP is spelled-out, the linear ordering X<Y is established at PF. Crucially, this ordering cannot be erased or changed to avoid ordering contradictions in PF, as discussed in (4).

As described in (5b), suppose that a new element Z is merged in the higher domain βP, and that the element X merged in αP is remerged in βP (i.e. movement of X in βP). After the Spell-out of βP, the new orderings (X<Z<αP) are added in PF.[4] Since the first (overt) element in

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phase in syntax is less burdensome (as in the PIC approach) than evaluating orderings at PF (as in the CL approach).

[3] For ease of exposition, I employ the term (and notation) of traces. Strictly speaking, however, traces do not exist in the derivation under the CL approach. F&P assume that movement is "remerge" of elements introduced in the previous derivation, and that ordering statements are established for elements most recently merged if they are remerged in a given derivation. See F&P (2005a) for details.

[4] For economy considerations, linearization does not apply to the domains linearized before (see fn. 1). Thus, when βP is linearized in (5), αP is not linearized all over again. Rather, when βP is spelled-out, only the new ordering X<Z<αP is added at PF.

αP is Y, PF obtains new linearization information, X<Z<Y.[5] Given that the ordering in βP (X<Z<Y) is *consistent* with the one in αP (X<Y), the derivation in (5b) poses no problem for PF.[6] Thus, movement of X from the edge in (5b) is correctly allowed under Cyclic Linearization.

Compare the derivations in (5) with (6), which shows that certain types of movement out of nonedge zones are ruled out under Cyclic Linearization.[7] In (6), X precedes Y in the lower Spell-out domain αP. Suppose that Z is merged in the higher domain βP, and that Y undergoes movement over Z, as described in (6b).

Movement out of nonedge zone:

(6)   a.   [$_{αP}$ X   Y]: **X<Y**

      b.   *[$_{βP}$ Y$_1$ Z   [$_{αP}$ X   t$_1$]]: Y<Z<αP => **Y<Z<X**

When the βP in (6b) is spelled out, PF obtains the information that Y<Z and Z<αP. Since X is the first element in αP, Z precedes X. Given that Y precedes Z and Z precedes X, Y must precede X at βP.

Notice, however, that the ordering at βP (**Y<Z<X**) in (6b) contradicts the ordering established at the lower domain αP (**X<Y**). Specifically, the ordering at αP indicates that X precedes Y. The ordering at βP indicates that Y precedes X. Derivations like (6b) with an

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[5] Strictly speaking, the ordering statement added in (5b) is "Z precedes the first non-trace element of αP, namely Y". For ease of exposition, however, I also present the ordering of terminals for each spell-out domain (e.g. X<Z<Y for the βP domain in (5b)). X<Z<Y is my notation for the total ordering {X<Z, X<Y, Z<Y}. F&P offer a more statement of the formal properties of the collection of orderings in the ordering table in PF.

[6] It is worth stressing that ordering statements are evaluated with respect to precedence relationship, but not with respect to immediate precedence relationship. In other words, X and Y in (5a) and (5b) must preserve their relative ordering, but the immediate precedence relationship with respect to X and Y can be changed by external merge of a higher element Z, as in (5b).

[7] In the next section 1.2, we will see that movement out of nonedge zone is possible if the outcome of the movement obeys Linearization Preservation.

ordering contradiction cannot be pronounced and are filtered out at PF. Thus, movement of Y

from nonedge zones in configurations like (6b) is ruled out.

Compare now the derivations in (6) with the paradigms in (7), which show that Cyclic

Linearization allows successive cyclic movement (of a single element) through the edge. To

derive the ordering Y<X from the underlying structure in (6a) under Cyclic Linearization, Y

must move to the left of X *before* the Spell-out of αP, as illustrated in (7a).

Successive cyclic movement through the edge:

(7) a. $[_{αP}$ Y   [X t_1]]: **Y<X**

  b. $[_{βP}$ Y_1 Z $[_{αP}$ t_1 [X t_1]]: Y<Z<αP => **Y<Z<X**

If Y moves over X before the Spell-out of αP, as in (7a), it is also possible that Y may

move to the left of a new element Z in the higher domain βP without yielding any ordering

contradictions. In particular, the ordering statement in the αP domain (Y<X) is consistent with

the ordering in the higher domain βP (Y<Z<αP => **Y<Z<X**). Hence, derivations like (7b) are

allowed under Cyclic Linearization, in contrast to (6b).

As F&P argue, the contrast between (6b) and (7b) shows that the CL approach derives

successive cyclic movement without invoking the PIC or assuming a notion of "escape hatch". If

an element moves out of the (outmost) edge, it does not create a situation where the ordering

statements between the lower domain and the higher domain conflict. Hence, it appears that

successive cyclic movement through the edge is necessary. On this view, successive cyclic

movement is a natural consequence of the fact that movement from the (outmost) edge does not

change the orderings established in the spelled-out domains.[8] There is no reason to assume that the edge has a special grammatical status as an escape hatch.

1.2   Diverging Predictions

We have seen that both the PIC and the CL approach may derive successive cyclic movement. The CL approach, however, makes different predictions from the PIC approach in other contexts.[9] There are derivations ruled out by the CL approach, but not by the PIC approach. Conversely, there are derivations ruled in by the CL approach, but not by the PIC approach.

Consider first the case in which the predictions of Cyclic Linearization are less restrictive than the PIC. Under the PIC, movement out of nonedge zones cannot occur at all. Under Cyclic Linearization, however, elements are free to move out of the "already spelled-out domain" as long as the movement does not yield an ordering contradiction at PF.

More concretely, a nonedge element may move to the higher domain without going through the edge, as long as all the preceding elements (heads or Specs) move in addition to the nonedge element, preserving their relative ordering. A sample derivation is depicted in (8).

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[8] This makes a prediction that when multiple elements move out of edge zones, successive cyclic movement must be constrained in a particular way that ordering statements do not conflict. Throughout the thesis, I show evidence that this is indeed the case. See the next section 1.2, in particular, for introductory discussion.

[9] The PIC approach and the CL approach make different predictions for phonological cycles. As stated earlier, for the PIC approach, Spell-out is viewed as actual instructions for pronunciation (see Uriagereka 1999 for relevant discussion), and thus it is tacitly assumed that phonological cycles must coincide with syntactic cycles. For the CL approach, however, the function of Spell-out is instead limited to determining orderings among spelled-out elements (though other PF-operations may be subsumed under Cyclic Linearization). The CL approach is thus compatible with the claim that phonological cycles do not necessarily coincide with syntactic cycles. I do not discuss the relation between phonological cycles and syntactic cycles in the thesis, but it certainly remains an important research question which approach provides a more plausible account for cyclicity effects in phonology.

In (8), the nonedge element Y may move to the next domain without going through the edge when X (a head or a Spec) moves together with Y, preserving their relative ordering. Note that derivations like (8b) are not allowed under the PIC approach. Given that Y is merged in the complement of the head of the Spell-out domain αP, Y should be inaccessible to syntactic operations (triggering movement) due to the PIC.

Multiple movement out of the nonedge and edge zone:
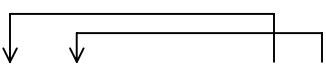
(8)   a. $[_{αP}$ X   Y]: **X<Y**

       b. $[_{βP}$ X_1 Y_2 Z $[_{αP}$ t_1 t_2]]: X<Y<Z<αP => **X<Y<Z**

F&P extensively argue that derivations like (8b) are in fact observed. In particular, F&P show that a variety of "order preservation" phenomena receive a natural account as instances of (8b) (see F&P for detailed discussion). F&P, in particular, argue that restrictions on Object Shift in Scandinavian languages constitute such cases.

The object in Scandinavian languages may move out of VP (crossing adverbs and negation) only when all the overt elements that preceded the object in VP continue to precede the object after Object Shift (cf. Holmberg 1999, Müller 2000, Chomsky 2001, Sells 2001, Williams 2003). For instance, *henne* 'her' in (9a) may undergo Object Shift when the verb *kysste* 'kiss' that preceded *henne* 'her' in VP continues to precede the shifted object in CP (due to V to C movement in (9a)). By contrast, *henne* 'her' in (9b) cannot undergo Object Shift when the verb *kysste* 'kiss' that preceded *henne* 'her' in VP does *not* precede the shifted object in CP (due to the

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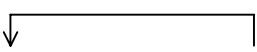
unavailibility of V to C movement in (9b), where the auxiliary *har* 'have' blocks such movement).

Swedish: Object Shift

(9) a.   Jag kysste$_v$ henne$_o$ inte [$_{VP}$ t$_v$ t$_o$]

I   kissed her   not

'I did not kiss her'

b.   *Jag har   henne$_o$ inte [$_{VP}$ kysst t$_o$]

I   have her   not   kissed

'I have not kissed her'

F&P argue that the paradigms in (9) can be analyzed as instantiations of (6) and (8). In (9a), the ordering statements in the VP and CP domain are consistent, as in (8): V precedes O both in the VP and CP domain.[10] Hence, (9a) is allowed. By contrast, in (9b), the ordering statements in the VP and CP domain are contradictory, as in (6): V precedes O in the VP domain while O precedes V in the CP domain. Thus, (9b) cannot be pronounced at PF. (See F&P for further discussion of *Holmberg's Generalization.*)

Let us turn to the case in which the predictions of Cyclic Linearization are more restrictive than the PIC. Under the PIC, elements on the edge zone are in principle free to move to the next (smallest) strong phase. Restrictions on movement out of edge zones, if they exist,

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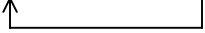
[10] In contrast to Chomsky (2001), F&P assume that Spell-out domains may include a maximal projection smaller than *v**P such as VP, which contains only a verb and its internal arguments (cf. Sabbagh 2003 for PP as a Spell-out domain). See Chapter 3 for further discussion of the categorial status of Spell-out domains.

need to be explained via additional mechanisms (cf. Chomsky 2001; See appendix 3A for detailed discussion).

Under Cyclic Linearization, on the other hand, elements in a Spell-out domain including Spec, head, and complement are all linearized at Spell-out. This implies that even elements merged in the edge, including the head, must preserve their relative ordering, as established at Spell-out. As described in (10), if an element undergoes movement to the left of the head, it must precede the head in the higher domains. Otherwise, ordering contradictions would arise.

(10)   *Fixed ordering on the edge*

$[_{\alpha P}$ XP $[\alpha$ ... t]]: the XP<α order needs to be preserved in the higher domains.

F&P provide arguments that the prediction in (10) is attested as well. In particular, they argue that unlike the non-quantificational object in (9), a negative quantifier like *ekkert* in Icelandic moves within VP, as in (11a) (based on observations by Rögnvaldsson 1987, Jónsson 1996, Svenonius 2000). [11] Once the quantifier object *ekkert* moves to the left of the verb within VP, however, the verb cannot raise across it in the higher domain, as in (11b). In particular, (11b) is ruled out because of an ordering contradiction: O precedes V in the VP domain, but V precedes O in the CP domain. The ungrammaticality of (11b) confirms the prediction in (10).

---

[11] For simplicity, it is assumed that base order is derived from the head parameter (as tacitly assumed in F&P). The order in (11a) is derived from the order projected from argument structure. Strictly speaking, however, how to derive base order is not the main concern of the CL approach. Rather, the issue is whether the (derived or underived) order at VP must be preserved in the higher domains. The CL approach can in principle be made compatible with an approach that derives base order from mechanisms other than the head parameter. In this vein, it would be worth pursuing the ideas of the CL approach within Kayne's (1994) antisymmetry framework, but it is beyond the scope the thesis. I thank Shigeru Miyagawa for discussion of this point.

(11)　　*Icelandic Negative Quantifier Movement* (Svenonius 2000, Fox and Pesetsky, 2005a)

a.　　Jón　　hefur　[$_{VP}$ ekkert$_o$　　sagt　Sveini　　　t$_o$]

　　　Jon　　has　　　　　nothing　　said　Svein-Dat

　　　'Jon has told Svein nothing'

b.　　*Jón　sagði$_v$　[$_{VP}$ ekkert$_o$　　　[t$_v$　Sveini　　　t$_o$]

　　　Jon　　said　　　　　nothing　　　　　　Svein-Dat

　　　'John said Svein nothing'

1.3　　Proposal: The Edge Generalization

In the previous section, we have seen that the CL approach and the PIC approach make different predictions. In particular, under the CL approach, elements in the complement of a Spell-out domain can move out of the Spell-out domain, as long as they preserve the orderings established in the previous domains (recall (8), repeated here as (12)). Under the PIC approach, on the other hand, movement out of a complement domain into a higher domain (without going through the edge), as in (12b), is predicted to be ungrammatical.

Movement out of the nonedge zone:

(12)　　a.　　　[$_{\alpha P}$ X　　Y]: **X<Y**

　　　　b.　　　[$_{\beta P}$ X$_1$　　Y$_2$　　　Z　[$_{\alpha P}$　　t$_1$　　　t$_2$]]: X<Y<Z<αP　=> **X<Y<Z**

Moreover, under the CL approach, orderings between elements at the edge of a Spell-out domain αP are fixed at Spell-out of the αP, as illustrated in (13). Multiple movements out of the edge zone must preserve the orderings at the lower domain αP, as in (13b). Derivations like (13c) are ruled out due to ordering contradictions at PF. By contrast, on the PIC approach, there is nothing inherent about the PIC that forces two elements X and Y at the edge in (13) to preserve their orderings. Derivations like (13c) must be ruled out (if they are ungrammatical) by postulating other mechanisms (e.g. Richards's (1997, 2001) tucking-in generalization).

Fixed ordering at the edge

(13)   a. $[_{αP}$ X   Y $[α$ $Z]]$: **X<Y**<α<Z

        b. $[_{βP}$ X_1 Y_2 $[β$ $[_{αP}$ t_1 t_2 $[α$ $Z]]$: X<Y<β<αP => **X<Y**<β<α

        c.   *$[_{βP}$ Y_2 X_1 $[β$ $[_{αP}$ t_1 t_2 $[α$ $Z]]$: Y< X<β<αP => **Y<X**<β<α
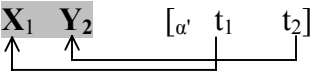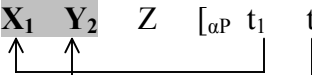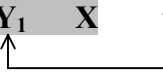
Given the two diverging predictions, to the extent that we find instances like (12) and (13), the CL approach might be supported over the PIC approach. It is important to note, however, that evidence in favor of the CL approach must be accompanied by arguments concerning constraints on domain-internal movement in the narrow syntax.

Specifically, to take derivations like (12) as supporting evidence for the CL approach, it is necessary to show that Y does not move through the edge. If an intermediate derivation like (14b) were allowed, the surface ordering in (12) would be just as compatible with the PIC approach as the CL approach. Similarly, to argue that elements at the edge cannot change their

relative ordering due to Cyclic Linearization, it is necessary to establish that domain-internal movement from inner Spec to outer Spec as in (15b) is impossible. If (15b) were possible, linear ordering at the edge would be flexible, which is expected under the PIC approach as well.[12] Thus, systematic investigations of interactions between constraints on domain-internal movement and Cyclic Linearization can be considered as one of the central issues to be resolved to settle the debate between the PIC approach and the CL approach.

(14) a.   [$_{\alpha P}$ **X   Y**]]

    b.   [$_{\alpha P}$ **X$_1$ Y$_2$**   [$_{\alpha'}$ t$_1$ t$_2$]]   => *impossible?*

    c.   [$_{\beta P}$ **X$_1$ Y$_2$**   Z   [$_{\alpha P}$ t$_1$ t$_2$ [$_{\alpha'}$ t$_1$ t$_2$]]]

(15) a.   [$_{\alpha P}$ **X   Y**   [$_\alpha$ Z]]

    b.   [$_{\alpha P}$ **Y$_1$ X**   t$_1$ [$_\alpha$ Z]]   => *impossible?*

---

[12] Consider, for instance, the configuration in (11). If *ekkert* in (11a) could not move within VP, we would wrongly expect that *ekkert* would not be able to precede the verb *sagt*, just like the paradigm of Object Shift in (9). Moreover, if the verb may move to the left of *ekkert* within VP, the word order in (11b) would be incorrectly ruled in. Thus, to use the paradigms in (11) as evidence for the CL approach, we need arguments concerning constraints on domain-internal movement. In particular, it is necessary to establish that the narrow syntax allows *ekkert* to move VP-internally, but that the syntax prevents *sagt* from moving to the left of *ekkert* in VP. See F&P (2005 a,b) for discussion and arguments for the former condition. I will provide arguments for the latter condition, based on Chomsky's (2000, 2001) locality condition on movement (Search Domain Condition in (18)).

In this thesis, I attempt to contribute to resolving the issue addressed above by closely investigating linear ordering in syntactic edges. In particular, I examine whether linear ordering in syntactic edges is constrained as predicted by constraints on domain-internal movement in the narrow syntax and Cyclic Linearization. Broadly construed, I examine the predictions of the CL approach described in (16). Specifically, if the CL approach is correct, we expect that possible linear orderings must be determined at the smallest Spell-out domain in which elements are introduced.

(16)   **Interactions between domain-internal movement and Cyclic Linearization**

If a certain type of domain-internal movement in a Spell-out domain αP is blocked for independent reasons, the linear ordering that could have been created by domain-internal movement in αP can never be created in the higher domains.

Throughout this thesis, I argue that the prediction in (16) is consistently upheld. In particular, I show that interactions of Cyclic Linearization and constraints on domain-internal movement of multiple specifiers lead us to predict otherwise unexpected ordering restrictions for syntactic edges, stated in (17). I call this the Edge Generalization.

Specifically, I argue that due to a locality condition on movement in the narrow syntax (called a Search Domain Condition (18): Chomsky 2000, 2001), elements externally merged in the edge of a Spell-out domain as a constituent cannot be separated by a domain-internal element.

Given Cyclic Linearization, this ordering restriction is preserved in the higher domains. A formal description is given in (17).[13]

(17)   **The Edge Generalization**

```
            αP
          /    \
       (Z)      α'
             /     \
          γP         α'
         /  \       /   \
        X    Y    βP      α
                  /  \
                ... Z ...
```
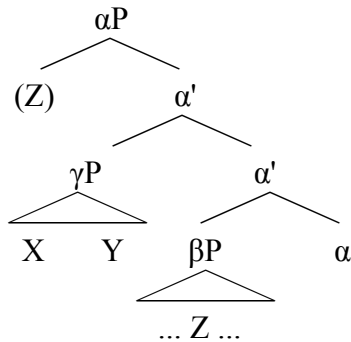
If X and Y are dominated by a non-complement (Spec) γP of a Spell-out domain αP, X and Y cannot be separated by an αP-internal element Z that is not dominated by γP.

(18)   **Search Domain Condition** (based on Chomsky 2000, 2001)

A probe can search for a goal only in its c-command domain.

I provide arguments for the Edge Generalization from a variety of asymmetries in scrambling, with special attention to floating quantifier and possessor raising constructions in Korean and Japanese. In particular, I propose that the Edge Generalization captures constraints on subject scrambling and parallel restrictions on object scrambling. Evidence is drawn from interactions among various factors, which include: scrambling, the scope and syntactic position of adverbs, depictive and resultative predicates, possessor constructions, and varieties of floating quantifiers, among others.

---

[13] Adopting Chomsky (1995), I assume that the status of complements and specifiers is determined derivationally. An element that is first merged with a head is called a complement. All other elements merged with a projection of a head are called specifiers. I do not distinguish specifiers from adjoined positions.

Most importantly, I argue that the Edge Generalization should not be stipulated as a principle of the grammar. Instead, the Edge Generalization results from the interaction between Cyclic Linearization and conditions on domain-internal movement. If successful, my arguments for the Edge Generalization establish novel evidence for the idea that the architecture of grammar requires linearization in phonology to be cyclically determined by the syntax. Specifically, as the CL approach argues, the domain of cyclic Spell-out must include the edge as well as the complement of a Spell-out domain. Possible linear orderings must be determined at the smallest Spell-out domain in which elements are introduced.

This, in turn, challenges the idea that the edge zone is a "designated escape hatch". In particular, there is nothing inherent in the PIC approach that forces multiple movement out of edge zones to result in a particular linear order in the higher phases. Therefore, to explain the Edge Generalization by the PIC approach (instead of Cyclic Linearization), some additional mechanisms must be postulated. I present paradigms that can be naturally captured by Cyclic Linearization, but cannot be accommodated under the PIC approach without postulating otherwise unnecessary assumptions.

My proposals also shed light on debates concerning formal properties of scrambling. In particular, I argue for the claim that scrambling is a feature-driven movement constrained by a proper probe-goal relationship, called a Search Domain Condition (18) (Chomsky 2000, 2001). My arguments thus provide further support for the line of approaches arguing that scrambling must obey locality conditions on feature movement (Miyagawa 1997, 2001, Grewendorf and Sabel 1999, Sabel 2001, Kitahara 2002, among others). This in turn poses challenges to the approach that scrambling occurs rather freely without an attracting head (cf. Fukui 1993). My approach to scrambling also crucially assumes that elements must be externally merged in their

theta positions prior to scrambling. This in turn challenges the views that scrambled elements are externally merged in their pronounced positions and undergo lowering at LF (cf. Bošković and Takahashi 1998; See Bailyn 2001 for extensive discussion of this issue).

The thesis is organized as follows. In chapter 2, I introduce a long-standing puzzle concerning a subject-object asymmetry in licensing floating numeral quantifiers in Korean and Japanese, which I call the *Subject Puzzle*. I show that previous accounts that rely on a mutual c-command condition (Miyagawa 1989) or a ban on subject scrambling (Saito 1985) do not solve the puzzle properly. I propose that the Subject Puzzle is an instance of the Edge Generalization. In particular, I show that interactions of Cyclic Linearization and constraints on domain-internal movement explain the Subject Puzzle. This argument is further supported by a variety of other asymmetries in subject scrambling, which are explained as instances of the Edge Generalization.

In Chapter 3, I examine predictions of the Edge Generalization for object scrambling. I argue that the VP domain is a Spell-out domain, in addition to *v*P and CP. I show that hitherto unobserved asymmetries between VP-internal and VP-external adverbs with respect to object scrambling receive a natural account as instances of the Edge Generalization. Otherwise unexpected parallels between subject scrambling and object scrambling are also derived from the Edge Generalization. Ordering restrictions among depictive secondary predicates, resultative secondary predicates, and object scrambling are also explained under the Edge Generalization.

In Chapter 4, I investigate implications of the Edge Generalization for underlying constituency of the elements merged at the edge of a Spell-out domain. In particular, I show paradigms that argue for the claim that a nominative possessor and a nominative possessee form a constituent in underlying structure, whereas an accusative possessor and an accusative possessee do not. I also show a variety of facts suggesting that it is necessary to assume two

types of floating quantifiers in Korean. One type of floating quantifier (e.g. Caseless NQs) forms a constituent with its host NP in underlying structure. The other type of floating quantifier (e.g. Case-marked NQs, focus-marked NQs, universal QPs, NPIs) does not form a constituent with its host NP in underlying structure. The clustering of properties shown by each group of quantifiers and possessors receives a natural account under my proposals for the Edge Generalization.

In Chapter 5, I investigate interactions between Case agreement and underlying constituency. In particular, I examine the properties of multiple Case marking in inalienable possession constructions (IPCs) and Case-marked numeral quantifier constructions (CNQCs). I argue that otherwise unexpected contrasts between the IPC and the CNQC in Case agreement can be derived from their different underlying structures, proposed in the previous chapters. My arguments support the claim that syntactic agreement must be understood as feature sharing (Pollard and Sag 1994, Frampton and Gutmann 2000, Pesetsky and Torrego 2004b, among others). The chapter also argues for the claim (Pesetsky and Torrego 2004b) that it is unnecessary to postulate the notion of *defective phase*, which has been considered as a central pillar of other theories that assume the PIC. Specifically, the properties of defective phase can be derived from the nature of syntactic agreement, not stipulated by designating "defective domains". In doing so, the chapter further contributes to the thesis that the domain of linearization and agreement may diverge, along the line suggested by Cyclic Linearization.

Chapter 2. Subject Scrambling and Cyclic Linearization

2.1   The Subject Puzzle

In Korean, quantity is expressed by a Numeral Quantifier (NQ) followed by a Classifier (Cl). An NQ can be separated from its host NP in various contexts.[14] The paradigms in (19) and (20) illustrate a well-known subject-object asymmetry in floating NQ constructions.

As illustrated in (19), the subject may intervene between the object and an object-oriented NQ (NQ_{obj}). In contrast, the object cannot intervene between the subject and a subject-oriented NQ (NQ_{subj}), as seen in (20).[15] (See Han 1989, C. Lee 1989, Park and Sohn 1993, Y.-S. Lee 1993, Gill 2001, Kang 2002, among others.) [16]

---

[14] Several types of NQ constructions exist in Korean. The NQ in (ia,b) cannot be separated from its host NP, whereas the NQ in (iia,b) can. (The plural marker '*-tul*' is optionally attached to an animate plural NP.) Chapters 2 and 3 focus primarily on type (iia) numerals. I turn to type (iib) constructions in Chapter 4. I use the term NP and DP interchangeably. Nothing hinges on the choice of the term, except that I argue in Chapter 5 that Case feature resides in the head D. I call a quantifier separated from its host NP a floating quantifier.

(i) a. [Haksayng(-tul)   sey-myeng]-i   (ii) a. [Haksayng(-tul)-i]   [sey-myeng]
       [Student(-Pl)   3-Cl]-Nom   Student(-Pl)-Nom   3-Cl
   b. [Sey-myeng-uy   haksayng(-tul)]-i   b. [Haksayng(-tul)-i]   [sey-myeng-i]
       [3-Cl-Gen   student(-Pl)]-Nom   Student(-Pl)-Nom   3-Cl-Nom

[15] As will be discussed shortly, similar paradigms have been observed in Japanese.

[16] For clarification, if focus is imposed on *sey-myeng* '3-Cl' in (20b), or if (20b) is an answer to a question like '*how many* students drank beer?', the grammaticality of (20b) improves though it is never comparable to (19b) (Kang 2002). This chapter deals primarily with the paradigms without focus (in an out-of-the-blue context). I return to the effect of focus in NQ constructions in Chapter 4 (see appendix 4B for discussion).

(19) a. John-i **maykcwu-lul** **sey-pyeng** masi-ess-ta[17]

John-Nom beer-Acc 3-Cl$_{bottle}$ drink-Past-Dec

'John drank three bottles of beer'

b. **Maykcwu-lul** John-i **sey-pyeng** masi-ess-ta

Beer-Acc John-Nom 3-Cl$_{bottle}$ drink-Past-Dec

'John drank three bottles of beer'

(20) a. **Haksayng-tul-i** **sey-myeng** maykcwu-lul masi-ess-ta [18]

Student-Pl-Nom 3-Cl$_{person}$ beer-Acc drink-Past-Dec

'Three students drank beer.'

b. *__Haksayng-tul-i__ maykcwu-lul **sey-myeng** masi-ess-ta

Student-Pl-Nom beer-Acc 3-Cl$_{person}$ drink-Past-Dec

'Three students drank beer.'

The grammaticality of (19b) naturally follows under the assumption that the object may scramble to the left of the subject and strand the NQ$_{obj}$, which has been merged as a constituent with the object prior to scrambling (Kuroda 1983, Sportiche 1988, among others). It is not obvious, however, how the ungrammaticality of (20b) can be accounted for.

---

[17] I employ the Yale Romanization to transliterate Korean examples (Martin 1992). If necessary, unimportant morphemes are not glossed for the sake of space (ex. *malhayess-ni* (said-Q) instead of *malha-yess-ni* (say-Past-Q)).

[18] Lee (1989, 1999) judges (i) to be ungrammatical, and argues that a subject of an agentive verb cannot be a host even for an adjacent NQ. I found no other speakers who confirm this judgment yet.

(i) ?*Haksayng-i sey-myeng yehaksayng-ul mil-ess-ta
   Student-Nom 3-Cl girl.student-Acc push-Past-Dec
   'Three students pushed girls'

Having observed the same paradigms in Japanese (independently), [19] as in (21), Miyagawa (1989) argues that a subject-oriented NQ cannot modify the subject across the object (e.g. (21b)) due to a mutual c-command requirement (22).

Japanese (Miyagawa 1989: 28-29)

(21) a. **Tomodati-ga 2-ri** Sinzyuku-de Tanaka-sensei-ni atta

Friends-Nom 2-Cl Shinjuku-in Prof. Tanaka-Dat met

'Two friends met Professor Tanaka in Shijuku'

b. ***Tomodati-ga** Sinzyuku-de Tanaka-sensei-ni **2-ri** atta

Friends-Nom Shinjuku-in Prof. Tanaka-Dat **2-Cl** met

'Two friends met Professor Tanaka in Shijuku'

(22) **Mutual C-Command Requirement** (Miyagawa 1989, based on Williams 1980)

The NP or its trace and the predicate or its trace must c-command each other.

In particular, Miyagawa assumes the structure in (23) for (21b), and argues that the numeral in (21b) does not c-command either the subject or the trace of the subject, violating the mutual c-command requirement (22). In contrast, the sentence in (21a) is grammatical in Miyagawa's account because the structure (24) is available for (21a).

---

[19] Refer to Haig (1980), Kuroda (1983), Saito (1985), and Fujita (1994), among many others, for the same observations in Japanese. (cf. Miyagawa and Arikawa (2004), Hoji and Ishii (2005), and references therein for judgment variations about floating NQ constructions in Japanese.) See section 2.4 for detailed discussion of Japanese paradigms.

(23)   Structure for (21b) (Miyagawa 1989: 29)[20]

```
              *S
            /    \
          NP      VP
          |      /  \
     tomodati-ga   Tanaka-sensei-ni  2-ri  atta
     friends-Nom   Prof. Tanaka-Dat  2-Cl  met
```
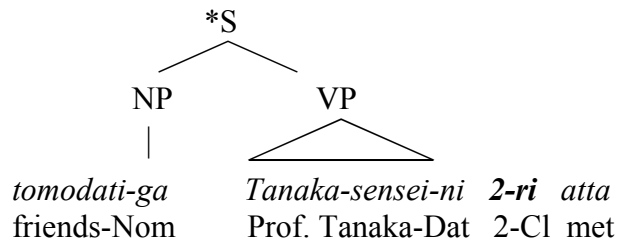
(24)   Structure for (21a) (Miyagawa 1989: 29)

```
                 S
            /    |    \
          NP    NQ     VP
          |     |     /  \
     tomodati-ga  2-ri   Tanaka-sensei-ni   atta
     friends-Nom  2-Cl   Prof. Tanaka-Dat   met
```
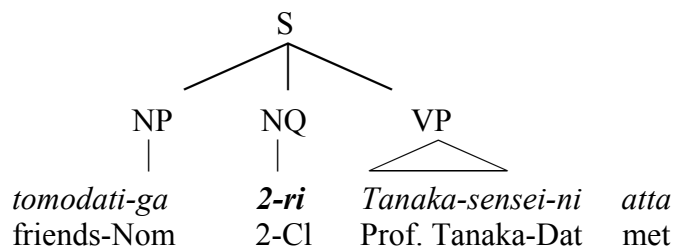
The mutual c-command condition, however, is too weak. As pointed out by Saito (1985: 211-212), if the subject may scramble over the scrambled object, as depicted in (25), the subject-oriented NQ may c-command the trace of the subject, satisfying the mutual c-command condition. Hence, if (25) is allowed, there is no reason to expect that the subject cannot be separated by the object from its associate NQ in (20) or (21). For Miyagawa (1989), it is mysterious why derivations like (26) should be ruled out.[21]

(25)   *[S   O t_s NQ$_{subj}$ t_o V]

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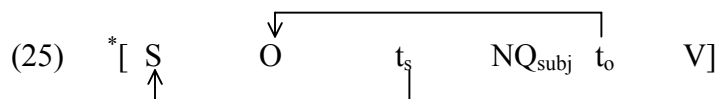
[20] Miyagawa (1989) excludes the postpositional phrase *sinzyuku-de* 'in Shinjuku', assuming that it has no bearing on his arguments. But, see section 2.4 for further discussion about how locatives interact with floated NQs.

[21] Miyagawa (1989) mentioned the contrasts in (21) but did not discuss the problematic derivations like (25) and (26). Saito (1985) implicitly assumed that an NQ must stand next to the subject or the trace of the subject, but did not discuss the implication of his arguments for the mutual c-command condition explicitly.

(26)

```
                    S
                   / \
                  /   \
                  S
                 / \
                /   \
                S
              / | \
           NP  NQ  VP
            |   |   / \
     tomodati-ga  2-ri   Tanaka-sensei-ni | atta
     friends-Nom  2-Cl   Prof. Tanaka-Dat | met
```
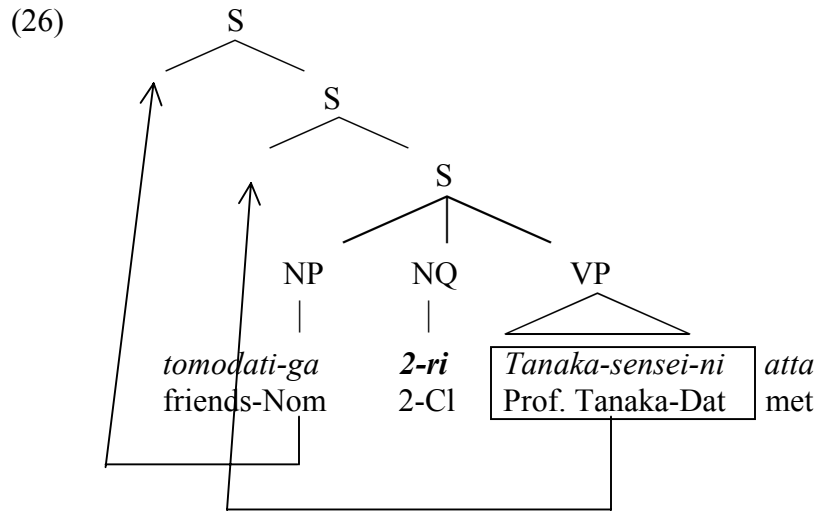
Given the subject-object asymmetry presented above, Saito proposes that the subject cannot scramble at all (cf. Hoji 1985)[22] and thus cannot move to the left of the object in (25). On this view, the ungrammaticality of (20b) and (21b) is a result of the ban on subject scrambling.[23]

Contrary to Saito's claim, however, there is evidence that the subject can indeed scramble (Kurata 1991; Lee 1993; Sohn 1995; Ko 2005, in press a, among others). As illustrated in (27), an embedded subject may scramble over the matrix subject (with some parsing difficulty) (Sohn

---

[22] Assuming that the subject is base-generated in [Spec,IP], Saito (1985) argues that the subject cannot scramble because its trace cannot be lexically-governed by the verb. Hoji (1985) independently argues that the subject cannot undergo (string-vacuous) scrambling (See also Sabel (to appear) for general ban on string vacuous scrambling). In particular, as in (i), if both the subject and the object undergo (string-vacuous) scrambling, Japanese would show scope ambiguity in SOV sentences, contrary to the facts. Notice, however, that this reasoning cannot extend to (25). In (25), the result of multiple scrambling is not string-vacuous, unlike (i).
(i) [S O t_s t_o V]

[23] Once we adopt the vP-internal subject hypothesis (Kitagawa 1986, Kuroda 1988, Koopman and Sportiche 1991, among others), however, the subject may move to [Spec,IP] over the scrambled object, leaving its trace lexically-governed by the verb (via m-command), as in (i). Therefore, if (i) is allowed, (25) remains puzzling. I thank Mamoru Saito (p.c.) for pointing this out to me.
(i) [$_{IP}$ Subj$_1$ [$_{vP}$ Obj$_2$ [$_{vP}$ t$_1$ NQ$_{subj}$ [$_{VP}$ t$_2$ V] v]] T]

35

1995; cf. Saito 1985 for discussion).[24] Furthermore, the embedded subject may also strand an

NQ$_{subj}$ across the matrix subject, as shown in (28). If the subject could not scramble at all, we

would expect (27) and (28) to be ungrammatical, contrary to the facts.[25]

(27)   (?) John-i₁ [$_{CP}$ na-nun   [$_{CP}$ t₁   Mary-lul   mannassta-ko]   sayngkakhanta]]

     John-Nom   I-Top   Mary-Acc met-C   think

     'John₁, I think that t₁ met Mary.' (adapted from Sohn 1995)

(28)   (?) **Haksayng-tul**-i₁ [na-nun [t₁ **sey-myeng** Mary-lul   mannassta-ko] sayngkakhanta]]

     Student-Pl-Nom   I-Top   3-Cl   Mary-Acc met-C   think

     'Students₁, I think that three t₁ met Mary.'

One might think that subject scrambling is allowed only clause-externally (27)-(28), so

that we may maintain the claim that the subject cannot move to the left of the object in (25). This

conjecture, however, is incorrect. The subject may also scramble clause-internally in certain

contexts. For example, the subject may be separated from its NQ by (high) adverbs such as

pwunmyenghi 'evidently' (29) and *way* 'why' (30) (Ko, in press a).[26] If the subject cannot

---

[24] To avoid parsing difficulty, a topic-marked matrix subject is employed in (27) (Sohn 1995 and references therein for parsing strategies in double nominative constructions).

[25] Saito (1985:188-189) argues that an embedded subject may precede a matrix (topic-marked) subject because the matrix subject is "downgraded" (i.e. lowered) as a parenthetical expression into the embedded clause. Once downgrading is allowed, however, it is not clear why the scrambled object cannot downgrade between the subject and the NQ$_{subj}$, which begs the question of the subject-object asymmetry shown in (19)-(21).

[26] In Ko (in press, a), I argue that 'why' in *wh*-in-situ languages including Korean (*way* 'why'), Japanese (*naze* 'why'), and Chinese (*weishenme* 'why') is externally merged in [Spec,CP] as a CP-modifier. (See also Ko (2004) for Turkish 'why' *niye*). There, I provide various arguments that it is necessary to assume that the subject can scramble over 'why' in [Spec,CP]. In Ko (in press, b, c), I also argue that further evidence for this claim can be drawn from acquisition of *wh*-questions in Korean (asymmetries between why-question and where-questions).

scramble (clause-internally), we would expect (29) and (30) to be ungrammatical, contrary to the facts.
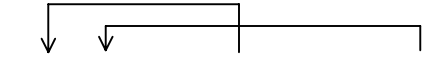
(29) **Haksayng-tul-i**$_1$ *pwunmyenghi*   t$_1$ **sey-myeng**   maykcwu-lul   masiessta

     Student-Pl-Nom   evidently   3-Cl   beer-Acc   drank

     'Evidently, three students drank beer.'
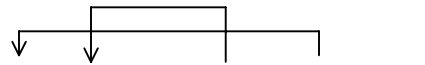
(30) **Haksayng-tul-i**$_1$ *way*   t$_1$ **sey-myeng**   hakkyo-lul   ttenass-nunci   anta

     Student-Pl-Nom   why   3-Cl   school-Acc   left-Q   know

     '(I) know why three students left the school.'

Note that the data in (27)-(30) can be straightforwardly explained if we assume that the subject can indeed undergo scrambling, contra Saito (1985). This, however, leaves the contrast between (19) and (20) (or (21) in Japanese) unexplained.[27] In fact, the subject-object asymmetry is not limited to (19) and (20), which implies that we cannot simply resort to a stipulation for (20b). The paradigms in (31)-(32) further confirm Saito's insight that subject scrambling is impossible in certain contexts where the object also undergoes scrambling.[28]

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[27] Adopting my (in press, a) proposal that the subject can in principle undergo scrambling, Miyagawa and Arikawa (2004) argue that the subject can move over the (scrambled) object, leaving a subject-oriented NQ. This argument provides a promising theory for the reason why some speakers accept (21b) (see appendix 4B for discussion). In section 2.4, however, I discuss paradigms that cannot be straightforwardly accommodated under this proposal.

[28] Shigeru Miyagawa (p.c.) suggests that (20b) might be ungrammatical because the object in (20b) cannot stay in [Spec,*v*P] below the subject (a suggestion based on Miyagawa 1996). The contrast between (31) and (32), however, rules out this hypothesis rather straightforwardly. The object in (31) precedes a high adverb merged outside *v*P, indicating that the object is outside *v*P. The sentence in (31), however, is ungrammatical, just like (20b). (Note also that if the subject

(31) $^{?*}$[S$_2$ O$_1$ *adv*   t$_2$ NQ$_{subj}$ t$_1$ V]

    ?*__Haksayng-tul-i__$_1$ maykcwu-lul$_2$ *pwunmyenghi* t$_1$ __sey-myeng__ t$_2$ masiessta

    Student-Pl-Nom   beer-Acc   evidently   3-Cl$_{person}$ drank

    'Evidently, three students drank beer.'

(32)   [O$_1$ S$_2$ *adv*   t$_2$ t$_1$ NQ$_{obj}$ V]

    Maykcwu-lul$_2$ __haksayng-tul-i__$_1$ *pwunmyenghi* t$_1$ t$_2$ __sey-pyeng__ masiessta

    Beer-Acc   student-Pl-Nom   evidently   3-Cl$_{bottle}$ drank

    'Evidently, students drank three bottles of beer.'

As illustrated in (31), when the subject and the object scramble together over an adverb, the subject *cannot* strand the NQ$_{subj}$ to the right of the object and the adverb. In contrast, the object *can* strand the NQ$_{obj}$ to the right of the subject and the adverb, as shown in (32).[29]

In sum, the floating NQ paradigms presented here provide us with the following puzzle concerning the distribution of the subject and its NQ, which I call the Subject Puzzle:

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and the object move to a position outside *v*P via multiple scrambling, the ungrammaticality of (20b) would not be explained under the hypothesis suggested above.)

[29] One might wonder whether (20b) and (31) can be explained by the assumption that the scrambled object triggers an intervention effect for subject scrambling (Noam Chomsky, p.c.). In appendix 3A, I discuss a number of reasons why this suggestion is inadequate to explain the paradigms of subject scrambling (and parallel paradigms of object scrambling). See appendix 3A for details.

(33)   **The Subject Puzzle:**

The subject can in principle undergo scrambling [(27)-(30)]. However, the subject cannot

strand an NQ when moved across the object [(20), (31)]. In this respect, the subject

behaves unlike the object, which may strand an NQ across the subject [(19), (32)].

In the next section, I present a solution to this puzzle.

2.2   Proposal

As we have seen, there is no general ban on subject scrambling. I propose that the restrictions on

subject scrambling follow from conditions on linearization and movement. Specifically, I argue

that the Subject Puzzle (33) is a consequence of a conspiracy of three independent factors: (i)

Cyclic Linearization of syntactic structure; (ii) conditions on domain-internal movement; (iii) the

underlying structure of NP and NQ. I first introduce these factors in detail, and then show how

their interactions explain scrambling paradigms and the Subject Puzzle.[30]

2.2.1   Proposal: Three Factors

First, I argue that Cyclic Linearization applies to the constructions with scrambling at each

instance of Spell-out. In particular, I argue that as a consequence of Cyclic Linearization, the

output of scrambling is constrained by Linearization Preservation (34). In developing a theory of

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[30] As I will discuss in section 2.5, this proposal motivates the Edge Generalization introduced in
Chapter 1. For the moment, I will present my arguments without mentioning the Edge
Generalization. After presenting other important facts that characterizes subject scrambling, I
will connect the present proposal with my general proposals for the Edge Generalization. We
will see that the Subject Puzzle is just an instance of the Edge Generalization.

scrambling under the Cyclic Linearization framework, I assume that *v*P and CP constitute Spell-out domains in Korean (but see Chapter 3 for VP as an additional Spell-out domain).[31]

(34)   **Linearization Preservation** (Fox and Pesetsky 2003, 2005a):

The linear ordering of syntactic units is affected by Merge and Move within a Spell-out Domain, but is fixed once and for all at the end of each Spell-out Domain.

Second, I take scrambling to be a feature-driven movement (See Miyagawa 1997, 2001, Grewendorf and Sabel 1999, Sabel 2001, Kitahara 2002, among others, for similar approaches developed in slightly different frameworks). In particular, I argue that scrambling is an operation that moves a maximal projection to the Spec of a head that bears a triggering feature. For concreteness, I call a feature that triggers scrambling an uninterpretable "Σ" feature (uΣ), and I call the feature that undergoes agreement with uΣ an interpretable Σ feature (iΣ).[32]

Adopting the terminology of Chomsky (2000, 2001), I call an element that triggers agreement a *probe*, and an element that undergoes agreement triggered by the probe a *goal*.[33]

---

[31] Chapter 3 provides arguments that VP is a Spell-out domain in Korean and Japanese, in addition to *v*P and CP. Nothing in this chapter, however, is crucially affected by this modification.

[32] The term "Σ" feature was adopted from Grewendorf and Sabel (1999). I leave the nature of the Σ feature open. It has been suggested that scrambling is related to discourse factors like Topic and Focus (cf. Yoon 1997, Choi 1999, Dayal 2003, Lee and Cho 2004, among others), but it is not clear (at least to me) how exactly the formal property of scrambling is assimilated to those discourse factors. For current purposes, I focus on formal properties of scrambling when an uΣ feature is assigned to a head. The question of "how" an uΣ feature is assigned to a head is beyond scope of my arguments. Also, the question of how an iΣ feature is interpreted at the interface is left for future research. Refer to Miyagawa (to appear a) for extensive discussion on the relevant issue.

[33] In Chapter 5, I modify Chomsky's (2000, 2001) feature theory, adopting arguments by Pesetsky and Torrego (2004b). Nothing in the preceding chapters, however, is crucially affected

Following Chomsky (2000, 2001), I argue that movement is preceded by syntactic agreement between a probe and a goal, and that overt movement is triggered by an EPP feature in a probe.

On this view, scrambling is considered as a two-step process: Σ agreement and subsequent movement of the goal. Specifically, after Σ agreement, an EPP feature triggers movement of a goal XP with iΣ to the Spec of the head with uΣ.[34] I further assume that when multiple scrambling is triggered by one head, elements move to multiple Specs of the probing head (Ura 1996, 2000, Richards 1997, 2001). Scrambling may occur optionally, meaning that a head may optionally acquire an uΣ feature.[35]

An immediate consequence of this approach is that scrambling is constrained by the general properties of feature-driven movement.[36] I argue with Chomsky (2000, 2001) that movement is allowed only when a legitimate probe-goal relationship is established. Specifically, a probe may search for a goal only under strict c-command. I call this a Search Domain Condition:

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by this modification, as long as we assume that the EPP feature is assigned to a head, but not to a maximal projection.

[34] I assume that an EPP feature is a sub-feature of a feature. On this view, an EPP feature in scrambling is a sub-feature associated with an uΣ feature. This is only for concreteness, however. The assumption that an EPP feature is assigned directly to a head (e.g. Chomsky 2000) can also be made compatible with my proposals.

[35] In other words, assignment of an uΣ feature is optional, but the operation triggered by the uΣ feature is obligatory. This is essentially the view taken by Grewendorf and Sabel (1999) for optionality of scrambling under slightly different assumptions. Grewendorf and Sabel (1999) argue that Σ features may be realized in AGR-heads, but I assume that any heads (especially Spell-out domain heads) may acquire uΣ features. The question of why scrambling is optional is not pursed any further in this thesis. See Ross (1967), Saito (1985), Fukui (1986, 1993), Kuroda (1988), Tada (1993), Miyagawa (1997, 2001, to appear a), Saito and Fukui (1998), Takano (1998), Bošković and Takahashi (1998), Boeckx (2003), Yang and Kim (2005), Yang (2005), among others, for diverse perspectives on optionality of scrambling.

[36] Though technical details may differ, this intuition has certainly been shared by the previous approaches arguing that scrambling is a feature-driven movement. See in particular Miyagawa (1997, 2001), Grewendorf and Sabel (1999), Sabel (2001), and Kitahara (2002), among others, which raise this point explicitly and derive parallels between scrambling and general properties of movement.

(35)   **Search Domain Condition** (based on Chomsky 2000, 2001)

A probe can search for a goal only in its c-command domain.

If Σ agreement is prerequisite for scrambling of a goal, it follows that scrambling is allowed only when a head triggering scrambling c-commands an XP that undergoes scrambling. This is illustrated in (36). This has the important consequence that no scrambling is allowed from one Spec of a head α to another Spec of α (cf. Rezac 2003, Richards 2004 for considerations that movement can be triggered from Spec to Spec of a single head in certain cases).[37]

(36)   **Illegal Scrambling**

αP
α'
γP   α'
XP [iΣ]   α   βP   →   Search Domain of α
            [uΣ, EPP]

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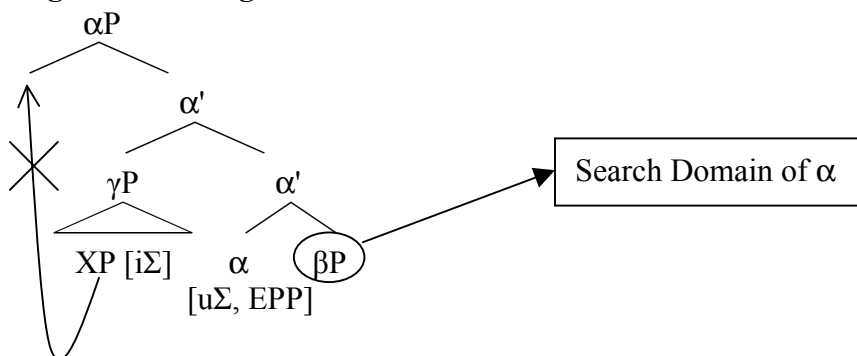
[37] Rezac (2003) argues that a head can search its Spec if it fails to find a goal within its complement domain. Richards (2004) argues that elements merged in a Spec by internal merge undergo further movement from the moved position to another Spec of a single head. The cases I deal with do not inherently contradict these claims. Specifically, if elements both in Spec and complement of a single head have the iΣ feature, the head necessarily searches its complement first under Rezac (2003). Rezac (2003) crucially assumes that there is no multiple checking (agreement). Hence, once the head undergoes agreement with elements in the complement domain, elements in Spec are not available for search by the head. Richards (2004) deals with cases when Spec is created by internal merge (internal merge of *wh*-phrase into [Spec,CP]). I, however, discuss cases where Spec is created by external merge (i.e. external merge of the subject in [Spec,vP]). Thus, Richards's (2004) arguments do not (at least directly) extend to cases that I discuss here.

Given that a probe α in (36) can search only into its c-command domain βP, the Spec γP is not in the search domain of α. Therefore, no agreement between α and elements in γP is possible. (Agreement between α and γP itself is also impossible.)[38] Consequently, no movement is triggered from γP within αP in (36). As will be seen in the next section, this formal property of scrambling has an important consequence for the syntax of subject scrambling.

Finally, following Sportiche (1988), I argue that an NQ and its host NP are externally merged as a constituent.[39] In Chapter 4, I provide extensive discussion of the implications of this claim for Cyclic Linearization. For the current chapter, it suffices to say that this assumption will play a role in blocking some illicit movement of an object (see fn.45, fn.50 for discussion).

2.2.2   Analysis: Scrambling and Cyclic Linearization

Assuming the theory of scrambling sketched above, let us consider the paradigms of object scrambling, subject scrambling, and multiple scrambling showing the Subject Puzzle.

2.2.2.1 Object Scrambling

Consider first the basic paradigm of object scrambling in (19) (repeated here as (37)).

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[38] One might think that (36) might be derived from the line of approaches imposing anti-locality condition in the grammar (Saito and Murasugi 1993, 1999, Bošković 1994, 2004a, Doggett 2004, Lee 2004, *inter alia*). However, the Search Domain Condition and anti-locality condition make different predictions. See fn. 46 for discussion.

[39] See Kamio (1983), Kuroda (1983), Sportiche (1988), Déprez (1989), Ueda (1990), Giusti (1990), Shlonsky (1991), Kitahara (1993b), Merchant (1996), Cinque (1999), Benmamoun (1999), McCloskey (2000), Bošković (2004b) for similar approaches. (cf. Kayne 1975, Williams 1982, Dowty and Brodie 1984, Miyagawa 1989, Fukushima 1991, Doetjes 1992, Fujita 1994, Baltin 1995, Bobaljik 1995, 2003, Brisson 1998, among others, for alternative approaches).

(37)   [O$_1$ S   t$_1$ NQ$_{obj}$ V]

       Maykcwu-lul$_1$ John-i   t$_1$ **sey-pyeng**   masi-ess-ta

       Beer-Acc   John-Nom   three-Cl$_{bottle}$ drink-Past-Dec

       'John drank three bottles of beer'

When object scrambling occurs, the object first scrambles over the subject to the outer Spec of *v*P, as in (38) (cf. Kitahara 2002, Lee and Cho 2004). When the *v*P is spelled out, the elements of *v*P are linearized and the ordering at *v*P (O<S<NQ$_{obj}$<V<*v*) is established in PF.

(38)   [$_{vP}$ O$_1$ [$_{vP}$ S   t$_1$ NQ$_{obj}$ V *v*]]

       Linearize *v*P: <u>O<S<NQ$_{obj}$<V<*v*</u>

After linearization of *v*P, new heads are introduced, as illustrated in (39). The syntax continues to merge and remerge elements. As in (39), the object in [Spec,*v*P] may scramble further to [Spec,TP].[40] When the higher domain CP is spelled-out, the ordering statements at CP in (39) are established (O<S<NQ$_{obj}$<V<*v*<T<C).[41] Since the ordering statements at *v*P and CP are *consistent*, the derivation poses no problem for PF.[42]

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[40] See Mahajan (1990), Saito (1992), and Sohn (1995) for object scrambling to [Spec,TP]. For current purposes, it does not matter whether the object *must* or *may* scramble to [Spec,TP] (cf. Miyagawa 1997).

[41] It does not matter for my proposals whether fully inflected words (e.g. *mek-ess-ta* 'eat-Past-Dec') are inserted into the syntax, or bound morphemes (e.g. '*ess* 'Past', *ta* 'Declarative') are combined with their host via head movement or morphological merge.

[42] For clarification, if the object does not undergo scrambling in the *v*P-domain and moves over the subject in the CP domain, the ordering in the *v*P-domain (S<O) would contradict the ordering at the CP domain (O<S). Hence, the derivation will be ruled out at PF. (Refer to the discussion of successive cyclic movement presented in Chapter 1.)

(39)   [$_{CP}$ [$_{TP}$ O$_1$ [$_{vP}$ t$_1$ [$_{vP}$ S   t$_1$ NQ$_{obj}$ V v]] T]C]

Linearize CP: <u>O<vP<T<C</u> => Ordering at CP: <u>O<S<NQ$_{obj}$<V<v<T<C</u>

2.2.2.2 Subject Scrambling

As in the object scrambling paradigm, we have seen that the subject can scramble and license the NQ$_{subj}$ over a (high) adverb, as shown in (29)-(30). A representative example is repeated here as (40).

(40)   [S$_1$ *adv*   t$_1$ NQ$_{subj}$ O   V]

Haksayng-tul-i$_1$ *pwunmyenghi* t$_1$ **sey-myeng** maykcwu-lul   masiessta

Student-Pl-Nom   evidently   3-Cl$_{people}$ beer-Acc   drank

'Evidently, three students drank beer.'

Under Cyclic Linearization, (40) is derived as follows. When the vP structure of (40) is projected and spelled out, the ordering statements for the vP domain are established (S<NQ$_{subj}$<O<V<v), as given in (41a). Given that high adverbs such as *pwunmyenghi* 'evidently' and *way* 'why' are externally merged outside vP, high adverbs do not participate in the linearization of vP (cf. section 2.3 for low adverbs merged within vP). After a high adverb is merged in the CP domain, the subject moves to the left of the adverb and the CP is spelled-out. After the Spell-out of CP, the ordering statements in the CP domain are established, as given in (41b).

(41) a.   [$_{vP}$ S   NQ$_{subj}$ O   V v]

   Linearize vP: S<NQ$_{subj}$<O<V<v

   b.   [$_{CP}$ S$_1$ *adv*   [$_{TP}$ t$_1$ [$_{vP}$ t$_1$ NQ$_{subj}$ O   V v] T]C]

   Linearize CP: S< adv <vP <T<C
        => Ordering at CP: S< adv<NQ$_{subj}$<O<V<v<T<C

The linearization at CP adds new ordering statements (e.g. S<adv<NQ$_{subj}$), but crucially there is no contradiction between the ordering in vP and the ordering in CP. Hence, the derivation poses no problem for PF.

   The analysis for (40) straightforwardly extends to the examples in (28), where the matrix subject intervenes between the embedded subject and its NQ:

(42)   a. [$_{vP}$ S$_e$ NQ$_{subj}$ O   V$_e$ v_e]

   Ordering at the embedded vP: S$_e$<NQ$_{subj}$<O<V$_e$<v_e

   b. [$_{CP}$ [$_{TP}$ S$_{e1}$ [$_{vP}$ t$_1$ NQ$_{subj}$ O   V$_e$ v_e] T$_e$] C$_e$] [43]

   Ordering at the embedded CP: S$_e$<NQ$_{subj}$<O<V$_e$<v_e <T$_e$<C$_e$

   c. [$_{vP}$ S$_{e1}$ [$_{vP}$ S$_m$ [$_{CP}$ [$_{TP}$ t$_1$ [$_{vP}$ t$_1$ NQ$_{subj}$ O V$_e$ v_e] T$_e$] C$_e$] V$_m$ v_m]]

   Ordering at the matrix vP: S$_e$<S$_m$<NQ$_{subj}$<O<V$_e$<v_e <T$_e$<C$_e$ <V$_m$<v_m

---

[43] For clarification, it does not matter for linearization whether the subject in (42b) stays in [Spec,vP] or moves to [Spec,TP] (cf. Miyagawa (2001) who argues that the subject must move to [Spec,TP] in contexts like (42b). The same concern applies to (42d)).

d. $[_{CP} [_{TP} S_{e1} [_{vP} \; t_1 [_{vP} S_m [_{CP} [_{TP} t_1 [_{vP} t_1 \; NQ_{subj}O \; V_e \; v_e] \; T_e] \; C_e] \; V_m \, v_m \;]]T_m]C_m]$

    Ordering at the matrix CP: $\underline{S_e{<}S_m{<}NQ_{subj}{<}O{<}V_e{\leq}v_e \;{<}T_e{<}C_e{<}V_m{<}v_m{<}T_m{<}C_m}$

2.2.3 Multiple Scrambling: The Subject Puzzle

Let us now consider the paradigms of multiple scrambling under the current proposal. Recall the Subject Puzzle in scrambling:

(43) a. $[S_2$ adv t_2 NQ_{subj} O   V]

        b. $[O_1$ adv S t_1 NQ_{obj} V]

        c. $^*[S_2$ O_1 (adv) t_2 NQ_{subj} t_1 V] → **The Subject Puzzle**

        d. $[O_1$ S_2 (adv) t_2 t_1 NQ_{Obj} V]
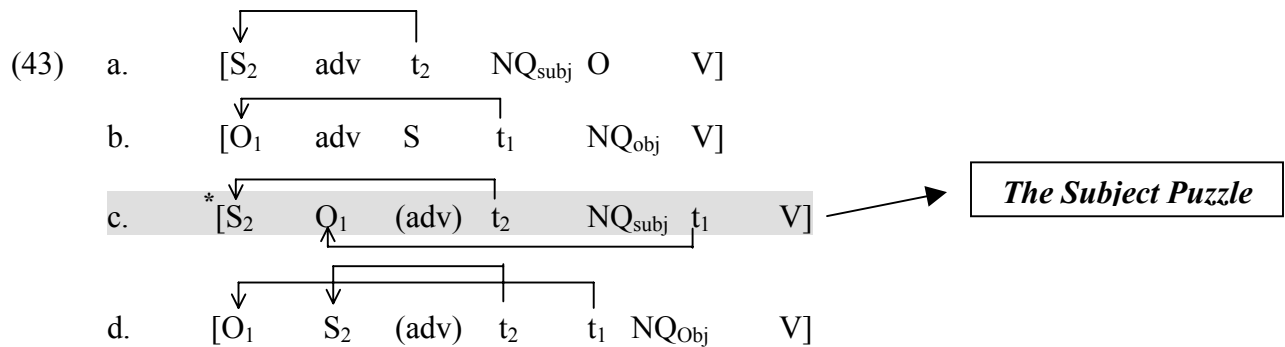
As described in (43), the subject can scramble alone and license its NQ, but when both the subject and the object scramble, the subject cannot strand an NQ_{subj} across the object (e.g. (20), (31)). The object, by contrast, can strand its NQ whether it scrambles alone (e.g. (19)) or scrambles together with the subject (e.g. (32)). I argue that this paradigm follows from interactions of Cyclic Linearization and formal properties of scrambling discussed above.

Consider the ungrammatical paradigm of multiple scrambling (43c), repeated here as (44).

(44)   *Illicit Multiple Scrambling*

?*[S₂   O₁   *(adv)*   t₂   NQ_subj   t₁   V] (see (20) and (31) for examples)
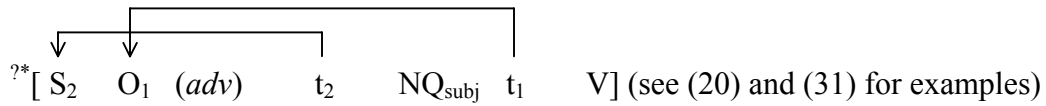
When the argument structure of (44) is projected, the underlying order in (45) is obtained. Given that scrambling may occur optionally in *v*P, we need to consider two logical possibilities: (i) *Case-I* in which the object does not scramble in *v*P. (ii) *Case-II* in which the object scrambles in *v*P. Crucially, given that the subject is externally merged in [Spec,*v*P], the subject cannot scramble within *v*P (recall (36)).

Let us start the discussion with Case-I, demonstrated in (46).

(45)   *Underlying order projected from the argument structure*
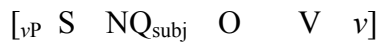
[_{vP} S   NQ_subj   O   V   *v*]

(46)   *Case-I: the object does not undergo scrambling in vP*

a.

```
                        vP
                   ╱        ╲
                 DP          v'
               ╱    ╲       ╱   ╲
              S   NQsubj  VP      v
                         ╱  ╲
                        O    V
```
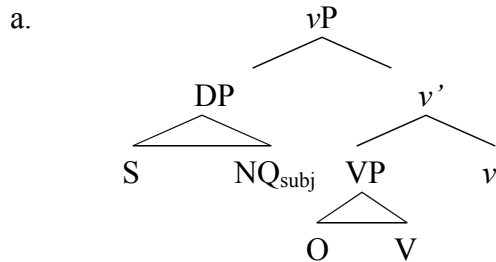
Ordering at vP: <u>S< **NQ_subj**< **O** < V < *v*</u>

b.　　　[CP　　S$_2$　　　O$_1$　　　*adv*　　[$_{vP}$　t$_2$　NQ$_{subj}$　t$_1$　　　V　*v*] T C] [44]

Ordering at CP: S<**O**<adv<**NQ$_{subj}$**<V<*v*<T<C [**ordering contradiction!**]
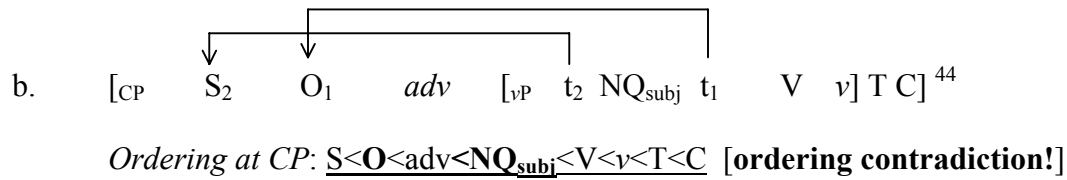
When the *v*P domain is spelled out in (46), the linear ordering in (46a) is established (S<**NQ$_{subj}$**<**O**<V<*v*). Crucially, if the object does not undergo scrambling, the object follows *both* the subject and the NQ$_{subj}$ in the *v*P domain. After the Spell-out of *v*P, an adverb may be merged in the higher spell-out domain. Suppose that to create the ordering in (44), the subject and the object undergo scrambling over the adverb, as in (46b). When the CP is spelled out, the orderings at the CP are established, as given in (46b) (S<**O**<adv<**NQ$_{subj}$**<V<*v*<T<C).

Notice that the ordering statements in the CP domain are *inconsistent* with the orderings established in the *v*P domain. In particular, in the *v*P domain, the ordering statements indicate that NQ$_{subj}$ precedes O. However, in the CP domain, the ordering statements indicate that O precedes NQ$_{subj}$. Hence, an ordering contradiction arises for the phonology and this derivation cannot be pronounced at PF.

Now turn to Case–II, where the object does undergo scrambling at *v*P:

---

[44] As discussed in Chapter 1, under F&P, elements in *nonedge* position of the Spell-out domain may move to the higher domain as long as the movement yields no ordering contradiction at PF (cf. Chomsky 2001). Thus, the fact that the object in VP (*nonedge* position) moves to the left of the adverb in (46b) is irrelevant in deciding the grammatical status of (46).

(47) *Case-II: the object undergoes scrambling in vP*

a.
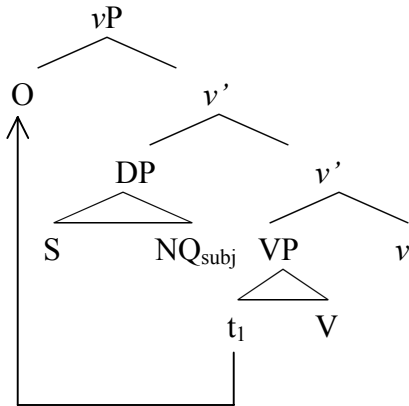
Ordering at vP: **O<S**< NQ$_{subj}$ < V<v

b.   [$_{CP}$ S$_2$ O$_1$ *adv*   [$_{vP}$ t$_1$ [$_{vP}$ t$_2$ NQ$_{subj}$ t$_1$ V v] T C]
      Ordering at CP: **S<O**<adv<NQ$_{subj}$<V<v<T<C   [**ordering contradiction!**]

As illustrated in (47a), when the object undergoes scrambling to the left of the subject (moving to the outer Spec of the vP), the object also scrambles to the left of the NQ$_{subj}$. Since the subject and NQ$_{subj}$ form a constituent within a DP, the object cannot move into a DP-internal position between S and NQ$_{subj}$ directly (if the trigger for object movement must c-command the object). When the vP is spelled out, the ordering in (47a) is established (**O<S**<NQ$_{subj}$<V<v). Note crucially that the scrambled object must precede *both* the subject and the NQ$_{subj}$ in the vP.[45]

After Spell-out of vP, the object may move further to the left of an adverb in the next Spell-out domain. Suppose now that to create the word order in (44), the subject moves over the

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[45]If the subject and the NQ$_{subj}$ were not a constituent at vP, the object would move into a position between S and NQ$_{subj}$ in the vP domain, and the illicit order (S<O<NQ$_{subj}$) would be incorrectly permitted. Hence, to the extent that my analysis is correct, it provides support for the view that NP and NQ form a constituent in their base position (see also fn. 50). In Chapter 4, I show that this argument is further supported by the fact that floating quantifiers that plausibly do not form a constituent with their host NP indeed allow the linear ordering (S<O<QP$_{subj}$).

scrambled object, as described in (47b). When the CP in (47b) is spelled out, the orderings in the CP domain are established (**S<O**<adv<NQ$_{subj}$<V<*v*<T<C).

Notice that the new orderings added in the CP domain are again *inconsistent* with the orderings established in the *v*P domain. In particular, in the *v*P domain, the ordering statements indicate that O precedes S. In the CP domain, however, the ordering statements indicate that S precedes O. Hence, an ordering contradiction arises for the phonology and this structure cannot be pronounced at PF.

In short, whether the object undergoes *v*P-scrambling or not, the object cannot intervene between the subject and the NQ$_{subj}$. If the object does not scramble in *v*P, it follows *both* the subject and the NQ$_{subj}$ in the *v*P domain: (46). If the object scrambles in *v*P, it precedes *both* the subject and the NQ$_{subj}$ in the *v*P domain: (47). Given that Cyclic Linearization requires the ordering in the *v*P domain must be preserved in the higher domains, the object cannot intervene between the subject and the NQ$_{subj}$ in the higher domains, either.

One of the crucial premises of the analysis is that the subject is directly merged at [Spec, *v*P] and thus cannot *v*P-scramble. If the subject were able to scramble from the inner Spec to the outer Spec of *v* (to the left of the scrambled object within the *v*P), as in (48), the linear ordering in (44) would have been incorrectly allowed.

(48)   Illicit Scrambling: Subject scrambling from [Spec,vP] to [Spec,vP]

vP
S$_2$ v'
O$_1$ v'
DP v'
t$_2$ NQ$_{subj}$ VP v
t$_1$ V
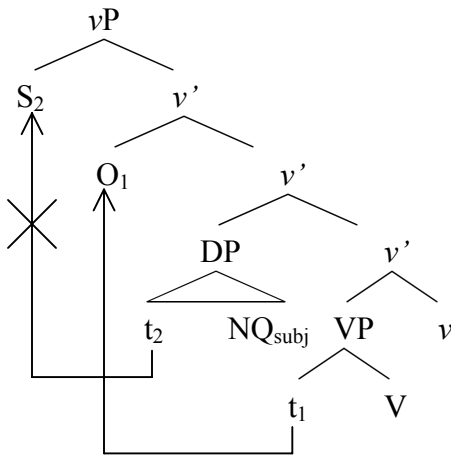
Linearize vP: <u>S<O<NQ$_{subj}$<V<v</u>   [**Impossible Movement!**]

Under my proposal, (48) is ruled out by a consideration of what is a possible probe-goal relationship: a Search Domain Condition (18). Specifically, [Spec,vP] is not in the search space (c-command domain) of v (Chomsky 2000, 2001). Hence, no scrambling is possible from [Spec,vP] to [Spec,vP]. (In section 2.3, it is shown that a subject that is not externally merged in [Spec,vP] behaves differently.) Thus, to the extent that my analysis is successful, it provides further support for the thesis that scrambling is driven by a head in a legitimate probe-goal configuration. More generally, my arguments provide further support for the line of approaches arguing that scrambling is a feature-driven movement (e.g. Miyagawa 1997, 2001, Grewendorf and Sabel 1999, Sabel 2001, Kitahara 2002). This in turn poses challenges to the approaches arguing that scrambling occurs rather freely without an attracting head (cf. Fukui 1993).[46]

---

[46] To accommodate my arguments within an approach that does not assume a probe-goal relationship in scrambling, one needs to postulate an extra constraint to block (48). Note that an anti-locality constraint like (i) (Saito and Murasugi 1993, 1999, Bošković 1994, 2004a, *inter alia*) cannot capture the ungrammaticality of (48), since the movement of the subject NP from inside DP to [Spec,vP] in (48) crosses a maximal projection DP.

(i)   Each chain link must be at least length of 1, where a chain link from A to B is of length n if there are n XPs that dominate B but not A. (Bošković 2004a)

Under the present proposal, the crucial contrast between the subject and the object in (31) and (32) follows from the fact that the object is *not* externally merged in the Spec of the Spell-out domain head *v*. The object is in the search domain of *v*. Since there is a head (i.e. *v*) that can attract the object over the subject in the *v*P domain, the object may scramble to the left of the subject *before* the Spell-out of *v*P. Hence, the subject may always intervene between the object and the NQ_{obj}. This is demonstrated in (49) for (32) with licit multiple scrambling (cf. (44) with illicit multiple scrambling).

(49)   *Licit Multiple Scrambling*

a. $[_{vP}$ O_1 $[_{vP}$ S t_1 NQ_{obj} V   *v*]]

        Ordering at vP: **O<S**< NQ_{obj} < V<*v*

b. $[_{CP}$ O_1 S_2 *adv* $[_{vP}$ t_1 $[_{vP}$ t_2 t_1 NQ_{obj} V   *v*]] T C]
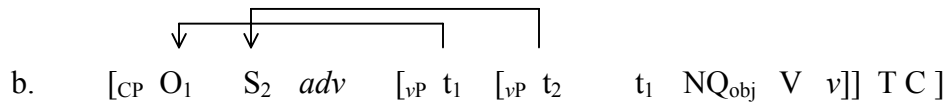
        Ordering at CP: **O<S**<adv<NQ_{obj} < V<*v*<T<C

My arguments in fact support Saito's (1985) original insight, in a sense. In particular, Saito (1985) was correct in arguing that subject movement is more restricted than object movement. My proposals suggest, however, that subject scrambling is more restricted *only in a particular domain*. Departing from Saito (1985), I attempted to derive the restriction on subject scrambling from the structural configuration in which the subject is placed, rather than from postulating a general ban on subject movement. (See Chapter 3 for implications of my approach for object scrambling.)

2.3   Further Predictions

In the previous sections, I have shown that there is no general ban on subject scrambling. Rather, the subject-object asymmetry in scrambling follows from a Search Domain Condition on agreement (a *probe-goal* relationship) and Cyclic Linearization. In this section, I provide various further arguments supporting this account. In particular, I show that every element base-generated within *v*P behaves like an object in its syntactic distribution with respect to the subject and NQ$_{subj}$. I demonstrate that this generalization is predicted by the Cyclic Linearization approach to scrambling.

2.3.1   Subject vs. Nonsubject Asymmetry

Thus far, I have argued that the subject does not undergo scrambling within *v*P because it is externally merged at the Spec of a Spell-out domain head *v*. This argument makes the following prediction: *no element that is base-generated in vP can intervene between the subject and its associate NQ*. Consider (50) and (51) for detailed description.

(50)   *v*P

XP$_1$ *v'*

DP   *v'*

S   NQ$_{subj}$ VP   *v*

t$_1$ V

Linearize vP: **XP<S<NQ$_{subj}$**<V<*v*

(51)   *v*P

DP   *v'*

S   NQ$_{subj}$ VP   *v*

XP   V

Linearize vP: **S<NQ$_{subj}$<XP**<V<*v*

54
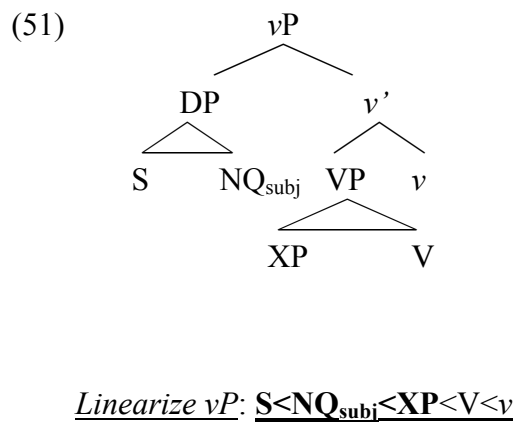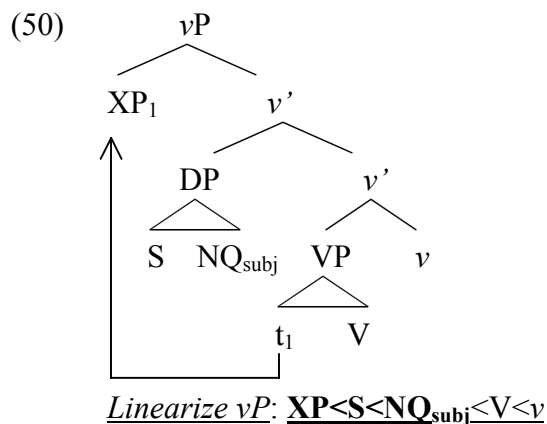
As schematized in (50), if any nonsubject element XP undergoes scrambling in *v*P, it must scramble to the left of *both* the subject and the NQ$_{subj}$. If the nonsubject element does not undergo scrambling, as in (51), it must follow *both* the subject and the NQ$_{subj}$. The subject externally merged in [Spec,*v*P] cannot move within *v*P (Search Domain Condition). Therefore, given Linearization Preservation, we predict that a nonsubject element in *v*P cannot intervene the subject and the NQ$_{subj}$. The Subject Puzzle discussed above is just a particular instance of this prediction. In what follows, I show that this prediction is borne out by various tests.

As predicted, *v*P-internal arguments uniformly cannot split the subject and its associate NQ. This is illustrated by (52) where the relevant argument is an indirect object, and also by (53) where the relevant argument is a postpositional phrase (PP). [47]

(52) a. **Haksayng-tul-i**   **sey-myeng**   Mary-eykey   maykcwu-lul   cwu-ess-ta

      Student-Pl-Nom   3-Cl   Mary-Dat   beer-Acc   give-Past-Dec

      'Three students gave Mary beer'

      b. ?* **Haksayng-tul-i**   Mary-eykey   **sey-myeng**   maykcwu-lul   cwu-ess-ta

      Student-Pl-Nom   Mary-Dat   3-Cl   beer-Acc   give-Past-Dec

      'Three students gave Mary beer'

---

[47]As expected, sentences like (i) and (ii), where two *v*P-internal XPs intervene between S and NQ$_{subj}$ are also ungrammatical. (The sentences in (52b) and (53b) are slightly less degraded than the sentences in (i) and (ii). I do not have an account of this contrast.)

(i)   ***Haksayng-tul-i**   Mary-eykey   maykcwu-ul   **sey-myeng**   cwu-ess-ta
       Student-Pl-Nom   Mary-Dat   beer-Acc   3-Cl   give-Past-Dec
       'Three students gave Mary beer'

(ii)   ***Haksayng-tul-i**   maykcwu-lul   kyosil-lo   **sey-myeng**   kacyewa-ss-ta
       Student-Pl-Nom   beer-Acc   classroom-to   3-Cl   bring-Past-Dec
       'Three students brought beer to the classroom'

(53) a. **Haksayng-tul-i   sey-myeng** maykcwu-lul kyosil-lo   kacyewa-ss-ta

Student-Pl-Nom   3-Cl   beer-Acc   classroom-to bring-Past-Dec

'Three students brought beer to the classroom'

b. *?******Haksayng-tul-i**   kyosil-lo   **sey-myeng** maykcwu-lul kacyewa-ss-ta

Student-Pl-Nom   classroom-to   3-Cl   beer-Acc   bring-Past-Dec

'Three students brought beer to the classroom'

2.3.2 High (*v*P-external) vs. Low (*v*P-internal) Adjuncts Asymmetry

We have seen that the subject and NQ $_{subj}$ can be separated by a high adverbial merged outside *v*P [(29)-(30)]. A high adverb is not linearized with respect to the subject at the Spell-out of *v*P. The subject can move over the high adverb in the higher domain CP and add a *new* ordering statement that the subject precedes the high adverb without yielding any ordering contradictions.

Now let us consider a low adverbial merged *within v*P. Since the low adverb is introduced before the Spell-out of *v*P, the subject must be linearized with respect to the low adverbial at *v*P, as in the case of indirect object, direct object, and postpositional phrase arguments. We then predict that the subject and the NQ$_{subj}$ cannot be separated by a low adverbial, in contrast to the paradigms with high adverbs. This prediction is borne out:

As illustrated in (54a), a low adverb, such as *ilpwule* 'deliberately', cannot intervene between the subject and its NQ$_{subj}$, in contrast to the high adverb *pwunmyenghi* 'evidently' in (54b).

(54)   a. ?***Haksayng-tul-i**   *ilpwule*   **sey-myeng** kong-ul   patassta[48]

           Student-Pl-Nom   deliberately   3-Cl   ball-Acc   received

           'Three students received a ball deliberately'[49]

      b. **Haksayng-tul-i**   *pwunmyenghi*   **sey-myeng** kong-ul   patassta

           Student-Pl-Nom   evidently   3-Cl   ball-Acc   received

           'Evidently, three students received a ball'

This high-low adjunct asymmetry is verified by testing other pairs of adverbs and PPs in (55).

(55)   a.   ?*[S   *low adjunct*   NQ$_{subj}$ O   V]:

           Manner adverb/PP(e.g. *ppalli* 'quickly', *yelsimhi* 'diligently')

           Instrumental adverb/PP (e.g. *phoku-lo* 'fork-with')

           Resultative adverb/PP (e.g. *sansancokak-ulo* 'into three pieces')

     b.   [S   *high adjunct*   NQ$_{subj}$ O   V]

           Sentential adverb/PP(e.g. *pwunmyenghi* 'evidently', *amato* 'probably')

           Temporal/locative adverb/PP (e.g. *ecey* 'yesterday', *kekise* 'there')

           Speaker-oriented adverb/PP (e.g. *nollapkeyto* 'to my surprise')

---

[48] For convenience, I use the terms 'adverb' and 'adverb phrase' interchangeably.

[49] David Pesetsky (p.c.) notes that *deliberately* in English can be ambiguous:

(i) The students *deliberately* took that test on Thursday.

On one reading, (i) means that the students made a deliberate decision, so that they took the test on Thursday. On the other reading, (i) means that someone else (e.g. an instructor) made a deliberate decision, so that the students took the test on Thursday. (But some English speakers (Norvin Richards, an anonymous *LI* reviewer) get only the former reading.) Korean *ilpwule* 'deliberately' allows only the former reading where the subject is the agent of the deliberate decision.

Interestingly, the high-low adverb asymmetry with respect to an NQ$_{subj}$ in (54)-(55) disappears when we employ an object-oriented NQ$_{obj}$, as demonstrated in (56).

(56) a. **Kong-ul**   haksayng-tul-i   *ilpwule*   **sey-kay**   patassta

Ball-Acc   student-Pl-Nom   deliberately   3-Cl$_{thing}$ received

'Students received three balls deliberately'

   b. **Kong-ul**   haksayng-tul-i   *amato*   **sey-kay**   pat-ass-ulkes-ita

Ball-Acc student-Pl-Nom   probably   3-Cl$_{thing}$ receive-Past-likely-Cop

'Probably, students received three balls'
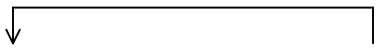
This fact is again predicted under the current proposal. Given that the object can undergo scrambling to the left of the low adverb within *v*P, the object and NQ$_{obj}$ can be reordered with respect to the low adverb *before* the Spell-out of *v*P. [50] This is illustrated in (57). Moreover, as illustrated in (57b), the object and the NQ$_{obj}$ can also be separated by a high adverb via object scrambling in the CP domain, which adds a new ordering statement specifying that the object precedes the high adverb. (In (57b), the subject additionally scrambles to the left of the high adverb.)

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[50] The grammaticality of (i) provides further support for my claim that a floated NQ is not an adverb. If a floated NQ$_{subj}$ were an adverb that does not form a constituent with the subject, we would expect that the object might scramble to the left of the NQ$_{subj}$ and yield the order (S<O<NQ$_{subj}$), just like (i), contrary to the fact in (20). (I thank Danny Fox (p.c.) for stressing the importance of the grammaticality of (i).)
(i)   Haksayng-tul-i   **kong-ul**   cayppalli   **sey-kay**   patassta
      Student-Pl-Nom   ball-Acc   quickly   3-Cl$_{thing}$ received
      'Students received three balls quickly' (cf. (20) and (25))
To accommodate the contrast between (i) and (20b) under the claim that a floated NQ is an adverb, one would have to postulate that an NQ$_{subj}$ is a special type of an adverb that must be adjacent to the subject before the spell-out of *v*P. At this moment, however, there is no independent reason to support such a constraint.

(57) a. $[_{vP}$ O$_1$ $[_{vP}$ S   L-adv   t$_1$ NQ$_{obj}$ V v $]]$: (56a)

$\quad\quad\quad$ *Ordering at vP*: O<S<L-adv<NQ$_{obj}$<V<v

$\quad$ b. $[_{CP}$ O$_1$ S$_2$ H-adv $[_{vP}$ t$_1$ $[_{vP}$ t$_2$ t$_1$ NQ$_{obj}$ V $v]]$ T C]: (56b)

$\quad\quad\quad$ *Ordering at vP*: O<S<NQ$_{obj}$<V<v

$\quad\quad\quad$ *Ordering at CP*: O<S<H-adv<NQ$_{obj}$<V<v<T<C

The arguments from the high-low adverb asymmetry provide us with another immediate prediction: if a certain adverb can be merged either in a high (*v*P-external) or low (*v*P-internal) position, the floating quantifier construction will disambiguate the syntactic position of the adverbial. Specifically, only the high adverbial reading will emerge when an ambiguous adverb intervenes between the subject and the NQ$_{subj}$. This prediction is borne out as well.

As illustrated in (58), subject-oriented adverbials (e.g. *mwulyeyhakey* 'rudely', *yenglihakey* 'cleverly') are ambiguous between the (high) evaluative reading and the (low) agent-oriented manner reading (see Jackendoff 1977 for the same paradigm in English).

(58) John-i   mwulyeyhakey   maykcwu-lul   masi-ess-ta

$\quad\quad$ John-Nom   rudely   beer-Acc   drink-Past-Dec

$\quad\quad$ 'It was rude that John drank beer' (but he drank in a polite manner) [high reading]

$\quad\quad$ 'John drank beer in a rude manner' (*but he drank in a polite manner) [low reading]

As expected, the ambiguity in (58) disappears when *mwulyeyhakey* 'rudely' intervenes between the subject and the subject oriented NQ$_{subj}$. As illustrated in (60), the intervening adverb

retains only the high adverbial reading, in contrast to (59).[51] The paradigm established here thus implies that the floating quantifier construction provides a useful diagnostic to test whether an adverbial is merged within or outside *v*P.

(59)   **Haksayng-tul-i**   **yel-myeng**   mwulyeyhakey   maykcwu-lul   masiessta

        Student-Pl-Nom   10-Cl   rudely   beer-Acc   drank

        (?)?'*It was rude that* ten students drank beer'

        'Ten students drank beer *in a rude manner*'

(60)   **Haksayng-tul-i**   mwulyeyhakey **yel-myeng**   maykcwu-lul   masiessta

        Student-Pl-Nom   rudely   10-Cl   beer-Acc   drank

        '*It was rude that* ten students drank beer'

        ?*'Ten students drank beer *in a rude manner*'

     In the next section, I provide further evidence for my account from asymmetries between an unaccusative/passive subject and an unergative subject.

---

[51] For reasons unclear to me, I strongly prefer the manner reading with *mwulyeyhakey* 'rudely' for (59). If *mwulyeyhakey* 'rudely' scrambles over the subject, as in (i), the manner and evaluative readings are equally possible.
(i) Mwulyeyhakey,   **haksayng-tul-i**   **yel-myeng**   maykcwu-lul   masiessta
   Rudely   student-Pl-Nom   10-Cl   beer-Acc   drank
  '*It was rude that* ten students drank beer', 'Ten students drank beer *in a rude manner*'

2.3.3   Unaccusative vs. Unergative Subject Asymmetry

So far, I have argued that the subject and NQ$_{subj}$ cannot be separated by a *v*P-internal element because the subject is directly merged in [Spec,*v*P] and thus cannot scramble within *v*P. This argument predicts that if the subject is not externally merged at [Spec,*v*P], the subject and NQ$_{subj}$ may be separated by a *v*P-internal element. I argue that this prediction is upheld.

Miyagawa (1989) observes a contrast between the unaccusative/passive and unergative subject in Japanese: while the unaccusative and passive subject can be separated from its associate NQ$_{subj}$ by an (low) adjunct phrase or by an agentive *by-phrase*, the unergative subject cannot (see Miyagawa 1989: 38-44 for Japanese examples; cf. Kuno and Takami 2003 for different judgments).

As illustrated in (61)-(63), a similar paradigm is also observed in Korean (cf. Lee 1989).[52]

(61)   Ecey,   **catongcha**-ga koyhan-eykey **twu-tay** pwuswu-eci-ess-ta

     Yesterday,   car-Nom   robber-by   2-Cl   break-Pass-Past-Dec

     'Yesterday, two cars were broken by a robber' [passive, S<PP<NQ$_{subj}$]

---

[52] Lee (1989) judges (i) to be slightly better than (ii), and argues that an unaccusative subject allows an associate NQ more readily than a unergative subject. Note, however, that the contrast between (61)-(62) and (63) is much stronger than the claimed subtle contrast between (i) and (ii). (I do not see any contrast between (i) and (ii).)
(i) Haksayng-i   sey-myeng   tochakha-yess-ta
    Student-Nom   3-Cl   arrive-Past-Dec
    'Three students arrived'
(ii) ?Haksayng-i   sey-myeng   wus-ess-ta
    Student-Nom   3-Cl   laugh-Past-Dec
    'Three students laughed'

(62) **Koyangi**-ka i pyeng-ulo **sey-mari** cwuk-ess-ta

Cat-Nom this disease-by 3-Cl die-Past-Dec

'Three cats died from this disease' [unaccusative, S<PP<NQ$_{subj}$]

(63) ?***Haksayng-tul**-i caki-uy ton-ulo **twu-myeng** cenhwaha-yess-ta

Student-Pl-Nom self's money-by 2-Cl telephone-Past-Dec

'Two students telephoned with their own money' [unergative, S<PP<NQ$_{subj}$]

This asymmetry between unaccusative/passive and unergative subjects is exactly what the Cyclic Linearization approach to scrambling predicts. Given the well-established hypothesis that the unaccusative/passive subject is *derived* from an internal argument position in VP (Perlmutter 1978, Belletti and Rizzi 1981, Burzio 1981, 1986, Miyagawa 1989, among others), we expect that the derived subject may behave just like the object in terms of linearization.

In particular, if the subject is externally merged within VP and undergoes movement to [Spec,*v*P], it is expected that the subject can indeed revise the word order with respect to the (low) adverb phrase before the Spell-out of *v*P,[53] as demonstrated in (64). [54]

---

[53] Chomsky (2001) argues that unaccusative/passive *v*P are weak phases, which do not undergo Spell-out (cf. Legate 2003 for opposing arguments). In fact, this claim can be made compatible with my analysis for (61)-(63). Even if we assume that unaccusative/passive constructions lack *v* (or if weak *v*Ps are not Spell-out domains), the subject in (61) and (62) may move to the left of low adjuncts in the CP domain without any ordering contradictions. In Chapter 3, however, I provide arguments that VP is a Spell-out domain, which suggests that unaccusative/passive *v*P must undergo Spell-out. Thus, I do not pursue Chomsky's weak phase theory. See Chapter 5 for implications of this argument for defective phases.

[54] This analysis raises a question of whether the movement in (64) is A- or A'-movement (David Pesetsky, p.c.). Given that a passive subject can A-bind into an NP in an agentive by-phrase, I assume that this movement can be A-movement. Further research, however, is needed to see whether the binding in (i) is due to later scrambling of the passive subject to [Spec,TP] rather than due to scrambling to [Spec,*v*P]. (It has also been proposed that local scrambling (possibly *v*P-scrambling) can be ambiguous between A- or A'-scrambling in German (Webelhuth 1989),

Furthermore, given the hypothesis that an unergative subject is base-generated in [Spec,*v*P], just like the subject in transitive *v*P (Hale and Keyser 1993, Chomsky 1995, among others), it is also predicted that low adjunct phrases such as *caki-uy ton-ulo* 'with self's money' in (63) cannot intervene between the unergative subject and the NQ_{subj}. This is illustrated in (65).[55]

(64)   *Unaccusative/passive subject*   (65)   *Unergative subject*
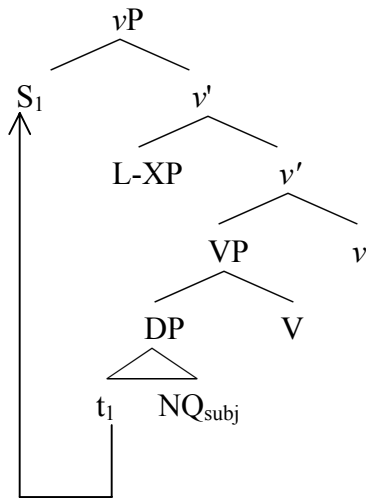
Linearize vP: **S< L-XP <NQ_subj<V<*v***   *Linearize vP*: L-XP<S< NQ_subj<(L-XP)<V<*v*
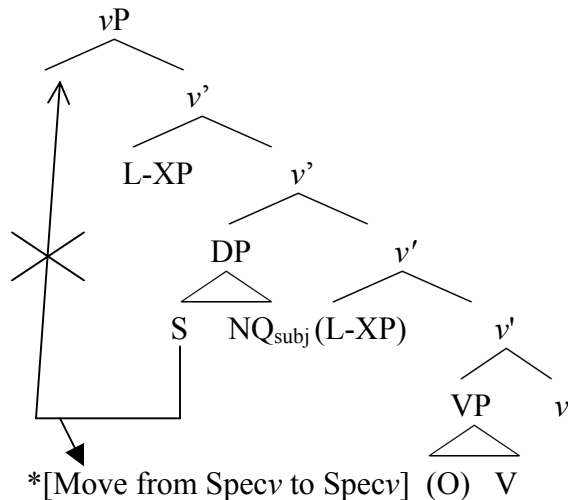
---

but see also Grewendorf and Sabel (1999) for different perspectives of German short scrambling.)

(i)[(?)]**Haksayng-tul-i**i caki-uyi sensayng-nim-eykey **twu-myeng** pwuthcap-hi-ess-ta
    Student-Pl-Nom self-Gen teacher-Hon-by   2-Cl   capture-Pass-Past-Dec
    'Two students were captured by self's teacher.'
(ii)[?*]Caki-uyi sensayng-nim-eykey haksayng-tul-ii twu-myeng pwuthcap-hi-ess-ta
[55] Some accusative Case marked locative PPs may intervene between a subject and NQ:
(i) Ecey,   **kwunsa-tul-i**   *ku tali-lul*   **twu-myeng**   kennu-ess-ta
    Yesterday   soldier-Pl-Nom   that bridge-Acc   2-Cl   cross-Past-Dec
    'Yesterday, two soldiers crossed the bridge.'
Following Miyagawa (1989:40 for the same paradigm in Japanese), I assume that the subject 'soldiers' in (i) originated from the VP as an internal argument of 'cross'. Independent evidence would be required to solidify this argument, however.

Another prediction that follows from my analysis is that the asymmetry between the unaccusative/passive and unergative subject seen in (63)-(65) will disappear if we test a paradigm with a high adverb. More specifically, a high adverb is introduced *after* the Spell-out of *v*P. Thus, it does not matter for the purpose of linearization of the subject and a high adverb whether the subject is base-generated within VP or in [Spec,*v*P]. In both cases, the subject is able to undergo scrambling over the high adverb and add a new ordering statement (e.g. S<H-adv) in the higher domain. This prediction is also borne out, as shown by the grammaticality of (66).

(66) a. **Haksayng-tul-i**   amato   **sey-myeng**   tochakha-yess-ulkes-ita

      Student-Pl-Nom   probably   3-Cl   arrive-Past-likely-Cop

      'Probably, three students arrived'

    b. **Haksayng-tul-i**   amato   **sey-myeng**   cenhwahay-ss-ulkes-ita

      Student-Pl-Nom   probably   3-Cl   telephone-Past-likely-Cop

      'Probably, three students telephoned.'

2.4   Japanese Paradigms

In the preceding sections, we have seen that a variety of asymmetries in Korean scrambling are in fact predicted from the interaction of the Search Domain Condition and Cyclic Linearization. In this section, I investigate possible parallels between Korean and Japanese in floating quantifier constructions. I start the discussion with the type of the NQ in (67a), which Korean and Japanese

clearly share.[56] I then comment on the distribution of the type of the NQ in (67b), which Korean

lacks.

Japanese

(67)   *(Floating) Numeral Quantifier Constructions in Japanese*

a.   John-wa   **hon-o**   **san-satu**   katta

        John-Top   book-Acc   3-Cl   bought

        'John bought three books'

b.   John-wa   **san-satu**   **hon-o**   katta

        John-Top   3-Cl   book-Acc   bought

        'John bought three books'   (Watanabe 2004:4)

        If my account for the Subject Puzzle extends to Japanese, we expect that the asymmetries

observed in Korean subject scrambling would also be observed in Japanese. My own survey and

(at least some) previous observations support this expectation (see Chapter 4 for discussion of

judgment variation regarding some NQ constructions in Japanese). Specifically, as observed with

Korean paradigms, Japanese paradigms demonstrate that the subject and its associate NQ cannot

---

[56] Interestingly, Japanese lacks multiple Case-Marking NQ constructions found in Korean. In Japanese, the numeral quantifiers in (i) cannot be stranded from its host NP (The same fact holds in Korean: see fn. 14).
(i) a.   John-wa   hon   san-satu-o   katta
         John-Top   book   3-Cl-Acc   bought
         'John bought three books'
    b.   John-wa   san-satu-no   hon-o   katta
         John-Top   3-Cl-Gen   book   bought
         'John bought three books'

be separated by a *v*P-internal element, unlike the paradigms with an object-oriented NQ. Representative examples are given in (68)-(74).

The contrast between (68) and (69) show that the subject cannot be separated from its associate NQ by the object, whereas the object can be separated from its associate NQ by the subject (Haig 1980, Kuroda 1983, Saito 1985, Miyagawa 1989, Ueda 1990, Fujita 1994, among many others; see also section 2.1 for examples and introductory discussion).[57]

Japanese

(68)   *Subject<Object<NO_{subj}*

a.   **Gakusei-ga**   **san-nin**   sake-o   nonda

       Student-Nom   3-Cl_{people}   sake-Acc   drank

       'Three students drank sake'

b.   ***Gakusei-ga**   sake-o   **san-nin**   nonda

        Student-Nom   sake-Acc   3-Cl_{people}   drank

       'Three students drank sake'

---

[57] Miyagawa and Arikawa (2004) and Hoji and Ishii (2005) cite judgment variation about the type of sentence in (68b). All my informants found (68b) to be ungrammatical (5/5). Two speakers find that the grammaticality of (68b) is slightly improved when a pause precedes the NQ. This pause effect was originally observed by Miyagawa and Arikawa (2004). In particular, Miyagawa and Arikawa (2004) observe that all the counterexamples for the Subject Puzzle in Japanese literature involve a focused NQ that is often accompanied by a pause. (See appendix 4B for discussion of how this observation can be accommodated under my account.)

(69)　*Object<Subject<NO_obj*

a.　Gakusei-ga　　　　**hon-o**　　　**go-satu**　　　katta

　　Student-Nom　　　book-Acc　　5-Cl_book　　　bought

　　'Students bought five books'

b.　**Hon-o**　　　　　gakusei-ga　　**go-satu**　　　katta

　　Book-Acc　　　　student-Nom　5-Cl_book　　　bought

　　'Students bought five books'

The symmetry between (68) and (70)-(71) show that not only the object but also other arguments such as indirect object and PP arguments cannot intervene between the subject and a subject-oriented NQ.

(70)　?**Subject<Indirect Object <NO_subj*

　　?*/* **Gakusei-ga**　　　Mary-ni　　**san-nin**　　biiru-o　　ageta

　　　Student-Nom　　　　Mary-Dat　　3-Cl　　　beer-Acc　　gave

　　　'Three students gave Mary beer' (N. Hasegawa, p.c.)

(71)　?**Subject<PP argument <NO_subj*

a.　?***Gakusei-ga**　　hako-ni　　**san-nin**　　koin-o　　ireta

　　　Student-Nom　　　box-in　　3-Cl　　　coin-Acc　put

　　'Three students put a coin/coins in a box.'

b.　　?***Gakusei-ga**　　jaanaru-ni　　**huta-ri**　　ronbun-o　　tookoosita

　　　　Student-Nom　　journal-to　　2-Cl　　paper-Acc　　submitted

　　　'Two students submitted papers to a journal' (Y. Endo, p.c.) [58]

　　The paradigms in (72) and (73) show that a low adjunct cannot intervene between the subject and a subject-oriented NQ, but may intervene between the object and an object-oriented NQ. (See Miyawaga 1989, Koizumi 1994, Fujita 1994, among others, for the distribution of low adverbs like instrumental and manner adverbs with respect to a subject-oriented NQ.)

Japanese

(72)　　*?*Subject<low adjunct<NO_{subj}*

a.　　*Manner Adverbs*

　　?***Gakusei-ga**　　gatugatu　　**san-nin**　　susi-o　　tabeta　(koto)

　　　Student-Nom　　greedily　　3-Cl　　sushi-Acc　　ate　(fact)

　　　'Three students ate sushi greedily' (Kawashima 1998, citing Miyagawa 1989)

b.　　*Instrumental Adverbs*

　　*****Gakusei-ga**　　hanmaa-de　　**san-nin**　　kurumi-o　　watta

　　　Student-Nom　　hammer-with　3-Cl　　walnut-Acc　　cracked

　　　'Three students cracked walnuts with a hammer' (Koizumi 1994)

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[58] N. Hasegawa (p.c.) judges the sentence in (71a) to be grammatical. See Chapter 4 for discussion of possible sources of the judgment variation, related to the focus assigned on NQs in the discourse.

Japanese

(73)   *Object< low adjunct <NQ$_{obj}$*

a.   John-ga   **hon-o**   isoide   **san-satu**   katta

       John-Nom   book-Acc   quickly   3-Cl   bought

       'John quickly bought three books'   (Ishii 1998: 150)

b.   Gakusei-ga   **susi-o**   gatugatu   **mit-tu**   tabeta   (koto)

       Student-Nom   sushi-Acc   greedily   3-Cl   ate   (fact)

       'Students ate three pieces of sushi greedily' (K. Takezawa, p.c.)

c.   Gakusei-ga   **kurumi-o**   hanmaa-de   **mit-tu**   watta/kowasita

       Student-Nom   walnut-Acc   hammer-with   3-Cl   cracked/broke

       'Students cracked three walnuts with a hammer' (K. Takezawa, p.c.)

The paradigms in (74) show that high adverbs such as temporal and locative adverbs may intervene between the subject and a subject-oriented NQ, in contrast to the paradigms with low adverbs in (72) (see Miyagawa 1989, Ueda 1990, Fujita 1994, among others, for the distribution of high adverbs with respect to a subject-oriented NQ).[59]

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[59] Nakanishi (2003a,b) claims that Japanese NQs cannot be separated from the host NP when the predicate denotes a (singular) telic event (e.g. destroy John's house). This argument provides an interesting perspective on why judgments for floating NQs are affected by the choice of predicates. This, however, cannot be an alternative account for the asymmetries in scrambling observed here. In particular, it is not obvious how the proposal may account for the asymmetries between high and low adverbs in subject scrambling ((72),(74)), lack of asymmetries between high and low adverbs in object scrambling (73), and the contrasts between unaccusative/passive and unergative subjects ((61)-(63)). We will see other paradigms that are not straightforwardly accommodated under the proposal. (See in particular Control paradigms in (76)-(77), restrictions on object scrambling paradigms in Chapter 3, and two types of NQs in Korean in Chapter 4.)

Japanese

(74)   *Subject<high adverb<NO_{subj}*

 a.   *Temporal Adverbs*

     Gakusei-ga   kyoo **san-nin**   hon-o   katta

     Students-Nom   today 3-Cl   book-Acc bought

     'Three students bought a book today' (Miyagawa 1989: 30, 44)

 b.   *Locative Adverbs* (modifying the subject)

     Gakusei-ga   tosyokan-de   **san-nin**   hon-o   yondeita

     Student-Nom   library-in   3-Cl   book-Acc reading

     'Three students were reading books in the library' (Ueda 1990: 84)

Given the parallels between Japanese paradigms in (68)-(74) and Korean paradigms in the preceding sections, I suggest that my analysis for Korean scrambling directly extends to corresponding Japanese paradigms (68)-(74). In particular, the subject cannot be separated from its NQ by a *v*P-internal element due to the interaction of the Search Domain Condition and Cyclic Linearization. A *v*P-internal element must precede or follow the constituent that contains the subject and a subject-oriented NQ within the *v*P domain (Search Domain Condition). This ordering restriction in the *v*P domain must be preserved in the higher domains to avoid ordering contradictions at PF (Cyclic Linearization).

The current analysis is further supported by the distribution of NQs in Control paradigms in Japanese. As shown in (75), a subject-oriented NQ may be associated with PRO in Control configurations. The object in the embedded clause in (75) may scramble to the left of the subject-oriented NQ *san-nin*, as shown in (76a). Note crucially that (76a) and (76b) are equivalent in

terms of the linear ordering among overt arguments. In both cases, the object intervenes between the subject and the subject-associated NQ. In sharp contrast with (76b), the sentence in (76a) is grammatical, however. The examples in (77) show the same point.

(75)   *Control Paradigms in Japanese*

    Gakusei-ga   [sono toki   [PRO **san-nin** [sakana-o tabe]-**oe**]-ta]

    Student-Nom   that time   3-Cl   fish-Acc eat-finish-Past

    'Three students finished eating fish at that time' (Ura 1996; N. Hasegawa, Y. Endo p.c.)

(76)   *Control and Subject-Oriented NQ*

a.   **Gakusei-ga**   [sakana-o   [PRO **san-nin** [tabe]-**oe**]-ta]

    Student-Nom   fish-Acc   3-Cl   eat-finish-Past

    'Three students finished eating fish at that time' (Ura 1996; N. Hasegawa, Y. Endo p.c.)

b.   ***Gakusei-ga**   sakana-o   **san-nin**   tabe-ta

    Student-Nom fish-Acc   3-Cl   eat-Past

    'Three students ate fish' (N. Hasegawa, Y. Endo p.c.)

(77)   *Control and Subject-Oriented NQ*

a.   **Gakusei-ga** sono   ronbun-o   PRO **san-nin**   kopii-si-wasure-ta

    Student-Nom that   paper-Acc   3-Cl   copy-do-forget-Past

    'Three students forgot to copy that paper' (N. Hasegawa, Y. Endo p.c.)

b.   ***Gakusei-ga**   sono   ronbun-o   **san-nin**   kopii-si-ta

    Student-Nom   that   paper-Acc 3-Cl   copy-do-Past

    'Three students copied that paper' (N. Hasegawa, Y. Endo p.c.)

The contrast between Control paradigms and ordinary subject paradigms in (76)-(77) is predicted under the current analysis for the Subject Puzzle. Specifically, since the object *sakana-o* in (76a) is externally merged in a different clause from the matrix subject *gakusei-ga, sakana-o* may intervene between the subject *gakusei-ga* and *san-nin* without violating the Search Domain Condition or causing ordering contradictions at PF. The same point holds for (77).[60]

The paradigms in (76)-(77) are particularly important to rule out an attempt to explain the Subject Puzzle based on a parsing-based approach. In particular, the grammaticality of (76a) and (77a) shows that it is not the case that the linear order S<O<NQ$_{subj}$ is impossible. Rather, the Subject Puzzle is observed only when the subject and the object are externally merged in the same Spell-out domain. This rules out an apparent alternative hypothesis for the Subject Puzzle that the order S<O<NQ$_{subj}$ is impossible because the object must be parsed with a following NQ.[61]

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[60] If the *v*P structures of Control and non-Control paradigms in (76)-(77) are identical, the current analysis for (76)-(77) is not compatible with a movement analysis of Control (e.g. Hornstein 1999, Boeckx and Hornstein 2004). If the matrix subject in (76)-(77) has moved from the embedded clause, we expect no contrast between (a) examples and (b) examples in (76)-(77). (I thank Danny Fox for raising this point). To make the paradigms in (76)-(77) compatible with the movement analysis of Control, it is necessary to assume that some extra head with a scrambling feature (higher than the head introducing the subject) may agree with a Control subject, so that the Control subject may move to the left of the object before the first Spell-out of the structure including *v*P (I thank Cedric Boeckx for this suggestion). It remains open whether we may find support for this assumption.

[61] Miyagawa and Arikawa (2004) argue that the order S<O<NQ$_{subj}$ is judged to be ungrammatical because the object tends to be parsed with a following NQ unless nuclear stress falls on the NQ. It is not clear, however, how the contrasts observed in (76) and (77) can be explained under this hypothesis. (My informants report to me that no focus is required on NQs in (76a) and (77a).) Miyagawa and Arikawa's (2004) account does not extend to the ungrammatical paradigms observed in (70)-(72), where the object *follows* the NQ$_{subj}$. As the thesis proceeds, we will see other facts that do not follow from the parsing approach directly. (See, in particular, asymmetries in leftward NQ scrambling in (80)-(82), a host of asymmetries in object scrambling in Chapter 3, asymmetries in two types of floating quantifiers and possessor raising constructions in Chapter 4, and existence of S<O<QP$_{subj}$ in non-focal contexts in appendix 4B.)

Let us now turn to the type of NQs that precede its host NP in Japanese. An example is repeated here as (78).

(78)   John-wa   **san-satu**   **hon-o**   katta

         John-Top   3-Cl   book-Acc   bought

         'John bought three books'

Suppose that the NQ in (78) forms a constituent with its host NP and precedes the host NP via DP-internal movement.[62] We then predict that the distribution of NQ in (78) must be explained by the same principles that regulate subject scrambling in the previous sections. In particular, we predict that a subject-oriented NQ may precede the subject, but that vP-internal elements may not intervene between the NQ and its host NP. This prediction is corroborated by a series of observations by Miyagawa (1989).

Representative examples are given in (79)-(83). (All examples are taken from Miyagawa 1989: 50-51). As shown in (79), an object-oriented NQ may precede the object, and the subject may intervene between the object-oriented NQ and the object. By contrast, the vP-internal element cannot intervene between the scrambled NQ and the subject, as in (80)-(82). A vP-external element (e.g. time adverb *kyoo* 'today'), on the other hand, can intervene between a subject-oriented NQ and the subject, as illustrated in (83). My analysis for quantifier stranding in (68)-(74) directly extends to NQ scrambling in (79)-(83) if we assume that subject-oriented NQs

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[62] Korean does not allow the type of the NQ in (78). I leave it further research for why this contrast between Korean and Japanese holds. For the moment, I stipulate that Korean lacks DP-internal movement of an NQ.

are externally merged as a constituent with the subject and undergo DP-internal scrambling (to the left of the subject).

(79)   NQ$_{obj}$<Subj<Obj

Huta-tu,   kodomo-ga   **kozutumi-o**   t   okutta

2-Cl   child-Nom   package-Acc   sent

'The child sent two packages' (also attributed to Katagiri 1983)

(80)   ?*NQ$_{subj}$<Obj<Subj

?***Huta -ri**,   hon-o   **gakusei-ga**   t   katta

 2-Cl   book-Acc   student-Nom   bought

 'Two students bought a book'

(81)   *NQ$_{subj}$<Indirect Obj<Subj

***Huta-ri**,   Tanaka-san-ni   **gakusei-ga**   t   omiyage-o   ageta

 2-Cl   Tanaka-Mr.-Dat   student-Nom   present-Acc   gave

 'Two students gave Mr. Tanaka a present'

(82)   ?*NQ$_{subj}$<Instrumental PP (low adjunct) <Subj

```
        ┌────────────────────────────────┐
        ↓                                 │
?*Huta-ri,      naifu-de,      kodomo-ga     t     roopu-o        kitta
```

  2-Cl   knife-by   child-Nom   rope-Acc   cut

  'Two children cut the rope with a knife'

(83)   NQ$_{subj}$<time adverb (high adjunct) <Subj

```
      ┌──────────────────────────────┐
      ↓                               │
Huta-ri,        kyoo,    gakusei-ga     t     nihongo-no    hon-o      katta
```

  2-Cl   today   student-Nom   Japanese-Gen book-Acc   bought

  'Today two students bought Japanese language books'

Moreover, we predict that an unaccusative and passive subject may be separated from its associate NQ by a low adjunct, while an unergative subject cannot. This prediction is also upheld by Miyagawa's (1989) observations. Some examples are given in (84)-(88). My accounts for unaccusative and unergative paradigms in (64)-(65) thus extends to (84)-(88).

(84)   NQ$_{subj}$< PP argument <Unaccusative Subj

```
      ┌──────────────────────────────┐
      ↓                               │
Huta-ri,        ofisu-ni      gakusei-ga     t     kita
```

  2-Cl   office-to   student-Nom   came

  'Two students came to my office.'

(85)   NQ_subj< Instrumental PP <Unaccusative Subj

Huta-tu,   kono   kagi-de   **doa-ga**   t   aita

2-Cl   this   key-with   door-Nom   opened

'Two doors opened with this key.'

(86)   NQ_subj< PP argument <Passive Subj

Yuube,   **ni-dai**   doroboo-ni   **kuruma-ga**   t   nusum-are-ta

Last night   2-Cl   thief-by   car-Nom   steal-Pass-Past

'Last night, two cars were stolen by a thief'

(87)   *NQ_subj< Instrumental PP <Unergative Subj

*Huta-ri,   konpyuutaa-de   **gakusei-ga**   t   keisansita

2-Cl   computer-by   student-Nom   calculated

'Two students calculated by a computer.'

(88)   *NQ_subj< manner adverb <Unergative Subj

*Huta-ri,   geragerato   **kodomo-ga**   t   waratta

2-Cl   loudly   child-Nom   laughed

'Two children laughed loudly.'

The present analysis for NQ-scrambling in (79)-(88) has an interesting implication for constraints on DP-internal movement. As illustrated in (89), an NQ *san-satu* cannot precede its host NP *hono-o* when a demonstrative *sono/ano* 'these' modifies the host NP. By contrast, when an adjective *takai* 'expensive' modifies the host NP *hono-o*, as in (90), an NQ may precede its host NP. This is expected if we assume that an NQ cannot move to the left of the demonstrative within DP. If DP is a Spell-out domain, the linear ordering within DP will be preserved in the higher domains. Thus, (89b) and (89c) are ruled out.[63]

(89)   *NQ-scrambling and demonstratives*

a.   Hanako-ga   ***sono/ano***   hon-o   **san-satu**   katta   (koto)

Hanako-Nom these   book-Acc   3-Cl   bought fact

'Hanako bought these three books'

b.   *Hanako-ga   **san-satu**   *sono/ano*   hon-o   katta   (koto)

Hanako-Nom   3-Cl   these   book-Acc   bought fact

'Hanako bought these three books'

c.   ***San-satu***   Hanako-ga   *sono/ano*   hon-o   katta   (koto)

3-Cl   Hanako-Nom   these   book-Acc   bought fact

'Hanako bought these three books'   (S. Miyagawa, p.c.)

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[63] This argument certainly awaits further research concerning why an NQ cannot move to the left of a demonstrative, but may move to the left of an adjective in DP. At this moment, I do not have a good account of this. I tentatively suggest that a demonstrative and a DP-internally moved NQ compete for the same position within DP. Adjectives, on the other hand, can adjoin below the demonstrative position so that NQ may move over it.

(90)   *NQ-scrambling and adjectives*

a.   Hanako-ga   **san-satu**   *takai*   hon-o   katta   (koto)

        Hanako-Nom 3-Cl   expensive   book-Acc   bought fact

        'Hanako bought three expensive books' (cf. (89a))

b.   **San-satu**   Hanako-ga   *takai*   hon-o   katta   (koto)

        3-Cl   Hanako-Nom expensive   book-Acc   bought fact

        'Hanako bought three expensive books' (cf. (89b))

c.   Hanako-ga   *takai*   hon-o   **san-satu**   katta   (koto)

        Hanako-Nom expensive   book-Acc   3-Cl   bought fact

        'Hanako bought three expensive books' (cf. (89c), S. Miyagawa, p.c.)

2.5   Conclusion: The Edge Generalization

In this chapter, we have seen various types of ordering restrictions concerning the distribution of the subject and its associate numeral. In particular, we have observed interactions among subject scrambling, object scrambling, multiple scrambling, the position of the subject, the position of adverbs, and NQ-scrambling. Some important facts analyzed in this chapter are summarized in (91).

(91)   **Ordering restrictions in subject scrambling:**

- The subject may intervene between the object and its NQ whereas the object may not intervene between the subject and its NQ.

- The indirect object, PP-argument, and *v*P-internal adjuncts may not intervene between the subject and its NQ whereas *v*P-external adverbs may.

- The object may be separated from its NQ either by *v*P-internal adjuncts or *v*P-external adjuncts, unlike the paradigms with a transitive subject.

- Unaccusative and passive subjects can be separated by *v*P-internal elements from their NQs whereas unergative subjects cannot.

- An unergative subject can be separated from its NQ by *v*P-external elements, just like unaccusative and passive subjects.

- A subject-oriented NQ may precede the subject in Japanese, but *v*P-internal elements cannot intervene between the subject-oriented NQ and the subject.

I have argued that the paradigms presented in (91) cannot be explained by the analyses that rely on the mutual c-command condition or on a general ban on subject scrambling. Instead, all the paradigms described above can receive a unified account as a consequence of the interaction between formal properties of scrambling and Cyclic Linearization. Specifically, due to a probe-goal relationship and underlying constituency, a *v*P-internal element cannot intervene between the subject and its NQ in the *v*P domain. Given Cyclic Linearization, this ordering restriction is preserved in the higher domains. On this view, *v*P-external elements may intervene between the subject and NQ$_{subj}$ because they do not participate in the linearization of *v*P and add new orderings in the *v*P-external domains. The object can be separated from its NQ by a *v*P-internal element because the object may undergo *v*P-internal scrambling without violating the Search Domain Condition.

My account for the paradigms in (91) in fact follows from a more general prediction concerning the interaction of domain-internal movement and Cyclic Linearization, which I call the Edge Generalization. A formal description is given in (92).

(92)   ***The Edge Generalization***
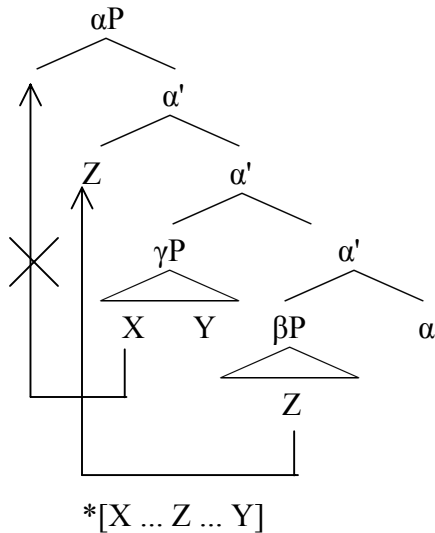
If X and Y are dominated by a specifier γP of a Spell-out domain αP, X and Y cannot be separated by an αP-internal element Z that is not dominated by γP.

*[X ... Z ... Y]

As described in (92), interactions of the Search Domain Condition in the narrow syntax and Cyclic Linearization lead us to predict ordering restrictions for elements merged in syntactic edges. In particular, elements merged in the edge of a Spell-out domain as a constituent cannot be separated by a domain-internal element. More specifically, if the domain-internal element Z in (92) stays in-situ, Z would follow both X and Y. If Z moves to the edge of αP, Z would precede both X and Y. Due to the Search Domain Condition, X or Y cannot move within αP. Hence, Z cannot intervene between X and Y within αP.[64] Given that the linear ordering at a Spell-out domain αP must be preserved in the higher domains (Cyclic Linearization), it is predicted that X and Y cannot be separated by Z.

On my account, the restrictions on subject scrambling observed in this chapter are in fact instances of the Edge Generalization. The paradigms summarized in (91) instantiate cases that αP in (92) corresponds to *v*P. There is nothing inherent about the subject that blocks its

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[64] As noted earlier, underlying constituency between X and Y matters. If X and Y were merged as nonconstituent, Z may move into a position between X and Y. See Chapter 4 for extensive discussion.

movement out of *v*P. The subject appears to obey special ordering restrictions, in contrast to internal arguments, because it is externally merged in the edge of a Spell-out domain *v*P. If my arguments for the Edge Generalization are correct, we expect that the Edge Generalization would not be limited to the case where αP in (92) corresponds to *v*P. In particular, we predict that elements merged in the edge of other Spell-out domains would also observe the Edge Generalization. In the next chapter, I argue that this is indeed the case. In particular, we will see that an object externally merged in syntactic edges behaves exactly like a subject with respect to ordering restrictions.

Chapter 3. Object Scrambling and The Edge Generalization

In this chapter, I examine predictions of the Edge Generalization for object scrambling. I argue that VP is a Spell-out domain in Korean and Japanese, in addition to vP and CP. I show that hitherto unobserved ordering asymmetries between VP-internal and VP-external elements with respect to object scrambling receive a natural account as instances of the Edge Generalization. Otherwise unexpected parallels between subject scrambling and object scrambling are also derived from the Edge Generalization. I provide supporting evidence for my claims from interactions among object scrambling, indirect object scrambling, the scope of an aspectual adverb 'again', subject-oriented depictive phrases, object-oriented depictive phrases, resultative secondary predicates, and floating numeral quantifier constructions. Implications of the Edge Generalization for theories of argument structure are also discussed.

3.1   The Edge Generalization in the VP domain

In previous chapter, I have assumed that vP and CP are spell-out domains in Korean. As a working hypothesis, let us entertain the possibility that VP is also a Spell-out domain, in addition to vP and CP (cf. Chomsky 2000, 2001).[65] Assume also that the status of specifiers and

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[65] It is a controversial issue what constitutes a Spell-out domain in languages. Chomsky (2000, 2001) proposes that a phase is a "proposition" (vP and CP). But see Matushansky (2005) for various arguments against this claim. See also McGinnis (2001), Fox and Pesetsky (2003, 2005a,b), Abels (2003), Sabbagh (2003), and Lee-Schoenfeld (2005), among others, for arguments that other maximal categories such as VP and PP can also be a phase/Spell-out domain. Clearly, the question of which projection may constitute a Spell-out domain is an empirical issue. In this chapter, I pursue the possibility that VP is a Spell-out domain (in addition to vP and CP) for Korean and Japanese. I remain open, however, for the possiblity that other maximal projections may be a Spell-out domain (see fn. 82 for relevant discussion). See section 3.6 for discussion of implications of the current hypothesis.

complements is determined derivationally along the lines of Chomsky's (1995) Bare Phrase Structure hypothesis. Specifically, the XP that is first merged with a head α is the complement of α. The other XPs that are later merged with the projection of α are considered as specifiers of α (as long as α projects). Under this assumption, the object may be considered as a specifier of VP if there is an element externally merged with V before the object merges with V.[66]

If the aforementioned hypotheses are correct, my proposals for the Edge Generalization make another prediction: elements externally merged within VP cannot intervene between the object and an object-oriented NQ if the object is in the Spec of V, as described in (93). I call this the VP-Edge Generalization.

(93)   *The VP-Edge Generalization: The Edge Generalization in the VP domain*

    *[O<XP<NQ]

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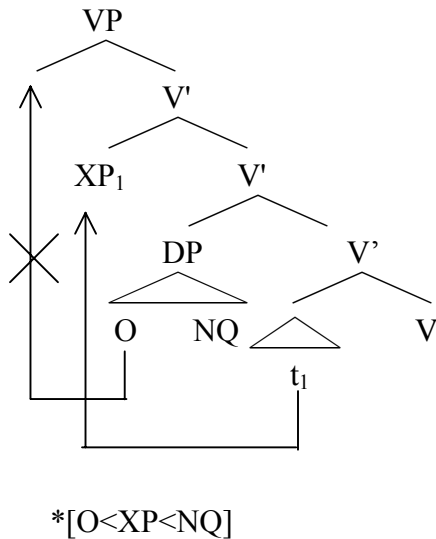
[66] The idea that internal arguments can be merged as a specifier of verbal projection has been widely pursued before. In particular, paradigms in which a single predicate appears to take two internal arguments have been analyzed in such a way. See Larson (1988), Hale and Keyser (1993), Chomsky (1995), and Baker (2004) for references and relevant discussion. I assume that any maximal projection (e.g. adjectival phrase, verbal phrase, adverbial phrase, nominal phrase) can be counted as a complement of a head H if it is first merged with H. On this view, complement-specifier distinctions have no bearing on argumenthood of a maximal projection.

As can be seen in (93), a VP-internal element XP may follow *both* the object and its

NQ$_{obj}$, or precede *both* the object and NQ$_{obj}$ within VP (given that the object and its NQ$_{obj}$ form a

constituent in VP). Due to the Search Domain Condition, the object in [Spec,VP] cannot move

within the VP. [67] If VP is a Spell-out domain, the ordering at VP must be preserved in the higher

domains (as a consequence of Cyclic Linearization). We thus expect that the order O<XP<NQ$_{obj}$

in (93) would be disallowed. In what follows, I argue that this is the case.

A straightforward prediction is that the object and its NQ in a matrix clause cannot be

separated by an element merged in an embedded clause. The paradigms exemplified in Korean

(94) and Japanese (95) support this prediction. In particular, the matrix object and its associate

NQ cannot be separated by an element externally merged in the complement clause, as shown in

(94b) and (95b). The paradigms in (94c) and (95c) show that it is in principle possible to move

an element merged in the embedded clause to the matrix clause.

Korean

(94)　a. John-i　　　**haksayng-tul-ul　sey-myeng** [PRO　Boston-ulo　ka-lako]　seltukhayssta

　　　　John-Nom　student-Pl-Acc　　3-Cl　　　　　　Boston-to　go-C　　persuaded

　　　'John persuaded three students to go to Boston'

　　　b.*John-i　　　**haksayng-tul-ul**　Boston-ulo₁　**sey-myeng** [PRO t₁ ka-lako]　seltukhayssta

　　　　John-Nom　student-Pl-Acc　　Boston-to　　3-Cl　　　　　　go-C　　persuaded

　　　'John persuaded three students to go to Boston'

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[67] It is worth stressing that (93) holds only when the object is in [Spec,VP]. If the object is
merged as a sister of the verb, and a VP-adjunct is merged as a specifier, as in (i), the object may
move to the left of the adjunct within VP, unlike (93).
(i)　　[VP adjunct [[DP O　NQ]　V]]

c. ?John-i   Boston-ulo$_1$ **haksayng-tul-ul sey-myeng** [PRO t$_1$ ka-lako] seltukhayssta

John-Nom Boston-to   student-Pl-Acc   3-Cl   go-C   persuaded

'John persuaded three students to go to Boston'

Japanese

(95) a.   John-ga   **gakusei-tati-o   san-nin** [PRO   Boston-e   iku-yooni] settokusita

John-Nom student-Pl-Acc   3-Cl   Boston-to go-C   persuaded

'John persuaded three students to go to Boston'

b.   *John-ga   **gakusei-tati-o** Boston-e$_1$ **san-nin** [PRO t$_1$ iku-yooni] settokusita

John-Nom student-Pl-Acc   Boston-to 3-Cl   go-C   persuaded

'John persuaded three students to go to Boston'

c.   ?John-ga   Boston-e$_1$ **gakusei-tati-o san-nin**   [PRO t$_1$ iku-yooni] settokusita

John-Nom Boston-to   student-Pl-Acc   3-Cl   go-C   persuaded

'John persuaded three students to go to Boston' (K. Takezawa, p.c.)

The paradigms in (94b) and (95b) show that it is not the case that the object can always be separated from its associate NQ. Rather, if the object is in the edge of a Spell-out domain VP, it shows the same ordering restrictions as the subject in the edge of a Spell-out domain *v*P. Both the subject and the object cannot be separated from its associate NQ by a domain-mate. This raises a question of whether the VP-Edge Generalization holds even in monoclausal contexts. In what follows, I argue that this is indeed the case. I provide arguments for this claim from the interaction between word order variation and the scope of *tasi* 'again' in Korean and *mata* 'again' in Japanese.

3.2   The Syntax of *tasi* 'again'[68]

As illustrated in (96), *tasi* 'again' in Korean is ambiguous between a *repetitive* reading and *restitutive* reading (see Von Stechow 1996 and Beck and Johnson 2004 for discussion and references about the semantics of 'again'). On the repetitive reading, (96) presupposes that the agent *Sally* has opened the door before. On the restitutive reading, (96) presupposes that the door had been in the state of being open before. [69]

(96)   Sally-ka   ku   mwun-ul   *tasi*   yel-ess-ta

       Sally-Nom   that   door-Acc   again   open-Past-Dec

       'Sally opened that door, and she had done that before' (*repetitive*)

       'Sally opened that door, and the door had been in the state of being open before' (*restitutive*)

In explaining the ambiguity of *tasi* 'again' in (96), I adopt the proposals by von Stechow (1996) and Beck and Johnson (2004) with minor revision (see fn. 71). In particular, I argue with von Stechow (1996) and Beck and Johnson (2004) that *open* is decomposed into the adjective *open* and a verbal head V* that contributes a BECOME component to the meaning (see also

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[68] I specially thank Danny Fox for very helpful discussion of this section.

[69] The Korean example in (96) also has an intermediate reading that indicates a mere repetition of action: 'door was opened before by someone, but not necessarily by Sally'. This interpretation can be compatible with both repetitive and restitutive 'again' (Refer to Von Stechow 1996 for discussion of German *wieder* 'again'). The restitutive reading, however, is clearly observed in examples like (96). It is just easier to imagine a restitutive reading with the example in (ii), in a scenario that the cave was wide open and then was closed due to avalanche and then was opened by Sally, and Sally was the first person who opened the door since the cave was created. I thank David Pesetsky and an anonymous *LI* reviewer for clarifying this point.

(ii) Sally-ka   ku   tongkwul-ul   *tasi*   yel-ess-ta

     Sally-Nom that   cave-Acc   again   open-Past-Dec

     'Sally opened the cave again'

Baker (2004: 77-88) for similar proposals). The restitutive reading of 'again' is obtained when 'again' is merged below the BECOME-functor V*. The repetitive reading of 'again' is obtained when 'again' is merged above V*.[70] I also argue that an adjective phrase (AP) is a complement of V*, and that the object is merged as a specifier of V*.[71]

On this approach, the repetitive reading in (96) is captured by *tasi* adjoined to a projection of the head *v*, as described in (97). As depicted in (97), the object may undergo scrambling to the left of repetitive *tasi*. It may undergo *v*P-internal movement (if repetitive *tasi* is merged inside *v*P) or *v*P-external movement (if repetitive *tasi* is merged outside *v*P). The restitutive reading, on the other hand, is captured by *tasi* adjoined to an adjective head denoting the "(result) state" of the event, as illustrated in (98).

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[70] It is not crucial to me, however, whether CAUSE and BECOME are both expressed by V* (cf. Beck and Johnson 2004). A standard assumption would be to attribute the CAUSE-functor to *v* (or a voice head, Kratzer 1996), as assumed in von Stechow (1996).

[71] Beck and Johnson (2004) assume that the object in English is externally merged with the adjective *open*. Departing from this, I argue that the object is merged as a specifier of V when 'again' modifies the result state of the event. On my analysis, the position of restitutive 'again' may be considered as the position where the prefix 're-' may merge (cf. Carlson and Roeper 1980, and Keyser and Roeper 1984 for relevant discussion). The semantics of 'again' is not crucially affected by this modification, but see fn. 73 for some important implications of this claim for the syntax of object scrambling.

(97) *Repetitive 'again'*   (98) *Restitutive 'again'*
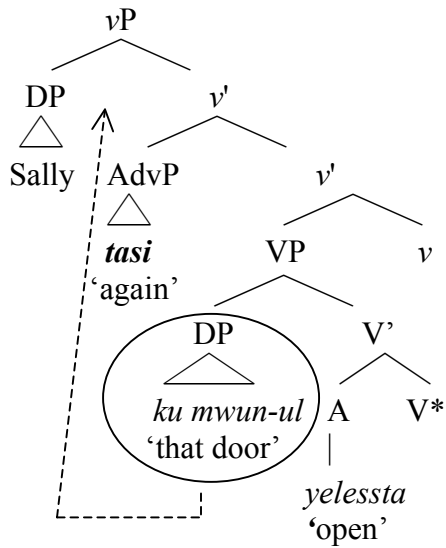
```
            vP                                    vP
          /    \                                /    \
        DP      v'                            DP      v'
        △      / \                            △      / \
      Sally  AdvP  v'                        Sally  VP    v
             △    /  \                              / \
           tasi  VP    v                          DP    V'
          'again' / \                             △    /  \
               DP    V'                      ku mwun-ul  AP      V*
               △    / \                      'that door' / \
           ku mwun-ul A  V*                           AdvP   A
           'that door' |                              △     |
                     yelessta                        tasi  yelessta
                     'open'                          'again' 'open'
```
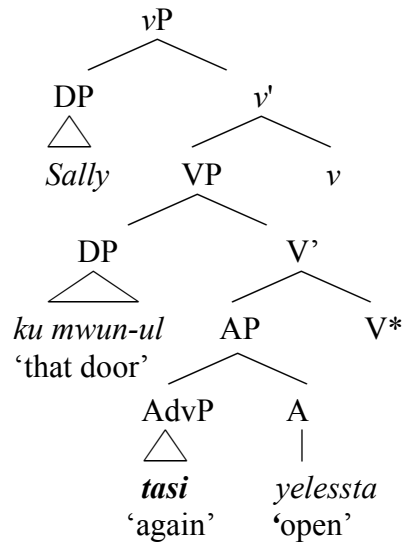
   Given the discussion of the VP-Edge Generalization in (93), we predict that the ambiguity in (96) will disappear if *tasi* intervenes between the object and the NQ$_{obj}$. In particular, the sentence will retain only the *repetitive* reading.

   To obtain a *restitutive* reading, *tasi* needs to be adjoined to the adjective 'open', as in (98). If this is the case, however, *tasi* must follow both the object and the NQ$_{obj}$, or precede both of them (if *tasi* scrambles to the left of the object).[72] The object cannot move within the VP in structures like (98) because the object is the specifier of the VP. Hence, *tasi* with the *restitutive* reading cannot intervene between the object and the NQ$_{obj}$ in the VP domain. Given that VP is a

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[72] Von Stechow (1996) argues that *wieder* 'again' in German does not undergo scrambling at all, on the basis of the fact that *wieder* lacks the restitutive reading if it precedes the object, as in (i). The same fact, however, does not hold in Korean. In particular, *tasi* 'again' preceding the object may retain the restitutive reading. Hence, my claim that *tasi* may scramble in Korean is consistent with Von Stechow's (1996) overall arguments. It remains open, however, why the contrast between German (i) and Korean (ii) holds.
(i) Ali Baba wieder Sesam öffnete
    'Ali Baba opened the door again' (only repetitive)
(ii) Sally-ka   tasi   ku   tongkwul-ul   yelessta
     Sally-Nom   again that cave-Acc   opened
     'Sally opened the cave again' (restitutive, repetitive)

Spell-out domain, the ordering in VP must be preserved in the higher domains. Thus, *tasi* with the *restitutive* reading cannot intervene between the object and the NQ$_{obj}$ in the higher domains, either.[73]

By contrast, *tasi* with a *repetitive* reading can intervene between the object and the NQ$_{obj}$ because the object can move to the left of *tasi* 'again' adjoined to *v*P and establish a new ordering in the *v*P domain that the object precedes *tasi* 'again'. (Recall parallel asymmetries between high and low adverbs in subject scrambling in Chapter 2.)

The prediction about *tasi* is confirmed, as shown in (99). In (99), the previous context makes it clear that 'John has never bought an espresso machine before', which forces the *restitutive* reading.[74] If the restitutive reading of *tasi* were available in (99a), the sentence would be acceptable, just like (99b). However, (99a) is infelicitous in the context given in (99).[75,76]

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[73] If the object can be merged as a sister of the adjective head (below 'again'), this prediction would not hold.

[74] Here I abstract away from the issue of whether we should posit the intermediate reading of 'again' (mere repetition of action: fn. 69), independent of the restitutive reading and the repetitive reading (See Von Stechow 1996 for discussion). Precisely speaking, the context in (99) is incompatible with (pure) repetitive reading, but it may be compatible with the restitutive or the intermediate reading. This, however, does not affect the main arguments because (99a) is infelicitous in the given context, as predicted by the VP-Edge Generalization.

[75] For clarification, (99a) is felicitous in a context compatible with a presupposition that John has bought an espresso machine before. Similarly, (99b) is ambiguous between a restitutive and repetitive reading when no preceding context is given. Korean informants (4/5) agreed with the judgments reported in (99). (One speaker accepted both sentences in (99)).

[76] My arguments for (99) imply that 'x buy y' is decomposed into 'x CAUSE y to BECOME in the possession of x'. Such abstract decomposition of a verb has been justified in the Generative Semantics literature (e.g. Dowty 1979). The fact that *sao* 'buy' in (99) can be decomposed morphologically into *sa-* 'purchase' and *o-*'come' may also support this claim. As von Stechow (1996) notes, decomposition is also necessary to explain scope ambiguity of *wieder* 'again' with a mono-morphemic verb. On this view, *fing* 'catch' in the German example (i) is decomposed into CAUSE BECOME in the state of a PRISONER, as described in (ii) (see von Stechow's (1996) for discussion).

(i)   Randi den Bockhirsch **wieder fing** (restitutive/repetitive)
        Randi   Bockhirsch again   caught
(ii)   [**again** [$_{VP}$ Randi [**again** [$_{SC}$ Bockhirsch **PRISONER**]] **BECOME**] **CAUSE**]]

(99)   Context forcing the restitutive reading: *Mary bought an espresso machine for the department two days ago. But the machine is broken. The department needs to buy a new espresso machine. John, a potential volunteer for buying a new espresso machine, has never bought an espresso machine before.*

John:

  Iceney   *pro* sapo-n-cek-un   ep-ci-man,

  before   (I)   buy-Rel-time-Top   be.not-CI-but

  'I have never bought an espresso machine before but',

a.   #Nay-ka   **eyspuleyso**   **kikyey-lul**   tasi   **han-tay**   sao-l-kkeyyo

     I-Nom   espresso   machine-Acc again 1-Cl   buy-Fut-promise

    #'I will buy an espresso machine, (and I have done that before)' [repetitive reading]

    *'I will buy an espresso machine, (and an espresso machine was in the possession of the

    department before)' [restitutive reading]

b.   Nay-ka   **eyspuleyso** **kikyey-lul**   **han-tay** tasi   sao-l-kkeyyo

     I-Nom   espresso   machine-Acc   1-Cl   again buy-Fut-promise

    #'I will buy an espresso machine, (and I have done that before)' [repetitive reading]

    √'I will buy an espresso machine, (and an espresso machine was in the possession of the

    department before)' [restitutive reading]

The data presented in this section have important implications given that the object can quite freely be separated from the associate NQ in most cases.[77] The paradigms in (94) and (99)

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[77] Aspectual adverbs such as *panccum* 'halfway' may be considered to be merged in VP (modifying the result status of the event) (cf. Tenny 2000, Pylkkänen 2002 for causatives).

not only argue for the claim that VP is a spell-out domain independent of *v*P, but also rule out the hypothesis that the subject-object asymmetries seen in the previous chapter hold because the object can always strand an associate NQ.[78] My analysis also explains the otherwise surprising parallels between object-oriented NQs and subject-oriented NQs in their distribution with respect to domain-mate adverbs. They are all instances of the Edge Generalization.

3.3   Indirect Object and Spell-out domain

Let us turn to implications of the current arguments for the position of the Indirect Object (IO) in argument structure. As shown in (100), a dative-marked Indirect Object (IO) in Korean may intervene between a Direct Object (DO) and a DO-oriented NQ. [79]

Consistent with our expectations, 'halfway' cannot intervene between the object and its NQ: (ib). The ungrammaticality of (ic), however, is not understood.

(i)   a.   John-i   **chayk-ul   han-kwon**   *panccum*   ilk-ess-ta
                John-Nom book-Acc   one-Cl   halfway   read-Past-Dec
                'John read one book halfway'
        b.   *John-i   **chayk-ul** *panccum*   **han-kwon** ilk-ess-ta
        c.   *John-i   *panccum*   **chayk-ul** **han-kwon** ilk-ess-ta

[78] I also predict that an embedded object and its NQ can be separated by restitutive *tasi* that modifies the matrix verb if the embedded object can scramble to the left of *tasi* in the matrix clause. The data in (i)-(ii) suggest that this prediction is correct. But, the judgments about restitutive *tasi* in the matrix clause is rather shaky, and (ii) is slightly degraded regardless of the reading of *tasi*.

(i) John-i   tasi   [Mary-ka   haksayng-tul-ul sey-myeng ttayliessta-ko] malhayssta
    John-Nom again Mary-Nom   student-Pl-Acc   3-Cl   hit-C   said
    'John said again that Mary hit three students' (??restitutive, repetitive)

(ii) ??Haksayng-tul-ul₁ John-i   tasi   [Mary-ka t₁ sey-myeng ttayliessta-ko] malhayssta
     Student-Pl-Acc   John-Nom again   Mary-Nom 3-Cl   hit-C   said
     'John said again that Mary hit three students' (??restitutive, repetitive)

[79] In contrast to (100), an accusative Case-marked IO cannot intervene between the DO and its NQ, as in (i). The accusative IO may follow or precede the DO when a DO-oriented NQ does not exist in the sentence, as in (ii)-(iii):

(i)   ?* John-i   **chayk-ul**   *Mary-lul*   **sey-kwon**   cwu-ess-ta
               John-Nom book-Acc   Mary-Acc   3-Cl   give-Past-Dec
               'John gave three books to Mary'

(100) *DO<IO<NQ$_{DO}$*

        John-i   **chayk-ul**   Mary-eykey   **sey-kwon**   cwu-ess-ta

        John-Nom   book-Acc   Mary-Dat   3-Cl   give-Past-Dec

        'John gave three books to Mary'

The fact in (100) is compatible with (at least) two conceivable hypotheses. One is that the IO is merged outside VP in which the DO is externally merged, as sketched in (101) (cf. high applicative argument in Pylkkänen (2002)). The other is that the IO is merged within VP, but the DO is not externally merged in the Spec of V, as described in (102) (cf. low applicative argument in Pylkkänen 2002). For concreteness, I call the head introducing the IO an applicative head (Appl).[80]

(ii)   John-i   **chayk-ul**   *Mary-lul*   cwu-ess-ta
(iii)   John-i   *Mary-lul*   **chayk-ul**   cwu-ess-ta
The ungrammaticality of (i) might suggest that the accusative IO is externally merged below the DO within the VP domain (possibly as a complement of V). On this view, (i) is another instance of the Edge Generalization. I speculate that the semantics of the accusative IO may force it to be merged below the DO. Substantiation of this claim requires further research. See Jung and Miyagawa (2004) for possibly relevant discussion of the semantic properties of verbs that allow accusative Goal constructions in Korean.

[80] The term applicative has been used to denote a variety of types of arguments (e.g. locative, benefactive, malefactive, goal, etc). See Baker (1988), Bresnan and Moshi (1990), Marantz (1993), Ura (1996), Seidl (2000), McGinnis (2001), Pylkkänen (2002), Doggett (2004), Lee (2004), and references therein for discussion of the syntax of applicatives. In this chapter, I limit my discussion to the IO (which can be seen as a goal argument). The hypotheses in (101) and (102) are similar to the high and low applicative construction proposed by Pylkkänen (2002) in terms of their syntactic structure. My arguments for (101) and (102), however, are independent of Pylkkänen's (2002) semantic analysis of high and low applicatives. See fn.86-87 for relevant discussion.

(101) Hypothesis I

```
          /\
    ApplP    v
     /\
   DO  /\
   ↑  IO  /\
   |     VP   Appl
   |     /\
   |    /__\  V'
   |  t_obj NQ_DO /__\
   |_____|
```

(102) Hypothesis II

```
          /\
     VP    v
     /\
  DO_1  /\
   ↑  ApplP   V
   |   /\
   |  IO  /\
   |     /__\  Appl
   |    t_1  NQ_DO
   |___|
```
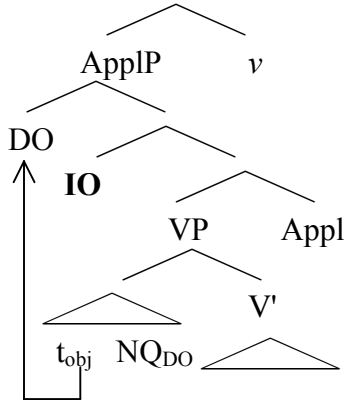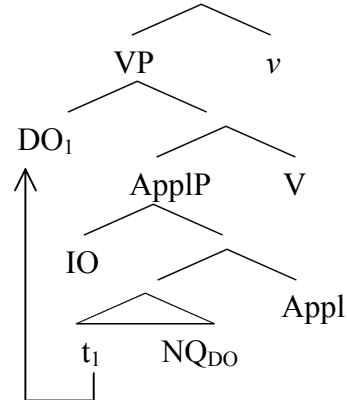
In (101), the DO and its NQ may be separated by the IO because the IO and the DO are externally merged in different Spell-out domains (recall the paradigms with a subject-oriented NQ and a high adverb).[81] In (102), the DO may move to the left of the IO because the DO is in the search domain of V and may move to the left of the IO within VP (cf. (93)).[82] Thus, both hypotheses may capture the grammaticality of (100).

The hypotheses in (101) and (102), however, make a different prediction concerning the scope of *tasi* 'again' and its interactions between the IO and the DO.[83]

If (101) is correct, we expect that the IO and the DO may be separated by restitutive *tasi*. If restitutive *tasi* moves to the left of the DO within VP, the order 'restitutive *tasi*<DO' is

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[81] If the DO is merged as a part of the complement of V, the DO may move to the left of the IO whether the IO is externally merged above or below VP. In this section, I limit the discussion to the case where the DO is merged at Spec of the V to investigate the implications of the VP-Edge Generalization for the position of the IO.

[82] One may also assume that the DO moves to the edge of Appl-P before it moves to [Spec,V]. This assumption will be crucial if Appl-P is a Spell-out domain. But, I do not have evidence that Appl-P is a Spell-out domain. But see also McGinnis (2001) for relevant discussion.

[83] I thank Danny Fox and Norvin Richards for suggesting this test.

established in the VP domain. When the IO is later merged in the applicative projection, the order 'IO< restitutive *tasi*<DO' may be created in the higher domain. This is described in (103).

(103)   IO<restitutive *tasi*<DO under the underlying structure in (101)

ApplP   *v*

   IO

      VP   Appl

   tasi

          V'

      DO

        AP   V

         t
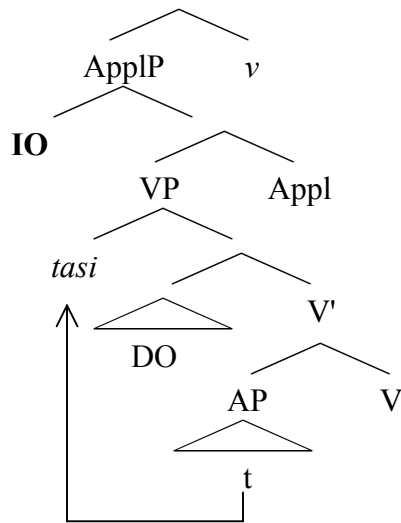
In contrast, if (102) is correct, we expect that restitutive *tasi* may not intervene between the IO and the DO. In particular, given that restitutive *tasi* is adjoined to the complement of V (AP), the applicative phrase in (102) becomes the specifier of V when restitutive *tasi* is present in the sentence. Given the VP-Edge Generalization discussed in (93), this implies that the IO and the DO cannot be separated by restitutive *tasi*. This is depicted in (104).

(104)   *IO<restitutive *tasi*<DO under the underlying structure in (102)

VP   *v*

IO$_2$

        tasi$_1$

            ApplP   V'

            t$_2$ AP   V
                DO Appl
                        t$_1$
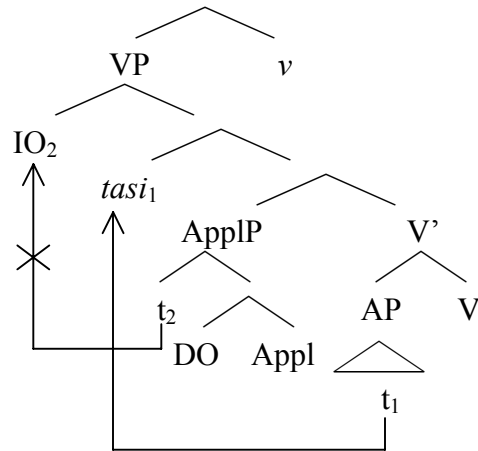
The data show that the former prediction in (101) is correct. As shown in (105), the IO and the DO may be separated by restitutive *tasi.* In particular, the sentence in (105) is compatible with the following scenario, which forces the restitutive reading of 'again': Mary had owned a diamond ring before and recently lost it. John is Mary's new boyfriend and he bought a new diamond ring for Mary. John, however, has never bought a diamond ring for Mary before.[84]

(105) *IO<again<DO*

   John-i   Mary-eykey   tasi   diamond panci-lul   sacwu-ess-ta

   John-Nom   Mary-Dat   again   diamond ring-Acc   buy-Past-Dec

   'John bought a diamond ring for Mary again' [(?)restitutive, repetitive]

---

[84] Precisely speaking, the sentence in (105) is three-way ambiguous: (i) A diamond ring has been in the possession of Mary twice (pure restitutive reading). (ii) A diamond ring was bought for Mary twice (but not necessarily by the same person) (an intermediate reading). (iii) John bought a diamond ring for Mary twice (a pure repetitive reading).

To accommodate (105), proponents of the hypothesis in (102) might postulate that the applicative projection in (102) must be a complement of a verb regardless of the presence of restitutive *tasi*,[85] so that the IO and the DO may move over restitutive *tasi* within VP. This assumption, however, cannot explain the paradigm in (106). As illustrated in (106), restitutive *tasi* may not intervene between the DO and a DO-oriented NQ regardless of the presence of the IO in the sentence. If the IO and the DO may move over restitutive *tasi* in (105), we would expect that the paradigm in (106) would be grammatical with restitutive *tasi*, contrary to the facts.

(106) *DO<IO<again<NQ_{DO}*

    John-i   diamond panci-lul   Mary-eykey   tasi   han-kay   sacwu-ess-ta

    John-Nom   diamond ring-Acc   Mary-Dat   again   one-Cl   buy-Past-Dec

    'John bought a diamond ring for Mary again' [*restitutive, repetitive]

The hypothesis in (101), on the other hand, makes a correct prediction for (106). The ungrammaticality of (106) is just an instance of the VP-Edge Generalization. Given that the ordering, DO<restitutive *tasi* <NQ_{DO} cannot be created in the VP domain, it is predicted that the ordering in (106) would not be grammatical with restitutive *tasi*. Importantly, the hypothesis in (101) correctly predicts that the ordering DO<restitutive *tasi* <NQ_{DO} is ungrammatical regardless of presence of IO between DO and NQ_{DO} in (106) (cf. predictions of (102)).

The table in (107) summarizes the current discussion of the interactions of IO, DO, NQ, and the scope of 'again':

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[85] It is not obvious how this approach may capture the semantics of *tasi,* however.

(107) Diverging Predictions

	IO<restitutive 'again' <DO	DO<IO<restitutive 'again' <NQ$_{DO}$
Hypothesis I (101) => CORRECT!	**grammatical:** (105)	**ungrammatical:** (106)
Hypothesis II (102)	ungrammatical (if AP is the complement of V)	ungrammatical (if AP is the complement of V)
	grammatical (if Appl-P is the complement of V)	grammatical (if Appl-P is the complement of V)

My arguments for (100)-(106) thus provide support for the claim that the IO is merged in a different Spell-out domain from the DO. This, in turn, poses interesting challenges to the claim that the IO and the DO in Korean are externally merged as arguments of a low applicative head (cf. Pylkkänen 2002; see Seidl (2000) and McGinnis (2001) for relevant discussion of cross-linguistic variation of applicative constructions).[86]

Further research is required, however, to understand the syntax and the semantics of the head introducing the IO in (101). In particular, it is not clear how the semantic relationship

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[86] Pylkkänen (2002) argues that only high applicative heads are able to combine with unergative/stative verbs. Given that Korean lacks unergative/stative applicatives, as in (i), Pylkkänen claims that Korean lacks high applicative IOs and allows only low applicative IOs. (*Hantey* in (i) is a colloquial form of the dative marker)
(i) a. *Mary-ka   John-hanthey talli-ess-ta
        Mary-Nom   John-Dat   run-Past-Dec
        'Mary ran for John'
  b. *Mary-ka   John-hanthey kabang-ul   cap-ass-ta
        Mary-Nom   John-Dat   bag-Acc   hold-Past-Dec
        'Mary held a bag for John'   (Pylkkänen 2002, p.25)
The ungrammaticality of (i), however, may not be strong evidence for Pylkkänen's claim. It might be the case that Korean allows high applicatives but that the high applicatives must bear a particular morphology such as benefactive marker. In fact, the sentences in (i) are all grammatical if the dative marker *hantey* is replaced with a benefactive postposition *wuyhayse* 'for'. Moreover, it might also be the case that IOs in Korean are locative PPs so that it does not show the properties of either high or low applicative arguments.

between the IO and the DO in (100) (i.e. transfer of possession) can be captured under (101).[87] It also remains open whether the projection of the applicative head in (101) may constitute a Spell-out domain. If the IO and an IO-oriented NQ show the effects of the Edge Generalization, we might argue that the applicative projection containing the IO is a Spell-out domain. As is well-known, however, Korean IOs do not license a floating quantifier at all, just like adjunct phrases: (108)-(109). Thus, this prediction cannot be tested.

(108) a.   [S   NQ$_{IO}$-Gen   IO   DO   V]

               John-i   [sey-myeng-uy haksayng-tul]-eykey   chayk-ul   cwu-ess-ta

               John-Nom   3-Cl-Gen   student-Pl-Dat   book-Acc   give-Past-Dec

               'John gave three students a book'

       b.   *[S   IO   NQ$_{IO}$ DO   V]

               *John-i   **haksayng-tul-eykey   sey-myeng** chayk-ul   cwu-ess-ta

                John-Nom   student-Pl-Dat   3-Cl   book-Acc   give-Past-Dec

                'John gave three students a book'

(109) a.   Haksayng-tul-i   [sey-kos-uy cwucem]-eyse   makcwu-lul   masiessta

               Student-Pl-Nom   3-Cl-Gen   bar-in   beer-Acc   drank

               'Students drank beer in three bars'

---

[87] The semantic relationship between IO and DO in (100) is rather naturally explained by the semantics of a low applicative that Pylkkänen assumes. As discussed above, however, this is incompatible with (105)-(106).

b.　　*Haksayng-tul-i　**cwucem-eyse**　**sey-kos**　makcwu-lul　masiessta

　　　Student-Pl-Nom　bar-in　　3-Cl　　beer-Acc　　drank

　　　'Students drank beer in three bars'

3.4　Further Support: The VP-Edge Generalization in Japanese

If the VP-Edge Generalization also holds in Japanese, as argued for the Control paradigm in (95), we expect that a VP-internal element may not intervene between the object and the object-oriented NQ in mono-clausal contexts in Japanese as well. The paradigms in (110)-(111) show that this is the case. As (110) shows, *mata* 'again' in Japanese may not retain the restitutive reading when it intervenes between the object and the object-oriented NQ, just as in corresponding Korean examples in (99).

(110)　Context forcing the restitutive reading of 'again': *Mary bought an espresso machine for the department two days ago. But, the machine is broken. The department needs to buy a new espresso machine. John, a potential volunteer for buying a new espresso machine, has never bought an espresso machine before.*

John:

　　Mae-ni　(pro)　kat-ta　　koto na-i　　keredo,

　　Before　I　　buy-Past　　fact not-Pres　but

　　'I have never bought an espresso machine before but',

a.   ?*/# Boku-ga **esupuresso masin-o** *mata* **hito-tu** kai-masu

         I-Nom   espresso   machine-Acc   again one-Cl buy-Fut

      #'I will buy an espresso machine, (and I have done that before)' [repetitive reading]

      ?*'I will buy an espresso machine, (and an espresso machine was in the possession of

      the department before)' [restitutive reading]

b.   Boku-ga   **esupuresso masin-o**   **hito-tu**   *mata*   kai-masu

      I-Nom   espresso   machine-Acc one-Cl   again   buy-Fut

      #'I will buy an espresso machine, (and I have done that before)' [repetitive reading]

      √'I will buy an espresso machine, (and an espresso machine was in the possession of the

      department before)' [restitutive reading]

                                           (N. Hasegawa, p.c.)

The example in (111) shows the same point. When *mata* intervenes between the object and the object-oriented NQ, the restitutive reading is not available.[88] Given the parallels between Korean *tasi* paradigms in (99) and Japanese *mata* paradigms in (110)-(111), I argue that my analysis for the VP-Edge Generalization in Korean straightforwardly extends to Japanese.

---

[88] I thank Nobuko Hasegawa for providing me the examples in (111). My analysis for (111) implies that 'x order y' is decomposed into 'x CAUSE y to become in the possession of x'. See fn. 76 for related discussion.

(111) Context forcing the restitutive reading of 'again': *At a party, Mary ordered a pizza and it has been consumed. Then John volunteered to order another pizza.*

a. ?* Kondo-wa   boku-ga **pizza-o**   *mata* **hito-tu**   tyuumon-su-ru-yo

  This.time-Top I-Nom   pizza-Acc again one-Cl   order-do-Pres-Assertive

  'This time, I will order a pizza again.'

b.   Kondo-wa   boku-ga **pizza-o**   **hito-tu**   *mata*   tyuumon-su-ru-yo

  This time-Top I-Nom   pizza-Acc one-Cl   again   order-do-Pres-Assertive

  'This time, I will order a pizza again.' (N. Hasegawa, p.c.)

The question of whether the IO and the DO belong to the same Spell-out domain arises for Japanese as well. As illustrated in (112), the IO may intervene between the DO and a DO-oriented NQ in Japanese (recall the Korean paradigm in (100)). As argued for Korean paradigms, the two approaches described in (113) and (114) are compatible with (112).

Japanese

(112) *DO<IO<NQ$_{DO}$*

  John-ga   **hon-o**   Mary-ni   **san-satu**   age-ta

  John-Nom   book-Acc   Mary-Dat   3-Cl   give-Past

  'John gave three books to Mary' (adapted from Hoji 1985; K. Takezawa, p.c.)

(113) Hypothesis I

```
        ApplP        v
      /      \
    DO
    ↑        IO
             /    \
           VP      Appl
          /   \
       t_obj  NQ_DO   V'
```

(114) Hypothesis II

```
        VP           v
      /    \
    DO₁
    ↑       ApplP        V
            /    \
          IO
          /   \
        t₁   NQ_DO   Appl
```
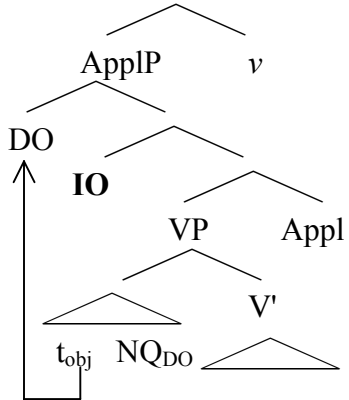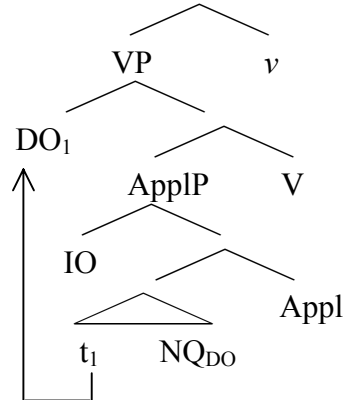
As summarized in (115), however, two hypotheses in (113) and (114) make different predictions concerning possible linear orderings among IO and DO, and restitutive *mata* 'again':

(115) Diverging Predictions

	IO<restitutive 'again' <DO	DO<IO<restitutive 'again' <NQ$_{DO}$
Hypothesis I (113)	**grammatical**	**ungrammatical**
Hypothesis II (114)	ungrammatical (if AP is the complement of V)	ungrammatical (if AP is the complement of V)

Specifically, if the IO is externally merged outside the VP domain, as in (113), we predict that restitutive *mata* may intervene between the IO and the DO, but not between the DO and a DO-oriented NQ regardless of presence of the IO in the sentence. If the IO and the DO are externally merged within VP, as in (114), we expect that restitutive *mata* cannot intervene between IO and DO, or between DO and DO-oriented NQ.

The facts in (116)-(117) show that the predictions of the hypothesis in (113) are correct. As described in (116b), restitutive *mata* may intervene between *Mary-ni* and *kuruma-o*.

Restitutive *mata*, however, cannot intervene between the DO and the DO-oriented NQ, as shown in (117b) (recall the same paradigms observed in Korean (105)-(106)).

Japanese: IO<again<DO

(116) a. John-ga   Mary-ni   kuruma-o   *mata*   kat-ta

        John-Nom Mary-Dat car-Acc   again   buy-Past

        'John bought a car for Mary' (restitutive, repetitive)

     b. John-ga   **Mary-ni**   *mata*   **kuruma-o** kat-ta

        John-Nom Mary-Dat   again car-Acc   buy-Past

        'John bought a car for Mary' (?restitutive, repetitive)

     c. John-ga   *mata*   Mary-ni   kuruma-o kat-ta

        John-Nom again   Mary-Dat   car-Acc   buy-Past

        'John bought a car for Mary' (*restitutive, repetitive) (K. Takezawa, p.c.)

Japanese: IO<DO<again<NQ_{DO}

(117) a. John-ga   Mary-ni   kuruma-o iti-dai   mata kat-ta

        John-Nom Mary-Dat car-Acc   one-Cl   again buy-Past

        'John bought one car for Mary' (restitutive, repetitive)

     b. John-ga   **Mary-ni**   **kuruma-o** *mata* **iti-dai**   kat-ta

        John-Nom Mary-Dat car-Acc   again   one-Cl buy-Past

        'John bought one car for Mary' (*restitutive, repetitive) (K. Takezawa, p.c.)

My overall arguments for the paradigms in (112)-(117) thus provide further support for the claim that the IO in Japanese is externally merged outside VP (possibly as an argument of a high applicative head) (e.g. Miyagawa and Tsujioka 2004 for high applicative analysis for some Japanese IOs). This, in turn, challenges the claim (e.g. Pylkkänen 2002) that Japanese IOs are obligatorily merged as an argument of a low applicative head within VP.

3.5   Secondary Predicates in Japanese

In this section, I show that the current account of the Edge Generalization is corroborated by well-established observations concerning the distribution of secondary predicates in Japanese: *de* depictive predicates and *ni* resultative predicates. The data in this section are mostly taken from Koizumi (1994) and Takezawa (1993).[89]

3.5.1 Depictive Secondary Predicates in Japanese

A secondary depictive predicate describes the state of the referent of an NP at the time when the action denoted by the primary predicate occurs. In Japanese, depictive phrases are marked with –*de* suffix. The following sentences are typical examples of –*de* depictive phrases. (For convenience, I call –*de* marked depictive phrases 'DE-depictives', subject-oriented depictive phrases 'SDP', and object-oriented depictive phrases 'ODP'.)

---

[89] I thank Shigeru Miyagawa for drawing my attention to the distribution of secondary predicates in Japanese.

Japanese

(118)   Subject-Oriented Depictive Phrases (SDP)

a.   **Taroo-ga**   **hadaka-de**   hon-o   yonda

Taro-Nom   naked-DE   book-Acc   read

'Taro read a book naked'

b.   **Hanako-ga**   **kimono-sugata-de**   odotta

Hanako-Nom kimono-dress-DE   danced

'Hanako danced in kimono'   (Koizumi 1994: 27)

Japanese

(119)   Object-oriented Depictive Phrases (ODP)

a.   Taroo-ga   **katuo-o**   **nama-de**   tabeta

Taro-Nom   bonito-Acc   raw-DE   ate

'Taro ate the bonito raw'

b.   Hanako-ga   **kuruma-o**   **tyuuko-de**   katta

Hanako-Nom car-Acc   secondhand-DE   bought

'Hanako bought a car used'   (Koizumi 1994: 27)

Koizumi (1994) argues that a SDP and an ODP are base-generated in different positions, as described in (120). In particular, Koizumi argues that the SDP may be base-generated outside a verbal projection "VP", which contains internal arguments such as indirect object and direct

object.[90] The ODP, on the other hand, must be base-generated inside "VP". Specifically, the ODP

must be base-generated as a sister of V and the object. Koizumi takes the facts in (121)-(128) as

supporting evidence for the structure in (120).

(120)   Koizumi 1994: Depictive Predicates in Japanese

```
                IP
              /    \
            NP      I'
                  /   \
              SDP₁  "VP"  I
                  /     \
              SDP₂      "VP"
                          |
                          V'
                        /   \
                    NP  ODP  V
```
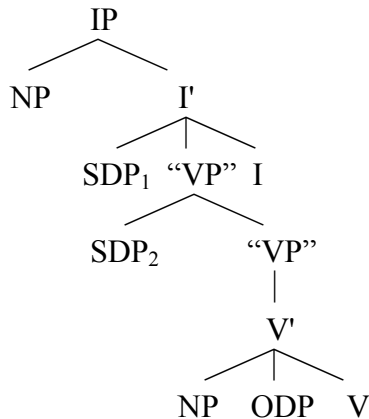
In particular, Koizumi argues that VP-constituency tests such as VP-preposing and VP-
pseudo-clefting provide evidence for (120). As illustrated in (121)-(122), VP-preposing and
pseudo-clefting of VP are possible when the "VP" containing all the internal arguments is
preposed.[91]

---

[90] Koizumi (1994) does not assume the *v*P-internal subject hypothesis. To avoid potential confusion due to the differences in terminology, I will use "VP" to denote the VP in Koizumi's structure.

[91] As Danny Fox (p.c.) notes, Koizumi's argument tacitly assumes that there is no trace of the subject or trace of internal arguments in the preposed VPs in (121). Norvin Richards (p.c.) raises the questions of how the order in (121) can be derived under Cyclic Linearization. I tentatively suggest that the VP projection may scramble to the left of the subject *John-ga* within *v*P. This claim, as it stands, is not compatible with the claim that a complement cannot move to a Spec of a single head (e.g. Abels 2003, Doggett 2004) (The same issue also arises for the PIC approach since the VP is a complement of *v*. VP cannot be fronted unless it moves to the edge in the *v*P phase). Alternatively, one might argue that *John-ga* is externally merged higher than [Spec,*v*P] (as an argument of *sita*) and the fronted "VP" in (121) is in fact a *v*P that contains PRO bound by *John-ga.* I leave it future research how to resolve this issue.

Japanese: VP-preposing (Koizumi 1994: 32-33)

(121) a. [**sono hako-no naka-ni ringo-o ire-sae**]$_1$ John-ga t$_1$ sita

　　　 that box-Gen inside-in apple-Acc put-even John-Nom did

　　　 'Even put an apple in that box, John did'

　 b. *[**ire-sae**]$_1$ John-ga [sono hako-no naka-ni ringo-o t$_1$] sita

　　　 put-even John-Nom that box-Gen inside-in apple-Acc did

　　　 'Even put, John did an apple in that box'

　 c. *[**ringo-o ire-sae**]$_1$ John-ga [sono hako-no naka-ni t$_1$] sita

　　　 apple-Acc put-even John-Nom that box-Gen inside-in did

　　　 'Even put an apple, John did in that box'

Japanese: Pseudo-clefting (Koizumi 1994: 33)

(122) a. John-ga sita no wa [**sono hako-no naka-ni ringo-o ireru**]-koto da

　　　 John-Nom did NL Top that box-Gen inside-in apple-Acc put -NL Cop

　　　 'What John did is put an apple in that box'

　 b. *John-ga [**sono hako-no naka-ni ringo-o**] sita no wa [ireru]-koto da

　　　 John-Nom that box-Gen inside-in apple-Acc did NL Top put-NL Cop

　　　 'What John did an apple in the box is put'

　 c. *John-ga [**sono hako-no naka-ni**] sita no wa [ringo-o ireru]-koto da

　　　 John-Nom that box-Gen inside-in did NL Top apple-Acc put-NL Cop

　　　 'What John did in the box is put an apple'

As illustrated in (123), the SDP may optionally be included in a preposed VP. The ODP, on the other hand, must be included in a preposed VP, as shown in (124). Given the paradigms in (121)-(122), Koizumi argues that the contrast between the SDP and the ODP in (123)-(124) implies that the SDP can optionally be base-generated outside "VP". In contrast, the ODP must be merged within "VP".

Japanese: SDP and VP-preposing

(123) a.   [katuo-o   tabe-sae]$_1$ Taroo-ga   **hadaka-de** t_1 sita

              bonito-Acc eat-even   Taro-Nom naked-DE   did

              'Even eat the bonito, Taro did naked'

       b.   [**hadaka-de** katuo-o   tabe-sae]$_1$ Taroo-ga t_1 sita

              naked-DE   bonito-Acc eat-even   Taro-Nom   did

              'Even eat the bonito naked, Taro did' (Koizumi 1994: 34)

Japanese: ODP and VP-preposing

(124) a.   *[katuo-o   tabe-sae]$_1$ Taroo-ga   **nama-de** t_1 sita

              bonito-Acc eat-even   Taro-Nom raw-DE   did

              'Even eat the bonito, Taro did raw'

       b.   [**nama-de** katuo-o   tabe-sae]$_1$ Taroo-ga t_1 sita

              raw-DE   bonito-Acc eat-even   Taro-Nom   did

              'Even eat the bonito raw, Taro did' (Koizumi 1994: 35)

Koizumi further argues that the pro-verbal form *soo-su* 'do so' test shows the same point. The proform *soo-su* may replace "VP", as illustrated in (125).[92] A SDP can *optionally* be included within the *soo-su* phrase, as in (126). In contrast, an ODP is *obligatorily* included within the *soo-su* phrase when its antecedent contains the ODP, as shown in (127) and (128). Given (128), Koizumi further argues that the ODP must be generated as a sister of V, so that the object and the verb do not form a constituent to the exclusion of the ODP.[93]

Japanese: soo-su proform (Koizumi 1994: 36)

(125) a.   Taroo-wa   **sinroo-ni**   **hanataba-o**   **watasi-ta**

Taro-Top   bridegroom-Dat   bouquet-Acc   hand-Past

'Taro handed a bouquet to the bridegroom'

b.   Hanako-mo   **soo-si-ta**

Hanako-also   so-do-Past

'Hanako did so, too (handed a bouquet to the bridegroom)'

c.   Hanako-wa   **sinpu-ni**   **soo-si-ta**

Hanako-Top   bride-Dat   so-do-Past

'Hanako did so to the bride (handed a bouquet to the bride)'

---

[92] Unlike the VP-preposing tests in (121)-(122), the *soo-su* proform may replace a verb and direct object, excluding the indirect object (e.g. (125c); cf. (121c) and (122c)). Nothing hinges on this for current purposes.

[93] This assumes that *soo-su* cannot replace a phrase containing a trace. As Koizumi notes, this assumption is also needed to rule out (i).

(i) *Ziroo-wa ringo-o_1 soo-si-ta

Jiro-Top   apple-Acc   so-do-Past = [t_1 V]

'Jiro did so an apple' (ate an apple)

Japanese: SDP and soo-su proform (Koizumi 1994: 37)

(126) a.　　Hanako-ga　　**kimono-sugata-de**　　suika-o　　　　　　tabeta

　　　　　　Hanako-Nom　kimono-dress-DE　　watermelon-Acc　　ate

　　　　　　'Hanako ate watermelon in kimono'

　　　b.　　Ziroo-mo　　**soo-si-ta**

　　　　　　Jiro-also　　　so-do-Past

　　　　　　'Jiro did so, too (ate watermelon (in kimono))'

Japanese: ODP and soo-su proform (Koizumi 1994: 38)

(127) a.　　Hanako-ga　　Sentra-o　　　**sinsya-de**　　katta

　　　　　　Hanako-Nom　Sentra-Acc　　new-DE　　　bought

　　　　　　'Hanako bought a sentra new'

　　　b.　　Ziroo-mo　　**soo-si-ta**

　　　　　　Jiro-also　　　so-do-Past

　　　　　　'Jiro did so, too (bought a Sentra **new**, too)'

(128) a.　　Hanako-ga　　**sinsya-de**　　Sentra-o　　　katta

　　　　　　Hanako-Nom　new-DE　　　　Sentra-Acc　　bought

　　　　　　'Hanako bought a Sentra **new'**

　　　b.　　*Ziroo-wa　　**tyuuko-de**　　soo-si-ta

　　　　　　Jiro-Top　　　used-DE　　　　so-do-Past

　　　　　　'Jiro did so **used**'

Let us now consider the implications of Koizumi's argument for present proposals. Under the current framework assuming the *v*P-internal subject hypothesis, Koizumi's observations may roughly correspond to the following:

(129)   *DE-depictives in Japanese under the vP-internal subject hypothesis* [to be revised]

The SDP may optionally be externally merged outside or inside *v*P, but the ODP must be externally merged within *v*P. More specifically, the ODP must be merged within a verbal projection containing the object and the verb (roughly corresponding to VP).

Given the hypothesis in (129), the Edge Generalization make various predictions regarding the interactions of DE-depictive predicates and floating NQs in Japanese.

Consider first an immediate prediction concerning subject scrambling. If (129) is on the right track, we predict that the subject and the subject-oriented NQ can be separated by the SDP, but not by the ODP. Schematic representations of the prediction are described in (130)-(131). Given that the SDP can be externally merged higher than *v*P, the subject may move to the left of the SDP in the CP domain without contradicting ordering restrictions established in the *v*P domain (recall the paradigms with high adverbs and the subject in Chapter 2). By contrast, given that the ODP must be externally merged lower than *v*P, the subject and a subject-oriented NQ cannot be separated by the ODP within the *v*P domain without violating the Search Domain Condition. Given Cyclic Linearization, we expect this ordering restriction to be preserved in the higher domains (recall the paradigms with low adverbs and the subject in Chapter 2).
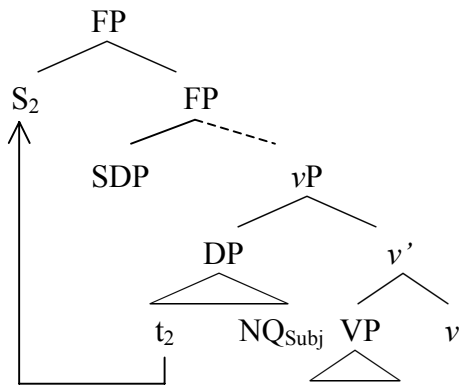
(130) S<SDP<NQ_{subj}   (131) *S<ODP<NQ_{subj}
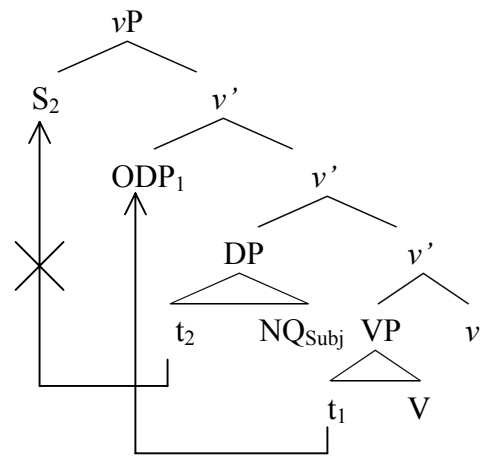
The prediction is borne out, as shown in (132) and (133). On my account, the paradigms

in (132) and (133) instantiate the Edge Generalization in the *v*P-domain.

Japanese: Subject-oriented NQ and SDP (Koizumi 1994: 32)

S<SDP<NQ_{subj}

(132) a. **Gakusei-ga**   **san-nin**   *hadaka-de*   katuo-o   tabeta

           Student-Nom   3-Cl   naked-DE   bonito-Acc   ate

           'Three students ate the bonito **naked**'

       b. ?**Gakusei-ga**   *hadaka-de*   **san-nin**   katuo-o   tabeta

            Student-Nom   naked-DE   3-Cl   bonito-Acc   ate

           'Three students ate the bonito **naked**'

113

Japanese: Subject-oriented NQ and ODP (Koizumi 1994: 32)

*S<ODP<NQ_{subj}

(133) a.   **Gakusei-ga**   **san-nin**   *nama-de*   katuo-o   tabeta

Student-Nom   3-Cl   raw-DE   bonito-Acc   ate

'Three students ate the bonito ***raw***'

 b.   ***Gakusei-ga**   *nama-de*   **san-nin**   katuo-o   tabeta

 Student-Nom   raw-DE   3-Cl   bonito-Acc   ate

'Three students ate the bonito ***raw***'

I have argued that an NQ must form a constituent with its host NP. On this approach, an SDP and an NQ originate from different underlying structures. Specifically, an SDP may be externally merged separately from the subject (i.e. outside *v*P), whereas a subject-oriented NQ must form a constituent with the subject in the underlying structure. This argument leads us to expect that the SDP and NQ$_{subj}$ may show different syntactic distributions. The paradigms in (134)-(136) show that this is indeed the case.[94]

Unlike the SDP in (123), the NQ$_{subj}$ cannot be included in the clefted VP, as exemplified in (134b). The contrast between the SDP in (123b) and the NQ in (134b) is expected under my approach that *gakusei-ga* 'student-Nom' and *3-nin* '3-Cl' in (134b) are merged as a constituent in [Spec,*v*P], unlike the SDP in (123).[95]

---

[94] The contrasts between the SDP and NQ$_{subj}$ in their syntactic distribution would remain unexplained if NQs were treated as secondary predicates (cf. Miyagawa 1989, See also Chapter 4 for discussion of Case-Marked NQs).

[95] Koizumi (1994) does not explain the contrasts between subject-oriented NQs and SDP. In Korean, (134b) is ungrammatical, but if the NQ is case-marked, the sentence becomes grammatical. This is expected under my suggestion in Chapter 4 that Case-Marked NQs are secondary predicates in Korean.

(134)   Subject-oriented NQ must not be included in VP-clefting (cf. SDP in (123))

a.   Gakusei-ga   **san-nin**   sita   no wa   [sono   hako-no   naka-ni   ringo-o   ireru]-koto da

Student-Nom   3-Cl   did   NL Top   that   box-Gen   inside-in apple-Acc put   -NL   Cop

'What three student did is put an apple in that box'

b.   *Gakusei-ga   sita no   wa   [**san-nin**   sono   hako-no naka-ni   ringo-o   ireru]-koto da

Student-Nom did NL Top   3-Cl   that   box-Gen   inside-in   apple-Acc put- NL   Cop

'What three students did is put an apple in that box' (Koizumi 1994: 34)

The paradigms in (135) and (136) show further contrasts between an SDP and an NQ. As illustrated in (135), the subject and an SDP may be separated by the object, in contrast to the paradigms with an NQ in (136) (recall the Subject Puzzle). This contrast is again expected under my proposals. Given that the SDP may be base-generated outside *v*P, the subject and the SDP may be separated by the object. Under this view, the SDP can be ambiguous in its structural position, just like other ambiguous adverbs such as *mwuleyhakey* 'rudely' seen in Chapter 2.

(135)   *Subject<Object<SDP*

a.   **Hanako-ga**   **kimono-sugata-de**   suika-o   tabeta

Hanako-Nom   kimono-dress-DE   watermelon-Acc   ate

'Hanako ate watermelon in kimono'

b.   **Hanako-ga**   suika-o   **kimono-sugata-de**   tabeta

Hanako-Nom   watermelon-Acc   kimono-dress-DE   ate

'Hanako ate watermelon in kimono'

(136) *Subject<Object<NO$_{subj}$

a. **Gakusei-ga**   **san-nin**   sake-o   nonda

Student-Nom   3-Cl$_{people}$ sake-Acc   drank

'Three students drank sake'

b. ***Gakusei-ga**   sake-o   **san-nin**   nonda

Student-Nom   sake-Acc   3-Cl$_{people}$ drank

'Three students drank sake'

Let us now turn to paradigms with object scrambling. Since Koizumi used a ternary structure in (120), it is not obvious what the precise prediction of the VP-Edge Generalization for an ODP is. But, if the object is a specifier of V, we predict that the ODP may not intervene between the object and its NQ. The paradigm in (137) shows that this is not the case, however. As described in (137b), the ODP may intervene between the object and an object-oriented NQ (cf. *mata* paradigms in (110)-(111)).

(137) Object<ODP<NQ$_{obj}$

a. Taroo-ga   **katuo-o**   **san-biki**   *nama-de*   tabeta

Taro-Nom   bonito-Acc   3-Cl   raw-DE   ate

'Taro ate three pieces of bonito raw.'

b. Taroo-ga   **katuo-o**   *nama-de*   **san-biki**   tabeta

Taro-Nom   bonito-Acc   raw-DE   3-Cl   ate

'Taro ate three pieces of bonito raw.'

116

c.   Taroo-ga   *nama-de*   **katuo-o**   **san-biki**   tabeta

        Taro-Nom   raw-DE   bonito-Acc   3-Cl   ate

        'Taro ate three pieces of bonito raw.' (S. Miyagawa, p.c.)

If my arguments for the VP-Edge Generalization are correct, (137) suggest that the object is not in Spec of V. However, there are at least two possible structures for an ODP, which are compatible with (137) and the VP-Edge Generalization.

First, if an ODP is externally merged above the object in VP, as depicted in (138), the object is not in [Spec,VP]. The object in the configuration (138) is in complement position. Thus, movement of the object to the left of the ODP in the VP domain does not violate the Search Domain Condition. Hence, the paradigms in (137) are expected. Under this view, the crucial contrast between *mata* 'again' paradigms in (110)-(111) and (137) is that *mata* must be merged below the object, while the ODP can (optionally, but not necessarily) be merged above the object.[96]

---

[96] This, of course, raises the question of why the base position of 'again' and an ODP differs. It seems to me that the lexical semantics of the ODP and 'again' is the key to answer this question. If the semantics of 'again' forces it to be merged with an adjective phrase denoting "state" (von Stechow 1996, Beck and Johnson 2004), 'again' must be externally merged lower than V, modify the adjective (the complement of V).
(i) [VP O   V [AP *again* A]]
By contrast, there is no reason to assume such semantic constraints for the ODP. Note that (138) is compatible with Pylkkänen's (2002) analysis for depictives in (ii). Pylkkänen argues that movement may create a node of the type <e,<s,t>> with which DEP can be merged, as in (iii). In (138), object scrambling yields the structure like (iii). (See Pylkkänen (2002) for arguments for (iii) that the IO may be modified by a depictive phrase when it undergoes A-movement. See also Pylkkänen (2002) for comments on conflicting arguments from Nissenbaum (2000)).

(138)   Revised Hypothesis I: DE-depictive Predicates in Japanese[97]

SDP   *v*P

S NQ
SDP

O

ODP   VP

v

V

t$_1$ NQ
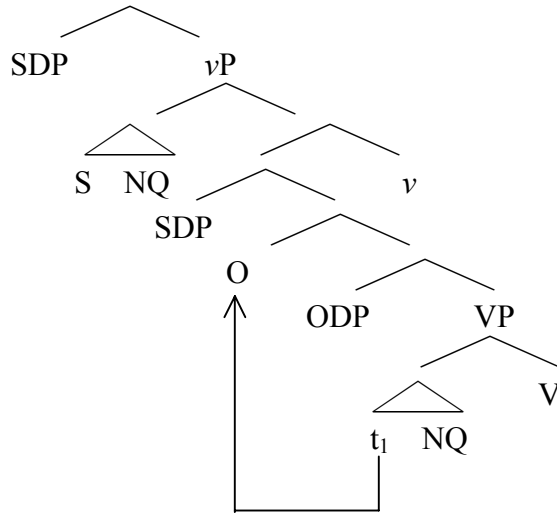
Alternatively, one might assume that the ODP is merged within VP, but the object and the ODP may form a constituent in a small clause and thus the object may move to the left of the ODP, as illustrated in (139).[98] Under this view, the crucial contrast between *mata* 'again' paradigms in (110)-(111) and (137) is that the ODP may form a constituent with the object while *mata* cannot.

(ii) [[DEP]] = λf <e,<s,t>>. λx. λe. (∃s) f(s,x) & e$_o$S
(iii) (A-)Movement and Depictive phrases

DP$_1$

DEP

λx

… t$_1$
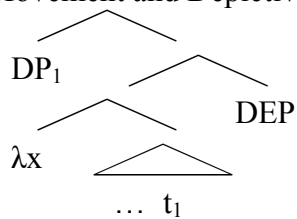
[97] For current purposes, it does not matter whether the lower SDP in (138) is merged below or above *v*. The same applies to (139). The fact in (123b), however, suggests that the former view is more plausible.
[98] I thank David Pesetsky for suggesting the structure in (139).

(139)   Revised Hypothesis II: DE-depictive Predicates in Japanese
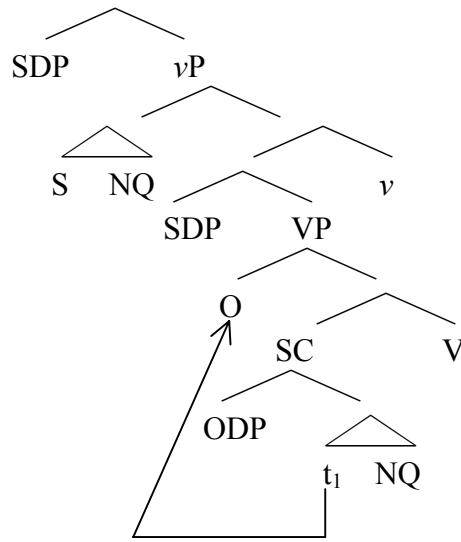
Both hypotheses in (138) and (139) may capture the paradigms discussed in this section. The hypotheses in (138) and (139), however, make different predictions concerning possible orderings among restitutive 'again', an ODP, the DO, and a DO-oriented NQ. The diverging predictions are summarized in (140). Specifically, if (138) is correct, we expect that restitutive 'again' may intervene between an ODP and the DO, but not between the DO and a DO-oriented NQ. If (139) is correct, we expect that restitutive 'again' might not intervene either between ODP and DO, or between DO and a DO-oriented NQ. This is summarized in (140). (Recall similar predictions for IO, DO, and 'again' in (115).)

(140) Diverging predictions

	ODP <restitutive 'again' <DO	DO<ODP<restitutive 'again' <NQ$_{DO}$
(138) => **CORRECT!**	**Grammatical:** (141b), (142b)	**Ungrammatical:** (143b)
(139)	Ungrammatical (if AP is the complement of V)	Ungrammatical (if AP is the complement of V)
	Grammatical (if SC is the complement of V)	Grammatical (if SC is the complement of V)

The facts in (141)-(143) consistently show that the predictions of the hypothesis in (138) are correct. In particular, (141b) and (142b) show that restitutive *mata* may intervene between an ODP *sinsay-de* and the DO *kuruma-o*. The paradigm in (143b) shows that restitutive *mata* cannot intervene between the DO *kuruma-o* and a DO-oriented NQ *iti-dai* even if an ODP *sinsya-de* is present in the sentence.

(141) *(IO)<ODP<again<DO*

    a.   John-ga   Mary-ni   **sinsya-de**   **kuruma-o**   *mata* kat-ta

           John-Nom   Mary-Dat   new-DE   car-Acc   again buy-Past

           'John bought a new car for Mary again' (restitutive, repetitive)

    b.   John-ga | Mary-ni   **sinsya-de**   *mata*   **kuruma-o** | kat-ta

           John-Nom   Mary-Dat   new-DE   again   car-Acc   buy-Past

           'John bought a new car for Mary again' (?restitutive, repetitive)

    c.   John-ga   *mata* Mary-ni   **sinsya-de**   **kuruma-o** kat-ta

           John-Nom   again Mary-Dat new-DE   car-Acc   buy-Past

           'John bought a new car for Mary again' (*restitutive, repetitive)

(142) *(IO)<DO<again<ODP*

a. John-ga   Mary-ni   **kuruma-o sinsya-de**   *mata*   kat-ta

    John-Nom Mary-Dat   car-Acc   new-DE   again   buy-Past

    'John bought a new car for Mary' (restitutive, repetitive)

b. John-ga | Mary-ni   **kuruma-o** *mata*   **sinsya-de** | kat-ta

    John-Nom Mary-Dat car-Acc   again new-DE buy-Past

    'John bought a new car for Mary' (?restitutive, repetitive)

c. John-ga   *mata* Mary-ni   **kuruma-o**   **sinsya-de**   kat-ta

    John-Nom again Mary-Dat car-Acc   new-DE   buy-Past

    'John bought a new car for Mary' (*restitutive, repetitive)

(143) *(IO)<DO<ODP<again<NQ*

a. John-ga   Mary-ni   **kuruma-o** sinsya-de **iti-dai**   *mata*   kat-ta

    John-Nom Mary-Dat car-Acc   new-DE   one-Cl   again buy-Past

    'John bought one new car for Mary' (restitutive, repetitive)

b. John-ga | Mary-ni   **kuruma-o** sinsya-de *mata*   **iti-dai** | kat-ta

    John-Nom Mary-Dat car-Acc   new-DE   again   one-Cl buy-Past

    'John bought one new car for Mary' (*restitutive, repetitive)

The overall arguments in this section thus provide further support for Koizumi's original insight that an ODP must be externally merged within *v*P, whereas a SDP may be externally merged outside *v*P. I, however, departed from Koizumi's assumption that an ODP, the DO, and V are in mutual c-command relationship in a ternary branching structure. Instead, an ODP is

externally merged higher than the object outside VP.[99] We have seen that under this assumption, intricate interactions among an ODP, an SDP, the subject, the DO, the IO, VP-internal adverbs, and NQs can be captured as instances of the Edge Generalization.

3.5.2   Resultative Secondary Predicates in Japanese [100]

In this section, I show that my analysis for the Edge Generalization is further supported by the distribution of resultative predicates in Japanese. In particular, I argue that interactions of resultative predicates and object-oriented NQs show VP-Edge Generalization effects.

  In Japanese, resultative predicates and depictive predicates exhibit distinct morphological endings. Resultative predicates are marked by *–ni*, as shown in (144). Depictive predicates are marked by *–de,* as in (145) (see also examples in the previous section for depictive predicates). For convenience, I call *–ni* marked resultative secondary predicates NI-resultatives.

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[99] Some discussion concerning (i) is in order, however. Koizumi argues that (ib) is ungrammatical because an ODP must be a sister of V and the DO, so that the DO and V cannot form a constituent to the exclusion of the ODP. (This argument crucially assumes that *soo-suru* cannot replace a phrase containing a trace). I cannot adopt Koizumi's analysis under (138) directly for obvious reasons (i.e. binary branching structure). To exclude (ib) under (138), one might need to assume that the ODP must be c-commanded by the DO at some point of derivation, so that *soo-suru* form cannot replace the VP before the object moves to a position higher than ODP in (138). This has an interesting consequence that Miyagawa's (1989) insight concerning the mutual c-command condition for secondary predication is basically correct. That is, depictive phrases must be c-commanded by its host NP at some point of derivation. I expect that eventually, the mutual c-command condition for secondary predication (or its equivalent in binary branching structure) should be derived from semantic properties of depictives (cf. hinted by Pylkkänen's (2002); see fn. 96 in this section). I leave this issue for further research.

(i) a. Hanako-ga   **sinsya-de**   Sentra-o   katta
      Hanako-Nom   new-DE   Sentra-Acc   bought
      'Hanako bought a Sentra **new'**
   b. *Ziroo-wa   **tyuuko-de**   soo-si-ta
      Jiro-Top   used-DE   so-do-Past
      'Jiro did so **used**'

[100] I specially thank to Koichi Takezawa for helpful discussion of the data in this section.

(144)   *Japanese: -ni resultative predicates*

a.   John-ga   **kabe-o**   **massiro-ni**/*-de   nutta

      John-Nom   wall-Acc   purewhite-NI/DE   painted

      'John painted the wall white'

b.   John-ga   **teeburu-o**   **kirei-ni**/*-de   huita

      John-Nom   table-Acc   clean-NI/DE   wiped

      'John wiped the table clean' (Takezawa 1993)

(145) *Japanese: -de depictive predicates*

a.   John-ga   **sakana-o**   **nama-*ni/-de**   tabeta

      John-Nom   fish-Acc   raw-NI/DE   ate

      'John ate the fish raw'

b.   **John-ga**   **hadaka-*ni/-de**   sakana-o   tabeta

      John-Nom   nude-NI/DE   fish-Acc   ate

      'John ate the fish nude'

Takezawa (1993) observes interesting contrasts between NI-resultative and DE-depictive predicates in their syntactic distribution, summarized in (146).

(146)   Takezawa's Observation:

a.   NI-resultative predicates may modify the object, but not the subject of transitive verbs: (144), (147). In contrast, DE-depictive predicates may modify either the subject or the object of transitive verbs: (145).

b. NI-resultative predicates may modify the subject of unaccusative verbs: (148)-(149), but not the subject of unergative verbs: (150). In contrast, DE-depictive predicates may modify the subject of unergative verbs: (151).

(147) Transitive object-oriented NI-resultatives

a. John-ga **aisukuriimu-o** **kotikoti-ni** kooraseta

John-Nom ice cream-Acc solid-NI froze

'John froze the ice cream solid'

b. John-ga **sakana-o** **makkuro-ni** kogasita

John-Nom fish-Acc deep.black-NI burned

'John burned the fish black'

(148) Unaccusative subject-oriented NI-resultatives

a. **Aisukuriimu-ga** **kotikoti-ni** kootta

Ice cream-Nom solid-NI froze

'The ice cream froze solid'

b. **Sakana-ga** **makkuro-ni** kogeta

Fish-Nom deep.black-NI burned

'The fish burned black'

(149)   Unaccusative subject-oriented NI-resultatives

a.   **John-ga**   **kutakuta-ni**   tukareta

John-Nom   exhausted-NI   tired

'John became tired'

b.   **John-ga**   **dorodarke-ni**   natta

John-Nom   muddy-NI   became

'John became muddy'

(150)   *Unergative subject-oriented NI-resultatives

a.   ***John-ga**   **kutakuta-ni**   odotta

John-Nom   exhausted-NI   danced

'John danced until (he was) exhausted'

b.   ***John-ga**   **dorodarake-ni**   asonda

John-Nom   muddy-NI   played

'John played until (he was) muddy'

(151)   Unergative subject-oriented DE-depictives

a.   **John-ga**   **kutakuta-de**   odotta

John-Nom   exhausted-DE   danced

'John danced when (he was) exhausted'

b.   **John-ga**   **dorodarake-de**   asonda

John-Nom   muddy-DE   played

'John played when (he was) muddy'

Takezawa (1993) proposes that the paradigms in (147)-(151) can be explained by assuming the following hypotheses: (i) –*ni* marked resultative predicates are base-generated in the domain of V, whereas –*de* marked depictive predicates are base-generated in the domain of V or I.[101] (ii) a predicate and its antecedent must c-command each other (the mutual c-command condition).

Specifically, if NI-resultative predicates must be base-generated within the domain of V, the resultative predicate cannot c-command the subject of transitive verbs or unergative verbs, as shown in (152).[102] Given the mutual c-command condition, the ungrammaticality of (152) (e.g. (150)) follows. A DE-depictive predicate, on the other hand, can modify the subject of transitive and unergative verbs because it can be base-generated either in the IP domain or VP domain, as shown in (153) (e.g. (145), (151)).

(152)   *[$_{IP}$ Subj   [$_{VP}$ X-*ni*   V]]

(153)   [$_{IP}$ Subj X-*de* [$_{VP}$ X-*de*   V]]

Consider now the implications of Takezawa's observations for the Edge Generalization. Takezawa (1993) did not assume the *v*P-internal subject hypothesis, so we cannot directly adopt his statement in (152) and (153) (cf. Takezawa 2000)[103]. The reformulation of his proposal under the current framework is quite straightforward, however:

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[101] See also Takezawa (1993) for further discussion about –*de* depictive predicates within nominal projection.

[102] Takezawa (1993) does not assume the *v*P-internal subject hypothesis. (The subject is base-generated in [Spec,IP].)

[103] Koichi Takezawa (p.c.) reports to me that Takezawa (2000) discusses the NI-resultative paradigms under the *v*P-internal subject hypothesis, but the paper was not directly available for me.

(154)   *NI-resultatives in Japanese under the vP-internal subject hypothesis:*

NI-resultative predicates must be externally merged within VP, whereas DE-depictive predicates can be externally merged outside VP. [104]

The hypothesis in (154) for DE-depictives is compatible with my arguments in the previous section. Thus, nothing in the previous section would be affected by (154). The hypothesis for NI-resultatives, however, makes an interesting prediction in light of the Edge Generalization.

In particular, if NI-resultative predicates must be base-generated within VP as a sister of V (or as a part of the complement of V), we predict that the VP-Edge Generalization, represented here as (155), would be observed. Specifically, we predict that NI-resultative predicates would not be able to intervene between the object and the object-oriented NQ, just as in the paradigms with restitutive *mata* 'again' in (110)-(111). This prediction is borne out: (156)-(158).

(155)   The Edge Generalization in the VP domain
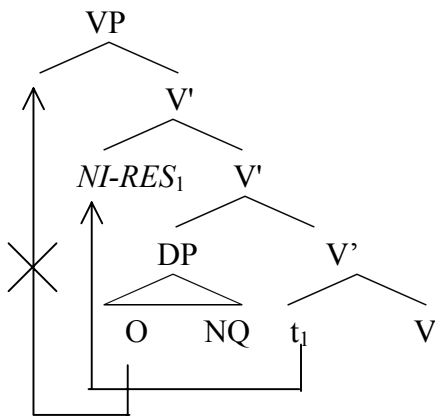
   *[O<NI-Resultative<NQ]

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[104] The hypothesis in (154) may be derived from semantic properties of NI-resultatives (Danny Fox, p.c.). Similar to restitutive 'again', NI-resultatives modify the result state of the event. It is quite possible that the formal semantics of NI-resultatives is implemented in a parallel way with restitutive 'again'. I leave substantiation of this suggestion for future research.

The paradigms in (156)-(158) show that the object and an object-oriented NQ cannot be separated by a NI-resultative phrase, as predicted by the Edge Generalization.

(156)   *Object< NI-Resultative < NQ_{obj}

a.   *John-ga   **kuruma-o**   makka-ni   **ni-dai**   nutta

       John-Nom   car-Acc   red-NI   2-Cl   painted

       'John painted two cars red'

b.   *John-ga   **kodomo-o**   rippa-ni   **san-nin**   sodateta

       John-Nom   child-Acc   admirable-NI 3-Cl   raised

       'John raised three children to be admirable'

                                              (Takezawa 1993: ex. 64, S. Miyagawa, p.c.)

(157)   *O<S<NI-Resultative <NQ_{obj}

a.   ***Kuruma-o**   John-ga   makka-ni   **ni-dai**   nutta

       Car-Acc   John-Nom   red-NI   two-Cl   painted

       'John painted two cars red'

b.   ***Kodomo-o**   John-ga   rippa-ni   **san-nin**   sodateta

       Child-Acc   John-Nom   admirable-NI three-Cl   raised

       'John raised three children to be admirable' (S. Miyagawa, p.c.)

(158)   *O <NI-Resultative<S<NQ_{obj}

a.   ***Kuruma-o**   makka-ni   John-ga   **ni-dai**   nutta

       Car-Acc   red-NI   John-Nom   two-Cl   painted

       'John painted two cars red'

The paradigms in (156)-(158) show that the object and an object-oriented NQ cannot be separated by a NI-resultative phrase, as predicted by the Edge Generalization.

(156)   *Object< NI-Resultative < NQ_{obj}

a.   *John-ga   **kuruma-o**   makka-ni   **ni-dai**   nutta

       John-Nom   car-Acc   red-NI   2-Cl   painted

       'John painted two cars red'

b.   *John-ga   **kodomo-o**   rippa-ni   **san-nin**   sodateta

       John-Nom   child-Acc   admirable-NI 3-Cl   raised

       'John raised three children to be admirable'

                                              (Takezawa 1993: ex. 64, S. Miyagawa, p.c.)

(157)   *O<S<NI-Resultative <NQ_{obj}

a.   ***Kuruma-o**   John-ga   makka-ni   **ni-dai**   nutta

       Car-Acc   John-Nom   red-NI   two-Cl   painted

       'John painted two cars red'

b.   ***Kodomo-o**   John-ga   rippa-ni   **san-nin**   sodateta

       Child-Acc   John-Nom   admirable-NI three-Cl   raised

       'John raised three children to be admirable' (S. Miyagawa, p.c.)

(158)   *O <NI-Resultative<S<NQ_{obj}

a.   ***Kuruma-o**   makka-ni   John-ga   **ni-dai**   nutta

       Car-Acc   red-NI   John-Nom   two-Cl   painted

       'John painted two cars red'

b.   ***Kodomo-o**   rippa-ni   John-ga   **san-nin**   sodateta

       Child-Acc   admirable-NI John-Nom   3-Cl   raised

       'John raised three children to be admirable' (S. Miyagawa, p.c.)

The examples in (159) show that one cannot simply stipulate that an NQ and a NI-resultatives cannot cooccur in a sentence. [105] The paradigm in (160) shows that one cannot stipulate that (156)-(158) are ungrammatical because the resultative phrase must be adjacent to the verb for some reason.[106]

(159)   *O<NQ$_{obj}$<S<NI-Resultative*

a.   **Kuruma-o**   **ni-dai**   John-ga   makka-ni   nutta

       Car-Acc   two-Cl   John-Nom   red-NI   painted

       'John painted two cars red'

b.   **Kodomo-o**   **san-nin**   John-ga   rippa-ni   sodateta

       Child-Acc   3-Cl   John-Nom   admirable-NI   raised

       'John raised three children to be admirable' (S. Miyagawa, p.c.)

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[105] Shigeru Miyagawa (p.c.) judges (i) to be somewhat degraded (though (i) is far better than the ungrammatical sentences in (156)-(158)). The judgment for (i) is compatible with my analysis, but not explained by my arguments for the Edge Generalization.
(i) ?? **Makka-ni kuruma-o**   John-ga   **ni-dai**   nutta
     Red-NI   car-Acc   John-Nom 2-Cl   painted
     'John painted two cars red'
[106] I thank Shigeru Miyagawa (p.c.) for raising this point. We will see more examples that this stipulation is inadequate to explain the distribution of resultatives. Note, in particular, examples in (164a), (165), (168), and (169b).

(160) *S< NI-Resultative<O<V*

John-ga   **makka-ni**   kuruma-o   nutta

John-Nom   red-NI   car-Acc   painted

John painted the/a car read' (K. Takezawa, p.c.)

My arguments for the VP-Edge Generalization make a further prediction that has not been tested before in this chapter: *the unaccusative subject and its NQ cannot be separated by NI-resultative predicates.* Given the hypothesis that the subject of an unaccusative verb is externally merged within VP, we expect that an unaccusative subject is not separated from a subject-oriented NQ by NI-resultatitive predicates, just like the paradigms with the object in (156). This prediction is borne out as well: (161)-(163).

(161) **Unaccusative Subject <NI-resultative<NQ$_{subj}$*

a.   **Shatu-ga**   **san-mai**   dorodarake-ni   yogoreta

Shirt-Nom   3-Cl   muddy-NI   became.dirty

'Three shirts became dirty with dirt'

b.   ***Shatu-ga**   dorodarake-ni   **san-mai**   yogoreta

Shirt-Nom   muddy-NI   3-Cl   became.dirty

'Three shirts became dirty with dirt' (K. Takezawa, p.c.; Takezawa 2000)

(162)   *Unaccusative Subject <NI-resultative<NQ*subj*

a.   **Gakusei-ga   san-nin**   kutakuta-ni   tukareta

Student-Nom   3-Cl   exhausted-NI   tired

'Three students became tired'

b.   ***Gakusei-ga**   kutakuta-ni   **san-nin**   tukareta

Student-Nom   exhausted-NI   3-Cl   tired

'Three students became tired' (K. Takezawa, p.c.)

(163)   *Unaccusative Subject <NI-resultative<NQ*subj*

a.   **Gakusei-ga   san-nin**   dorodarke-ni   natta

Student-Nom 3-Cl   exhausted-NI   became

'Three students became muddy'.

b.   ***Gakusei-ga**   dorodarke-ni   **san-nin**   natta

Student-Nom   exhausted-NI   3-Cl   became

'Three students became muddy'. (K. Takezawa, p.c.)

Finally, the current analysis for NI-resultatives makes a further prediction concerning the interactions among an ODP, a NI-Resultatitive, the DO and a DO-oriented NQ. In particular, we predict that NI-resultatives cannot intervene between the DO and its NQ regardless of presence of an ODP, similar to *mata* paradigms seen in (141)-(143). This prediction is borne out as well: (164)-(165). We observe exact parallels between *mata* paradigms and NI-resultative paradigms, as predicted by the Edge Generalization.

As demonstrated in (164a), it is in principle possible to have an ODP and a NI-resultative phrase together in a sentence.[107] As illustrated in (164b), however, a resultative phrase *hanbun-ni* cannot intervene between the object *sakana-o* and its NQ *ni-hiki*. As described in (165), if *hanbun-ni* undergoes scrambling to the left of the DO, an ODP may intervene between *sakana-o* and *ni-hiki*.

(164)   *ODP<DO<X-NI<NQ_{obj}*

a.   Taro-ga   **sakana-o**   **hanbun-ni**   **nama-de**   kit-ta

        Taro-Nom   fish-Acc   half-NI   raw-DE   cut-Past

        'Taro cut raw fish into half'

b.   *Taro-ga | **nama-de**   **sakana-o**   **hanbun-ni**   **ni-hiki** | kit-ta

         Taro-Nom   raw-DE   fish-Acc   half-NI   2-Cl   cut-Past

         'Taro cut two pieces of raw fish into half' (K. Takezawa, p.c.)

(165)   *X-NI<DO<ODP<NQ_{obj}*

        Taro-ga | **hanbun-ni**   **sakana-o**   **nama-de**   **ni-hiki** | kit-ta

        Taro-Nom   half-NI   fish-Acc   raw-DE   2-Cl   cut-Past

        'Taro cut two pieces of raw fish into half' (K. Takezawa, p.c.)

The paradigms in (156)-(165) show that the object or the unaccusative subject is not always able to license a floating NQ. Whether the object (or unaccusative subject) can be

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[107] K. Takezawa (p.c.) reports to me that the sentence in (164a) sounds more natural if the complex form *nama-no mama-de* or *nama-no jootai-de* is used. These depictives are roughly translated into 'in the state of X'.

separated from its NQ is conditioned by the factors that give rise to the Edge Generalization. The current data again argue against the claim that the subject-object asymmetries in NQ constructions hold because an object may always license its floating NQ. Moreover, as stressed in section 3.2, the existence of the VP-Edge Generalization further supports the claim that VP constitutes a Spell-out domain. It also contributes to the argument that the Edge Generalization is a general proposal about elements merged in the edge, not limited to the subject in [Spec,vP].

Note that the data captured by the VP-Edge Generalization cannot be explained under the previous proposals that reply on the mutual c-command condition. Takezawa (1993), for example, argues that (156) is ruled out by the assumption that the structure in (166a) cannot be generated in the underlying structure. Notice, however, that if we do not assume Cyclic Linearization of VP, (166) is too weak. As shown in (167b), if the direct object *NP-o* and the resultative *X-ni* move together to the left of the NQ$_{obj}$, there is no obvious reason why (156) should be ruled out by the mutual c-command condition.

(166)   Takezawa (1993):

a.   *(NP-ga)   [$_{VP}$ NP-o   X-ni   NQ$_{obj}$ V]

b.   √ (NP-ga)   [$_{VP}$ NP-o   NQ$_{obj}$ X-ni   V]

(167)   Problematic derivation for Takezawa (1993)

a.   [NP-ga   [$_{VP}$ NP-o   NQ$_{obj}$ X-ni   V]]

b.   [NP-ga   NP-o$_1$ X–ni$_2$ [$_{VP}$ t$_1$ NQ$_{obj}$ t$_2$ V]]

It is also important to note that the current data in (156)-(165) cannot be explained away by the stipulation that NI-resultative predicates cannot undergo scrambling. As shown in (168), NI-resultative predicates can undergo scrambling. As described in (169), the object either precede or follow the NI-resultative predicate. This indicates that the object and NI-resultative predicate may move independently. Thus, if we do not adopt the current arguments for the VP-Edge Generalization, it would remain puzzling why the object and NI-resultative phrase cannot move in the way described in (167).[108]

(168)   Scrambling of NI-resultative (Takezawa 1993, footnote 13):

Massiro-ni$_1$ Mary-ga   [John-ga   kabe-o t_1 nutta   to]   itta

White   Mary-Nom   [John-Nom   wall-Acc   painted C]   said

"Mary said that John painted the wall white"

---

[108] The Korean data in (i)-(iii) suggest that my arguments for Japanese resultative paradigms may extend to Korean. As shown in (ii), Korean resultative phrases cannot intervene between the object and the object-oriented NQ. I leave it future research if systematic parallels between Japanese and Korean hold for resultative constructions.

(i) John-i   **haksayng-ul sey-myeng** *nokcho-lo* mantulessta
    John-Nom   student-Acc 3-Cl   tired-to   made
    'John made three students tired'

(ii) *John-i   **haksayng-ul** *nokcho-lo* **sey-myeng** mantulessta
     John-Nom   student-Acc tired-to   3-Cl   made
     'John made three students tired'

(iii) ?**Haksayng-ul** John-i   **sey-myeng** *nokcho-lo* mantulessta
      Student-Acc   John-Nom   3-Cl   tired-to   made
      'John made three students tired'

(169)   O<NI-resultative; NI-resultative<O

a.   John-ga   kuruma-o   **makka-ni**   nutta

        John-Nom   car-Acc   red-NI   painted

        'John painted the/a car red'   (K. Takezawa, p.c.)

b.   John-ga   **makka-ni**   kuruma-o   nutta

        John-Nom   red-NI   car-Acc   painted

        'John painted the/a car read' (K. Takezawa, p.c.)

Furthermore, note that the paradigms of locative NI-phrases in (170)-(172) show that it is not the case that the phonetic string "Object<X-NI<NQ_{obj}" is always ungrammatical. On our approach, the contrasts between (170)-(172) and (156)-(163) are expected under the assumption that locative/goal phrases are merged higher than NI-resultative predicates, as argued for the paradigms in (112)-(117). (Takezawa 1993 reached the same conclusion for locative NI-phrases). Specifically, if locative/goal phrases are merged outside the VP Spell-out domain, the account presented in (113) extends to (170)-(172).

(170)   *Japanese: Object<Locative–NI<NQ_{obj}* [cf. (156)]

a.   John-ga   **kuruma-o**   *Mary-ni*   **ni-dai**   ageta

        John-Nom   car-Acc   Mary-NI   two-Cl   gave

        'John gave two cars to Mary'

b.   John-ga   **hon-o**   *tukue-no ue-ni*   **zyus-satu**   oita

        John-Nom   book-Acc   desk-Gen on-ni   ten-Cl   put

        'John put ten books on the desk' (K. Takezawa, p.c.)

(171)   *Japanese: Unaccsuative Subject<Locative –NI<NQ$_{subj}$* [cf. (161)-(163)]

a.   **Kodomo-ga**   **huta-ri**   *mise-ni*   kita

Child-Nom   2-Cl   shop-to   came

'Two children came to the shop'

b.   **Kodomo-ga**   *mise-ni*   **huta-ri**   kita

Child-Nom   shop-to   2-Cl   came

'Two children came to the shop' (K. Takezawa, p.c.)

(172)   *Japanese: Unaccsuative Subject<Locative–NI<NQ$_{subj}$* [cf. (161)-(163)]

a.   **Tegami-ga**   **san-tuu**   *uti-ni*   todoita

Letter-Nom   3-Cl   home-at   arrived

'Three letters arrived at home'

b.   **Tegami-ga**   *uti-ni*   **san-tuu**   todoita

Letter-Nom   home-at   3-Cl   arrived

'Three letters arrived at home' (K. Takezawa, p.c.)

3.6   Conclusion

In this chapter, we have observed a variety of types of ordering restrictions in object scrambling. In particular, we have seen intricate interactions among the subject, the object, the indirect object, the scope of aspectual adverb 'again', a subject-oriented depictive phrase, an object-oriented depictive phrase, a resultative secondary predicate, and numeral quantifiers. Some important paradigms discussed in this chapter are summarized in (173).

(173) **Ordering restrictions in object scrambling**

- The matrix object cannot be separated from its associate NQ by an element merged in the complement clause.

- The object can be separated from its associate NQ by a VP-external adverb (repetitive 'again'), but not by a VP-internal adverb (restitutive 'again').

- The indirect object may intervene between the direct object and the direct object oriented NQ.

- The indirect object may intervene between the direct object and a VP-internal adverb (restitutive 'again').

- The object-oriented depictive predicate may not intervene between the subject and its NQ whereas the subject-oriented depictive predicate may.

- The object-oriented depictive predicate may intervene between the object and the object-oriented NQ.

- The objec-oriented depictive predicate may intervene between the object and a VP-internal adverb (restitutive 'again').

- The NI-resultative predicate may not intervene between the object and the object-oriented NQ.

- The NI-resultative predicate may not intervene between the unaccusative subject and its associate NQ.

Throughout the chapter, I have argued that all the paradigms in (173) can receive a principled account as instances of the Edge Generalization (174) in the VP-domain. In particular, as a consequence of the interaction between the Search Domain Condition and Cyclic

Linearization, ordering restrictions in the VP domain are fixed in such a way that the object in [Spec,VP] cannot be separated from its associate NQ by a domain-internal (VP-internal) element.

(174)   ***The Edge Generalization***
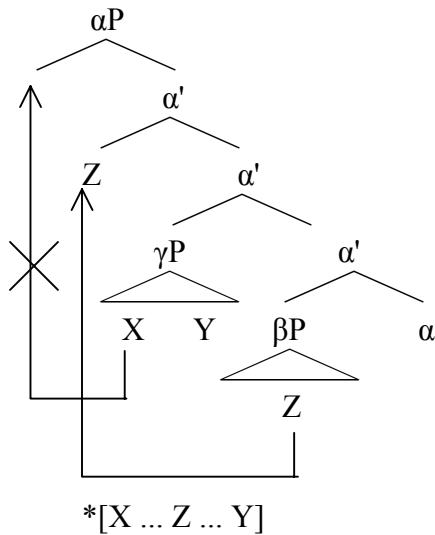
If X and Y are dominated by a specifier γP of a Spell-out domain αP, X and Y cannot be separated by an αP-internal element Z that is not dominated by γP.

My account for object scrambling paradigms has implications for theories of argument structure. In particular, an adverb that modifies the result status of the event, restitutive 'again', must be merged in the complement domain of the verb. Lexical decomposition of a verbal predicate into an adjective head and an empty predicate is necessary (Von Stechow 1996, Beck and Johnson 2004). The object is merged in the specifier position of a verbal predicate when the verb is decomposed and takes an adjectival predicate as a complement. The IO and the DO in Korean and Japanese are externally merged in separated Spell-out domains (cf. Pylkkänen 2002, Miyagawa and Tsujioka 2004). A subject depictive can be merged outside of a verbal predicate (*v*P), unlike an object depictive (Koizumi 1994). An object depictive is not merged as a sister of

the object, but it is merged in separate Spell-out domains from the object. Resultative predicates are merged in the complement domain of V (Takezawa 1993).

The paradigms examined in this chapter also have important implications for my overall arguments for the Edge Generalization. We have seen that the object cannot be separated from its associate NQ by a VP-domain internal element, as predicted by the Edge Generalization. This supports the claim that the Edge Generalization is a general proposal about elements merged in syntactic edges. It strengthens the claim in Chapter 2 that there is nothing inherent about the subject that blocks its movement. Any elements that are externally merged in syntactic edges show the same ordering restrictions with respect to their domain-mates. This, in turn, argues that it is inadequate to postulate a constraint targeting the subject to explain the paradigms presented in Chapter 2.

If my analysis for object scrambling is correct, it is necessary to assume that VP constitutes a Spell-out domain, in addition to *v*P and CP, at least in Korean and Japanese. This certainly challenges the view that only *v*P and CP undergo Spell-out (Chomsky 2000, 2001). In particular, to the extent that my arguments are successful, it would pose an important question of how the paradigms of object scrambling can be accounted for in a framework that a VP cannot be a Spell-out domain.

My arguments, however, raise some vital questions for the Cyclic Linearization approach as well. I tentatively assumed that every maximal projection can be a Spell-out domain. An important question is left open, however. In particular, further research is required to examine whether all the maximal projections must be considered as Spell-out domains. If not, it must be examined which projection may constitute a Spell-out domain and what factors determine this. If

there are parametric variations in the determination of Spell-out domains in languages, how children acquire this variation would also be an important research question.

Given the evidence presented here, the conclusion I can draw at this moment is that the projections of theta-role assigners (VP and *v*P) and theta-role assignees (CP, possibly DP) are Spell-out domains. This conclusion is of course speculative at best. It also raises an immediate question of how we may reconcile this conclusion with Fox and Pesetsky's (2005a,b) claim that either VP or *v*P (but not both) is a Spell-out domain in Scandinavian languages. I hope, however, that the fact that this work triggers all these questions about Spell-out domains can be seen as a progress. I wish that the questions that this work raises would contribute to the general question of what determines a Spell-out domain and to our understanding of the nature of phasehood in future research.

Appendix 3A. The PIC approach and the Edge Generalization

Thus far, I have argued that the Edge Generalization is a consequence of the interactions of Cyclic Linearization and the Search Domain Condition. In this appendix, I ask whether we can accommodate the Edge Generalization under the PIC approach, which does not assume Cyclic Linearization and argues that specifiers of a phase head do not undergo Spell-out when the complement of the phase head is spelled-out.

As discussed in Chapter 1, *edge zones* in the PIC approach are designated escape hatches for movement. There is nothing inherent in the phase system that might force multiple movement out of edge zones to result in a particular order in the higher phases. Therefore, to explain the Edge Generalization under the PIC approach, additional mechanisms are needed. In particular, the PIC approach must derive the generalization that ordering among elements merged in the edge of Spell-out domain must be preserved without postulating Cyclic Linearization. Though there might be other alternatives, suggestions by Chomsky (2001) and Kitahara (2002) appear to provide relevant discussion.

Chomsky (2001) employed "apparently countercyclic" Match (and Agree) to resolve a theory-internal problem concerning A'-movement under the PIC system. Specifically, Chomsky argues that an inactive trace disallows Match, and that the object that undergoes A'-movement must move on beyond the edge of *v*P to avoid certain intervention effects (in languges that do not allow Object Shift such as English and Romance). Consider, for example, derivations of *wh*-object movement in English under the PIC system. If a *wh*-object undergoes movement to the edge of *v*P (due to the PIC), as in (175), the *wh*-object in [Spec,*v*P] acts as an intervener for probe-goal agreement between T and the subject. Thus, the *wh*-object must block the necessary movement of the subject to [Spec,TP].

(175) [CP What$_1$ [TP T [$_{vP}$ t$_1$ John [VP buy t$_1$]]]]

What did John buy?

To avoid this problem, Chomsky assumes that a *wh*-object in [Spec,*v*P] must undergo
movement to [Spec,CP] before T searches for its goal in the *v*P-domain.[109] Assuming that an
inactive trace (void of phonological content) does not act as an intervener for Match (and Agree),
the trace of the *wh*-object does not act as an intervener for probe-goal agreement between T and
the subject. T can then bypass the trace of the object in [Spec,*v*P] when it probes the subject.

Kitahara (2002) argues that the same issue arises for object scrambling in Japanese. In
particular, Kitahara claims that when the object undergoes scrambling to a position outside *v*P, it
must scramble over the subject in the edge of *v*P, as described in (176). If the object stays in the
complement position within VP, the object is invisible to the operations in the higher domain due
to the PIC. Consequently, the object cannot move to the higher domain.

(176) [TP [$_{vP}$ OBJ [$_{v'}$ SUBJ   [[VP t$_{obj}$ V] *v*]]T]   (Kitahara 2002:171)

If the object stays in [Spec,*v*P] in (176), however, it blocks necessary agreement between
the subject and T. To avoid this intervention effect, Kitahara argues that the object in [Spec,*v*P]
must move to a position higher than T *before* the probe-goal relationship between T and the

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[109] Chomsky (2001) argues that this derivation should not be considered countercyclic because
the Minimal Link Condition (a locality condition on Match/Agree) is evaluated at the end of the
strong phase after it is known that the outer edge of *v*P becomes a trace. Chomsky (lectures,
MIT, Fall 2004) later argues that object movement to [Spec,CP] and subject movement to
[Spec,TP] may occur *simultaneously*, so that the object in [Spec, *v*P] may not act as an intervener
for subject movement to [Spec,TP].

subject is established. T can then bypass the trace of the object in [Spec,vP] when it probes the subject. For convenience, I call the condition that motivates this (apparently) countercyclic Match and subsequent Agree and Move *the Matching condition.* The statement in (177) is taken from Kitahara (2002: 171).

(177)   *Matching condition* (Kitahara 2002: 171, based on Chomsky 2000, 2001)

   For the structure $\alpha > \beta > \gamma$ (where > means c-command; β and γ match the probe α),

   the first matching β prevents Match of α and γ only if β has phonological content.

One might attempt to pursue Kitahara's approach to object scrambling to accommodate the Edge Generalization under the PIC approach. Specifically, suppose that whenever the object undergoes vP-external scrambling, the object must move to a position higher than the landing site of subject movement so that the object does not act as an intervener. In terms of linear ordering, it appears then that the object must precede the subject in the higher domains if the object has undergone vP-internal movement over the subject.[110] Moreover, if we assume that the subject and a subject-oriented NQ form a constituent in [Spec,vP], it seems that the scrambled object must precede both the subject and a subject-oriented NQ in the higher domains. Thus, one might think that the Matching Condition may be an alternative account for (at least) the Subject Puzzle.

The alternative approach based on the Matching Condition, however, is inadequate to capture the Edge Generalization. First, it is unclear how the derivation in (178) can be ruled out.

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[110] Under this approach, if the object may scramble to the right of T, it is possible to have O<S order at vP and S<O order at CP. In contrast, Cyclic Linearization predicts that this is impossible. I have no evidence that favors one prediction over the other.

(178) [$_{CP}$ S O (adv) [$_c$ [$_{TP}$ t$_s$ (adv) [$_{vP}$ t$_o$ t$_s$ NQ$_{subj}$ t$_o$ V *v*] T] C]
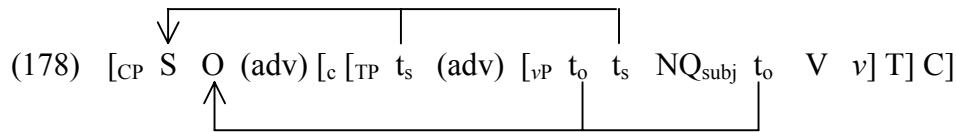
In (178), the object undergoes scrambling from [Spec,*v*P] to [Spec,CP] so that the subject may

scramble from inner Spec of *v* to [Spec,TP]. The subject later undergoes movement from

[Spec,TP] to [Spec, CP]. Under Chomsky (2000, 2001), the object in [Spec,CP] does not trigger

an intervention effect for subject scrambling from [Spec,TP] to the outer spec of C. Thus, the

derivation in (178) is expected to be grammatical, contrary to the facts examined in Chapter 2,

repeated here as (179) with CP-adverb 'why' and TP-adverb 'evidently'.[111]

(179) *S<O<CP/TP-adverb<NQ$_{subj}$

a. ?***Haksayng-tul-i$_2$** maykcwu-lul$_1$ *way* t$_2$ **sey-myeng** t$_1$ masiess-nunci kwunggumhata

   Student-Pl-Nom beer-Acc why 3-Cl$_{person}$ drank-C wonder

   'I wonder why three students drank beer.'

b. ?***Haksayng-tul-i$_2$** maykcwu-lul$_1$ *pwunmyenghi* t$_2$ **sey-myeng** t$_1$ masiessta

   Student-Pl-Nom beer-Acc evidently 3-Cl$_{person}$ drank

   'Evidently, three students drank beer.'

      With additional assumptions, one might attempt to resolve the problem addressed above.

For instance, if we assume that the subject in [Spec,TP] must tuck-in below the object in

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[111] Even if we adopt the fine structure of the left perphery of CP proposed by Rizzi (1997), the point for (178) still holds. If the object may move to a Spec of some head α above T in the left periphery, the subject may move to the outer Spec of α (above the the object in the lower Spec of α). Since the object in [Spec, αP] is not in the search domain of α, the object in [Spec, αP] cannot act as an intervener for movement of the subject to [Spec, αP]. I thank Cedric Boeckx for helpful discussion of this point.

[Spec,CP], the incorrect derivation in (178) might be blocked. In particular, if both the object and the subject must undergo movement to [Spec,TP] prior to movement to the Spec of C, as in (180), it is expected that the O<S order in vP must be preserved in TP and CP (adopting Richards's (1997) tucking-in generalization that two elements attracted by the same head must preserve their (hierarchical) order established prior to movement).

(180)　[$_{CP}$ O　S　(adv) [$_{TP}$ t$_o$　t$_s$　(adv) [$_{vP}$ t$_o$　t$_s$　NQ$_{subj}$　t$_o$　V　v] T] C]
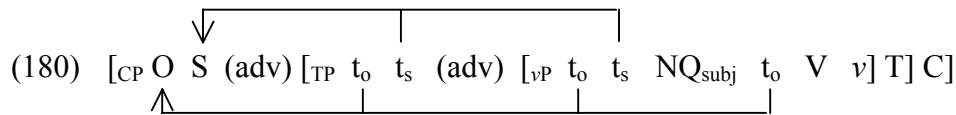
To adopt this alternative approach, however, it is crucial to ask whether independent evidence can be found for the claim that multiple scrambling is always triggered by the same head. Moreover, further arguments are needed to show that the English paradigm in (175) is not subject to such a constraint.[112] This argument also raises the new question of why the object may "tuck-out" above the subject in the vP domain at the first place. One could assume that the subject may be *optionally* merged below or above the object in [Spec,vP] to allow S<O and O<S order in the vP domain. Further research is required, however, to determine whether this argument can be independently supported.[113]

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[112] In particular, if (i) is allowed in English, it is expected that the *wh*-object occupies [Spec,TP] and receives the nominative Case from T while the subject *John* stays in [Spec,vP]. To block such a derivation, one could assume that a feature triggering *wh*-movement is imposed only on phase heads (v and C) (Chomsky 2001), abstracting away from the issue of how a wh-subject may move from [Spec,vP] to [Spec,TP].
(i) [$_{CP}$ What$_1$ [$_{TP}$ t$_1$　T [$_{vP}$ t$_1$ John [$_{VP}$ buy t$_1$]]]]
[113] Rezac (2003) argues that a head may search for a goal in its Spec after it searches for a legitimate goal in its complement domain (cf. the Search Domain Condition). Extending this idea (suggestion due to Norvin Richards (p.c.)), one may argue that internal merge of the object to a head v must occur prior to external merge of the subject with v, and that the subject may optionally be merged below or above the scrambled object. As Norvin Richards (p.c.) notes, if this argument is successful, we may eventually derive the generalization that α and β may change their relative ordering only at the Spec of a head where one of them is externally merged.

Moreover, it is not obvious how the alternative approach can account for ordering restrictions concerning domain-internal adverbials and arguments. As seen in Chapter 2, a *v*P-external adverb may intervene between the subject and NQ_{subj}, whereas the *v*P-internal adverb cannot. To explain this, the alternative approach needs to assume that an adverb must act as an intervener for Match between T and the subject. It is unlikely that an adverb has a matching feature that should block the probe-goal relationship between T and the subject.[114] The same concern extends to the asymmetries concerning VP-external and VP-internal adverbs with respect to object scrambling discussed in Chapter 3.

One might assume that both the subject and an adverbial bear the same feature for scrambling (e.g. an uΣ feature, discussed in Chapter 2), so that a *v*P-internal adverb acts as an intervener for subject scrambling to [Spec,TP]. Similarly, one might postulate that the object and an adverbial bear the same feature for scrambling, so that a VP-internal adverb acts as an intervener for object scrambling to higher domains. It is not clear, however, how this assumption may account for the paradigms with phrases that do not undergo scrambling but show the effects of the Edge Generalization.

As shown in (181), resultative phrases in Korean (e.g. 'into three pieces') may not undergo scrambling, unlike other arguments or adjuncts. This implies that one cannot simply assume that resultative phrases bear the same scrambling feature as the object that may undergo scrambling.

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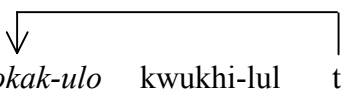
[114] Even if that is the case, it is not clear how derivations like (i) are ruled out (as discussed above with (179)). In (i), the low adverb *sikkulepkey* moves from [Spec,*v*P] to [Spec,CP], and the subject moves from [Spec,TP] to outer Spec of C. (Based on arguments given in Ko (in press, a,b), I assume that 'why' in Korean is externally merged in [Spec,CP].)

(i)   ?***Ai-tul-i**$_2$ sikkulepkey$_1$ *way* t$_2$ **sey-myeng** t$_1$ wuless-nunci kwunggumhata
         Baby-Pl-Nom loudly   why   3-Cl$_{person}$ cried-C   wonder
         'I wonder why three babies cried loudly.'

(181) a.   John-i   kwukhi-lul   *sey-cokak-ulo*   mantul-ess-ta

Jonn-Nom   cooky-Acc   3-pieces-into   make-Past-Dec

'John broke a cooky into three pieces'

b.   *John-i   *sey-cokak-ulo*   kwukhi-lul   t   mantul-ess-ta

 Jonn-Nom   3-pieces-into   cooky-Acc   make-Past-Dec

'John broke a cooky into three pieces'

c.   **sey-cokak-ulo*   John-i   kwukhi-lul   t   mantul-ess-ta

 3-pieces-into   Jonn-Nom   cooky-Acc   make-Past-Dec

'John broke a cooky into three pieces'

As shown in (182), the paradigms with a resultative phrase show the effects of the Edge Generalization in the VP domain, discussed in Chapter 3 with Japanese resultative phrases. In particular, the object and its associate NQ cannot be separated by a resultative phrase, as described in (182b). To explain the paradigms in (182) by the Matching condition, it is necessary to assume that the resulative phrase acts as an intervener for movement of the object in (182b). It is not obvious, however, how the resulative phrase that cannot undergo scrambling acts as an intervener for object scrambling.[115]

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[115] A larger phrase containing a resultative phrase (e.g. VP phrase) may undergo scrambling, as shown in (i). Interestingly, however, the resultative phrase cannot intervene between the object and its associate NQ even in the fronted VP. This is expected from the VP-Edge Generalization discussed in Chapter 3.
(i)   Kwukhi-lul (ecey)   sey-cokak-ulo,   John-i   mantul-ess-ta
       Cooky-Acc yesterday 3-pieces-into   John-Nom   make-Past-Dec
       'John broke a cooky into three pieces'

(182) a.　　John-i　　**kwukhi-lul twu-kay** *sey-cokak-ulo*　mantul-ess-ta

　　　　　　Jonn-Nom cooky-Acc　two-Cl　　3-pieces-into　　make-Past-Dec

　　　　　　'John broke two cookies into three pieces'

　　　b.　　*John-i　　**kwukhi-lul** *sey-cokak-ulo* t **twu-kay**　　t mantul-ess-ta

　　　　　　Jonn-Nom cooky-Acc　3-pieces-into　　　two-Cl　　　　make-Past-Dec

　　　　　　'John broke two cookies into three pieces'

As it stands, the alternative approach based on the Matching Condition would not explain the Edge generalization without postulating additional assumptions. In particular, it appears to be necessary to incorporate the assumptions listed in (183) into the PIC system. The ultimate goal of assuming (183) is to derive a generalization captured by Cyclic Linearization that elements may change relative ordering only in the smallest domain they are externally merged. None of the assumptions in (183) are necessary if we adopt Cyclic Linearization.

(183) Assumptions needed for the PIC system:

a.　　Arguments and adjuncts must be attracted by the same head at every step of scrambling. This is necessary to block illicit derivations such as (178) and (179).

(ii)　　*Kwukhi-lul sey-cokak-ulo twu-kay,　John-i　　　mantul-ess-ta
　　　　　Cooky-Acc 3-pieces-into　2-Cl　　　John-Nom　make-Past-Dec
　　　　　'John broke two cookies into three pieces'

b.   Adjuncts must act as interveners for the probe-goal relationship between arguments and a higher head. This is necessary to derive the fact that a domain-internal adjunct may not intervene between an argument and its NQ.

c.   The subject may be optionally externally merged above or below the object in [Spec,*v*P]. But, once the subject is merged in [Spec,*v*P], the ordering among elements at the Spec of *v* must be preserved at every step of movement. This is necessary to derive the fact that both O<S and S<O are possible, but that the Edge Generalization holds in the *v*P-domain.

d.   Similarly, the object may be optionally externally merged above or below a VP-internal adverb (e.g. restitutive 'again'). But once the object is merged in [Spec,VP], the ordering among elements at the Spec of V must be preserved at every step of movement. This is necessary to account for the fact that both O<restitutive 'again' and O<restitutive 'again' are possible, but that the Edge Generalization holds in the VP-domain.

The conclusion that I draw at this point is not that the PIC approach is incapable of handling the facts of the Edge Generalization. Rather, we would have to entertain otherwise unnecessary assumptions to accommodate the Edge Generalization under the PIC system. It surely remains an important research question whether order preservation phenomena at the edge of a Spell-out domain can be derived in a simpler way than described here, without assuming Cyclic Linearization. Further research might show that some variant of the PIC approach to scrambling could resolve the problems addressed here. But, at least under the current development of theories of movement, the patterns observed in the thesis can be most naturally captured by the Cyclic Linearization approach to scrambling.

Chapter 4. Underlying Constituency and The Edge Generalization

4.1   Introduction

In the previous chapters, I have argued that the interaction between the Search Domain Condition and Cyclic Linearization leads us to predict the Edge Generalization in (184). We have seen that the Edge Generalization provides a unified account for a variety of ordering restrictions in scrambling. In this chapter, I examine implications of the Edge Generalization for the underlying constituency of the elements merged at the edge of a Spell-out domain.

(184)   ***The Edge Generalization***
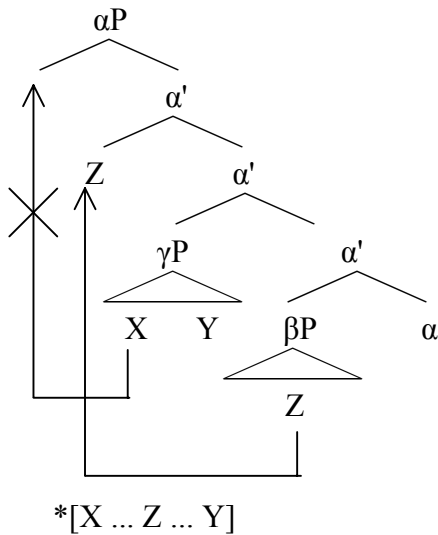
If X and Y are dominated by a specifier γP of a Spell-out domain αP, X and Y cannot be separated by an αP-internal element Z that is not dominated by γP.

*[X ... Z ... Y]

In the configuration given in (184), the αP-internal element Z cannot move into a position between X and Y dominated by γP, a specifier of αP. Thus, Z cannot separate X and Y in the αP

domain without violating the Search domain Condition. This implies that no elements merged at the edge of a Spell-out domain *as a constituent* can be separated by a domain-internal element.

Suppose, however, that two elements X and Y at the edge of a Spell-out domain do not form a constituent, as exemplified in (185). Under such circumstances, a domain-internal element Z may directly move into a position between X and Y. Specifically, X may be externally merged after Z moves to the left of Y in αP. Alternatively, Z may tuck-in between X and Y. We then expect that X and Y in configurations like (185) may be separated by Z without violating the Search Domain Condition or Linearization Preservation.

(185)
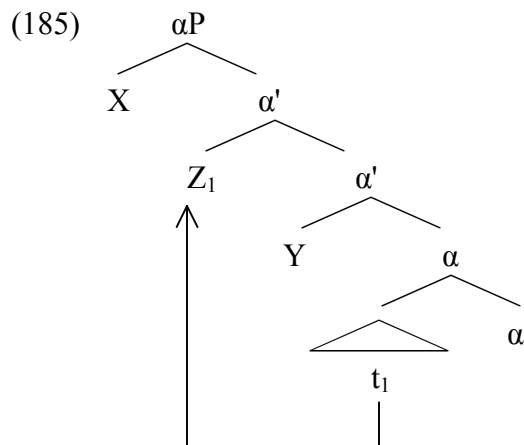
Thus, if my proposals for the Edge Generalization are correct, we may use the properties predicted from the Edge Generalization as a diagnostic to determine underlying constituency. In particular, if a certain construction shows clustering of properties predicted by the Edge Generalization in a given Spell-out domain αP (**Edge Effect**), this implies that the elements at the edge of αP form a constituent in underlying structure. If the Edge Effect is not observed, it may suggest that the structure in (185) can be supported. In particular, all the instances of the Edge Effect may disappear in a given domain αP in the structure in (185) (**Split Edge Effect**).

In this chapter, I investigate the implications of the Edge Effect and Split Edge Effect for underlying constituency, with special attention to Inalienable Possession Constructions (IPC) and a variety of types of floating quantifier constructions in Korean. In particular, I closely examine the syntactic distribution of nominative possessors, accusative possessors, Case-marked NQs, focus-marked NQs, universal QPs, and NPIs. I argue that the distribution of the Possessor can be best explained by assuming different underlying structures for multiple nominative and accusative IPCs. I also argue that it is necessary to assume two distinct types of floating quantifiers in Korean. One type of floating quantifier (Caseless NQs) forms a constituent with its host NP in underlying structure. The other type of floating quantifier (Case-marked NQs, focus-marked NQs, universal QPs, and NPIs) does not. The arguments are supported by a variety of tests based on the Edge Effect, the Split Edge Effect and interactions between them.

4.2   Inalienable Possession Constructions

4.2.1   Possessor Raising or Not?

Korean allows multiple nominative and accusative Case-marking in the domain of a single predicate. The Inalienable Possession Construction (IPC) is a context where such multiple Case marking is observed.[116] Some examples are given in (186) and (187) to illustrate multiple nominative and accusative marking in the IPC. [117]

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[116] I assume a relation that is inborn, inherent, or not conferred by purchase, such as body-part, kinship, and part-whole as inalienable possession relationship (adopting Choe 1987, Yoon 1990, Ura 1996, among many others).

[117] I do not discuss multiple dative IPCs here. See Maling and Kim (1992) for potentially relevant discussion for this chapter.

(186)   Multiple Nominative Inalienable Possession Construction

John-i   **tali-ka**   aphu-ta

John-Nom   leg-Nom   sick-Dec

'John's leg is sick'

(187)   Multiple Accusative Inalienable Possession Construction

Mary-ka   **John-ul**   **tali-lul**   cap-ass-ta

Mary-Nom   John-Acc   leg-Acc   grab-Past-Dec

'Mary grabbed John's leg'

The syntactic and semantic properties of the IPC have been extensively discussed in the literature.[118] While the details of the proposals may differ, analyses of the IPC can be divided into two families of proposals, differing on their view of the relationship between the Possessor and the Possessee in underlying structure. (See appendix 4A for implications of this issue.)

One camp, the **Constituent approach**, argues that the Possessor is a direct argument of the Possessee and is extracted from a DP containing the Possessee for Case reasons, as described in (188) (See Choe 1987, Ura 1996, Cho 2000, among others, for Korean).[119]

The other camp, the **Nonconstituent approach**, argues that the Possessor is an argument of the verbal predicate, and thus does not form a constituent with the Possessee in underlying

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[118] See Chun (1985), Choe (1987), Kang (1987), Yoon (1989, 1990), Kim (1989, 1990), Gerdts (1991), Maling and Kim (1992), Kitahara (1993a), D.–I. Cho (1993), Ura (1996), S. Cho (2000), Sim (2004), among many others, for discussion of the syntax and semantics of IPCs in Korean.
[119] See Szabolcsi (1983), Kubo (1990), Keach and Rochemont (1992), Landau (1999), among others, for similar proposals for other languages.

structure, as illustrated in (189) (Yoon 1989, 1990, Kim 1990, Sim 2004, among others, for Korean).[120]

(188) **Constituent Approach**

```
              XP
            /    \
    Possessor₁    DP
       ↑        /   \
        _____t₁   Possessee
```

(189) **Nonconstituent Approach**

```
            VP
          /    \
   Possessor    V'
              /    \
        Possessee   V
```
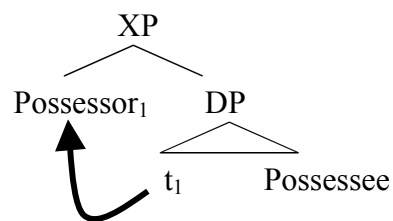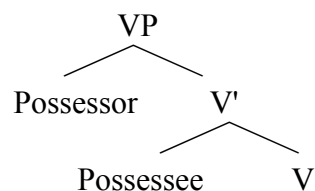
The controversy concerning the underlying structure of IPCs has not been settled yet. Previous literature often adopts the Constituent or Nonconstituent approach without argument.[121] Also to the best of my knowledge, it has not been explicitly discussed whether the multiple nominative and accusative IPC should be analyzed in the same way.[122]

I argue that close inspection of the predictions of the Edge Generalization concerning possessor scrambling provides a resolution of the controversy.

If the Possessor and the Possessee are merged as a constituent, Edge Effects should be visible in the IPC. In particular, the distribution of the Possessee will be constrained by the same principles that regulate the distribution of numeral quantifiers seen in the previous chapters.[123]

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[120] See also Guéron (1985), Borer and Grodzinsky (1986), Cheng and Ritter (1987), Authier and Reed (1991), Tellier (1991), Kempchinsky (1992), Shibatani (1994), among others, for similar claims for other languages.

[121] But see Kim (1989, 1990) and Sim (2004) citing Yoon (2001) for relevant discussion.

[122] Many studies for the Nonconstituent approach do not discuss multiple nominative IPCs (e.g. Yoon 1989, 1990, Kim 1989, 1990, Sim 2004). Many studies for the Constituent approach tacitly assume that the multiple nominative and accusative IPC must be treated in the same way without independent arguments (e.g. Choe 1987, Ura 1996).

[123] I thank Norvin Richards for directing me to this prediction.

By contrast, if the Possessor and the Possessee do not form a constituent in underlying structure, there is no reason to expect that the ordering between the Possessor and the Possessee would be constrained by the Edge Generalization. Thus, Split Edge Effects should be visible in the IPC.

In what follows, I show that both predictions are correct, but in different domains. Specifically, the former prediction is confirmed by multiple nominative IPCs, and the latter prediction is supported by multiple accusative IPCs. This result has the interesting implication that the syntax of the IPC can be best explained by assuming the Constituent approach for multiple nominative IPCs, and the Nonconstituent approach for multiple accusative IPCs.

4.2.2   The Edge Generalization and Inalienable Possession Constructions

Let us first consider the distribution of multiple nominative IPCs in transitive sentences. For convenience, I call a nominative marked possessor an **S-Possessor** and a nominative marked possessee an **S-Possessee**. Similarly, an accusative marked possessor is called **an O-Possessor** and an accusative marked possessee an **O-Possessee**.

If the S-Possessor and the S-Possessee form a constituent in the underlying structure, their distribution should show Edge Effects in the vP domain. In particular, if the S-Possessor and the S-Possessee are externally merged in [Spec,vP] as a constituent, they must either precede a vP-internal element (190) or follow it (191) within the vP domain. Derivations like (192) would be ruled out by the Search Domain Condition since the Possessor and the Possessee are not in the search domain of v, which in turn would host a feature that triggers scrambling.

(190)

```
            vP
          /    \
        DP      v'
       /  \    /  \
Possessor Possessee VP   v
                  /  \
                 XP   V
```

(191)

```
              vP
            /    \
         XP₁      v'
          ↑     /    \
          |   DP      v'
          |  /  \    /  \
     Possessor Possessee VP   v
                        /  \
                       t₁   V
```
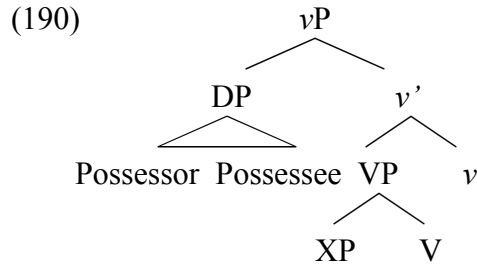
Linearize *v*P:
S-Possessor<S-Possessee <XP
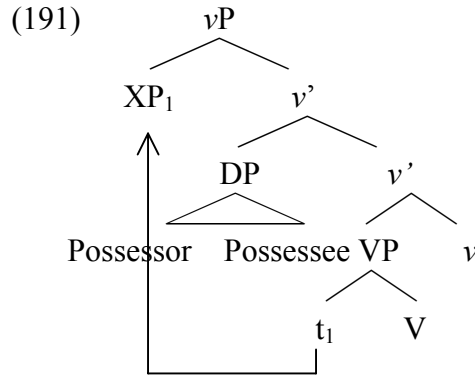
Linearize *v*P:
XP<S-Possessor<S-Possessee

(192)   Illegal Scrambling: violation of the Search Domain Condition

```
            vP
          /    \
   Possessor    v'
      ↑        /    \
      |     XP₁      v'
      ⨯      ↑      /    \
      |      |    DP      v'
      |      |   /  \    /  \
      |      t₂ Possessee VP   v
      |               /  \
      |              t₁   V
```
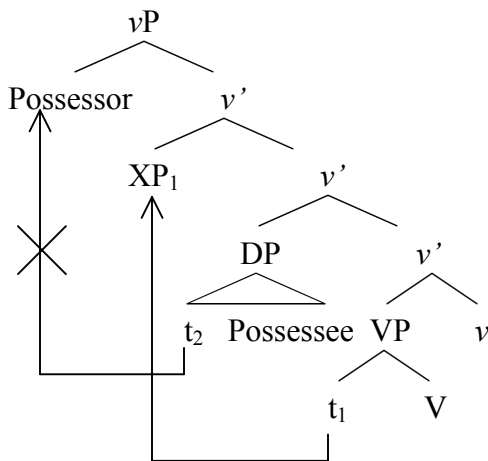
Given that the ordering in the *v*P domain needs to be preserved in the higher domains (Cyclic Linearization), we predict that the S-Possessor and the S-Possessee may not be separated by a *v*P-internal element such as direct object, indirect object, and low adverbs. This prediction is borne out.
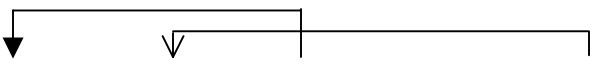
The paradigms in (193)-(195) illustrate that the S-Possessor and the S-Possessee cannot be separated by the object, using various types of predicates. Habitual and stative predicates readily allow multiple nominative constructions, as shown in the (a) examples of (193)-(194).

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When the object intervenes between the S-Possessor and the S-Possessee, however, the sentence becomes ungrammatical, as illustrated in the (b) examples of (193)-(194). Multiple nominative constructions with episodic predicates (195) are slightly degraded and require a context that assigns a focus to the Possessor, as in (195a) (observation due to Yoon 2004, 2005).[124] When the object intervenes between the S-Possessor and the S-Possessee, however, the sentence becomes utterly ungrammatical, regardless of previous contexts. This can be seen in (195b).

(193)   *S-Possessor<Object<S-Possessee [habitual predicates]

a.   **John-i**   **apeci-ka**   wupyo-lul   mou-si-n-ta

        John-Nom   father-Nom   stamp-Acc   collect-Hon-Pres-Dec

        'John's father collects stamps'

b.   * **John-i$_2$**   wupyo-lul$_1$ t$_2$ **apeci-ka**   t$_1$ mou-si-n-ta

        John-Nom   stamp-Acc   father-Nom   collect-Hon-Pres-Dec

        'John's father collects stamps'

(194)   *S-Possessor<Object<S-Possessee [stative predicates]

a.   **John-i**   **apeci-ka**   yenge-lul   cal   ha-si-n-ta

        John-Nom   father-Nom   English-Acc   well   do-Hon-Pres-Dec

        'John's father speaks English well'

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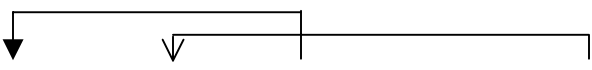
[124] See Yoon (2004, 2005) for extensive discussion of semantic constraints in using multiple nominative constructions in Korean. Yoon argues that the Possessor in multiple nominative IPCs should be interpreted as a major subject. Yoon shows that the semantics of a major subject is not readily compatible with an episodic predicate, but focusing the S-Possessor makes it felicitous to use it as a major subject of an episodic predicate.

b.   * **John-i₂**   yenge-lul₁   t₂   **apeci-ka**   t₁   cal   ha-si-n-ta

      John-Nom   English-Acc   father-Nom   well   do-Hon-Pres-Dec

      'John's father speaks English well'

(195)   **S-Possessor<Object<S-Possessee*   [episodic predicates]

Context: Nwukwu-uy/ka   apeci-ka   totwuk-ul   cap-usi-ess-ni?

         Who-Gen/Nom   father-Nom   thief-Acc   capture-Hon-Past-Q

         'Whose father captured a thief?'

a.   ?**John-i**   **apeci-ka**   totwuk-ul   cap-usi-ess-ta

      John-Nom   father-Nom   thief-Acc   capture-Hon-Past-Dec

      'John's father captured a thief'

b.   * **John-i₂**   totwuk-ul₁   t₂   **apeci-ka**   t₁   cap-usi-ess-ta

      John-Nom   thief-Acc   father-Nom   capture-Hon-Past-Dec

      'John's father captured a thief'

The paradigms in (196)-(197) demonstrate that the S-Possessor and the S-Possessee cannot be separated by an indirect object or postpositional argument phrase:

(196)   *S-Possessor<IO<S-Possessee

a.   ?**John-i**   **apeci-ka**   (cengkicekulo) koatul-eykey senmwul-ul ponay-si-n-ta

   John-Nom   father-Nom   regularly   orphans-Dat   present-Acc send-Hon-Pres-Dec

   'John's father sends a present to orphans regularly'

b.   *__John-i$_2$__   koatul-eykey$_1$ t$_2$ **apeci-ka**   (cengkicekulo) t$_1$ senmwul-ul ponay-si-n-ta

   John-Nom   orphans-Dat   father-Nom   regularly   present-Acc send-Hon-Pres-Dec

   'John's father sends a present to orphans regularly'

(197)   *S-Possessor<PP<S-Possessee

a.   ?**John-i**   **apeci-ka**   koawon-ey   umsik-ul   paytalha-si-ess-ta

   John-Nom   father-Nom   orphanage-to food-Acc   deliver-Hon-Past-Dec

   'John's father delivered food to an orphanage'

b.   *__John-i$_2$__   koawon-ey$_1$ t$_2$ **apeci-ka**   t$_1$ umsik-ul   paytalha-si-ess-ta

   John-Nom   orphanage-to   father-Nom   food-Acc   deliver-Hon-Past-Dec

   'John's father delivered food to an orphanage'

The examples in (198)-(200) show that the S-Possessor and the S-Possessee cannot be separated by a low adjunct phrase (merged within *v*P) expressing manner (*yelsimhi* 'diligently', *cal* 'well'), instrument (*chong-ulo* 'with a gun'), and volition (*ilpwule* 'deliberately').

(198)   *S-Possessor< L-adjunct <S-Possessee [habitual predicate]

a.   **John-i**   **apeci-ka**   yelsimhi   wupyo-lul   mou-si-n-ta

     John-Nom   father-Nom   diligently   stamp-Acc   collect-Hon-Pres-Dec

     'John's father collects stamps diligently'

b.   ***John-i$_2$**   yelsimhi   t$_2$ **apeci-ka**   t$_1$ wupyo-lul   mou-si-n-ta

     John-Nom   diligently   father-Nom   stamp-Acc   collect-Hon-Pres-Dec

     'John's father collects stamps diligently'

(199)   *S-Possessor<L-adjunct<S-Possessee [stative predicate]

a.   **John-i**   **apeci-ka**   yenge-lul   cal/ilpwule   ssu-si-n-ta

     John-Nom   father-Nom   English-Acc   well/deliberately   use-Hon-Pres-Dec

     'John's father speaks English well (often)/deliberately'

a.   ***John-i$_2$**   cal/ilpwule   t$_2$ **apeci-ka**   yenge-lul   t$_1$ ssu-si-n-ta

     John-Nom   well/deliberately   father-Nom   English-Acc   use-Hon-Pres-Dec

     'John's father speaks English well(often)/deliberately'

(200)   *S-Possessor< L-adjunct <S-Possessee [episodic predicate]

[Context: 'Whose father shot a bird (with a gun)'?]

a.   ?**John-i**   **apeci-ka**   chong-ulo   say-lul   so(-si-)ass-ta

     John-Nom   father-Nom   gun-with   bird-Acc   shot(-Hon-)Past-Dec

     'John's father shot a bird with a gun'

b.   ***John-i$_2$**   chong-ulo$_1$ t$_2$ **apeci-ka**   t$_1$ say-lul   so(-si-)ass-ta

    John-Nom   gun.with   father-Nom   bird-Acc   shot(-Hon-)Past-Dec

    'John's father shot a bird with a gun'
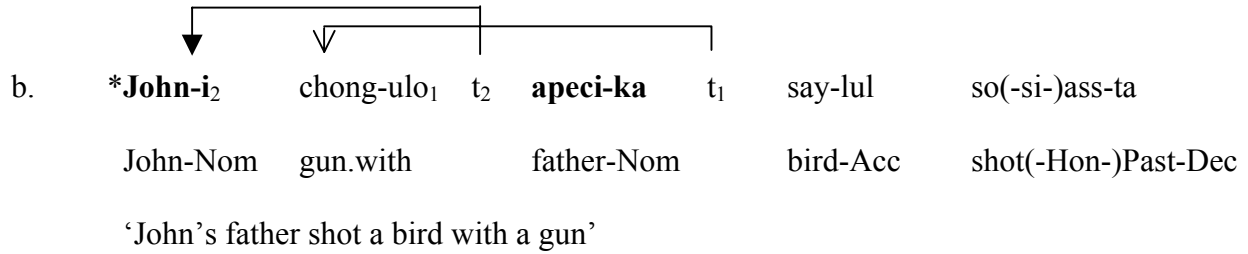
If the Edge Generalization holds in the multiple nominative IPC, we also expect differences between high and low adjuncts. Recall that a high adjunct externally merged outside *v*P does not participate in the linearization of the *v*P domain. Thus, the S-Possessor and the S-Possessee should be separable by a high adjunct without yielding any ordering contradiction as shown in (202), in contrast to the situation with low adjuncts seen in (198)-(200) (replicating the asymmetries between high and low adjuncts in NQ constructions). The prediction is borne out, as illustrated in (203)-(206).

(201)
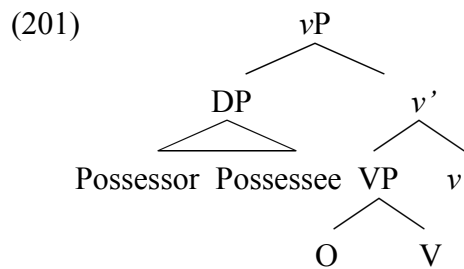
Linearize *v*P:
S-Possessor<S-Possessee <O

(202)
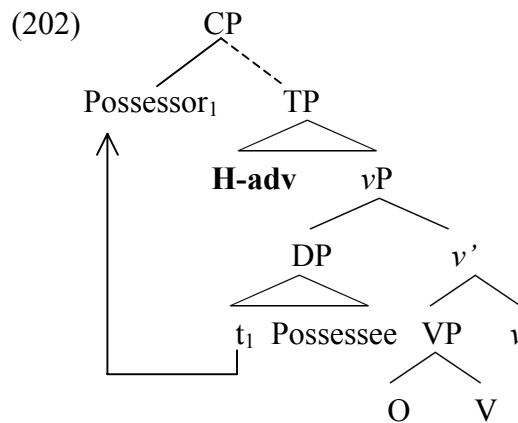
Linearize CP*:*
S-Possessor<H-adv< *v*P

The S-Possessor and the S-Possessee can in fact be separated by high adjuncts including epistemic adverbs (e.g. *amato* 'probably', *pwunmyenghi* 'evidently'), evaluative adverbs (e.g.

tahaynghito 'fortunately'), temporal adverbs (e.g. *caknyun-ey* 'last year', *hangsang* 'always'), and locative PPs (e.g. *kongwon-eyse* 'in a park').

(203)　*S-Possessor< H-adjunct <S-Possessee* [habitual predicate]

a.　　?Amato　　**John-i**　　**apeci-ka**　　wupyo-lul　　mou-si-n-ta

　　　　Probably　　John-Nom　　father-Nom　　stamp-Acc　　collect-Hon-Pres-Dec
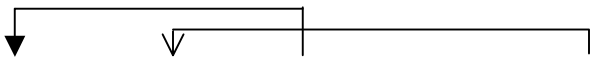
　　　　'Probably, John's father collects stamps'

b.　　?**John-i₂**　　amato　　t₂　　**apeci-ka**　　wupyo-lul　　mou-si-n-ta

　　　　John-Nom　　probably　　　　father-Nom　　stamp-Acc　　collect-Hon-Pres-Dec

　　　　'Probably, John's father collects stamps'

(204)　*S-Possessor< H-adjunct <S-Possessee* [stative predicate]

a.　　?Tahaynghito　**John-i**　　**apeci-ka**　　yenge-lul　　cal　　ha-si-n-ta

　　　　Fortunately　John-Nom　　father-Nom　　English-Acc　well　　do-Hon-Pres-Dec

　　　　'Fortunately, John's father speaks English well'

b.　　?**John-i₂**　　tahaynghito　t₂　　**apeci-ka**　　yenge-lul　　cal　　ha-si-n-ta

　　　　John-Nom　　fortunately　　　　father-Nom　　English-Acc well　do-Hon-Pres-Dec

　　　　'Fortunately, John's father speaks English well'

(205)   *S-Possessor< H-adjunct <S-Possessee* [episodic predicate]

[Context: 'Whose father shot a bird'?]

a.   ?Pwunmyenghi   **John-i**   **apeci-ka**   say-lul   so(-si-)ass-ta

Evidently   John-Nom   father-Nom   bird-Acc   shot(-Hon-)Past-Dec

'Evidently, John's father shot a bird'

b.   ?**John-i$_2$**   pwunmyenghi   t$_2$ **apeci-ka**   say-lul   so(-si-)ass-ta

John-Nom   evidently   father-Nom   bird-Acc   shot(-Hon-)Past-Dec

'Evidently, John's father shot a bird'

(206) *S-Possessor<H-adjunct <S-Possessee*

a.   **John-i**   hangsang   t   **apeci-ka**   kosnolay-lul   pwulu-si-n-ta

John-Nom   always   father-Nom   nose.sing-Acc sing-Hon-Pres-Dec

'John's father always does humming'

b.   **John-i**   caknyen-ey   t   **apeci-ka**   toycik-ul   ha-si-ess-ta

John-Nom   last year   father-Nom   retire-Acc   do-Hon-Past-Dec

'John's father retired last year'

c. (?) **John-i**   kongwon-eyse   t   **apeci-ka**   mayil   coking-ul   ha-si-n-ta

John-Nom park-in   father-Nom   everyday   jogging-Acc   do-Hon-Pres-Dec

'John's father goes for a run in a park everyday'

Furthermore, we predict an asymmetry in intransitive sentences in the IPC as well. If the S-Possessor is externally merged as an internal argument of the verb (as in passive and unaccusative constructions), we expect that the S-Possessor and the S-Possessee might be separable by a vP-internal element, as described in (207). By contrast, if the S-Possessor is merged as an external argument of the verb (as in unergative constructions), we expect that the S-Possessor and the S-Possessee cannot be separated by a vP-internal element, as illustrated in (208). This prediction is upheld, as exemplified in (209)-(211).[125]

(207) *Unaccusative/passive subject*

(208) *Unergative subject*
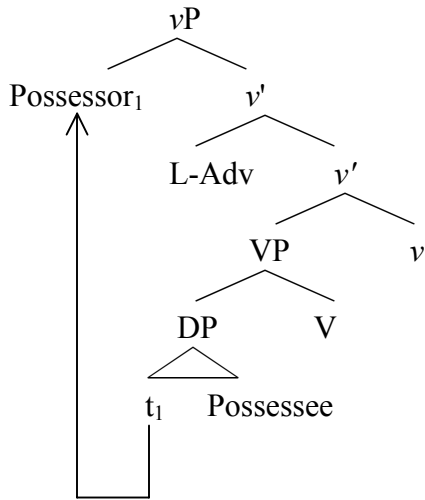
Linearize vP:
S-Possessor<L-Adv<S-Possessee
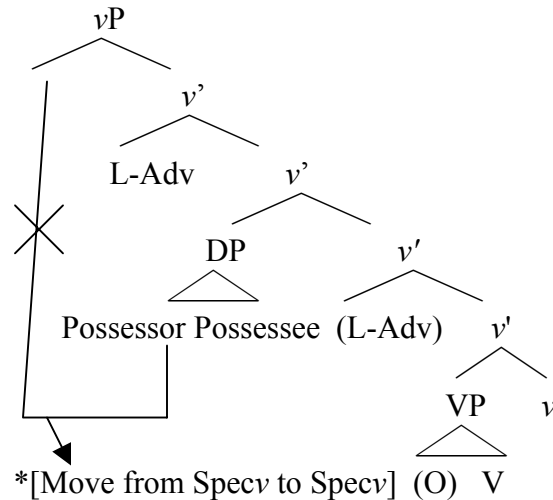
Linearize vP:
L-Adv<S-Possessor<S-Possessee <(L-Adv)

---

[125] The paradigms in (209)-(210) show that one cannot simply stipulate that a nominative possessor cannot be separated by a vP-internal element from its possessee. Any attempts to stipulate constraints on nominative Case marking to explain the paradigms in (193)-(206) would fail to explain the contrasts between the transitive subjects in (193)-(206) and unaccusative/passive paradigms in (209)-(210). For clarification, however, the data in (209) and (210) do not show whether an unaccusative/passive S-Possessor form a constituent with a S-Possessee in the underlying structure. Even if they did not form a constituent, an unaccusative/passive S-Possessor may move to the left of the low adverbial because the unaccusative/passive S-Possessor is in the search domain of v. (See discussion of O-Possessors in (213)-(215). See also fn. 131.)

(209) *Passive S-Possessor<by-agent<S-Possessee*

a.   Mary-ka   **John-ul**   **sonmok-ul**   cap-ass-ta

        Mary-Nom   John-Acc   wrist-Acc   grab-Past-Dec

        'Mary grabbed John's wrist'
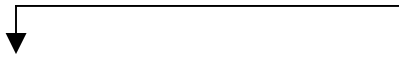
b.   **John-i**   Mary-eykey   t   **sonmok-i/ul**   cap-hi-ess-ta

        John-Nom   Mary-Dat(by)   wrist-Nom/Acc   grab-Pass-Past-Dec

        'John's wrist were grabbed by Mary' (cf. Maling and Kim 1992)

(210) *Unaccusative S-Possessor<PP<S-Possessee*

a.   **John-i**   ku pyeng-ulo   t   **ai-ka**   cwuk-ess-ta

        John-Nom   that disease-with   baby-Nom   die-Past-Dec

        'John's baby died from this disease'

b.   **John-i**   sinyak-ulo/   (nwukwu pota)   ppalli   t   **moksori-ka**   tolawassta

        John-Nom   new.medicine-with/(anyone than)   quickly   voice-Nom   returned

        'John's voice returned (was cured) with new medicine/quickly (than anybody else's)'

(211)   *Unergative S-Possessor<L-Adverb<S-Possessee

[Context: 'Whose baby cries (deliberately)'?]

a.   ?**Mary-ka**   **ai-ka**   ilpwule   wu-n-ta

     Mary-Nom   baby-Nom   deliberately   cry-Pres-Dec

     'Mary's baby cries deliberately'

b.   ***Mary-ka**$_2$ ilpwule$_1$ t$_2$ **ai-ka**   t$_1$ wu-n-ta

     Mary-Nom   deliberately   baby-Nom   cry-Pres-Dec

     'Mary's baby cries deliberately'

The paradigms in (193)-(211) of course strongly suggest that there are systematic parallels in the syntactic properties of the multiple nominative IPC and numeral quantifier constructions. In particular, in both constructions, the subject cannot be separated from its associate XP by an element externally merged in the same Spell-out domain. This symmetry naturally follows from the Edge Generalization if we assume that the S-Possessor and the S-Possessee form a constituent in underlying structure, just like the subject and its NQ in the edge of *v*P. This in turn supports the claim that the Edge Generalization is a general prediction for linear ordering at syntactic edges, and that the Edge Effect is not limited to numeral quantifier constructions.

The overall arguments presented here thus provide further support for the Constituent approach in (188) for multiple nominative IPCs.[126] If the S-Possessor and the S-Possessee were

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[126] This conclusion of course is limited to Inalienable Possession Constructions studied here. I wish to investigate in the future whether the current proposal extends to multiple nominative alienable possession constructions or multiple nominative constructions (in general) that do not

not a constituent in the underlying structure, there would be no reason why the Edge Effect should be observed in the IPC. In particular, as drawn in (212), a *v*P-internal element may in principle move to the left of S-Possessee or tuck-in between the S-Possessor and the S-Possessee. If (212) were allowed, the paradigms in (193)-(211) would be left unexplained.[127]

(212)   *Problematic Derivation under the Nonconstituent Approach*

```
                    vP
            _____|_____
          /                  \
     S-Possessor              v'
                      _____|_____
                    /                  \
                  XP₁                   v'
                   △           _____|_____
                   |         /                  \
                   |    S-Possessee              v'
                   |                      _____|_____
                   |                    /                  \
                   |                   VP                   v
                   |            _____|_____
                   |          /              \
                   |_____ t₁               V
```
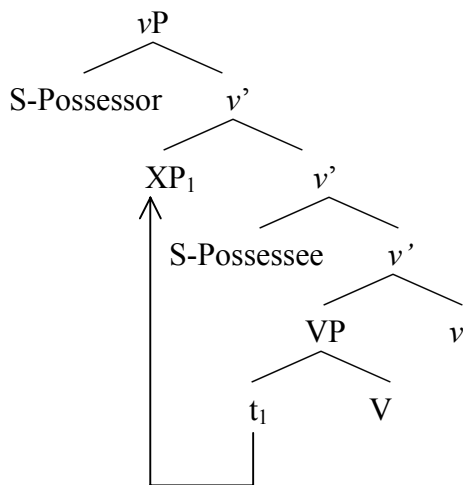
Let us now turn to multiple accusative IPCs. I first consider the predictions for possible orderings between an O-Possessor and a *v*P-internal element, and then discuss the predictions for possible ordering between an O-Possessor and a VP-internal element.

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involve possession relationship. See Ura (1996), Schütze (2001), and Yoon (2004, 2005), among others, for references and discussions of alienable possession and non-possessive multiple nominative constructions in Korean and Japanese.

[127] To block derivations like (212), proponents of the Nonconstituent Approach might postulate that an XP cannot move into a position between two (separate) specifiers of *v*P (or semantically associated two XPs). Alternatively, one might simply stipulate that no elements externally merged at the edge can be separated by a domain-mate. I will show shortly that these alternatives cannot be maintained. In particular, we will see that in multiple accusative IPCs, Possessor and Possessee can be separated by a domain-internal element ((216)-(217)). A variety of arguments for Split Edge Effects in section 4.3 cannot be accommodated under such assumptions, either.
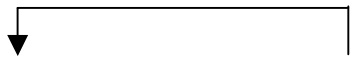
The O-Possessor and the O-Possessee are merged below *v* and may move within the *v*P domain before Spell-out of *v*P. Thus, we predict that the O-Possessor and the O-Possessee can be separated by a *v*P-internal element, in contrast to the paradigms seen with the subject IPC. It is also expected that a high adjunct (merged outside *v*P) would be able to intervene between the O-Possessor and the O-Possessee. We thus predict no asymmetry between high and low adjuncts in the object IPC. These predictions are again borne out, as illustrated in (213)-(215).[128]

(213) *O-Possessor<Subject<O-Possessee*

a. Mary-ka   **John-ul**   **tali-lul**   cap-ass-ta

  Mary-Nom   John-Acc   leg-Acc   grab-Past-Dec

  'Mary grabbed John's leg'

b. **John-ul**$_1$ Mary-ka t_1 **tali-lul**   cap-ass-ta

  John-Acc   Mary-Nom   leg-Acc   grab-Past-Dec

  'Mary grabbed John's leg'

---

[128] The S-Possessor constructions in (193)-(200) employ the kinship relationship and the O-Possessor constructions in (213)-(215) employ the part-whole relationship. This is because the S-Possessor strongly prefers a major subject (Topic-like) reading. Part-whole relationship hardly satisfies this constraint. The O-Possessor, on the other hand, must satisfy the affectedness condition (Yoon 1990; See also Jeong 2005 for discussion of contrasts between part-whole vs. kinship IPCs). Kinship relationship cannot satisfy this condition (See discussion of (218)-(222) later). Note, however, that this does not affect my main arguments crucially. Recall that we have observed asymmetries *within* S-Possessor constructions (high adverbs vs. low adverbs, high adverbs vs. arguments, unaccusative/passive subjects vs. unergative subjects). Any attempts to reduce the subject-object asymmetries into kinship vs. part-whole distinction would fail to explain the observed asymmetries among the S-Possessors. Under the Edge Generalization, however, the asymmetries among S-Possessors as well as the asymmetries between S-Possessors and O-Possessors may naturally follow. (I thank Youngmi Jeong for helpful discussion of this.)

(214) *O-Possessor<L-adverb<O-Possessee*

a.   Ilpwule   Mary-ka   **John-ul**   **tali-lul**   capassta

Deliberately   Mary-Nom   John-Acc   leg-Acc   grabbed

'Mary grabbed John's leg deliberately'
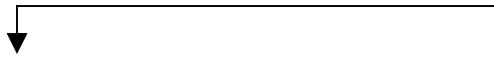
b.   **John-ul$_1$**   Mary-ka   ilpwule   t$_1$ **tali-lul**   capassta

John-Acc   Mary-Nom   deliberately   leg-Acc   grabbed

'Mary grabbed John's leg deliberately'

(215) *O-Possessor<H-adverb<O-Possessee* (see also Cho 1993)

a.   Pwunmyenghi   Mary-ka   **John-ul**   **tali-lul**   capassta

Evidently   Mary-Nom   John-Acc   leg-Acc   grabbed

'Evidently, Mary grabbed John's leg'

b.   **John-ul$_1$**   pwunmyenghi   Mary-ka   t$_1$ **tali-lul**   capassta

John-Acc   evidently   Mary-Nom   leg-Acc   grabbed

'Evidently, Mary grabbed John's leg'

The systematic asymmetries between S-Possessors and O-Possessors in (213)-(215) further support my arguments for the Edge Generalization. The paradigms in (213)-(215) do not distinguish between the Constituent and Nonconstituent approach, however. In particular, whether the O-Possessor and the O-Possessee form a constituent or not, the O-Possessor may move within the *v*P domain. This itself may derive the subject-object asymmetries in the IPC.

The predictions of the Constituent and Nonconstituent approach diverge in the VP domain, however. Specifically, if the O-Possessor and the O-Possessee must form a constituent in [Spec,VP], we would expect that the O-Possessor and the O-Possessee might not be separable by an element merged within VP (e.g. VP-internal adverb) as an instance of the VP-Edge Generalization. On the other hand, if the O-Possessor and the O-Possessee do not form a constituent, we have no reason to expect that the VP-Edge Generalization should hold in multiple accusative IPCs.

The paradigms in (216)-(217) show that the latter prediction is correct. As illustrated in (216)-(217), both restitutive and repetitive adverb *tasi* 'again' may intervene between the O-Possessor and the O-Possessee, in contrast to the paradigms with the object-oriented NQs seen in Chapter 3.[129] The data in (216)-(217) thus suggest that the Nonconstituent approach is on the right track for multiple accusative IPCs.[130]

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[129] Heidi Harley (p.c.) raises the question of whether the paradigms in (216)-(217) can be explained by assuming that the object is in complement position and restitutive 'again' is in [Spec,VP]. If the object may move to the left of restitutive 'again' from the complement position, the paradigms in (216)-(217) are correctly predicted. If this were correct, multiple accusative IPC and nominative IPCs would have been analyzed in the same way (per Constituent approach). Note, however, that this hypothesis directly contradicts what we have seen in NQ paradigms in Chapter 3. If restitutive 'again' can be merged in [Spec,VP] in O-Possessor constructions, there is no obvious reason why the same structure is not available for NQ constructions. If that is the case, however, we would wrongly predict that the object and its NQ can be separated by restitutive 'again'. I thank Heidi Harley for helpful discussion of this point.

[130] It is important to note, however, that the data in (216)-(217) simply show that it is not the case that the O-Possessor and the O-Possessee "must" form a constituent in VP. It does not show that the O-Possessor and the O-Possessee "cannot" form a constituent in VP at all. Thus, one might postulate that multiple accusative IPCs may be structurally ambiguous so that the O-Possessor and the O-Possessee may be base-generated as a constituent or as separate projections. I leave it future research if this claim can be supported. At least, it is not obvious to me how such approaches can explain the paradigms that will be shown in (218)-(222).

(216) Kim-ssi-ka **John-ul** tasi **tali-lul** ttayli-ess-ta

Kim-Mr.-Nom John-Acc again leg-Acc hit-Past-Dec

i) 'Mr. Kim hit John on his leg again' (and John's leg was hit before) [*restitutive*]

ii) 'Mr. Kim hit John on his leg again' (and he has done that before) [*repetitive*]

(217) Kim-ssi-ka **espresso kikye-lul** tasi **soncapi-lul** pwulettuli-ess-ta

Kim-Mr.-Nom espresso machine-Acc again handle-Acc break-Past-Dec

i) 'Mr. Kim broke the handle of the espresso machine again' (and the handle has been in the state of broken before) [*restitutive*]

ii) 'Mr. Kim broke the handle of the espresso machine again' (and he has done before) [*repetitive*]

Given the tests based on the Edge Generalization in this section, I conclude that the distribution of the Possessor can be naturally explained by assuming different underlying structures for multiple nominative and accusative IPCs. Specifically, the Constituent approach is supported for multiple nominative IPCs, whereas the Nonconstituent approach is supported for multiple accusative IPCs.[131]

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[131] If this conclusion is correct, a passive S-Possessor and S-Possessee can be separated by restitutive *tasi*. (This, of course, assumes that the passive subject has undergone movement from object position.) The prediction seems to be correct. For instance, the sentence in (i) is two-way ambiguous: 'The handle of the espresso machine was broken by someone twice' or 'The handle of the espresso machine was in the state of being broken twice' (Imagine a scenario that the handle of the espresso machine was broken when it was purchased, was later fixed and then was broken again).
(i) **Espresso kikye-ka** tasi **soncapi-ka** pwule-ci-ess-ta
    Espresso machine-Nom again handle-Nom break-Pass-Past-Dec
    'The handle of the espresso machine was broken again'

Further research is required to see if this conclusion can be independently confirmed.[132] The following facts, however, suggest that the current conclusion is on the right track. As shown in (218), there are in fact some fundamental semantic differences between multiple nominative and accusative IPCs. Multiple accusative IPCs are subject to the affectedness condition (Yoon 1990), but multiple nominative IPCs are not. This is exemplified in (218) and (219).

Nonaffected Theme O-Possessor

(218) a. **John-i**   **apeci-ka**   kay-lul   (cacwu) ttayli-si-n-ta

John-Nom   father-Nom   dog-Acc   (often) hit-Hon-Pres-Dec

'John's father often hits a dog.'

b. *Mary-ka   **John-ul**   **apeci-lul**   (cacwu) tayli-n-ta

Mary-Nom   John-Acc   father-Acc   (often)   hit-Pres-Dec

'Mary hits John's father.'

Affected Theme O-Possessor

(219) a. **John-i**   **tali-ka**   apwuta

John-Nom   leg-Nom   sick

'John's leg is sick'

b. Mary-ka   **John-ul**   **tali-ul**   tayli-ess-ta

Mary-Nom   John-Acc   leg-Acc   hit-Past-Dec

'Mary hit John's leg.'

---

[132] In the next chapter, I provide some suggestive evidence for this conclusion from Case properties of the IPC.

As shown in (218) and (219), the O-Possessor must be affected by the event denoted by the verbal predicate, unlike the S-Possessor. This fact can be naturally explained if we assume that the O-Possessor as well as the O-Possessee is an argument of the verbal projection.[133] Specifically, one might plausibly argue that unlike the S-Possessor, the O-Possessor must be base-generated in the Spec of a functional head within vP that assigns the affected theme theta role to the O-Possessor, as depicted in (220) (The existence of *pro* is not important.)

(220)   Multiple Accusative IPC

```
                        FP
                      /    \
        O-Possessor₁         F'
                            /  \
                           /    \
                        VP        F affected theme
                      /    \
                   DP        V'
                 /____\
        (pro₁) O-Possessee
```
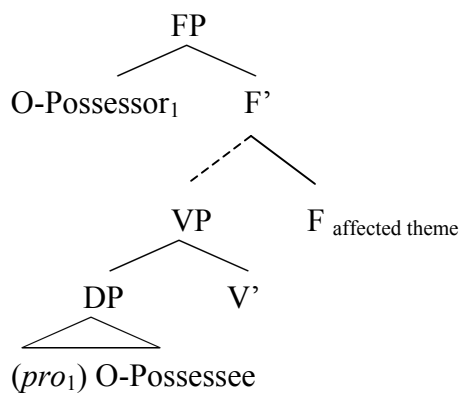
The hypothesis in (220) may also provide a plausible account of the fact that multiple accusative IPCs are incompatible with indirect object or PP arguments. Specifically, if we assume that the IO and PP arguments are in competition with the affected theme, the O-Possessor, for an argument position (e.g. applicative position), it is expected that the paradigms

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[133] In fact, this hypothesis has been proposed in various fashions. For example, Yoon (1990) argues that both the O-Possessor and the O-Possessee are arguments of the verb. Kim (1990) argues that O-Possessor is an argument of the verb and that O-Possessee is a secondary predicate. Lee (1992) argues that O-Possessor is an argument of the verb, and that O-Possessee is a complement of null proposition incorporated to the verb.

in (221) and (222) are ungrammatical (See Pesetsky (1995: 183-190) for relevant discussion of a constraint that limits the number of internal arguments to two).[134]

(221) *John-i   Mary-eykey   **Bill-ul**   **apeci-lul**   sokayha-yess-ta

     John-Nom   Mary-Dat   Bill-Acc   father-Acc   introduce-Past-Dec

     'John introduced Bill's father to Mary.'

(222) *John-i   kyosil-lo   **Bill-ul**   **apeci-lul**   mosyewa-ss-ta

     John-Nom   classroom-to   Bill-Acc   father-Acc   bring-Past-Dec

     'John brought Bill's father to the classroom.'

4.3   Two Types of Floating Quantifiers

In the previous chapters, I have argued that ordering restrictions in floating NQ constructions can be explained by the interaction of the Search Domain Condition and Cyclic Linearization. As noted earlier, this argument crucially assumes that an NQ and its host NP form a constituent in

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[134] This argument raises an interesting question concerning multiple accusative IPCs with more than two O-Possessors, as in (i).
(i) Mary-ka   John-ul   pal-ul   kkus-ul   cha-ss-ta
     Mary-Nom John-Acc foot-Acc   end-Acc   kick-Past-Dec
     'Mary kicked the end of John's foot.' ('Mary kicked John on the end of the foot')
If the number of internal arguments is limited to two, two of the three accusative NPs in (i) must form a constituent or one of the three accusative NP is an adjunct. The *tasi* 'again' test might be relevant here. The judgment is subtle, but the paradigm in (ii)-(iv) suggests that the first two NPs ('John' and 'foot') form a constituent and the last NP is merged as a separate projection.
(ii) ??Mary-ka   John-ul   tasi   pal-ul   kkus-ul   cha-ss-ta
        Mary-Nom John-Acc again   foot-Acc   end-Acc   kick-Past-Dec
       'Mary kicked the end of John's foot again.' (repetitive, ?*restitutive)
(iii) Mary-ka John-ul pal-ul   tasi   kkus-ul cha-ss-ta (repetitive, ?restitutive)
(iv) Mary-ka John-ul pal-ul   kkus-ul tasi   cha-ss-ta (repetitive, restitutive)

underlying structure. My arguments, however, leave open a possibility that other types of floating quantifiers might be a verbal modifier or an adjunct that does not form a constituent with its host NP. In this section, I investigate the syntactic distribution of various types of floating quantifiers that have not been tested in the previous chapters.[135]

There are a variety of types of floating quantifiers in Korean. These include Case-marked NQs, focus-marked NQs, universal QPs, and Negative Polarity Items (NPIs). Some examples are given in (223)-(230).

Subject-Oriented Floating Quantifiers

(223) **Haksayng-tul-i₂**   ecey   t₂   **sey-myeng-i**   maykcwu-lul   masi-ess-ta

Student-Pl-Nom   yesterday 3-Cl_{people}-Nom beer-Acc   drink-Past-Dec

'Three students drank beer yesterday'

(224) **Haksayng-tul-i₂**   ecey   t₂   **sey-myeng-man(-i)** maykcwu-lul masi-ess-ta

Student-Pl-Nom   yesterday   3-Cl-only-Nom   beer-Acc   drink-Past-Dec

'Only three students drank beer yesterday'

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[135] Some Japanese literature argues that coordination and pseudo-clefting constructions provide constituency tests for floating NQ constructions (e.g. Kamio 1983, Kawashima 1998). As Watanabe (2004) notes, however, these tests are for checking surface constituency, but not underlying constituency. If a verb undergoes string vacuous rightward movement (Kozumi 1995, 2000), coordination and pseudo-clefting tests cannot be direct tests for surface constituency between a host NP and its associate NQ, either.

(225) **Haksayng-tul-i$_2$** ecey t_2 **motwu(-ka)/ta** maykcwu-lul masi-ess-ta

Student-Pl-Nom yesterday all-Nom/all beer-Acc drink-Past-Dec

'All students drank beer yesterday'

(226) **Haksayng-tul-i$_2$** ecey t_2 **amwuto** maykcwu-lul masi-ci-anh-ass-ta

Student-Pl-Nom yesterday anyone beer-Acc drink-CI-Neg-Past-Dec

'No students drank beer yesterday'

Object-Oriented Floating Quantifiers

(227) **Maykcwu-lul$_1$** John-i t_1 **sey-pyeng-ul** masi-ess-ta

Beer-Acc John-Nom 3-Cl$_{bottle}$-Acc drink-Past-Dec

'John drank three bottles of beer'

(228) **Maykcwu-lul$_1$** John-i t_1 **sey-pyeng-man-(ul)** masi-ess-ta

Beer-Acc John-Nom 3-Cl-only-Acc drink-Past-Dec

'John drank only three bottles of beer'

(229) **Maykcwu-lul$_1$** John-i t_1 **motwu/ta** masi-ess-ta

Beer-Acc John-Nom all/all drink-Past-Dec

'John drank all bottles of beer'

(230) **Maykcwu-lul**$_1$ John-i   t$_1$ **han-pyeng-to** masi-ci-anh-ass-ta

Beer-Acc   John-Nom   one-bottle-even drink-CI-Neg-Past-Dec

'John didn't drink any bottle of beer (not even one bottle)'

The floating quantifiers presented above show a different syntactic distribution from the NQs examined in the previous chapters. In particular, they do not show the Subject Puzzle. The object may intervene between the subject and the subject-oriented quantifier, as in (232), unlike the paradigms with an NQ in (231) (O'Grady 1991, Park and Sohn 1993, Kang 2002, among others). For ease of discussion, I call the floating quantifiers in (232) Separable Floating Quantifiers (SFQs).

(231) *Subject<Object<Subject-oriented NQ

*Haksayng-tul-i   sakwa-lul   **twu-myeng**   mek-ess-ta

Student-Pl-Nom   apple-Acc   2-Cl   eat-Past-Dec

'Two students ate apples'

(232) Subject<Object<Subject-oriented FQ

a.   **Haksayng-tul-i**   sakwa-lul   **twu-myeng-i**   mek-ess-ta

Student-Pl-Nom   apple-Acc   2-Cl-Nom   eat-Past-Dec

'Two students ate apples'

b.   **Haksayng-tul-i**   sakwa-lul   **sey-myeng-man**   mek-ess-ta

Student-Pl-Nom   apple-Acc   3-Cl-only   eat-Past-Dec

'Only three students ate apples'

c. **Haksayng-tul-i**   sakwa-lul   **motwu-(ka)/ta(-tul)**   mek-ess-ta

   Student-Pl-Nom   apple-Acc   all-Nom/all-Pl   eat-Past-Dec

   'All the students ate apples'

d. **Haksayng-tul-i**   sakwa-lul   **amwuto**   mek-ci-anh-ass-ta

   Student-Pl-Nom   apple-Acc   anyone   eat-CI-not-Past-Dec

   'No students ate apples'

I suggest that the contrasts between NQs in (231) and SFQs in (232) can be explained by assuming different underlying structures, as argued for the contrasts between multiple nominative and accusative IPCs. In particular, I argue that an SFQ does not form a constituent with its host NP.[136] The paradigms in (232) are instances of the Split Edge Effect. On this view, the subject and the subject-oriented SFQs in (232) may be separated by the object because the object may move into a position between the subject and its SFQ within the *v*P domain, as described in (233). I assume that a subject-oriented SFQ is externally merged in the Spec of *v*P. An object-oriented SFQ is externally merged in the Spec of VP.[137]

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[136] Similar views have been suggested in the previous studies. In particular, my arguments were inspired by work by O'Grady (1991) and Kang (2002) who argue that SFQs are adverbials modifying a verbal predicate. O'Grady (1991) also argued that multiple accusative IPC should be analyzed as an adverbial phrase in the same way as a Case-marked NQ. Ishii (1998) also argued that it is necessary to assume two types of floating quantifiers in Japanese: VP-modifier and NP-modifier. Departing from the previous studies, however, I leave the grammatical category of the SFQs open. In section 4.5, I provide some suggestive evidence that SFQs are secondary predicates associated with a pro argument.
[137] I will provide some suggestive evidence for this assumption from order preservation between a host NP and an SFQ (See the discussion of (246)-(247)). In particular, I will suggest that a subject-oriented SFQ is merged in the inner Spec of *v* below the subject and that an object-oriented SFQ is merged in the inner Spec of V.

(233)   *A Proposal for Subject<Object<Subject-oriented SFQ (232)*

```
                    vP
                  /    \
               Subj     v'
                      /    \
                  Obj₁      v'
                   ↑      /    \
                   |  SFQ_subj  v'
                   |         /    \
                   |       VP      v
                   |      /  \
                   |    t₁    V
                   |____|
```
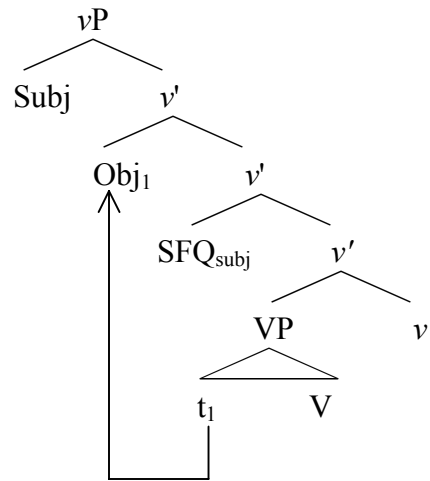
If my arguments for (233) are on the right track, we expect the clustering of properties that characterizes the Split Edge Effect. In particular, other *v*P-internal elements would also be able to intervene between the subject and a subject-oriented SFQ. This prediction is borne out. The subject can be separated from its SFQ by an indirect object (234), an argument PP (235), or a low adverb phrase (236). (cf. Edge Effects for NQs in Chapter 2)

(234)   Subject<Indirect Object<Subject-Oriented SFQ

a.   **Haksayng-tul-i**   Mary-eykey   **sey-myeng-i**   maykcwu-lul   cwu-ess-ta

     Student-Pl-Nom   Mary-Dat   3-Cl-Nom   beer-Acc   give-Past-Dec

     'Three students gave Mary beer'

b.   **Haksayng-tul-i**   Mary-eykey   **sey-myeng-man(-i)**   maykcwu-lul   cwu-ess-ta

     Student-Pl-Nom   Mary-Dat   3-Cl-only-Nom   beer-Acc   give-Past-Dec

     'Only three students gave Mary beer'

c.   **Haksayng-tul-i** Mary-eykey **motwu(-ka)/ta** maykcwu-lul cwu-ess-ta

Student-Pl-Nom Mary-Dat   all-Nom/all   beer-Acc   give-Past-Dec

'All the students gave Mary beer'

d.   **Haksayng-tul-i** Mary-eykey **amwuto** maykcwu-lul   cwu-ci-anh-ass-ta

Student-Pl-Nom Mary-Dat   anyone   beer-Acc   give-CI-Neg-Past-Dec

'No students gave Mary beer'

(235)   Subject<Argument PP <Subject-Oriented SFQ

a.   **Haksayng-tul-i** kyosil-lo   **sey-myeng-i** maykcwu-lul kacyewa-ss-ta

Student-Pl-Nom classroom-to 3-Cl-Nom   beer-Acc   bring-Past-Dec

'Three students brought beer to the classroom'

b.   **Haksayng-tul-i** kyosil-lo   **sey-myeng-man(-i)** maykcwu-lul kacyewa-ss-ta

Student-Pl-Nom classroom-to 3-Cl-only-Nom   beer-Acc   bring-Past-Dec

'Only three students brought beer to the classroom'

c.   **Haksayng-tul-i** kyosil-lo   **motwu(-ka)/ta** maykcwu-lul kacyewa-ss-ta

Student-Pl-Nom classroom-to all-Nom/all   beer-Acc   bring-Past-Dec

'All students brought beer to the classroom'

d.   **Haksayng-tul-i** kyosil-lo   **amwuto** maykcwu-lul kacyeo-ci-anh-ass-ta

Student-Pl-Nom classroom-to anyone   beer-Acc   bring-CI-Neg-Past-Dec

'No students brought beer to the classroom'

(236) Subject<Low adverb<Subject-oriented SFQ

a. **Haksayng-tul-i**   yelsimhi   **twu myeng-i**   kong-ul   cha-ss-ta

Student-Pl-Nom   diligently   2-Cl$_{people}$-Nom   ball-Acc   kick-Past-Dec

'Two students kicked a ball diligently'

b. (?)**Haksayng-tul-i**   yelsimhi   **sey-myeng-man(-i)**   kong-ul   cha-ss-ta

Student-Pl-Nom   diligently   3-Cl-only-Nom   ball-Acc   kick-Past-Dec

'Only three students kicked a ball diligently'

c. **Haksayng-tul-i**   yelsimhi   **motwu-(ka)/ta(-tul)**   kong-ul   cha-ss-ta

Student-Pl-Nom   diligently   all-Nom/all-Pl   ball-Acc   kick-Past-Dec

'All the students kicked a ball diligently'

d. (?)**Haksayng-tul-i**   yelsimhi   **amwuto**   kong-ul   cha-ci-anh-ass-ta

Student-Pl-Nom   diligently   anyone   ball-Acc   kick-CI-Neg-Past-Dec

'No students kicked a ball diligently'

Not surprisingly, the subject and a subject-oriented SFQ may be separated by a *v*P-external element. This is illustrated (237).

(237) Subject<High adverb<Subject-oriented SFQ

a. **Haksayng-tul-i**   pwunmyenghi   **sey-myeng-i**   kong-ul   pat-ass-ta

Student-Pl-Nom   evidently   3-Cl-Nom   ball-Acc   receive-Past-Dec

'Evidently, three students received a ball'

b. **Haksayng-tul-i**   pwunmyenghi **sey-myeng-man(-i)**   kong-ul   pat-ass-ta

Student-Pl-Nom   evidently   3-Cl-only-Nom   ball-Acc   receive-Past-Dec

'Evidently, only three students received a ball'

c. **Haksayng-tul-i**   pwunmyenghi   **motwu-(ka)/ta(-tul)**   kong-ul   pat-ass-ta

Student-Pl-Nom   evidently   all-Nom/all-Pl   ball-Acc   receive-Past-Dec

'Evidently, all the students received a ball'

d. ?**Haksayng-tul-i**   pwunmyenghi   **amwuto**   kong-ul   pat-ci-mos-hay-ss-ta

Student-Pl-Nom   evidently   anyone   ball-Acc   receive-CI-not-do-Past-Dec

'Evidently, no students received/were able to receive a ball.'

As expected, the object and the object-oriented SFQ may be separated by a *v*P-internal or *v*P-external element, as shown in (238)-(240).

(238) Object<Subject<Object-oriented SFQ

a. **Haksayng-tul-ul**   John-i   **twu-myeng-ul**   kaluchi-ess-ta

Student-Pl-Acc   John-Nom   2-Cl-Acc   teach-Past-Dec

'John taught two students'

b. **Haksayng-tul-ul**   John-i   **twu-myeng-man(-ul)** kaluchi-ess-ta

Student-Pl-Acc   John-Nom   2-Cl-only-Acc   teach-Past-Dec

'John taught only two students'

c. **Haksayng-tul-ul**   John-i   **motwu(-lul)/ta**   kaluchi-ess-ta

Student-Pl-Acc   John-Nom   all-Acc/all   teach-Past-Dec

'John taught all the students'

d.   **Haksayng-tul-ul**   John-i   **amwuto**   kaluchi-ci-anh-ass-ta

Student-Pl-Acc   John-Nom   anyone   teach-CI-Neg-Past-Dec

'John taught no student'

(239) Object<Low adverb<Object-oriented SFQ

a.   John-i   **haksayng-tul-ul**   yelsimhi   **twu-myeng-ul**   kaluchiessta

John-Nom   student-Pl-Acc   diligently   2-Cl-Acc   taught

'John taught two students diligently'

b.   John-i   **haksayng-tul-ul**   yelsimhi   **twu-myeng-man(-ul)** kaluchiessta

John-Nom   student-Pl-Acc   diligently   2-Cl-only-Acc   taught

'John taught only two students diligently'

c.   John-i   **haksayng-tul-ul**   yelsimhi   **motwu(-lul)/ta**   kaluchiessta

John-Nom   student-Pl-Acc   diligently   all-Acc/all   taught

'John taught all the students diligently'

d.   (?)John-i   **haksayng-tul-ul**   yelsimhi   **amwuto**   kaluchi-ci-anh-ass-ta

     John-Nom   student-Pl-Acc   diligently   anyone   teach-CI-Neg-Past-Dec

     'John taught no students diligently'

(240) Object<High adverb<Object-oriented SFQ

a.   John-i   **haksayng-tul-ul**   pwunmyenghi **twu-myeng-ul**   kaluchiessta

John-Nom   student-Pl-Acc   evidently   2-Cl-Acc   taught

'Evidently, John taught two students'

b.	John-i	**haksayng-tul-ul**	pwunmyenghi	**twu-myeng-man(-ul)** kaluchiessta

John-Nom	student-Pl-Acc	evidently	2-Cl-only-Acc	taught

'Evidently, John taught only two students'

c.	John-i	**haksayng-tul-ul**	pwunmyenghi	**motwu(-lul)/ta**	kaluchiessta

John-Nom	student-Pl-Acc	evidently	all-Acc/all	taught

'Evidently, John taught all the students'

d.	(?)John-i	**haksayng-tul-ul**	pwunmyenghi	**amwuto**	kaluchi-ci-anh-ass-ta

John-Nom	student-Pl-Acc	evidently	anyone	teach-CI-Neg-Past-Dec

'Evidently, John taught no students'

Moreover, we expect that the object and an object-oriented SFQ may be separated by a VP-internal adverb if the adverb may be merged (or move) between the object and the object-oriented SFQ. The judgment is very subtle, but the data seems to support this expectation:

(241)	Object<restitutive 'again'<Object-oriented SFQ[138]

a.	John-i	**espresso**	**kikye-lul**	tasi	**han-tay-lul**	sawa-ss-ta

John-Nom	espresso	machine-Acc	again	one-Cl-Acc	buy.come-Past-Dec

'John bought one espresso machine again' (?*restitutive*, *repetitive*)

b.	John-i	**espresso**	**kikye-lul**	tasi	**han-tay-man** sawa-ss-ta

John-Nom	espresso	machine-Acc	again	one-Cl-only	buy.come-Past-Dec

'John bought one espresso machine again' (??*restitutive*, *repetitive*)

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[138] For reasons unclear to me, (i) is not grammatical on either the restitutive or repetitive reading.
(i) *John-i	espresso kikye-lul	tasi amwutokesto sao-ci-anh-ass-ta
	John-Nom espresso	machine-Acc again anything	buy.come-CI-Neg-Past-Dec
	'John bought no espresso machine again' (*restitutive, repetitive*)

c.　John-i　　　　**espresso**　　**kikye-lul**　　tasi　　**mowtu/ta**　　sawa-ss-ta

　　John-Nom　　espresso　　　machine-Acc　again　all/all　　　　buy.come-Past-Dec

　　'John bought one espresso machine again' (*restitutive, repetitive*)

The paradigms in (231)-(241) support the claim that it is necessary to assume two types of floating quantifiers in Korean. One type of floating quantifier (e.g. Caseless NQs) forms a constituent with its associate NP in the underlying structure, showing the Edge Effect. The other type of floating quantifier (e.g. Case-marked NQ, focus-marked NQ, universal QP, NPI) does not form a constituent with its host NP in the underlying structure, showing the Split Edge Effect. The clustering of properties shown by each group of quantifiers receives a natural account under the current approach.

The Split Edge Effect shown in multiple accusative IPCs and SFQ constructions have important consequences for my overall arguments for the Edge Generalization. In particular, the paradigms with the Split Edge Effect directly rule out the stipulation that no elements merged at the edge of a Spell-out domain can be separated by a domain-mate (i.e. underlying constituency matters.). The paradigms in (232)-(241) also rule out the hypothesis that the Edge Generalization holds because an element cannot be separated from a semantically associated quantifier by a domain-mate (i.e. syntactic structure matters.). Rather, the data show that the Edge Effect is observed only when domain-internal movement violates the Search Domain Condition. This in turn provides further support for my claim that the Edge Generalization is a consequence of the interaction of the Search Domain Condition and Cyclic Linearization. The contrast between paradigms with nominative marked possessees and nominative marked NQs show that one

cannot simply stipulate that Case-marking automatically license the configuration where the subject is separated from its associate XP.[139]

Further research is required, however, to examine if my conclusion for SFQs can be independently supported.[140] (In the next chapter, I provide some suggestive arguments based on Case properties of SFQs.) For future reference, it is worth noting that my arguments for the Edge Effect and the Split Edge Effect make another different predictions concerning orderings between elements merged at the edge of a Spell-out domain.

If two elements X and Y are merged as a constituent in the edge γP, as described in (242), X and Y cannot be separated by a domain-internal element Z (Edge Effect), but *it is in principle possible to change the base order between X and Y via γP-internal movement.* On the other hand, if X and Y are merged as a nonconstituent in the edge, as described in (243), X and Y can be separated by a domain-internal element Z (Split Edge Effect), but *it is impossible to change the base order between X and Y given the Search Domain Condition.*

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[139] Miyagawa (to appear, b) argues that the object can intervene between the subject and a nominative Case-marked NQ in Korean (S<O<NQ-Nom) because Case marking on the NQ may indicate that the nominative NQ should not be parsed with the object. The fact that the Case-marked possessee shows the opposite pattern (*S-Possessor<O<S-Possessee) would be unexpected under his account.

[140] It also remains open how an SFQ acquires a classifier associated with the host NP. (I thank Shigeru Miyagawa (p.c.) for raising this point.) The same question, however, arises for Caseless NQs as well. There is no obvious reason why classifier agreement should be automatic when a quantifier forms a constituent with its host NP. In Chapter 5, I argue that when two elements are in c-command relationship, as the SFQ and the host NP in (233), Case agreement becomes obligatory. If we extend this argument to classifier agreement, it is not surprising that the classifier of a SFQ agrees with (or determined by) the host NP. (On this view, classifier agreement in SFQ constructions and NQ constructions would require a different account, however.) Alternatively, one could argue that an SFQ is a secondary predicate forming a constituent with a *pro*, and the classifier for an SFQ is determined by the pro, which in turn is bound by the host NP. (On this view, classifier agreement in SFQ constructions and NQ constructions would receive a uniform account.) I leave this for future research.

(242) **The Edge Effect**	(243) **The Split Edge Effect**
αP / α' / Z / α' / γP / α' / X Y βP α / Z	αP / X α' / Z_1 α' / Y α / α α / t_1
a. *[X ... Z ... Y]: Edge Effect (Chapter 2-3) b. √[Y... X ... Z]: NQ-Scrambling (Chapter 2)	a. √[X ... Z ... Y]: Split Edge Effect (Chapter 4) b. *[Y... X ... Z]:

We have seen evidence for the Edge Effect (Chapter 2, 3) and Split Edge Effect (Chapter 4). Although I did not emphasize the theoretical implications of leftward NQ-scrambling in Chapter 2, the NQ-scrambling paradigms in Japanese can indeed be seen as evidence for the prediction in (242b). In particular, as discussed in Chapter 2, the subject and a subject-oriented NQ in Japanese cannot be separated by a vP-internal element (Edge Effects), but NQs may optionally precede or follow its host NP.[141] Some representative examples from Miyagawa (1989) are repeated here as (244) and (245) (See Chapter 2 for more examples).

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[141] This argument, however, does not extend to Korean NQs. Korean NQs cannot precede its host NPs.

(244) ?*NQ_{subj}<vP-internal element (Obj) <Subj [Edge Effect: (242a)]

?***2-ri**,   hon-o   **gakusei-ga**   t   katta

  2-Cl   book-Acc   student-Nom   bought

  'Two students bought a book'

(245) NQ_{subj}<vP-external element (time adverb) <Subj [Order shift: (242b)]

2-ri   kyoo   **gakusei-ga**   t   nihongo-no   hon-o   katta

2-Cl   today   student-Nom   Japanese-Gen book-Acc   bought

'Today two students bought Japanese language books'

One remaining question is if the prediction in (243b) can be confirmed. In particular, if my analysis for the Split Edge Effect is correct, we expect that the quantifiers showing the Split Edge Effect would not be able to change their base order with respect to its host NP, unlike the NQ in (245). I suggest that the order preservation phenomenon observed with SFQs in (246)-(247) can be seen as supporting evidence for this prediction. It is not the case that SFQs may appear in any position in a sentence. As described in (246) and (247), an SFQ cannot precede its host NP whether it is subject-oriented or object-oriented. (The examples in (246) are adapted from Kang 2002).[142]

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[142] Kang (2002:380) observes that the delimiter *-ina* 'as many as' may precede the host NP, as in (i). I leave it open whether delimiter phrases are externally merged outside vP or may be merged in the higher Spec of vP (above the subject). Either way, the order in (i) is allowed. Kang treated *–man* 'only' as a delimiter. Kang did not discuss quantifiers like *motwu/ta* 'all', *amwuto* 'anyone', and *hanpyengto* 'even one bottle' (see also fn. 143 for discussion).

(246) *?*Subject-oriented SFQ<Subject*

a. **?*Sey-myeng-i** (ecey) **haksayng-tul-i** maykcwu-lul masi-ess-ta

    3-Cl-Nom yesterday student-Pl-Nom beer-Acc drink-Past-Dec

    'Three students drank beer yesterday'

b. **?*Sey-myeng-man** (ecey) **haksayng-tul-i** maykcwu-lul masi-ess-ta

    3-Cl-Nom yesterday student-Pl-Nom beer-Acc drink-Past-Dec

    'Only three students drank beer yesterday'

c. **?*motwu(-ka)/ta** (ecey) **haksayng-tul-i** maykcwu-lul masi-ess-ta

    All-Nom/all yesterday student-Pl-Nom beer-Acc drink-Past-Dec

    'All students drank beer yesterday'

d. **?*Amwuto** (ecey) **haksayng-tul-i** maykcwu-lul masi-ci-anh-ass-ta

    Anyone yesterday student-Pl-Nom beer-Acc drink-CI-Neg-Past-Dec

    'No students drank beer yesterday'

(247) *?*Object-oriented SFQ<Object*

a. **?*Sey-pyeng-ul** **maykcwu-lul** John-i masi-ess-ta

    Three-Cl-Acc beer-Acc John-Nom drink-Past-Dec

    'John drank three bottles of beer'

b. **?*Sey-pyeng-man(-ul)** **maykcwu-lul** John-i masi-ess-ta

    Three-Cl-only-Acc beer-Acc John-Nom drink-Past-Dec

    'John drank only three bottles of beer'

(i) Yel-myeng-ina haksayng-tul-i oassta
    10-Cl-DM student-Pl-Nom came
    '10 students came'

c.	?*motwu/ta	maykcwu-lul	John-i	masi-ess-ta
	All/all	beer-Acc	John-Nom	drink-Past-Dec

'John drank all beer'

d.	?*Han-pyeng-to	maykcwu-lul	John-i	masi-ci-anh-ass-ta
	One-Cl-even	beer-Acc	John-Nom	drink-CI-Neg-Past-Dec

'John did not drink even a bottle of beer'

If SFQs are externally merged as a lower Specifier of a Spell-out domain head *v* and V, as proposed in (233), it is expected that SFQ cannot precede its host NP. Specifically, given that both SFQ and its host NP are merged in the Spec of a Spell-out domain head, they cannot change their relative ordering within the Spell-out domain VP or *v*P. [143] Hence, if the subject and the object must be merged in the outer Spec of *v* and V above its associate SFQs, it follows that the subject and the object must precede their SFQs in the higher domains, preserving their base order. In other words, we observe an interesting correlation between the Split Edge Effect and order preservation among elements merged in the edge as a nonconstituent. [144, 145]

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[143] Kang (2002) argues that (246a) and (247a) are ungrammatical because two identical Case-marked elements cannot scramble in Korean. (Kang does not explain why this constraint holds.) In double object constructions, however, identical Case-marked elements may scramble: (i)-(ii). Note also that Kang's account does not extend to the (b),(c),(d) examples in (246)-(247). (cf. Kang claims that a –*man* marked delimiter may precede its host NP, but I do not agree with his judgment: see fn. 142).

(i)	John-i	Mary-lul	yenge-lul	kaluchi-ess-ta
	John-Nom	Mary-Acc	English-Acc	teach-Past-Dec

'John taught Mary English'

(ii)	John-i	yenge-lul	Mary-lul	kaluchi-ess-ta

[144] Some Japanese speakers find that universal quantifiers in (i) show the Split Edge Effect. Interestingly, it has been known that universal quantifiers like *subete* cannot precede its host NP, as in (ii) (Kawashima 1998). If this is the case, the current analysis for SFQs in Korean may extend to Japanese paradigms in (i) and (ii). Further research is necessary, however, to investigate why some speakers find both (i) and (ii) ungrammatical.

4.4   Interactions of the Edge Effect and Split Edge Effect

The present analyses make further predictions concerning possible interactions among possessor

raising, NQ stranding, and SFQ stranding. Specifically, we predict four types of ordering

patterns, depending on underlying (non-)constituency in subject and object position. The

predictions are described in (248)-(251). (S indicates the subject NP; SXP indicates a subject-

oriented XP; O indicates the object NP, OXP indicates an object-oriented XP.)

(i) Gakusei-ga   ringo-o   **zen'in/min'na/subete**   tabeta
     Student-Nom   apple-Acc   all$_{people}$/all$_{thing}$/all$_{thing}$ ate
     'All the students ate apples'
(ii) ?***Subete**   Hanako-ga   hon-o   katta   (koto)
     All   Hanako-Nom   book-Acc   bought   fact
     'Hanako bought all the books' (Kawashima 1998)

For completeness, it should be noted that the O-Possessor and the O-Possessee in Korean cannot change relative ordering. The O-Possessor always precedes the O-Possessee. This, of course, is compatible with my analysis for Split Edge Effects in multiple accusative IPCs. The order preservation in multiple accusative IPCs, however, cannot be strong evidence for my claim because the S-Possessor must also precede the S-Possessee. There might be a general (possibly semantic) constraint that prevents changing the order between the Possessor and the Possessee.

[145] Further research is required to exclude the possibility that an SFQ is merged *optionally* below or above the host NP, and that the SFQ<NP order is ruled out by independent factors. For instance, if a discourse factor independently requires that general information must precede specific information, the paradigms in (246) and (247) are merely compatible with (233), rather than supporting it. (I thank David Pesetsky for clarifying this point.) Note, however, that this alternative hypothesis cannot accommodate Japanese NQ paradigms (e.g. (245)), in which an NQ may precede its host NP.

(248) Type I
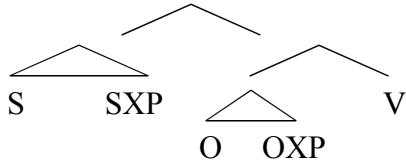
(249) Type II
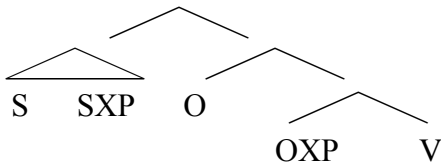
Predictions:
- S<SXP<O<OXP
- *S<O<SXP<OXP
- *O<S<OXP< SXP
- *S<O<OXP<SXP
- O<OXP<S<SXP

(250) Type III
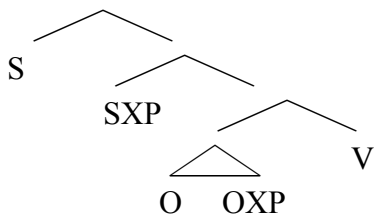
(251) Type IV
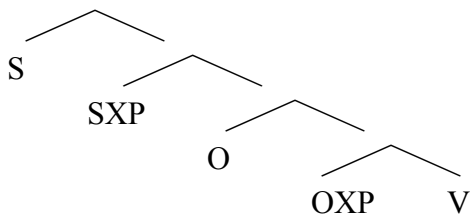
Predictions:
- S<SXP<O<OXP
- S<O<SXP<OXP
- O<S<OXP< SXP
- S<O<OXP<SXP
- O<OXP<S<SXP

Under the structures of Type I in (248) and Type II in (249), the subject and the subject-oriented XP would not be separable either by the object or the object-oriented XP. Under the structures of Type III in (250) and Type IV in (251), the subject and the subject-oriented XP

might be separated by the object or the object-oriented XP. Specifically, given the previous discussion concerning underlying constituency, we predict the patterns summarized in (252).

(252)   Interactions between Possessor Scrambling and Quantifier Stranding

a.   The S-Possessor and S-Possessee cannot be separated by the object, O-Possessee, the object-oriented Caseless NQ or the object-oriented SFQ: (253), (255)

b.   The subject and the subject-oriented NQ show the same restriction as the S-Possessor and the S-Possessee: (254), (256)

c.   The subject and the subject-oriented SFQ can be separated by the object, O-Possessee, object-oriented Caseless NQ, or object-oriented SFQ: (257),(258),(259).

The predictions in (252) are borne out. See (253)-(258) for examples confirming the predictions.

(253)   Interactions between S-Possessors and object-oriented NQs (prediction: (252a))

a.   *?John-i*   *apeci-ka*   **kkangphay-tul-ul**   **sey-myeng**   ttayli-ess-ta

    John-Nom   father-Nom   gangster-Pl-Acc   3-Cl   hit-Past-Dec

    'John's father hit three gangsters'

b.   **John-i*   **kkangphay-tul-ul**   *apeci-ka*   **sey-myeng**   ttayli-ess-ta

    John-Nom   gangster-Pl-Acc   father-Nom   3-Cl   hit-Past-Dec

    'John's father hit three gangsters'

c.　　***Kkangphay-tul-ul** *John-i*　　**sey-myeng**　*apeci-ka*　　ttayli-ess-ta

　　　Gangster-Pl-Acc　　John-Nom　　3-Cl　　　father-Nom　　hit-Past-Dec

　　　'John's father hit three gangsters'

d.　　***John-i**　　　　**kkangphay-tul-ul**　**sey-myeng**　*apeci-ka*　　ttayli-ess-ta

　　　John-Nom　　gangster-Pl-Acc　　3-Cl　　　father-Nom　　hit-Past-Dec

　　　'John's father hit three gangsters'

e.　　??**kkangphay-tul-ul sey-myeng**　*John-i*　　　*apeci-ka*　　ttayli-ess-ta[146]

　　　Gangster-Pl-Acc　　3-Cl　　　John-Nom　　father-Nom　　hit-Past-Dec

　　　'John's father hit three gangsters'

(254)　Interaction between subject-oriented NQs and object-oriented SFQs (prediction: (252b))

a.　　**Haksayng-tul-i sey-myeng**　*maykcwu-lul yel-pyeng-ul*　masi-ess-ta

　　Student-Pl-Nom 3-Cl　　　beer-Acc　　10-Cl-Acc　　drink-Past-Dec

　　'Three students drank 10 bottles of beer'

b.　　?***Haksayng-tul-i**　*maykcwu-lul*　**sey-myeng**　*yel-pyeng-ul*　masi-ess-ta

　　　Student-Pl-Nom　beer-Acc　　　3-Cl　　　10-Cl-Acc　　drink-Past-Dec

　　　'Three students drank 10 bottles of beer'

c.　　?*Maykcwu-lul　**haksayng-tul-i**　*yel-pyeng-ul*　**sey-myeng**　masi-ess-ta

　　　Beer-Acc　　　student-Pl-Nom　10-Cl-Acc　　3-Cl　　　　drink-Past-Dec

　　　'Three students drank 10 bottles of beer'

---

[146] It is generally true that if the object or OXP is scrambled to the left of the subject and SXP in Type I and Type II, the sentence becomes degraded, as in (e) examples of (253)-(256). I have no account of this. For our current purposes, however, it is important to note that the (e) examples of (253)-(256) are far better than the other ungrammatical sentences in (b,c,d) examples in (253)-(256).

d. ?***Haksayng-tul-i** *maykcwu-lul yel-pyeng-ul* **sey-myeng** masi-ess-ta

Student-Pl-Nom beer-Acc 10-Cl -Acc 3-Cl drink-Past-Dec

'Three students drank 10 bottles of beer'

e. ??(Ku) *maykcwu-lul yel-pyeng-ul* **haksayng-tul-i** **sey-myeng** masi-ess-ta

That beer-Acc 10-Cl-Acc student-Pl-Nom 3-Cl drink-Past-Dec

'Three students drank 10 bottles of beer'

(255) Interaction between S-Possessors and object-oriented SFQs (prediction: (252a))

a. **John-i** **apeci-ka** *maykcwu-lul yel-pyeng-ul* tu-si-ess-ta

John-Nom father-Nom beer-Acc 10-Cl-Acc drink-Hon-Past-Dec

'John's father drank 10 bottles of beer'

b. ***John-i** *maykcwu-lul* **apeci-ka** *yel-pyeng-ul* tu-si-ess-ta

John-Nom beer-Acc father-Nom 10-Cl-Acc drink-Hon-Past-Dec

'John's father drank 10 bottles of beer'

c. ***Maykcwu-lul* **John-i** *yel-pyeng-ul* **apeci-ka** tu-si-ess-ta

Beer-Acc John-Nom 10-Cl-Acc father-Nom drink-Hon-Past-Dec

'John's father drank 10 bottles of beer'

d. ***John-i** *maykcwu-lul* *yel-pyeng-ul* **apeci-ka** tu-si-ess-ta

John-Nom beer-Acc 10-Cl-Acc father-Nom drink-Hon-Past-Dec

'John's father drank 10 bottles of beer'

e. ??*Maykcwu-lul yel-pyeng-ul* **John-i** **apeci-ka** tu-si-ess-ta

Beer-Acc 10-Cl-Acc John-Nom father-Nom drink-Hon-Past-Dec

'John's father drank 10 bottles of beer'

(256) Interactions between subject-oriented NQs and O-Possessors (prediction: (252b))

a. **Kkangphay-tul-i**   **sey-myeng**   *John-ul*   *tali-lul*   ttayli-ess-ta

   Gangster-Pl-Nom   3-Cl   John-Acc   leg-Acc   hit-Past-Dec

   'Three gangsters hit John's leg'

b. ***Kkangphay-tul-i**   *John-ul*   **sey-myeng**   *tali-lul*   ttayli-ess-ta

   Gangster-Pl-Nom   John-Acc   3-Cl   leg-Acc   hit-Past-Dec

   'Three gangsters hit John's leg'

c. ***John-ul**   **kkangphay-tul-i**   *tali-lul*   **sey-myeng**   ttayli-ess-ta

   John-Acc   gangster-Pl-Nom   leg-Acc   3-Cl   hit-Past-Dec

   'Three gangsters hit John's leg'

d . ***Kkangphay-tul-i**   *John-ul*   *tali-lul*   **sey-myeng**   ttayli-ess-ta

   Gangster-Pl-Nom   John-Acc   leg-Acc   3-Cl   hit-Past-Dec

   'Three gangsters hit John's leg'

e. *??John-ul*   *tali-lul*   **kkangphay-tul-i**   **sey-myeng**   ttayli-ess-ta

   John-Acc   leg-Acc   gangster-Pl-Nom   3-Cl   hit-Past-Dec

   'Three gangsters hit John's leg'

(257) Interaction between subject-oriented SFQs and object-oriented NQs (prediction: (252c))

a. **Haksayng-tul-i** **sey-myeng-i**   *maykcwu-lul*   *yel-pyeng*   masi-ess-ta

   Student-Pl-Nom 3-Cl-Nom   beer-Acc   10-Cl   drink-Past-Dec

   'Three students drank 10 bottles of beer'

b. **Haksayng-tul-i** *maykcwu-lul* **sey-myeng-i** *yel-pyeng* masi-ess-ta

Student-Pl-Nom beer-Acc 3-Cl-Nom 10-Cl drink-Past-Dec

'Three students drank 10 bottles of beer'

c. *Maykcwu-lul* **haksayng-tul-i** *yel-pyeng* **sey-myeng-i** masi-ess-ta

Beer-Acc Student-Pl-Nom 10-Cl 3-Cl-Nom drink-Past-Dec

'Three students drank 10 bottles of beer'

d. **Haksayng-tul-i** *maykcwu-lul yel-pyeng* **sey-myeng-i** masi-ess-ta

Student-Pl-Nom beer-Acc 10-Cl 3-Cl-Nom drink-Past-Dec

'Three students drank 10 bottles of beer'

e. *Maykcwu-lul yel-pyeng* **haksayng-tul-i sey-myeng-i** masi-ess-ta

Beer-Acc 10-Cl student-Pl-Nom 3-Cl-Nom drink-Past-Dec

'Three students drank 10 bottles of beer'

(258) Interactions between subject SFQs and object SFQs (prediction: (252c))

a. **Haksayng-tul-i sey-myeng-i** *maykcwu-lul* *yel-pyeng-ul* masi-ess-ta

Student-Pl-Nom 3-Cl-Nom beer-Acc 10-Cl-Acc drink-Past-Dec

'Three students drank 10 bottles of beer'

b. **Haksayng-tul-i** *maykcwu-lul* **sey-myeng-i** *yel-pyeng-ul* masi-ess-ta

Student-Pl-Nom beer-Acc 3-Cl-Nom 10-Cl-Acc drink-Past-Dec

'Three students drank 10 bottles of beer'

c. *Maykcwu-lul* **haksayng-tul-i** *yel-pyeng-ul* **sey-myeng-i** masi-ess-ta

Beer-Acc student-Pl-Nom 10-Cl-Acc 3-Cl-Nom drink-Past-Dec

'Three students drank 10 bottles of beer'

d.　**Haksayng-tul-i**　*maykcwu-lul yel-pyeng-ul* **sey-myeng-i**　masi-ess-ta

　　Student-Pl-Nom　beer-Acc　　10-Cl-Acc　3-Cl-Nom　　　drink-Past-Dec

　　'Three students drank 10 bottles of beer'

e.　*Maykcwu-lul yel-pyeng-ul* **haksayng-tul-i**　　**sey-myeng-i** masi-ess-ta

　　Beer-Acc　　10-Cl-Acc　　student-Pl-Nom　　3-Cl-Nom　drink-Past-Dec

　　'Three students drank 10 bottles of beer'

(259)　Interaction between subject-oriented SFQs and O-Possessors (prediction: (252c))

a.　**Kkangphay-tul-i**　　**sey-myeng-i** *John-ul*　　*tali-lul*　　ttayli-ess-ta

　　Gangster-Pl-Nom　　3-Cl-Nom　　John-Acc　　leg-Acc　　hit-Past-Dec

　　'Three gangsters hit John's leg'

b.　**Kkangphay-tul-i**　　*John-ul*　　**sey-myeng-i** *tali-lul*　　ttayli-ess-ta

　　Gangster-Pl-Nom　　John-Acc　　3-Cl-Nom　　leg-Acc　　hit-Past-Dec

　　 'Three gangsters hit John's leg'

c.　*John-ul*　**kkangphay-tul-i**　*tali-lul*　　　**sey-myeng-i**　　ttayli-ess-ta[147]

　　John-Acc　gangster-Pl-Nom　leg-Acc　　3-Cl-Nom　　　　hit-Past-Dec

　　 'Three gangsters hit John's leg'

d.　**Kkangphay-tul-i**　*John-ul*　　*tali-lul*　　**sey-myeng-i** ttayli-ess-ta

　　Gangster-Pl-Nom　　John-Acc　　leg-Acc　　3-Cl-Nom　　hit-Past-Dec

　　'Three gangsters hit John's leg'

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[147] The paradigm in (259c) indicates that *John-ul* 'John-Acc' and *tali-lul* '[t *leg*]-Acc' may (optionally, but not necessarily) move to [Spec,*v*P] in separate steps. If *John-ul* and *tali-lul* must move together to Spec*v*P (above the subject *haksayngtul-i*), *John-ul* and *tali-lul* cannot be separated by the subject *haksyangtul-i* due to the Search Domain Condition. I thank Norvin Richards (p.c.) for this point.

e.   *John-ul*   *tali-lul*   **kkangphay-tul-i**   **sey-myeng-i**   ttayli-ess-ta

         John-Acc   leg-Acc   gangster-Pl-Nom   3-Cl-Nom   hit-Past-Dec

         'Three gangsters hit John's leg'

The paradigms in (253)-(259) again support the claim that it is necessary to assume two distinct types of underlying structures for different types of floating quantifiers: an NQ forms a constituent with its host NP, whereas an SFQ does not. If we do not assume two distinct types of underlying structures,[148] it would remain unexplained why the intricate interactions between possessor raising and quantifier stranding in (253)-(258) are attested in the way predicted by the current approach to the Edge Effect and the Split Edge Effect. (See appendix 4B for some implications of my arguments for interactions between discourse-related focus and NQs.)[149]

4.5   The Categorial Status of Separable Floating Quantifiers

I have left one important question open. I argued that SFQs do not form a constituent with its host in underlying structure. It is not obvious, however, what lexical category an SFQ belongs to. In the following, I speculate on this issue.

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[148] Danny Fox (p.c.) suggests that a possible alternative approach for SFQ paradigms is to assume that a focus particle or Case-marker attached to the QPs introduces a new head (above *v*P) and extends the spell-out domain, so that the subject may move to the left of a *v*P-internal element before the spell-out of the first domain that includes S and SFQ. (But this account would not explain the order preservation observed in (246)-(247)). Due to arguments in Chapter 5, I do not pursue this possibility here, but it would be interesting to see if there exists independent evidence for positing such an extra head introduced by focus/case particles above *v*P.

[149] Kang (2002) observes that the object may intervene between the subject and a subject-oriented NQ in the context where quantificational information is in focus. See appendix 4B for discussion of this fact.

Previous literature suggests that SFQs in Korean and Japanese are adverbs (cf. O'Grady 1991, Ishii 1998, Kang 2002, Hoji and Ishii 2005, among others). Their arguments as well as mine, however, do not rule out the possibility that SFQs belong to other types of categories that do not form a constituent with its host NP.[150] The current proposal for SFQs is compatible with the claim that SFQs are secondary predicates, as originally proposed by Miyagawa (1989). Miyagawa (1989) argued that Caseless NQs in Japanese are secondary predicates, which I have argued against throughout. However, his insight that floating quantifiers are secondary predicates might be true of other types of floating quantifiers, namely for SFQs.

There is in fact some preliminary syntactic evidence that SFQs might be secondary predicates. It is well-known that a secondary predicate shows obligatory Case concord with its host NP even in derived contexts in many languages (Comrie 1974, Neidle 1988, Kim 1990, Maling and Kim 1992, Pensalfiri 1997, among others). Some examples from Icelandic and Russian are given in (260)-(263). Korean Case-marked NQs show the same type of Case concord, as shown in (264) (see Chapter 5 for detailed discussion). The symmetry among (260)-(264) could be captured by the assumption that they all belong to the same category, a secondary predicate, which must agree with its associate argument in its Case value.

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[150] Ishii (1998) proposes that floating NQs in Japanese are structurally ambiguous between VP-adverbs and NP-modifiers, and that the former usage is licensed only when a distributive or cumulative reading is available. This generalization does not extend to Case-marked NQs in Korean. As shown in (i)-(ii), both distributive and collective readings are available with Case-marked NQs in Korean, depending on the plausibility of possible scenarios.

(i) **Haksayng-tul-i** piano-lul **sey-myeng-i** hamkkey tul-ess-ta
    Student-Pl-Nom piano-Acc 3-Cl-Nom together lift-Past-Dec
    'Three students lifted a piano together' (collective reading, *distributive reading)

(ii) **Haksayng-tul-i** tambay-lul **sey-myeng-i** phiwu-ess-ta
    Student-Pl-Nom cigarette-Acc 3-Cl-Nom smoke-Past-Dec
    'Three students smoked a cigarette' (*collective reading, distributive reading)

Icelandic Secondary Predicates (from Kim 1990, Maling and Kim 1992)

(260) a. Islendingar   kusu   *hana*   *forseta*   1980

Icelanders   chose   **her-Acc**   **president-Acc**   1980

'Icelanders elected her president in 1980.'

b. *Hun*   var   kosin   *forseti*   1980

She-Nom   was   chosen   **president-Nom**   1980

'She was elected president in 1980'

(261) a. Eg taldi   [*harald*   *alltof*   *stoltan*   af sjalfum ser]

I   consider   **H-Acc**   all.too   **proud-Acc**   of himself

b. *Haraldur*   er   talinn   *alltof* *stoltur* af   sjalfum ser.

Harold-Nom is   considered   all.too **proud-Nom** of   himself

Russian (Neidle 1988:25, referring to Comrie 1974; cited in Kim 1990)

(262)   Ivan   vernulsja   ugrjumyu/ugrjumym

Ivan (Nom)   returned   **gloomy (Nom/Instr)**

'Ivan returned gloomy'

(263) a. Ivan   vernulsja   odin/odnim

Ivan (Nom)   returned   **alone(Nom/*Instr)**

b. mne   nužno   bylo   idti   odnomu/odnim

Me (Dat)   necessary   was   to go   **alone (Dat/*Instr)**

(264) *Korean Case-marked NQs and Case Preservation*

a.   John-un   caki-pan   **haksayng-i**   **sey-myeng-i**   pwuca-lako   mitnunta

John-Top self class student-Nom 3-Cl-Nom   be.rich-C   believe

'John believes that three students in his class are rich.'

b.   **Haksayng-i**   Mary-eykey   **sey-myeng-i**   ponaye-*ci*-ess-ta

Student-Nom Mary-Dat   3-Cl-Nom   send-Pass-Past-Dec

'Three students were sent to Mary.'

To determine the categorial status of SFQs, it is also worth noting that SFQs may appear in a sentence even without an (overt) host NP, as shown in (265)-(267).[151]

(265) a.   Sey-myeng-i   Mary-lul   mann-ass-e

3-Cl-Nom   Mary-Acc   meet-Past-Dec

'Three (people) met Mary'

b.   John-i   sey-myeng-ul   ttayli-ess-e

John-Nom   3-Cl-Acc   hit-Past-Dec

'John hit three (people)'

---

[151] In contrast to (265)-(267), a Caseless NQ does not occur without an overt associate NP, as shown by the ungrammaticality of (i).
(i) *Sey-myeng   Mary-lul   mann-ass-e
    3-Cl   Mary-Acc   meet-Past-Dec
  'Three (people) met Mary'

(266) a. Motwu(-ka)   Mary-lul   mann-ass-e

All-Nom   Mary-Acc   meet-Past-Dec

'All (of them) met Mary'

b. Mary-ka   motwu(-lul) mann-ass-e

Mary-Nom   all-Acc   meet-Past-Dec

'Mary like all (of them)'

(267) a. Amwuto   Mary-lul   mos-mann-ass-e

Anyone   Mary-Acc   not-meet-Past-Dec

'No one (none of them) met Mary'

b. Mary-nun   amwuto   mos-mann-ass-e

Mary-Top   anyone   not-meet-Past-Dec

'Mary met no one (none of them)'

Given the paradigms in (265)-(267), I suggest that an SFQ may be a secondary predicate of a null argument *pro*. The pro associated with an SFQ might be interpreted as generic people or salient group of people in the preceding discourse in (265)-(267).[152] If a host NP coexists with the SFQ overtly in the same sentence, as in (264), the pro is forced to refer to the preceding host NP, because it is the closest and most salient antecedent in the discourse. On this view, the SFQ construction might be analyzed in a similar way as the left dislocation construction in English in (268). The pro in the SFQ construction would be a covert counterpart of 'of them'. I leave many

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[152] See also Furukawa (to appear) who argues that negative polarity items in Japanese are associated with a phonologically null antecedent.

ensuing questions open for future research concerning the structural position of pro, semantic

properties of pro, and Case properties of pro in SFQ constructions.

(268)   a.   Students, three of them, came.

        b.   Students, all of them, came.

4.6   Conclusion

In this chapter, I have investigated ordering restrictions in possessor scrambling and diverse types of floating quantifiers. In particular, I examined the syntactic distribution of nominative possessors, accusative possessors, Case-marked NQs, focus-marked NQs, universal QPs, and NPIs. The interactions between possessor scrambling and quantifier stranding, and the asymmetries and symmetries between possessor scrambling and two types of quantifier stranding were also discussed. Some important facts analyzed in this chapter are summarized in (269).

(269) **Possessor scrambling, quantifier stranding, and their interactions:**

- The distribution of a nominative possessor and a nominative possessee shows the same patterns with the distribution of the subject and a subject-oriented NQ:

  o A nominative possessor cannot be separated from a nominative possessee by a *v*P-internal element (e.g. the object, the indirect object, PP arguments, and low adverbs), unlike the paradigms with an accusative possessor.

  o A nominative possessor can be separated from a nominative possessee by a *v*P-external element such as a high adverb.

- The paradigms with the accusative possessor show a different pattern from the object and an object-oriented NQ:

  o The accusative possessor can be separated from the accusative possessee by a VP-internal element such as restitutive *tasi* 'again'.

- Some quantifiers (SFQ) show different syntactic distributions from NQs:

  o A subject-oriented SFQ (Case-marked NQs, focus-marked NQs, universal QPs, NPIs) may be separated from its host NP by a *v*P-internal element.

o   A subject-oriented SFQ may not precede the subject (cf. Japanese NQs).

o   An object-oriented SFQ may not precede the object (cf. Japanese NQs).

- Paradigms of possessor scrambling and quantifier stranding show that:

  o   A nominative subject and a nominative possessee cannot be separated by the object-oriented SFQ or an object-oriented NQ.

  o   The subject and a subject-oriented SFQ can be separated by an accusative possessee, an object-oriented NQ, or an object-oriented SFQ.

We have seen that the paradigms in (269) can be captured by the predictions following from the Edge Generalization. In particular, the Edge Effect explains the distribution of multiple nominative IPCs. The Split Effect accounts for the distribution of multiple accusative IPCs. Moreover, otherwise mysterious contrasts between SFQs and NQs in their syntactic distribution can be captured by postulating different underlying structures. On this view, the paradigms with SFQs show the Split Edge Effect, unlike the NQs. The intricate interactions between possessor scrambling and different types of quantifier stranding in (269) are predicted by my proposals for the Edge Generalization.

The arguments presented in this chapter have consequences for theories of underlying constituency. In particular, the distribution of the Possessor can be best explained by assuming different underlying structures for multiple nominative and accusative IPC. The Constituent approach is supported for multiple nominative IPCs, whereas the Nonconstituent approach is supported for multiple accusative IPCs. My arguments also imply that it is necessary to assume two distinct types of floating quantifiers in Korean. One type of floating quantifier (e.g. NQs) forms a constituent with its host NP in the underlying structure. The other type of floating

quantifier (e.g. Case-marked NQs, focus-marked NQs, universal QPs, NPIs) does not. If the current analysis is successful, we may use the clustering of properties that characterizes the Edge Effect and the Split Effect as a diagnostic to investigate underlying constituency.

My arguments support the line of approaches that Case-marked NQs should be analyzed differently from Caseless NQs in their underlying syntactic structures (O'Grady 1991, Kang 2002, in particular). This in turn challenges the view that floating quantifiers including Cassless NQs should be analyzed as an adverbial (cf. Fukushima 1991, Takami 1998, Nakanishi 2003a,b, Hoji and Ishii 2005). The existence of the Split Edge Effect also show that one cannot simply stipulate that two semantically associated XP cannot be separated by a domain-internal element to accommodate the facts in the preceding chapters. Rather, syntactic underlying constituency should be considered as a key factor in determining the distribution of the elements at the edge.

In the next chapter, I provide some evidence that the present conclusion for underlying structure of IPCs and Case-marked NQs is independently supported by other plausible tests for underlying constituency, based on Case concord and mismatch phenomena in Korean.

Appendix 4A

In this appendix, I review representative proposals for the Nonconstituent and Constituent approach to Inalienable Possession Constructions, and discuss some implications of the debate between the two approaches for Theta theory and Case theory, and the syntax-semantic mapping.

(270) **Nonconstituent Approach**

```
            VP
          /    \
    Possessor    V'
               /    \
         Possessee    V
```

(271) **Constituent Approach**

```
            XP
          /    \
   Possessor₁    DP
             ↰  /    \
              t₁      Possessee
```
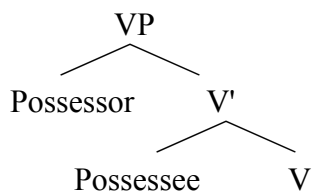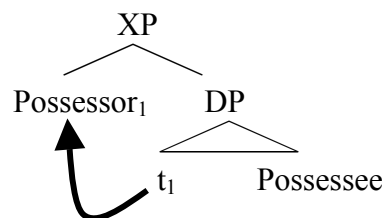
The Nonconstituent approach (270) argues that the verbal predicate (not the Possessee) assigns a theta role to the Possessor, and that the thematic relationship between the Possessor and the Possessee is derived "indirectly" via special semantic mechanisms. In particular, it has been argued that it is necessary to postulate an enriched Theta theory to maintain the claim that the Possessor, an argument of a verbal predicate, derives its possessor role from the Possessee.[153]

Yoon (1989, 1990), for example, attempts to resolve a tension between Theta theory and Case theory in the IPC by distinguishing theta-identification from theta-marking. Building on the suggestions of Higginbotham (1985), Yoon argues that theta-marking cancels out unsaturated arguments of the predicate, thus reduces its valency by one. Theta-identification, on the other hand, does not reduce valency. Instead, the unsaturated role of the argument of the predicate

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[153] This, of course, is not the only possiblity that can be pursued under the Nonconstituent approach. As I suggested earlier, it would also be possible that the Possessor is a direct argument of a higher head (e.g. applicative head) and not related to the Possessee in terms of its theta role.

composes with the open position in the argument structure to form a "complex predicate" with the same valency as the original predicate. Adopting the proposal of Higginbotham (1985), Yoon argues that the semantics of theta-identification is characterized as modification of one theta role by another. (cf. Heim and Kratzer's (1998) predicate modification)

Specifically, under Yoon's proposal, the verb does not discharge its theta role to the Possessee but forms a "complex predicate" with it via theta-identification, as depicted in (272). When the complex predicate assigns a (modified) theta role to the Possessor via theta-marking, the internal theta role of VP is finally saturated (cf. Sim 2004 for a event-semantics based approach to multiple accusative Case marking IPCs under the Nonconstituent approach). On this view, multiple (accusative) Cases are directly assigned by the verb to the Possessor and the Possessee.

(272)

VP ($\underline{x}$)

Possessor   V' ($\underline{x}$, y) $\longrightarrow$ | *Theta-Marking* |

Possessee   V ($\underline{x}$, y) $\longrightarrow$ | *Theta-Identification* |

[$\underline{x}$ = external argument]

(based on Yoon 1990: 506)
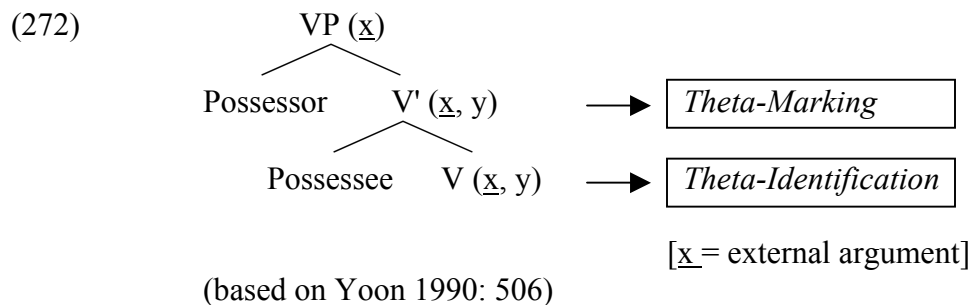
In a similar vein, Kim (1989, 1990) independently argues that the Possessor and the Possessee are base-generated separately in the multiple (accusative) Case marking constructions. Unlike Yoon, however, Kim argues that the Possessee is an adjunct (secondary predicate) rather than a subcategorized argument of the verb (cf. Cheng and Ritter 1987 for the same position; but see Yoon 1990 for criticisms against this argument). The Case agreement between the Possessor

and the Possessee is a morphological instantiation of secondary predication (but see Maling and Kim 1992 for various arguments against this claim).

The Constituent approach (271), on the other hand, argues that the Possessor is a direct argument of the Possessee. Hence, it is not surprising that the Possessor gets its possessor theta role from the Possessee. It is mysterious, however, why the Possessor gets a non-genitive structural Case, which is normally assigned by a verbal (or functional) head. Therefore, under the Constituent approach, it has been considered as a central issue how to implement Case theory in such a way that the Possessor, an argument of the Possessee, obtains a non-genitive structural Case from a verbal (or other functional) head.

Under the Government and Binding framework (Chomsky 1981, 1986), for example, Choe (1987) argues that the Possessor and the Possessee form a constituent in the underlying structure, and that the Possessor later moves to a Case-licensing head (IP for nominative Case and VP for accusative Case) via syntactic adjunction, as depicted in (273) and (274).

(273)　*Multiple Nominative Construction* (Choe 1987: 104)
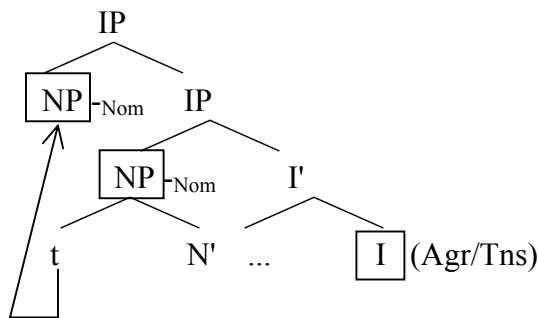
(274)   *Multiple Accusative Construction* (Choe 1987: 104)

```
              VP
          ╱        ╲
    [NP]-Acc        VP
      ↑         ╱        ╲
      │    [NP]-Acc        V'
      │      ╱   ╲      ╱    ╲
      t     t    N'  ...     [V]
      └──────┘
```
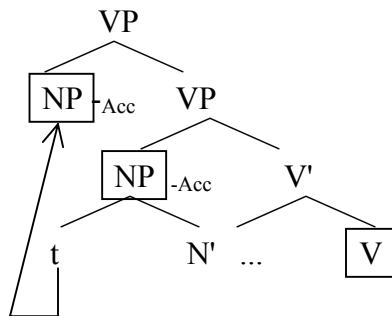
Similarly, under the Minimalist Framework (Chomsky 1995), Ura (1996) argues that the Possessor raises out of the host DP containing the Possessee to a Case licensing head for feature checking. The Possessor and the Possessee are assigned the same structural Case via multiple Case-checking (by T for multiple nominative Case checking; by *v* for multiple accusative Case checking). See Ura (1996, Chapter 4) for technical details.

Appendix 4B

In this appendix, I examine interesting observations concerning judgment variations about floating quantifiers in Korean and Japanese, and show that judgment variations are only apparent. In particular, I suggest that the judgment variation reflects discourse focus imposed on NQs. (My suggestions are built on the original observations of Kang 2002 and Miyagawa and Arikawa 2004.) It is also shown that once we force a discourse context where the Split Edge Effect cannot be maintained, the apparent judgment variation disappears.

Kang (2002) reports that the object may intervene between the subject and the subject-oriented floating quantifier in Korean under the environments described in (275).

(275)   Kang's Generalization (based on Kang 2002: 390)

S<O<FQ is allowed in the following three contexts:

a.   The floating quantifier is suffixed with a Case-marker: e.g. *sey-myeng-i/ul*

b.   The floating quantifier is suffixed with a discourse-marker: e.g. *sey-myeng-man/ina*

c.   Discourse contexts require that quantificational information is in focus

We have seen that the judgments for the contexts in (275a) and (275b) are explained by the Split Edge Effect (SFQs in sections 4.3-4.4). It is worth stressing that the judgments for (275a) and (275b) are categorical. To my knowledge, there is no variation among Korean speakers about the judgments for (275a) and (275b). Subtle discourse factors do not change judgments among speakers about the contrast between Casless NQs and SFQs in (275a)- (275b). This is expected if the judgments for SFQs are syntactically determined by the underlying structure, as assumed in my analysis for the Split Edge Effect.

Let us now turn to the case in (275c), which shows much variation among speakers, in contrast to the paradigms with SFQs. Kang argues that Caseless NQs in Korean can be used as a verbal modifier in some special contexts where quantificational information is in focus. In particular, the object may intervene between the subject and its associate numeral quantifier in a question-answer context such as (276) and gapping constructions. As Kang notes, the sentences in (276) are more or less acceptable.

(276) A: Haksayng myech-myeng-i khempyuwuthe chayk-ul sass-ni?

Student how.many-Cl-Nom computer book-Acc bought-Q

'How many students bought the computer book?'

B: ?**Haksayng-i** kukes-ul **twu-myeng** sasse

Student-Nom it-Acc 2-Cl bought

'Two students bought it'

Two immediate questions arise for the paradigms in (276): (i) why (276) is more or less acceptable, in comparison to typical Subject Puzzle paradigms (e.g. (231)); (ii) why Caseless NQs require special discourse contexts like (276) to obviate the Subject Puzzle, in contrast to SFQs in (275a) and (275b). I suggest that this is related to how focus is licensed in syntax.

In particular, I suggest that in focal contexts like (276), some speakers may analyze Caseless NQs as focused NQs akin to *3-myeng-man* '3-Cl-only'. In other words, due to the focus imposed on the NQ, the Caseless NQ can be analyzed as the type of SFQs presented in (224),

carrying a covert focus particle (cf. Miyagawa and Arikawa 2004 for Japanese).[154] On this view, the improvement of judgments about (276) is just the Split Edge Effect.[155]

Sufficient discourse context is necessary, however, to establish the hypothesis in speakers' mind that a Caseless NQ carries a covert focus particle. Hence, pragmatics may play a crucial role in judgment variations for Caseless NQs in (276). As for SFQs, in contrast, overt morphology may indicate that the Case/focus-marked quantifiers are merged separately from its host NP. Hence, no special (focal) discourse contexts are necessary for SFQs. On this approach, it is expected that the judgments for SFQs in (275a) and (275b) are categorical, whereas the judgments for Caseless NQs in (276) could be more or less flexible depending on speakers' willingness to accept focal interpretation of NQs.

---

[154] Miyagawa and Arikawa (2004) observe that all the counterexamples for the Subject Puzzle in Japanese literature in fact involve a focused NQ. Surely, my account for Korean (276) was inspired by their leading observations as well as Kang's (2002) observations. A key difference between Miyagawa and Arikawa (2004) and my proposal is that Miyagawa and Arikawa argue that the focus on NQ must be a nuclear stress, while I assume that the focus on NQ is an informational focus (or marked focus in the sense of Reinhart 1996, 2003). As discussed in Reinhart (1996, 2003), nuclear stress projects onto a higher phrase and can be licensed in out-of-blue contexts, but marked focus cannot. This makes a prediction that if my analysis for (276) is correct, the sentence in (276B) should be ungrammatical in out-of-blue contexts. As addressed before, this is the case. We will see further arguments for this claim in (277).

[155] David Pesetsky (p.c.) suggested to me that the fact that Case in Korean can be dropped would also be a factor. If the Case in NQ is optional, an NQ in 'NP-NQ' sequence is always ambiguous between true Caseless NQ and null-Case marked NQ like (275a). This line of approach, however, needs to explain why the Subject Puzzle with Caseless NQ disappears only when (informational) focus is imposed on NQ. I leave this question open. Shigeru Miyagwa (p.c.) notes that it is not obvious how this suggestion can be extended to Japanese. Miyagawa and Arikawa (2004) observe that an NQ with focus does not show the Subject Puzzle, but Japanese does not allow overt (nominative or accusative) Case-marking on NQs, unlike Korean. It might be the case, however, that Japanese allows the structural configuration for licensing Case-marked NQs, but Cases on NQs are not overtly realized due to morphological constraints. On this view, one might extend the idea that NQs with focus are in fact covertly Case-marked NQs to Japanese paradigms.

My arguments make a further prediction. If we can eliminate the possibility that focal interpretation can be imposed on quantifiers, we would expect to observe clear contrasts between Caseless NQs in (275c) and SFQs in (275a) and (275b). In particular, Caseless NQs would be incompatible with the Split Edge Effect in non-focal contexts, unlike (276). SFQs would show the Split Edge Effect, regardless of preceding contexts. This is indeed the case.

As shown in (277), the object may not intervene between the subject and its Caseless NQ, in non-focal contexts such as 'it happened that...' contexts[156] (cf. focal contexts like (276)).

(277) A: (Ecey)   mwusun   il-i   iss-ess-ni?

              Yesterday   what   thing-Nom   exist-Past-Q

       'What happened (yesterday)?'

       B: ***Haksayng-i**   kukes-ul   **twu-myeng**   sa-n-il-i   iss-ess-e

              Student-Nom   it-Acc   2-Cl   buy-Rel-thing-Nom exist-Past-Dec

       'It happened that two students bought it' (cf. (276))

Note that one cannot simply stipulate that a subject-oriented NQ is incompatible with non-focal contexts. A subject-oriented floating NQ may appear in non-focal contexts if it does not violate the Edge Generalization, as shown by the grammaticality of (278).

(278) A: (Ecey)   mwusun   il-i   iss-ess-ni?

              Yesterday   what   thing-Nom   exist-Past-Q

       'What happened (yesterday)?'

---

[156] I thank Danny Fox for helping me with constructing the non-focal contexts in this section.

B: **Haksayng-i**   (ecey)   **twu-myeng** kukes-ul sa-n-il-i   iss-ess-e

Student-Nom   yesterday 2-Cl   it-Acc   buy-Rel-thing-Nom exist-Past-Dec

'It happened that two students bought it (yesterday)'

The same account may extend to judgment variation for the NQ paradigms in Japanese. Under the current hypothesis, the pause effect that Miyawaga and Arikawa (2004) observe in (279) is a reflex of the structure that the NQ gets focus interpretation - which usually includes a pause before the focused element.

(279) (*) S<O<NQ$_{subj}$

Gakusei-ga   sake-o   *(#) **san-nin**   nonda

Student-Nom sake-Acc   3-Cl$_{people}$ drank

'Three students drank sake'

It should also be noted that those speakers who marginally accepted (279) find the same paradigm ungrammatical in non-focal contexts (e.g. listing contexts), as illustrated in (280).[157] The paradigms like (281), on the other hand, are judged to be grammatical even in non-focal

---

[157] Coordinators that may force an out-of-blue context such as *Tinamini* 'incidentally' or *tokorode* 'by the way' are incompatible with a pause, as shown in (i) (Y. Endo, p.c.).
(i)   *Tinamini, **gakusei-ga**   mado-o   ###   **huta-ri**   watta
      Incidentally, student-Nom   window.glass-Acc 2-Cl   broke
      'Incidentally, two students broke window glass'
(ii)   *Tinamini, **gakusei-ga huta-ri**   ###   mado-o   watta
      Incidentally, student-Nom 2-Cl   window.glass-Acc   broke
      'Incidentally, two students broke window glass'

contexts.[158] This observation further supports the argument that the NQs in (279) and the SFQs in (281) must be analyzed in the different ways, as suggested for similar Korean paradigms.

(280)   [Context: I will tell you what happened at the party yesterday]

a.   *Mazu   **gakusei-ga**   mado-o   **huta-ri**   watta

      First,   student-Nom   window.glass-Acc   2-Cl   broke

      'First, two students broke window glass'

b.   *Tugini   **sensei-ga**   Mary-o   **san-nin**   sikatta

      Next   teacher-Nom   Mary-Acc   3-Cl   scolded

      'Next, three teachers scolded Mary'

c.   *Sorekara   **oyatati-ga**   sake-o   **zyuu-nin**   nonda

      Then,   parent-Nom   sake-Acc   10-Cl   drank

      '10 parents drank sake' (N. Hasegawa, p.c.)

---

[158] Pause does not play a role in judgments about (280) (N. Hasegawa, p.c.). The contrast between (280) and (281) is not expected under Miyagawa and Arikawa's (2004) analysis of focused NQs. In particular, there is no reason why nuclear stress can fall on SFQs in (281), but not NQs in (280).

(281) [Context: I will tell you what the party was like yesterday][159]

a. Dai-iti-ni **gakusei-ga** susi-o **daremo/huta-ri-sika** tabe-nakat-ta

First of all, student-Nom sushi-Acc anyone/2-Cl-only$_{NPI}$ eat-Past-Neg

'First of all, no/only two students ate sushi'

b. Dai-ni-ni, **sensei-ga** sake-o **zen'in** non-da

Second, teacher-Nom sake-Acc all drink-Past

'Second, all teachers drank sake'

c. Dai-san-ni, **dansaa-ga** isyoo-o **huta-ri-dake** motte-ki-ta

Third, dancer-Nom stage.dress-Acc 2-Cl-only have-come-Past

'Third, only two dancers brought a (proper) dance dress.' (N. Hasegawa, Y. Endo, p.c.)

In short, judgment variations about the paradigms with Caseless NQs are only apparent. Once we provide a context where focal interpretation for NQs is impossible, Caseless NQs show the Edge Effect, as expected. Caseless NQs and SFQs differ in that rich pragmatic contexts are necessary to license a covert focus particle for Caseless NQs, whereas preceding focal contexts are not necessary to license the overt (Case/focus) morphology for SFQs. On this approach, it follows that SFQs may show the Split Edge Effect regardless of preceding contexts while Caseless NQs may variably show the Split Edge Effect under focal contexts, depending on the speaker's intention to accommodate focus on NQs.

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[159] Pause is unnecessary for the sentences in (281). In conversation contexts, the polite ending form "-masu-" sounds better in (281): *tabe-masen-desi-ta, nomi-masi-ta, motte-ki-masi-ta* (N. Hasegawa, p.c.).

Chapter 5. Case Sharing and Underlying Constituency

5.1   Introduction

In the previous chapter, I have argued that the Edge Effect and the Split Edge Effect may be used as a diagnostic to determine underlying constituency. In particular, I provided arguments that a nominative possessor and a nominative possessee form a constituent in underlying structure, whereas an accusative possessor and an accusative possessee do not. I also showed a variety of facts suggesting that it is necessary to assume two distinct types of floating quantifiers in Korean, differing in whether the quantifier forms a constituent with its host nominal in underlying structure. I drew evidence for this claim from the syntactic distribution of scrambled possessors and stranded quantifiers.

In this chapter, I provide some preliminary arguments that my claims for underlying structure are independently supported by other plausible tests for underlying constituency. In particular, I examine the properties of multiple Case marking in Inalienable Possession Constructions (IPCs) and Case-marked Numeral Quantifier Constructions (CNQCs). I argue that otherwise unexpected contrasts between the IPC and the CNQC in Case agreement can be derived from their different underlying structures proposed in the previous chapter.

The key idea that motivates this claim is that intervention effects in syntactic agreement are obtained in c-command configurations like (282), but not in configurations like (283). Specifically, if more than two elements are in a c-command relationship and if their (unchecked) features belong to the same type, they must agree in their feature values. I argue that this can be derived from Rizzi's (1990, 2001) work on Relativized Minimality couched under Pesetsky and Torrego's (2004b) theory of agreement.

(282) *Obligatory Agreement*

α
  β
    γ
      δ
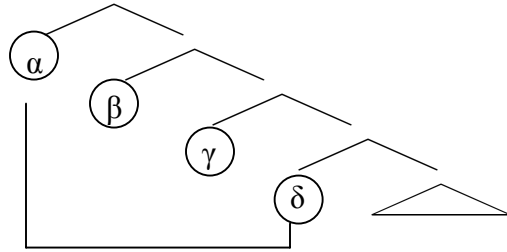
Obligatory Case Agreement:
CNQC and Multiple Accusative IPC

(283) *Nonobligatory Agreement*

α
  γP
    ⟨β⟩ γ
  δ
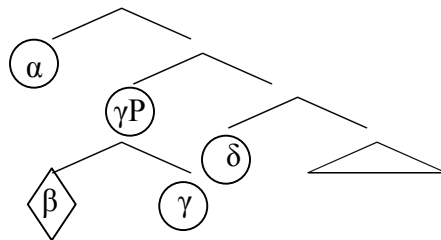
Nonobligatory Case Agreement:
Multiple Nominative IPC

If syntactic agreement and intervention effects are systematically determined by c-command, we expect that my arguments for constituency should be correlated with agreement patterns. In this chapter, I provide some evidence that this is indeed the case. In particular, I show that CNQCs and multiple accusative IPCs pattern together and show Case concord expected under the structure in (282). Multiple nominative IPCs, on the other hand, show (optional) Case mismatch expected under the structure in (283).

I develop my proposals under the framework arguing that syntactic agreement is feature sharing (cf. Pollard and Sag 1994, Frampton et al 2000, Frampton and Gutmann 2000, Sag et al 2003, Pesetsky and Torrego 2004b, among others). I also adopt a series of arguments that Case agreement is in fact Tense feature agreement (Pesetsky and Torrego 2001, 2004a, 2004b). If successful, my arguments provide further support for the claim (Pesetsky and Torrego 2004b) that Case agreement is determined by feature sharing between verbal heads (*v* and V) and tense

heads (T_o and T_s). Specifically, a DP obtains nominative Case when it is placed between *v* and T_s and receives accusative Case when it is placed between V and T_o. My arguments also provide support for the claim (Pesetsky and Torrego 2004b) that it is unnecessary to postulate the notion of *defective phase* in syntax, which has been considered as a central premise to maintain the PIC. Specifically, the properties of defective phase are derived from the nature of syntactic agreement, but not stipulated by "defective domains". In doing so, the chapter further contributes to the thesis that the domain of linearization and agreement may diverge, along the line suggested by Cyclic Linearization.

5.2   Puzzles: Case Concord and mismatch

As shown in the previous chapter, Korean IPCs and CNQCs allow multiple nominative and multiple accusative Case marking. Some examples are repeated here as (284) and (285).

(284) *Inalienable Possession Constructions*

a.   *Multiple Nominative Construction*

John-i   **apeci-ka**   hangsang   kosnolay-lul   pwulusinta

John-Nom   father-Nom   always   nose.sing-Acc   sing

'John's father always hums a song'

b.   *Multiple Accusative Construction*

Mary-ka   **John-ul**   **meli-lul**   capassta

Mary-Nom   John-Acc   head-Acc   grabbed

'Mary grabbed John's head'

(285)   *Case-Marked Numeral Quantifier Constructions*

a.   Multiple Nominative Construction

    Haksayng-i   **sey-myeng-i**   Mary-lul   mannassta

    Student-Nom   3-Cl-Nom   Mary-Acc met

    'Three students met Mary'

b.   Multiple Accusative Construction

    Ku   kay-ka   **haksayng-ul** **sey-myeng-ul**   mwulessta

    That   dog-Nom   student-Acc 3-Cl-Acc   bit

    'That dog bit three students'

On the surface, multiple Case marking in the IPC and the CNQC seems to show the same type of Case concord phenomena.[160] The parallels between the IPC and the CNQC break down in other syntactic environments, however.

Case concord in the CNQC is obligatory regardless of syntactic contexts. Specifically, as shown in (286), a DP and its CNQ must have the same Case in Exceptional Case Marking

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[160] Kim (1990), for instance, argues that Case concord between a Possessor and its Possessee and between an NP and its Case-marked NQ (CNQ) must be explained in the same way. Specifically, Kim argues that a Possessee in (284) and a floating CNQ in (285) are secondary predicates that must agree with its host NP in their morphological Case (adopting Hale 1981, Timberlake 1988, among others). But see Yoon (1990) and Maling and Kim (1992) for various arguments against this claim.

(ECM) constructions.[161] Moreover, a DP and its associate CNQ must bear the same Case in passive constructions as well.[162] This is illustrated in (287).

(286) *CNQ: ECM*

a.   John-un   caki-pan **haksayng-i   sey-myeng-i**   pwuca-lako   mitnunta [***Nom-Nom***]

      John-Top self class student-Nom 3-Cl-Nom   be.rich-C   believe

      'John believes that three students in his class are rich.'

b.   ?*John-un caki-pan **haksayng-ul sey-myeng-i**   pwuca-lako   mitnunta [[?*]***Acc-Nom***]

      John-Top self class student-Acc 3-Cl-Nom   be.rich-C   believe

      'John believes three students in his class to be rich.'

c.   *John-un caki-pan **haksayng-i sey-myeng-ul** pwuca-lako mitnunta   [***Nom-Acc***]

       John-Top self class student-Nom 3-Cl-Acc   be.rich-C   believe

      'John believes three students in his class to be rich.'

d.   ?John-un   caki-pan **haksayng-ul sey-myeng-ul** pwuca-lako   mitnunta [?***Acc-Acc***]

      John-Top self class student-Acc 3-Cl-Acc   be.rich-C   believe

      'John believes three students in his class to be rich.'

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[161] See J.-M. Yoon (1989, 1991), Hong (1990, 1997), Lee (1992), and J. Yoon (2005), among others, for extensive discussion of ECM constructions in Korean and references therein. Lee (1992) presents some sentences that could be counterexamples for (286). I have no good account of judgment variation (if it exists) for paradigms in (286) at this moment.

[162] Korean allows two types of passive constructions (see Kim 1990 and Oshima 2004 for overviews). One is a so-called "syntactic passive" construction, using *ci-* and *toy-* morphemes. The other is a "lexical passive" construction, using *i, hi, li, ki* morphemes. I first discuss Case properties observed in syntactic passives, and turn to lexical passives. See also Maling and Kim (1992: 65) for some relevant discussion of lexical passive and floating CNQs.

(287) *(Syntactic) Passive Construction*

a. **Haksayng-i**   Mary-eykey   **sey-myeng-i**   ponay-*eci*-ess-ta

   Student-Nom   Mary-Dat   3-Cl-Nom   send-Pass-Past-Dec

   'Three students were sent to Mary.'

b. ***Haksayng-i**   Mary-eykey   **sey-myeng-ul**   ponay-*eci*-ess-ta

    Student-Nom   Mary-Dat   3-Cl-Acc   send-Pass-Past-Dec

   'Three students were sent to Mary.'

The Case concord phenomena seen in the CNQC (286)-(287) are thus comparable to obligatory Case concord in Icelandic secondary predicate constructions shown in Chapter 4:

Icelandic Passive

(288) a. Islendingar   kusu   **hana**   **forseta**   1980

        Icelanders   chose her-Acc   president-Acc   1980

        'Icelanders elected her president in 1980.'

    b. **Hun**   var   kosin   **forseti**   1980

        She-Nom   was   chosen president-Nom   1980

        'She was elected president in 1980'   (Maling and Kim 1992: 54)

Icelandic ECM

(289) a. **Haraldur**   er   vondur   **kokkur**

        Harold-Nom   is   bad   cook-Nom

        'Harold is a bad cook'

b.   Ragnhildur   taldi   [**Harald**   vera   vondan   **kokk**]

        Ragnhildur   believed   Harold-Acc   to-be   bad   cook-Acc

        'Ragnhildur believed Harold to be a bad cook'

Icelandic ECM Passive

(290)   a. Eg taldi   [**Harald**   alltof   **stoltan**   af sjalfum ser]

         I consider Harold-Acc   all.too   proud-Acc   of himself

         'I consider Herald to be proud of himself'

        b. **Haraldur**   er   talinn   alltof **stoltur af**   sjalfum ser.

          Harold-Nom   is   considered   all.too proud-Nom   of   himself

          'Herald is considered to be proud of himself' (Maling and Kim 1992: 54)

    In contrast to CNQCs seen in (286)-(287), Case concord between the Possessor and the Possessee is not obligatory in certain contexts. In particular, the Possessor may bear a different Case from the Possessee in ECM constructions, as shown in (291)-(292) (cf. CNQs in (286)).

(291)   *Possessor ECM* (adapted from Yoon 2005): animate subject

a.   John-un   **Mary-ka   meli-ka**   coh-ta-ko   mitnunta   [***Nom-Nom***]

        John-Top   Mary-Nom   head-Nom   good-Dec-C   believe

        'John believes that Mary's head is good (Mary is smart) '

b.　　John-un　　**Mary-lul**　　**meli-ka**　　coh-ta-ko　　mitnunta　　[*Acc-Nom*]

　　　John-Top　　Mary-Acc　　head-Nom　　good-Dec-C　believe

　　　'John believes Mary's head to be good (Mary is smart)'

c.　　?John-un　　**Mary-lul**　　**meli-lul**　　coh-ta-ko　　mitnunta　　[*?Acc-Acc*]

　　　 John-Top　　Mary-Acc　　head-Acc　　good-Dec-C　believe

　　　'John believes Mary's head to be good (Mary is smart)' (cf. Japanese: Hiraiwa 2001)

(292)　*Possessor ECM* (adapted from Yoon 2005): inanimate subject

a.　　John-un　　**sakwa-ka**　　**kkepcil-i**　　mas-i　　issta-ko　　mitnunta [*Nom-Nom*]

　　　John-Top　　apple-Nom　　skin-Nom　　taste-Nom exsit-C　　believe

　　　'John believes that apples' skin is delicious' (not pear's skin)

b.　　John-un　　**sakwa-lul**　　**kkepcil-i**　　mas-i　　issta-ko　　mitnunta [*Acc-Nom*]

　　　John-Top　　apple-Acc　　skin-Nom　　taste-Nom exsit-C　　believe

　　　'John believes apples' skin to be delicious' (not pear's skin)

c.　　?John-un　　**sakwa-lul**　　**kkepcil-ul**　　mas-i　　issta-ko　　mitnunta [*?Acc-Acc*]

　　　 John-Top　　apple-Acc　　skin-Acc　　taste-Nom exsit-C　　believe

　　　'John believes apples' skin to be delicious' (not pear's skin)

Interestingly, however, the Possessor and the Possessee must have the same Case in (syntactic) passive constructions, just like the CNQ in (287). This is illustrated in (293).[163]

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[163] Lexical passive constructions show different properties. I will turn to this fact at the end of the chapter.

(293) *Syntactic Passive Constructions*

    a.   **Suni-ka**   **meli-ka/*lul**   piski-*eci*-ko-iss-ta

        Suni-Nom   head-Nom/Acc   comb-Pass-Prog-Cop-Dec

        'Suni's hair is being combed'

    b.   **Panana-ka**   **kkepcil-i/*ul**   kka-*ci*-ess-ta

        Babana-Nom skin-Nom/Acc   peel-Pass-Past-Dec

        'The banana was peeled'

The table in (294) summarizes the Case properties observed in the IPC and the CNQC.

(294) Case Concord Patterns (for multiple nominative/accusative Case marking)[164]

Case Concord in	Non-derived Contexts	ECM	(Syntactic) Passive
CNQ	*Obligatory*	*Obligatory*	*Obligatory*
IPC	*Obligatory*	*Optional*	*Obligatory*

Multiple Case marking in the IPC and the CNQC has been widely discussed (see references cited in Chapter 4). Interestingly, however, the differences between the IPC and the CNQC in Case concord and mismatch have not been extensively studied (cf. Maling and Kim 1992).[165] It has also been a matter of controversy how Case concord and mismatch in the IPC

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[164] Genitive Case marking on an NQ or on a Possessor is possible if they are adjacent to their associate DPs. I do not discuss how genitive Case marking is implemented in this thesis.

[165] Maling and Kim (1992) discuss Case concord and mismatch in the IPC, but do not explain why the IPC shows different Case properties from the CNQC (but see Maling and Kim (1992: fn.18) for some suggestions).

and the CNQC can be formally implemented.[166] The implications of Case concord and mismatch

for underlying structure have rarely been discussed in previous literature as well.

In the following sections of the chapter, I attempt to address these issues capitalizing on

the interactions between syntactic agreement and underlying constituency. In particular, I

propose that multiple Case marking in the IPC and the CNQC is explained by a feature sharing

approach to syntactic agreement. I further argue that the contrasts between the IPC and the

CNQC in Case concord and mismatch follow from their different underlying structures proposed

in the previous chapter.

5.3   Proposal

I argue that Case agreement is an instance of ***syntactic feature sharing***, described in (295).

Specifically, syntactic agreement is realized as sharing of a single feature between two or more

syntactic terminals. The idea of feature sharing has been developed in the HPSG framework (e.g.

Pollard and Sag 1994, Sag et al 2003) and recently adapted by a series of work in the Minimalist

Program to resolve various problems with the feature system in Derivation by Phase (DbP:

Chomsky 2001). (See Frampton et al 2000, Frampton and Gutmann 2000, Pesetsky and Torrego

2004b, among others.)

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[166] Some literature (e.g. Choe 1987, Ura 1996) argues that a Possessor may move out of the host DP containing the Possessee and adjoin to a Case licensing head, in the way described in (i). This type of movement is incompatible with the Search Domain Condition (at least for multiple nominative Case marking). If movement from Spec to Spec of a single head (or multiple Spec-Head agreement) is blocked, it remains an open question how multiple Case marking is licensed.
(i) [$_{TP}$ Possessor$_1$ [$_{DP}$ t$_1$ Possessee] T ...]
   (for nominative Case checking by T: Choe 1987, Ura 1996)

Though feature sharing may be implemented in other ways, I employ the notations of Pesetsky and Torrego (2004b), which presents a theory of feature sharing that can be most readily compatible with the theoretical assumptions I adopt in the thesis.

(295)   **Agree as feature sharing** (based on Pesetsky and Torrego 2004b)

   (i)   An unvalued feature F (a *probe*) at syntactic location α (F_α) scans its c-command domain for another instance of F (a *goal*) at location β (F_β) with which to agree.

   (ii)   Replace F_α with F_β, so that the same feature is present in both locations.

I assume with Pesetsky and Torrego (2004b) that four types of features in (296) need to be postulated in syntax. Interpretable features *iF* are accessible to the semantic component of the grammar, but uninterpretable features *uF* are not. *uF* must undergo agreement with *iF* at some point of derivation to get interpreted.[167] Unvalued features act as a probe for syntactic agreement - whether it is interpretable or uninterpretable (see Pesetsky and Torrego 2004b for various arguments for (296) and important contrasts between (296) and the feature system in DbP).

(296)   **Four Types of Features**

   uF *val*   uninterpretable, valued F   **uF [ ]**   uninterpretable, unvalued F

   iF *val*   interpretable, valued F   **iF [ ]**   interpretable, unvalued F

In developing a theory of Case under the feature sharing approach, I adopt a series of arguments by Pesetsky and Torrego (2001, 2004a, 2004b) that Case is an unvalued Tense feature

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[167] See Pesetsky and Torrego (2004b) for conceptual arguments for this proposal, adopting Brody (1997).

placed on a nominal head D.[168] In particular, I assume that Case is uT [ ], and that Case is licensed by a relationship between a tense head and a verbal head. The relevant verbal predication structure is sketched in (297). In (297), T_s corresponds to the traditional Tense node. T_o is an aspectual node relating the time of the vP-subevent to the time of the VP-subevent.[169] The head v introduces an external argument (SUBJ) and V introduces an internal argument (OBJ). Tense heads (T_s and T_o) bear an interpretable T feature, iT[ ], to be valued by the morphological properties of a verbal head (e.g. *finiteness*). Verbal heads (v and V) bear a valued uninterpretable T feature, uT*val*[ ], to be linked to a Tense node to get interpreted.[170]

(297) **Verbal Predication Structure** (before agreement)

	[T_s	[$_{vP}$	SUBJ	v	T_o	[$_{VP}$	V	OBJ]]]
	|		|	|	|		|	|
T-features	iT[ ]		uT[ ]	uT*val* [ ]	iT[ ]		uT*val* [ ]	uT[ ]

---

[168] See also Williams (1994), Haeberli (1999), and Svenonius (2002) who also view Case agreement as a tense related phenomenon.

[169] I adopt the proposal of Pesetsky and Torrego (2004a) who assume that T_o is responsible for accusative Case licensing. Refer to Travis (1991, 1992) and Krazter (1996) for the existence of an aspectual head located in the position of T_o in (297). See also Pesetsky and Torrego (2004a) for suggestion that T_o in (297) may correspond to the accusative Case licensing head proposed by Lasnik and Saito (1991), Johnson (1991), and Koizumi (1993, 1995). I leave it open, however, whether the function of T_o (i.e. licensing accusative Case) can be accommodated by v (as argued in Chomsky 1995).

[170] I refer readers to Pesetsky and Torrego (2001, 2004a, 2004b) for motivation for the feature system in (297). With the proposal that *Case is uT*, Pesetsky and Torrego capture a range of phenomena previously attributed to a variety of different syntactic mechanisms, including the *that*-trace effect, a restriction on auxiliary fronting, an asymmetry in the availability of sentential subjects, and the distinct patterns of complementation characteristics of nouns, verbs and adjectives. Pesetsky and Torrego (2004b) did not discuss accusative Case under the feature sharing framework. (297) is my interpretation of Pesetsky and Torrego (2004a) in the feature sharing approach.

Following Chomsky (2000, 2001), Pesetsky and Torrego (2004b) assume that only a head containing an unvalued feature may act as a probe.[171] I slightly depart from this assumption, and propose that a feature F may act as a probe as long as it is unvalued. On this view, an unvalued feature in a maximal projection as well as in a head may act as a probe.[172]

Under the feature sharing approach described above, I argue that nominative Case is licensed through T-feature sharing, as described in (298). Specifically, at the first step, the unvalued T feature in a DP searches for another T feature in its c-command domain. The T-features in the DP and v undergo agreement, as indicated by the index [2]. At the next step where T_s is merged, iT [ ] in T_s agrees with uT [2] in the DP. Though the DP itself does not retain a valued T feature, T_s gets valued through the T-feature link established between the DP and v at the first step. Similarly, accusative Case is licensed via a T-feature link, as described in (299).[173]

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[171] Under Pesetsky and Torrego (2004b), however, there is no principled reason that an unvalued feature in an XP cannot be a probe.

[172] In strict sense, an unvalued feature in an XP is percolated from its head (e.g. uT in DP).

[173] If the object is merged as a sister of the verb, DP may be a probe or goal. If the object is merged as a specifier of the verb (as in 'again' constructions in Chapter 3), the object is a probe, and the verb is a goal. I adopt the former view for simplicity, but nothing crucially hinges on this for Case purposes.

(298) *Nominative Case Agreement*

Step 1

```
              vP (finite)
             /          \
      DP_subj            v'
      uT[2]            /    \
                    T_oP      v
                    /\      uT val[2]
```

Step 2
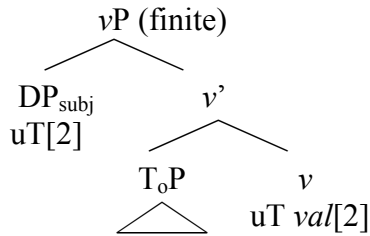
```
                    T_sP
                   /      \
            vP (finite)    T_s
           /        \      iT[2]
      DP_subj        v'
      uT[2]        /    \
                T_oP      v
                /\      uT val[2]
```
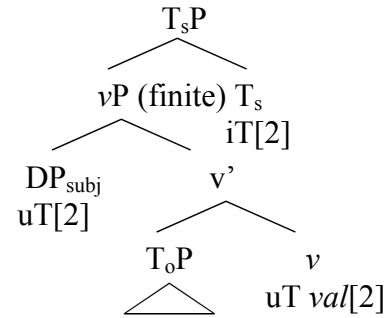
(299) *Accusative Case Agreement*

Step 1

```
              VP
            /    \
      DP_obj      V
      uT[2]    uTval[2]
```

Step 2
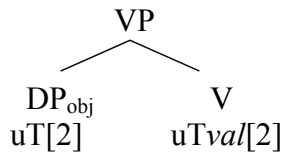
```
                 T_oP
                /     \
             VP        T_o
            /   \      iT[2]
      DP_obj     V
      uT[2]   uTval[2]
```
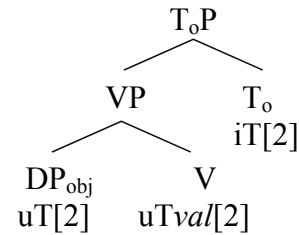
A crucial consequence of this approach is that Case sharing becomes obligatory when elements in a c-command relationship bear a Tense feature and are placed in a T-feature link between a verbal head and a tense head.

In particular, in configurations like (300), α and δ must agree, to license their T features. The other elements β and γ, placed between α and δ, must also agree in their T values. Otherwise, proper agreement between α and δ would not be established.[174] Specifically, if β and

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[174] I assume that agreement may occur at any point of the derivation. In particular, I do not assume that agreement must occur as soon as a feature is introduced in the derivation. This assumption has important implications for the Case properties of the IPC. See section 5.5 for discussion.

γ do not undergo agreement, as in (301), uninterpretable T features (uT) in γ and δ are not linked to an interpretable T (iT), so that uTs in γ and δ cannot be interpreted at LF. Furthermore, unvalued T features in α and β are not linked to a valued T, which implies that the morphological properties of T features in α and β cannot be determined.[175]

Proper Agreement Chain

(300)　　　　α　　　　　　β　　　　　　γ　　　　　　δ

　　　　　iT[2]　　　　uT[2]　　　　uT [2]　　　uT*val* [2]

Broken Agreement Chain

(301)　　　　α　　　　　　β　　　　　　γ　　　　　　δ

　　　　　iT [2]　　　　uT[2]　　　　uT [3]　　　uT*val* [3]
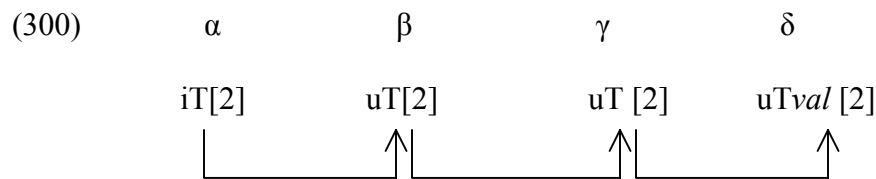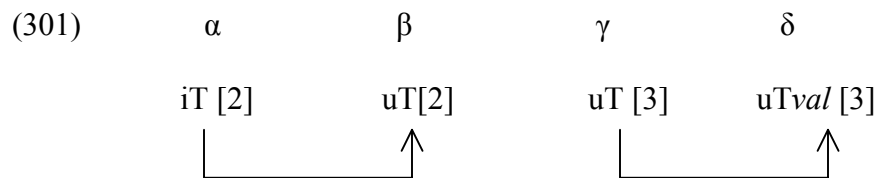
The same point holds under the proposal that multiple agreements exist (Hiraiwa's (2001, 2005) Multiple Agree). If α agrees with β and γ simultaneously, as in (302), or if α agrees with β, γ and δ simultaneously, as in (303), we expect that α and its goals must share the same T-feature value, which in turn implies that β and γ must agree in their T values.

---

[175] This might not cause ungrammaticality if some morphological process may assign a default value to unvalued T (e.g. default Case marking).

Possible Multiple Agree

(302)　　　　α　　　　　　β　　　　　　γ　　　　　　δ

　　　　　　iT [2]　　　　uT [2]　　　　uT [2]　　　　uT*val* [2]

(303)　　　　α　　　　　　β　　　　　　γ　　　　　　δ

　　　　　　iT [2]　　　　uT [2]　　　　uT [2]　　　　uT*val* [2]
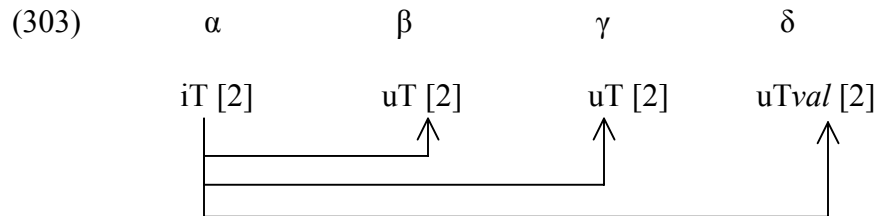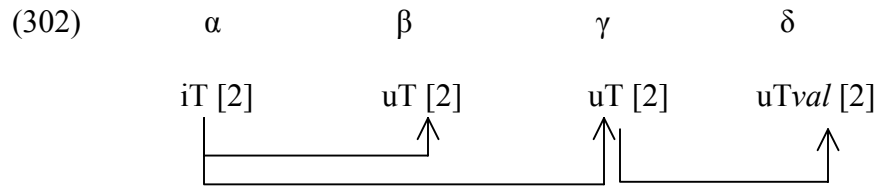
One might think that agreement chains like (304) might allow mismatch between β and γ in their T feature values. The agreement pattern in (304), however, is ruled out independently by a locality condition on agreement.[176] In particular, α cannot undergo agreement with γ or δ, skipping its closest goal β (Rizzi's (1990, 2001) Relativized Minimality).

Non-local Agreement: Intervention Effect

(304)　　　　α　　　　　　β　　　　　　γ　　　　　　δ

　　　　　　iT[3]　　　　uT[ ]　　　　uT[3]　　　　uT*val* [3]

---
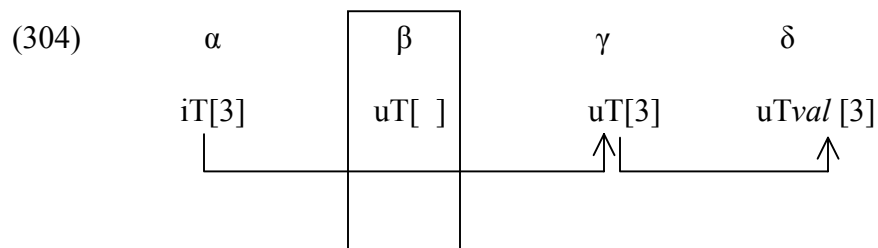
[176] See Chomsky (2000, 2001) for discussion of intervention effects in syntactic agreement. See also Hiraiwa (2005) for extensive discussion of intervention effects and multiple agree.

In the next section, I show that the formal properties of feature sharing discussed in the (300)-(304) explain crucial differences between the CNQC and the IPC in Case agreement.

5.4   Feature Sharing in Case-marked Numeral Quantifier Constructions

Let us first consider the Case concord phenomena in the CNQC. Basic multiple nominative and accusative constructions in (285) are repeated here as (305).

(305)   *Case-Marked Numeral Quantifier Constructions (CNQC)*

a.   *Multiple Nominative Construction*

Haksayng-i   **sey-myeng-i**   Mary-lul   mannassta

Student-Nom   3-Cl-Nom   Mary-Acc   met

'Three students met Mary'

b.   *Multiple Accusative Construction*

Ku   kay-ka   **haksayng-ul**   **sey-myeng-ul**   mwulessta

That   dog-Nom   student-Acc   3-Cl-Acc   bit

'That dog bit three students'

If a host DP and a CNQ are merged separately as multiple Specs and do not form a constituent in underlying structure, as argued in Chapter 4, the feature sharing system expects that the DP and its NQ must agree in their Case.[177] As illustrated in (306), the subject-oriented

---

[177] Precisely speaking, under the feature sharing system developed here, a DP and a CNQ must share the same Case as long as they are located between T_s and *v*. Thus, a DP and a CNQ do not have to be multiple Specs of the same head for Case purposes (but see Chapter 4 for some evidence that they are multiple Specs of a single head). To accommodate the fact that the

CNQ agrees with *v*, and the subject agrees with the CNQ, and T_s agrees with subject. If features with the same index are interpreted as one occurrence of a single feature at different locations (i.e. feature sharing), the subject DP gets the same T-feature value as the CNQ. Morphologically, this implies that the subject DP and the CNQ share the same nominative Case. This account extends to multiple accusative constructions, as shown in (307).

(306)   Multiple Nominative Case

```
                        Ts P
                      /      \
              vP (finite)      Ts
              /      \         iT[2]
       DPsubj         v'
       uT[2]        /    \
                 CNQ        v'
                 uT[2]    /    \
                       ToP       v
                       /\     uT val[2]
```

(307)   Multiple Accusative Case

```
                       ToP
                     /      \
                  VP          To
                /    \        iT[2]
          DPobj        V'
          uT[2]      /    \
                  CNQ        V
                  uT[2]   uT val[2]
```

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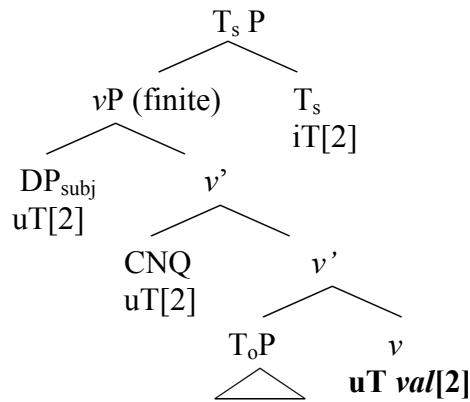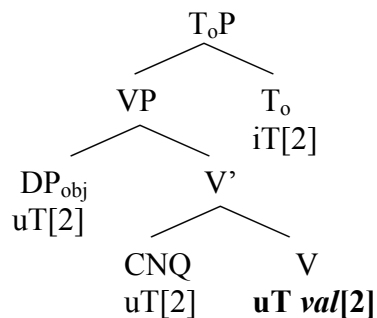
subject-oriented CNQ cannot bear an accusative Case, it suffices to assume that the subject-oriented CNQ must be base-generated above *v*, which introduces a T-feature link for nominative Case.

Crucially, if the DP and the CNQ do not agree in their T-values, as illustrated in (308), proper T-agreement cannot be established (recall the discussion of (300)-(304)). Specifically, uT*val* [3] in *v* and uT[3] in CNQ are not linked to an interpretable T at any point of the derivation, so they cannot be interpreted at LF. Moreover, iT[2] in T$_s$ and uT[2] in DP are not linked to a valued T, so their morphological properties cannot be decided. Hence, if T$_s$ and *v* must undergo T-feature agreement, it follows that the elements placed between them (i.e. DP and CNQ) must agree in their T-values, too.

(308)   *Improper Agreement Link*

```
                    T_sP
                   /    \
          vP (finite)    T_s
           /    \        iT[2]
      DP_subj    v'
      uT[2]     /   \
            CNQ      v'
            uT[3]   /   \
                 T_oP     v
                /__\    uT val[3]
```
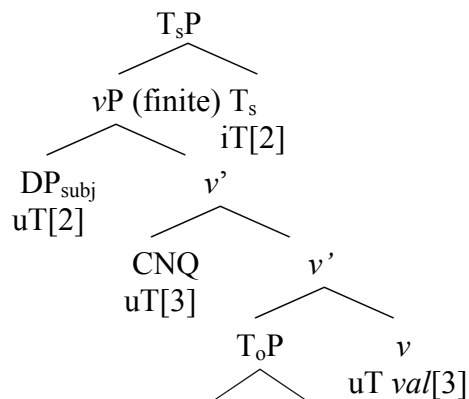
Let us now turn to Case agreement in derived contexts. The derivations in (306) and (307) illustrate the paradigms where a verbal head in a T-feature link is valued. Suppose, however, that a verbal head has no value for T. Then, a DP may not get valued by agreement with a verbal head. I argue with Pesetsky and Torrego (2004b) that a DP in those contexts may move to the next higher domain where it can get its T-feature valued. Specifically, I argue that raising to object position in ECM constructions and raising to subject position in passive

constructions may constitute such cases (see Pesetsky and Torrego 2004b for discussion of subject raising in English). In particular, I assume that v in ECM constructions and V in passive constructions can be defective in the sense that they may lack an inherent T-value, unlike v and V in finite and transitive verbal projections.

On this view, a DP and its CNQ must agree in their Cases, but their feature values are determined in the domain where one of the two elements is raised. Detailed descriptions for ECM constructions are given in (309). As described in Step I, the DP and its CNQ undergo agreement, but no valuation for T-features happens in the T_sP domain when v provides no T-value. If the DP in (309) undergoes movement into a domain where V has a valued T-feature (raising to object in ECM constructions), the value of DP is determined as accusative. Crucially, due to the previous link established between the DP and its CNQ in Step I, the DP and the CNQ must have the same T-feature value. This implies that the DP and the CNQ must get the same Case in ECM constructions.[178] Morphologically, this is realized as accusative Case concord between a DP and its associate CNQ, as seen in (286d).[179]

---

[178] My arguments imply that the following counter-cyclic derivation must be disallowed: the DP in (309) moves to a higher domain without undergoing agreement with v and receive an accusative Case. The NQ in (309) then undergoes agreement with T_s and v, assuming that v is valued so that the NQ obtains nominative Case. I leave it future research if this counter-cyclic derivation can be independently ruled out.

[179] As for (286a), I assume that v can be optionally valued in Korean ECM constructions (cf. Hiraiwa 2001 for optional raising in Japanese ECM). Crucially, however, the Case between a DP and its CNQ must agree whether the verbal head is valued or not, due to the obligatory T-feature agreement between the DP and its CNQ. As Carson Schütze (p.c.) notes, my analysis crucially needs to rule out derivations where a DP with valued T undergoes scrambling to a higher clause and acts as an intervener for T-agreement between V and T_o. I assume that elements that have been valued in the previous phases (Spell-out domains) may not act as an intervener in the higher domains (adapting Chomsky's (2001) claim that valued uninterpretable features are eliminated from the syntax via cyclic Spell-out).

(309)   ECM: Multiple Accusative Case (see examples in (286d))

Step I: no valuation   **Step II: subject movement and valuation**

$T_s P$

vP (nonfinite) T_s
                   iT[2]

DP$_{subj}$ v'
uT[2]

CNQ v'
uT[2]

T_oP v
              uT[2]

T_oP

VP T_o
          iT[2]

DP$_1$ V'
uT[2]

CP   V
          uTval[2]

C T_sP

vP (nonfinite) T_s
                   iT[2]

t$_1$ v'

CNQ v'
uT[2]

T_oP v
              uT[2]
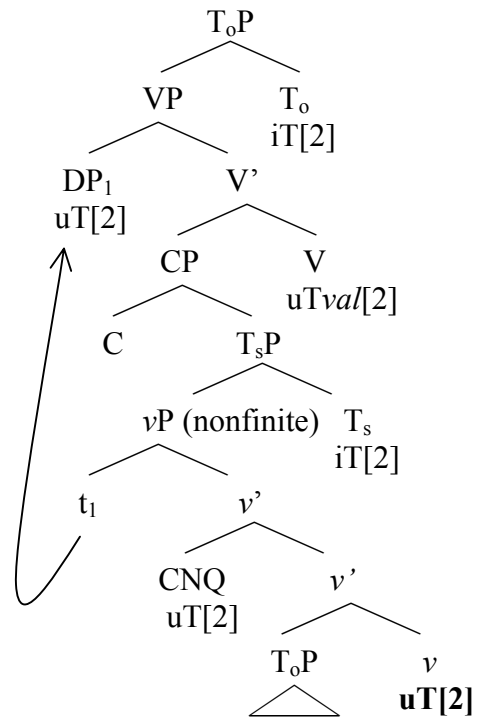
If we assume that V has no T-feature value in passive constructions, the same account extends to Case preservation in passive constructions. This is illustrated in (310). As described in Step I, the DP and its CNQ undergo agreement, but no valuation happens in the T_oP domain because the passive V provides no T-value. If the DP in (310) undergoes movement into a domain where v has a valued T feature (raising to subject in passive constructions), the value of DP is determined as nominative. Due to the previous agreement established between the DP and its CNQ in Step I, the DP and the CNQ must have the same T-feature value. This implies that the DP and the CNQ must get the same Case in passive constructions. Morphologically, this is realized as nominative Case concord between a DP and its associate CNQ, as seen in (287).

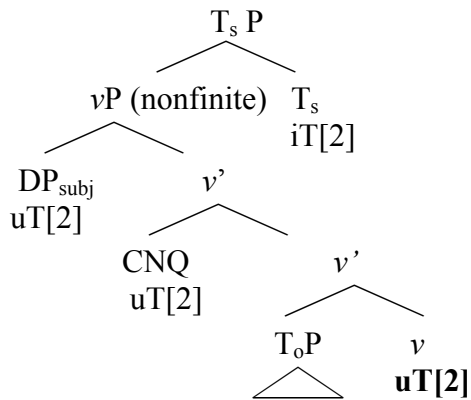(310) Passive: Multiple Nominative Case (see examples in (287))
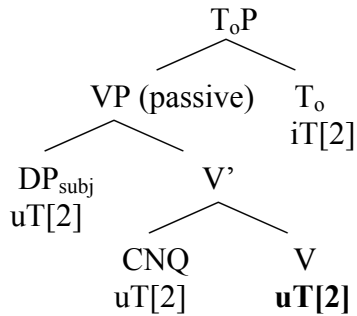
Step I: no valuation   ***Step II: object movement and valuation***

```
          T_oP                                          T_sP
         /    \                                        /    \
  VP (passive)  T_o                                  vP      T_s
      /  \       iT[2]                              /  \      iT[2]
DP_subj   V'                                     DP_1   v'
 uT[2]   /  \                                    uT[2]  /  \
      CNQ    V                                        T_oP    v
      uT[2]  uT[2]                                   /  \     uTval[2]
                                            VP (passive)  T_o
                                                /  \       iT[2]
                                              t_1   V'
                                                   /  \
                                                 CNQ    V
                                                 uT[2]  uT[2]
```
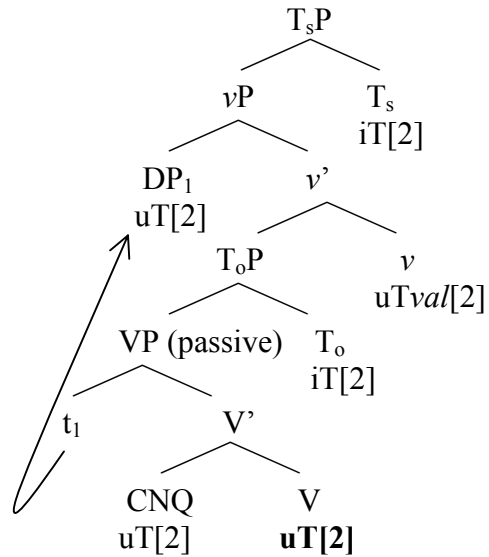

On the current approach to defective phases including nonfinite TPs and passive VPs, the nature of defective phases (or weak phases) is derived from defective features in a verbal head. Specifically, due to the lack of T-feature value in a verbal head, arguments must undergo movement into a higher domain to get its T-feature valued. Crucially, there is no domain designated as a defective domain (cf. Chomsky 2000, 2001; Pesetsky and Torrego 2004b for discussion). This move has particularly important implications for overall arguments for Cyclic Linearization. We have seen evidence that both strong phases (*vP and CP) and weak phases (passive vP and VP) undergo Cyclic Linearization (Chapters 2-3). If this argument is correct, we expect that there is no need for distinguishing between weak and strong phases in terms of Spell-out, contra Chomsky (2000, 2001). Hence, the facts that had been dealt with the notion of defective phases in the DbP framework must be explained in different ways. The current claim for ECM and passive constructions may achieve such a goal by deriving the nature of defective

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phases from defective features assigned to a verbal head, without stipulating the notion of defective domains.

**5.5   Feature Sharing in Inalienable Possession Constructions**

In the previous section, I have argued that a DP and its CNQ must agree in their Case because they are in c-command relationship in a T-feature link. More generally, in configurations like (311), if α and δ must undergo agreement (like a verbal head and a tense head), elements between them, β and γ, must also undergo agreement. Otherwise, a proper agreement link cannot be established.[180]

---

[180] My proposals predict that Case-bearing elements between α and δ in (311) must agree in their Case regardless of their categorial status. We have seen evidence for this claim from Case-marked numerals. In this vein, it is worth noting that Korean allows Case marking on a variety of categories including PPs and adverbs (see Maling 1989, Cho 2000, and references therein for extensive discussion of this issue). In future research, it would be worth examining if Case properties of adverbials can be derived from the current claim on Case concord. Some preliminary evidence can be drawn from the paradigms in (i)-(iii). The contrast between (i)-(ii) can be explained as an instance of the Edge Effect (in the VP domain) if we assume that the accusative Case marked PP 'for an hour' is externally merged below the object. The contrast in (ii)-(iii) shows that the time adverbial PP does not show the Edge Effect when it is not Case marked. This may follow from the claim that accusative Case must be obtained within the VP domain, hence the PP in (ii) has no option of be being merged outside *v*P. If this is correct, we expect that Case agreement and Edge Effects must be systematically correlated with each other. I wish to return to this issue in future research.

(i) John-i   chayk-ul   han-sikan-dongan-ul   ilk-ess-ta
    John-Nom book-Acc one-hour-for-Acc   read-Past-Dec
    'John read a book for an hour'
(ii) *John-i   chayk-ul   han-sikan-dongan-ul   twu-kwon   ilk-ess-ta
      John-Nom book-Acc one-hour-for-Acc   two-Cl   read-Past-Dec
     'John read two books for an hour'
(ii) John-i   chayk-ul   han-sikan-dongan   twu-kwon   ilk-ess-ta
    John-Nom   book-Acc   one-hour-for   two-Cl   read-Past-Dec
    'John read two books for an hour'

(311) *Obligatory Case Sharing*
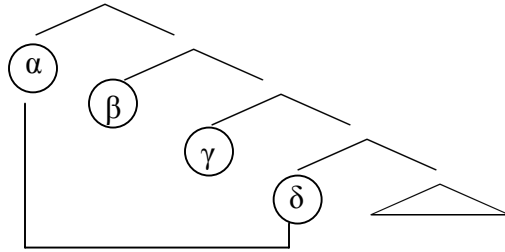
The hypothesis for obligatory feature sharing in (311) makes a prediction. If elements placed between α and δ are not in a c-command relationship with α and δ, as in (312), it would be possible that elements like β do not agree with γ and δ. It is of course possible that β may agree with γ if β may act as a probe for γ, but crucially, this is not obligatory. In particular, since β does not c-command δ, even if β does not agree with δ, β does not behave as an intervener for agreement between α and γP or between γP and δ. (In contrast, agreement among c-commanding elements α, γP, and δ is obligatory to avoid intervention effects.) In this section, I argue that this property of feature sharing explains optional Case mismatch in ECM constructions in the IPC.

(312) *Optional Feature Sharing*
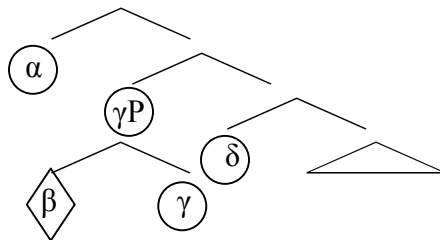
Consider first the basic multiple nominative IPC paradigms. We have seen various arguments based on the Edge Effect that the S-Possessor and the S-Possessee form a constituent in the underlying structure (Chapter 4). A representative example is repeated here as (313).

(313)   *Inalienable Possession Construction: Multiple Nominative Construction*

John-i   **apeci-ka**   hangsang   kosnolay-lul   pwulusinta

John-Nom   father-Nom   always   nose.sing-Acc   sing

'John's father always hums a song'

Multiple Case marking in (313) can be captured by feature sharing, but the underlying structure for (313) is crucially different from the CNQ in (306). Specifically, the Possessor does not c-command the verbal head *v* that has a valued T feature. As described in (314), the T-feature in the Possessor DP (DP_R) may act as a probe for the T-feature in the Possessee DP (DP_E), so that they may agree in their T-feature values. When the DP_E agrees with *v*, the DP_R also gets nominative Case indirectly through the T-feature link established between the DP_R and the DP_E.

(314) Multiple Nominative Case in IPCs

T_s P
    vP (finite) T_s
                   iT[2]
  DP$_E$ v'
DP$_R$ D$_E$'   T$_o$P   v
uT[2] | uT *val*[2]
         D$_E$
         uT [2]
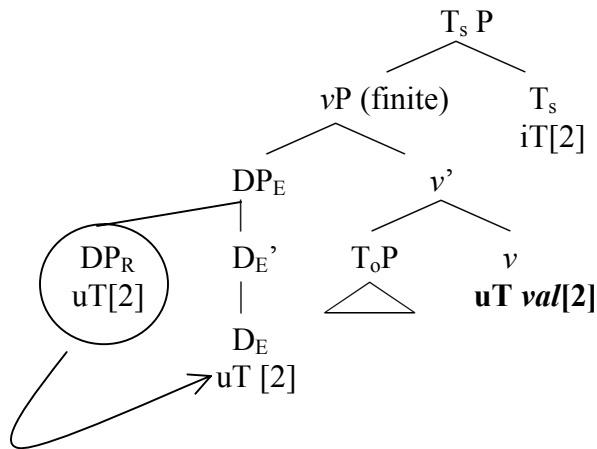
The account for Case concord in (314) may extend to (optional) Case concord in ECM constructions. As illustrated in (315), the Possessor DP$_R$ may agree with the Possessee DP$_E$, and later get valued by V in the higher domain in ECM constructions. Morphologically, this will be realized as accusative Case marking both on the Possessor DP$_R$ and the Possessee DP$_E$, as seen in (291c) and (292c).

(315) ECM: Multiple Accusative Case in IPCs

Step I: no valuation

T_s P
    vP (nonfinite) T_s
                   iT[2]
  DP$_E$ v'
DP$_R$ D$_E$'   T$_o$P   v
uT[2] | uT[2]
         D$_E$
         uT [2]

Step II: Possessor movement and valuation

T_oP
   VP T_o
     iT[2]
DP_R V'
uT[2]
   CP   V
      uT*val*[2]
C T_sP
   *v*P (nonfinite) T_s
      iT[2]
DP_E *v'*
t_R D_E' T_oP *v*
         uT[2]
  D_E
  uT [2]
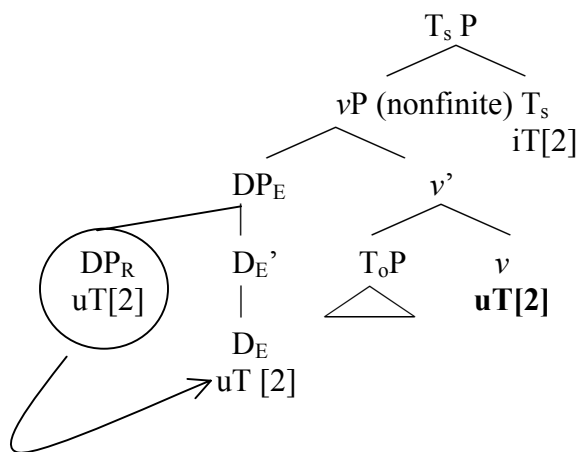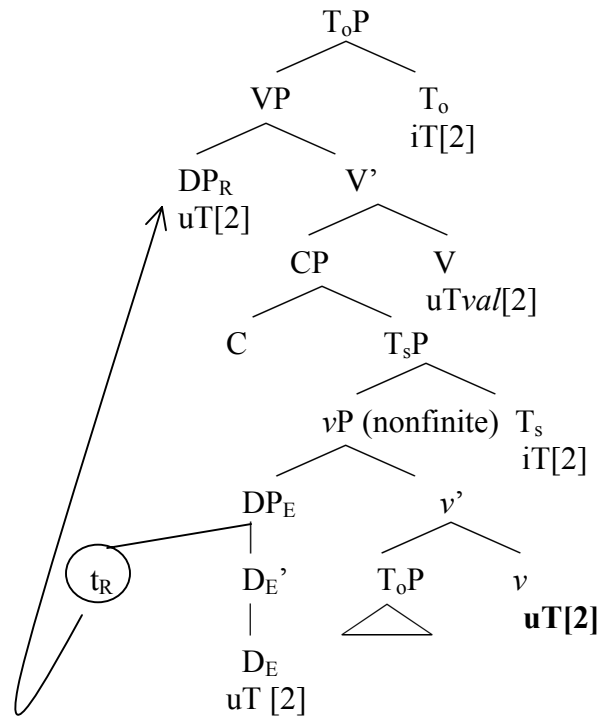
Notice, however, that unlike the CNQ in (306), the Possessor DP_R in (314) and (315) cannot probe the features on *v* directly: *v* is not in the search domain of the DP_R. This results in a crucial difference between the IPC and the CNQC in ECM constructions. As described in (316), if the Possessor DP_R does not agree with the Possessee DP_E and moves to the higher domain, the DP_R may obtain accusative Case valued by V while the DP_E obtains nominative Case valued by *v*. This derivation explains the Case mismatch seen in (291b) and (292b). [181]

---

[181] I assume that *v* is valued in ECM constructions when the Possessee obtains a nominative Case (see fn. 179).

(316) ECM: Case mismatch in IPCs

Step I: no agreement between Possessor and Possessee

```
                          T_s P
                         /    \
                       vP      T_s
                      /  \     iT[2]
                   DP_E   v'
                    |    /  \
         _____   D_E'  T_oP    v
        / DP_R \   |    /\    uT val[2]
        | uT[ ] |  |   /__\
        _____/  D_E
                  uT [2]
```

Step II: Possessor movement and valuation

```
                          T_oP
                         /    \
                       VP      T_o
                      /  \     iT[3]
                   DP_R   V'
                   uT[3] /  \
                        CP    V
                       /  \   uTval[3]
                      C    T_sP
                          /   \
                        vP     T_s
                       /  \    iT[2]
                    DP_E    v'
                     |     /  \
          ___      D_E'  T_oP    v
         / t_R \    |    /\    uT val[2]
         \_____/    |   /__\
                   D_E
                   uT [2]
```
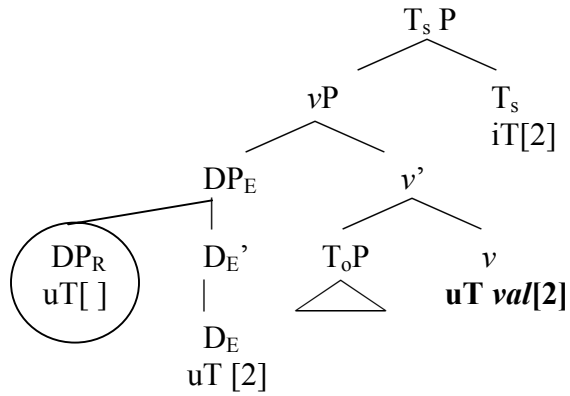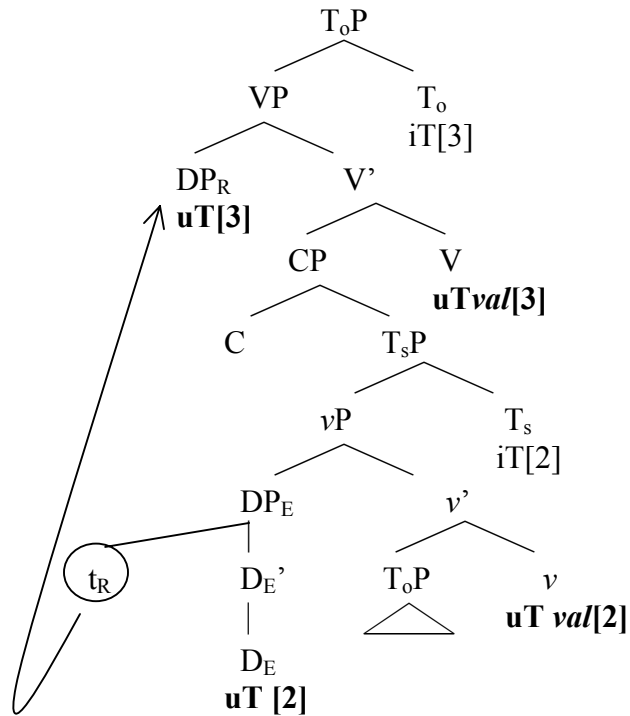
On this approach, the difference between the CNQ in (309) and the Possessor DP_R in (316) originates from their different underlying structures. The CNQ in (309) c-commands *v* so it

must agree with *v* directly. Otherwise, the CNQ will behave as an intervener for agreement between the subject and *v* or between T$_s$ and *v*. In contrast, the Possessor DP$_R$ in (316) does not c-command *v*, so that it has an option of being licensed later by a higher verbal head without behaving as an intervener for agreement between the subject and *v* or between T$_s$ and *v*.

The analysis in (316) also correctly rules out illegal Case mismatch in (317). The Cases on the Possessor and the Possessee may disagree in ECM constructions, but not randomly. As shown in (317), the Possessor may not receive a nominative Case when the Possessee has an accusative Case. This is expected under the proposal described in (316). The Possessor may obtain nominative Case (valued by *v*) only indirectly, through its T-feature agreement with the Possessee. If the Possessee gets accusative Case, as in (317), this implies that the *v* has no T-value. Hence, the Possessor cannot get nominative Case, either. Note that the reverse Case pattern in (316) is possible because the Possessor may move out of [Spec,*v*P] without undergoing agreement with the Possessee. Thus, accusative Case marking on the Possessor in (316) is independent of agreement between the Possessor and the Possessee, unlike the nominative Case marking in (317).

(317) *Illegal Case Mismatch in ECM constructions*

a.   *John-un   **Mary-ka**   **meli-lul**   coh-ta-ko   mitnunta   [***Nom-Acc***]

     John-Top   Mary-Nom   head-Acc   good-Dec-C   believe

     'John believes that Mary's head is good (Mary is smart) '

b.   *John-un   **sakwa-ka**   **kkepcil-ul**   mas-i   issta-ko   mitnunta [***Nom-Acc***]

     John-Top   apple-Nom   skin-Acc   taste-Nom exsit-C   believe

     'John believes that apples' skin is delicious' (not pear's skin)

If my arguments are correct, we also predict that a possessor may obtain nominative Case only when all the possessors to its right receive nominative Case in ECM constructions. In particular, we expect that such Case agreement patterns as Nom-Acc-Nom or Nom-Acc-Acc would not be allowed in ECM constructions. This is the case, as shown in (318)-(320).

(318) Na-nun   **khokkili-ka   kho-ka   kkus-i**   tantanhata-ko minunta

          I-Top   elephant-Nom nose-Nom   tip-Nom   hard.be-C   believe

          'I believe that the tip of elephant's nose is hard'

(319) *Na -nun   **khokkili-ka   kho-lul   kkus-i**   tantanhata-ko minunta

           I-Top   elephant-Nom nose-Acc   tip-Nom   hard.be-C   believe

           'I believe that the tip of elephant's nose is hard'

(320) *Na -nun   **khokkili-ka   kho-lul   kkus-ul**   tantanhata-ko minunta

           I-Top   elephant-Nom nose-Acc   tip-Acc   hard.be-C   believe

           'I believe that the tip of elephant's nose is hard'

Let us now turn to multiple accusative constructions in the IPC. A representative example is repeated here as (321).

(321) Mary-ka   **John-ul   meli-lul**   capassta

          Mary-Nom   John-Acc   head-Acc   grabbed

          'Mary grabbed John's head'

Based on the Split Edge Effect observed in multiple accusative IPCs, I have argued that the O-Possessor and the O-Possessee do not form a constituent, and suggested the underlying structure in (322) for multiple accusative IPCs (Chapter 4). If my arguments for (322) are correct, we expect that the Case concord between the O-Possessor and the O-Possessee will be obligatory. In particular, since the O-possessor and the O-possessee are in a c-command relationship, we expect that they must agree in their Case even in derived contexts, just like CNQs in (307).

(322)   Multiple Accusative Construction
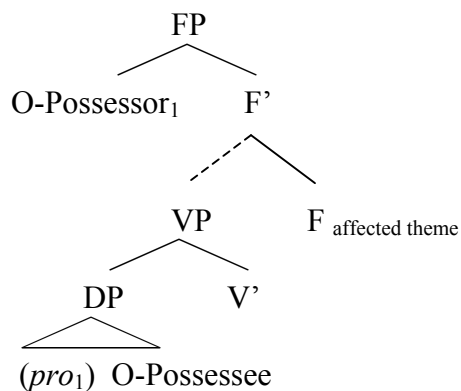
This is exactly what we have observed in (syntactic) passive constructions. As shown in (293), repeated here as (323), the O-Possessor and the O-Possessee must agree in their Case even in passive constructions, just like CNQs in (310) (cf. S-Possessor in ECM (316)).

(323)   *Syntactic Passive Constructions*

a.   **Suni-ka   meli-ka/*lul**   piski-*eci*-ko-iss-ta

Suni-Nom   head-Nom/Acc   comb-Pass-Prog-Cop-Dec

'Suni's hair is being combed'

b. **Panana-ka   kkepcil-i/*ul**   kka-*ci*-ess-ta

   Babana-Nom   skin-Nom/Acc   peel-Pass-Past-Dec

   'The banana was peeled'

More specifically, if we assume that the FP in (322) is located between T_o and V,[182] accusative Case marking in the IPC is explained in the same way as accusative Case marking in the CNQC in (307). As described in (324), the O-Possessor DP_R c-commands the O-Possessee DP_E and V, so that the O-Possessor, the O-Possessee, and V must agree in their T-feature value. Morphologically, this implies that the O-Possessor and the O-Possessee in (324) must bear the same accusative Case. If V has no T-value, both the O-Possessor DP_R and the O-Possessee DP_E are unvalued in the VP domain and later may get valued by a higher *v*, sharing the same nominative Case, as shown in (325) (cf. CNQ in (310)).

(324)   Multiple Accusative Case

---
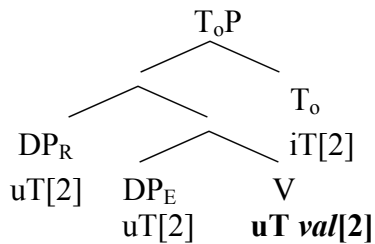
[182] Otherwise, accusative Case marking on the O-Possessor in (322) would be hard to capture under the feature sharing system developed here. It requires further research, however, to specify where the FP in the IPC (322) is located in the syntactic structure. Moreover, it is not obvious how the FP interacts with the passive construction, either. Thus, the present discussion for multiple accusative marking in the IPC must be taken as only a tentative suggestion until these questions are answered.

(325) ***O-Possessor movement and valuation in passive IPCs***

```
                    TsP
                   /    \
                 vP      Ts
                /  \     iT[2]
            DP1     v'
            uT[2]  /   \
                 ToP     v
                /   \    uTval[2]
              FP     To
             /  \    iT[2]
           t1    F'
                /   \
         VP(passive)  F
            /   \
          DPE    V
          uT[2]  uT[2]
```
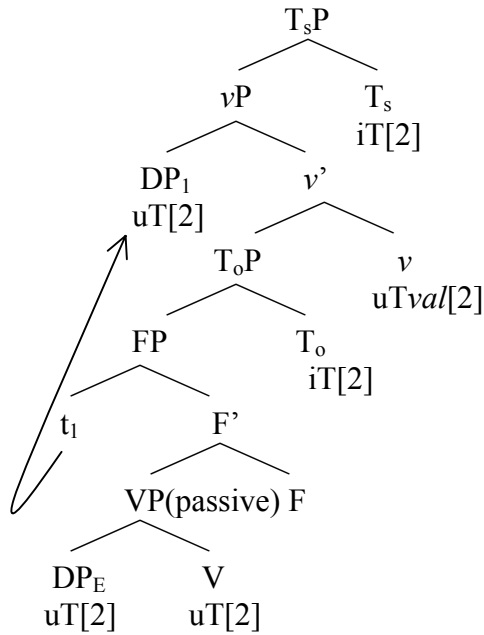
If the current analysis is on the right track, we predict obligatory Case concord in ECM passive constructions. In particular, a passive subject possessee must agree with the possessee in their Cases even in derived contexts since their underlying structure is the same as (324). This prediction is borne out, as shown in (326c). The ungrammaticality of (326d), however, is not understood.[183]

(326) a.   Na-nun Mary-ka   John-ul   meli-lul   piski-ess-ta-ko   mitnunta

            I-Top   Mary-Nom John-Acc   head-Acc comb-Past-Dec-C   believe

            'I believe that Mary combed John's hair'

---

[183] This might be related to the constraint that the subject raised from the lower clause in ECM constructions must be interpreted as a major subject. See Yoon (2005) for relevant discussion.

b.　　Na-nun　John-i　　Mary-eykey　meli-ka　　piski-eci-ess-ta-ko　　　mitnunta

　　　I-Top　　John-Nom　Mary-Dat　　head-Nom　comb-Pass-Past-Dec-C　believe

　　　'I believe that John's hair was combed by Mary'

c.　　?*Na-nun　John-ul　　Mary-eykey　meli-ka　　piski-eci-ess-ta-ko　　　mitnunta

　　　　I-Top　　John-Acc　Mary-Dat　　head-Nom　comb-Pass-Past-Dec-C　believe

　　　　'I believe that John's hair was combed by Mary'

d.　　?*Na-nun　John-ul　　Mary-eykey　meli-lul　　piski-eci-ess-ta-ko　　　mitnunta

　　　　I-Top　　John-Acc　Mary-Dat　　head-Acc　comb-Pass-Past-Dec-C　　believe

　　　　'I believe that John's hair was combed by Mary'

Some discussion concerning lexical passive constructions is in order, however. As described in (327), the Possessor and the Possessee may have different Cases in lexical passive constructions, employing *i, hi, li, ki* morphemes. The Case mismatch in (327) is not expected under my accounts for syntactic passives in (325).

(327)　*(Lexical) Passive Constructions*

　　Haksayng-i　kay-eykey　　**son-ul**　　　　mwul-***li***-ess-ta

　　Student-Nom　dog-Dat　　　hand-Acc　　　bite-Pass-Past-Dec

　　'A student's hand was bitten by a dog.' (Maling & Kim 1992, p. 65)

I speculate that the passive construction in (327) is not derived from movement of the Possessor at all. Rather, the Possessor subject in (327) is externally merged in Spec of *v* (see

Kubo (1990) for gapless passives in Japanese). The head V does not lack a T-feature value, and the Possessee gets accusative Case just as in transitive sentences.

Further research is necessary to validate this speculation. The following facts, however, seem to suggest that the current approach is on the right track. A subject in lexical passive constructions may behave as an antecedent for an agent-oriented phrase *susulo* 'by oneself's will', as in (328). This is expected if we assume that the passive subject *John-i* is externally merged in the Spec of *v*, as an agent. As argued by Kubo (1990), this is typical behavior of gapless passive subjects (see also Pylkkännen (2002)'s analysis for a gapless passive as a high applicative construction).

(328) **John-i**   susulo   Mary-eykey   **sonmok-ul**   chap-hi-ess-ta

John-Nom   by.himself   Mary-Dat   wrist-Acc   hold-Pass-Past-Dec

'John let Mary hold his wrist by himself's will'

The contrast between (328) and (329) also indicates that the underlying structures of syntactic and lexical passive constructions may be different. In syntactic passive constructions in (329), the subject cannot bind an agent-oriented anaphor *susulo*, in contrast to (328). This is expected if the subject in (329) is derived from the object position and thus cannot be an antecedent for an agent-oriented phrase *susulo*.

(329) ***John-i**   susulo   Mary-eykey   **meli-ka**   pis-**eci**-ess-ta

John-Nom   by.himself   Mary-Dat   head-Nom   comb-Pass-Past-Dec

'John's hair was combed by Mary by himself's will'

5.6   Conclusion

In this chapter, I have argued that interactions between formal properties of syntactic agreement and underlying constituency give rise to systematic Case concord and mismatch phenomena. In particular, I have argued that obligatory Case concord is predicted under the structure where Case-bearing elements are in a c-command relationship. Optional Case mismatch is predicted in the configuration that Case-bearing elements are not in a c-command relationship. I have provided arguments for these predictions from multiple Case marking patterns in IPCs and CNQCs.

The correlation between (Split) Edge Effects and Case agreement provide further support for my claims on underlying constituency presented in the previous chapter. Specifically, the fact that Edge Effects and optional Case mismatch are correlated support the claim that a nominative possessor and possessee form a constituent in underlying structure. The fact that Split Edge Effects and obligatory Case concord are correlated support the claim that a Case-marked NQ does not form a constituent with its host nominal in underlying structure.

I have also argued that Case agreement is Case sharing among a verbal head, a tense head, and intervening (c-commanding) elements. My accounts in this chapter thus provide further support for the line of approaches arguing that syntactic agreement is feature sharing (Frampton et al 2000, Frampton and Gutmann 2000, Pesetsky and Torrego 2004b, among others). I have also argued for the claim (Pesetsky and Torrego 2004b) that it is unnecessary to postulate the notion of defective phase in syntax. Specifically, the properties of defective phases can be derived from the nature of syntactic agreement, not stipulated by designating defective domains. In doing so, the chapter further contributes to the thesis that the domain of linearization and agreement may diverge, along the line suggested by Cyclic Linearization.

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